

Številka javnega naročila: JN 71/2025  
Datum: 29. 10. 2025

## **DOKUMENTACIJA V ZVEZI Z ODDAJO JAVNEGA NAROČILA**

Predmet javnega naročila: **NABAVA STS DVIGAL (SKLOP 1)**

Številka javnega naročila: **JN 71/2025**

Vrsta postopka za oddajo javnega naročila: **Odprti postopek**

## Kazalo:

I. NAVODILA PONUDNIKOM ZA PRIPRAVO PONUDBE .....	3
1. OSNOVNI PODATKI O NAROČILU .....	3
2. NAVODILA PONUDNIKOM .....	6
3. POGOJI IN MERILA ZA IZBOR PONUDB .....	14
3.1. Pogoji za priznanje sposobnosti .....	14
II. PONUDBENA DOKUMENTACIJA .....	18
1. VSEBINA PONUDBENE DOKUMENTACIJE .....	18
III. SPECIFIKACIJA NAROČILA .....	21
1. TEHNIČNI POGOJI IN OSTALI POGOJI NAROČILA .....	21
2. GENERAL TECHNICAL DEMANDS – SECTION »A« .....	22
2.1. Scope of work .....	22
2.2. Location .....	22
2.3. Climate and meteorology .....	22
2.4. Design .....	22
2.5. Documentation .....	25
2.6. Training of operators and maintenance personnel .....	31
2.7. Erection and operation sites and procedures .....	32
2.8. Warranty and warranty inspections .....	32
2.9. Technical support .....	33
2.10. Timetable .....	34
3. TECHNICAL DESCRIPTION – SECTION »B« .....	36
3.1. General .....	36
3.2. Operating characteristics .....	37
3.3. Major dimensions .....	41
3.4. Electrical system .....	41
3.5. Main technical and design demands .....	74
3.6. Accesories .....	96
3.7. Dimensions, tolerances and adjustments .....	97
3.8. Design criteria .....	98
3.9. Shop work .....	104
3.10. Project administrative requirements .....	109
IV. OBRAZCI .....	123

## I. NAVODILA PONUDNIKOM ZA PRIPRAVO PONUDBE

### 1. OSNOVNI PODATKI O NAROČILU

#### 1.1. PODATKI O NAROČNIKU IN POSTOPKU

Naročnik:	Luka Koper, d.d. Vojkovo nabrežje 38 6501 Koper
Oznaka javnega naročila:	JN 71/2025
Premet javnega naročila:	Nabava STS dvigal (sklop 1)
Postopek:	Odprti postopek
Podlaga (člen) po Zakonu o javnem naročanju: (Ur. l. RS, št. 91/15, 14/18, 121/21, 10/22, 74/22 – odl. US, 100/22 – ZNUZSZS, 28/23 in 88/23 – ZOPNN-F; v nadaljevanju ZJN-3)	40. člen

#### 1.2. PREDMET JAVNEGA NAROČILA

Vrsta	Blago
Predmet naročila:	Predmet naročila je nabava 3 (treh) kosov STS dvigal (Ship to Shore Cranes) tipa SPPX (Super Post-Panamax) za potrebe Luke Koper, d.d. z dodatno opremo tj. s 6 (šestimi) kontejnerskimi prijemali, 3 (trema) košarami za prevoz oseb in 3 (trema) OH adapterji (prijemala za izvengabaritne tovore).  Podrobnejši opis in obseg predmeta naročila je razviden iz nadaljevanja te dokumentacije v zvezi z oddajo javnega naročila.
Roki	Rok izvedbe predmeta naročila je <b>naveden v Vzorcju pogodbe (OBR-6)</b> .

Za predmetni postopek oddaje javnega naročila se uporablja Uredba (EU) 2022/1031 Evropskega parlamenta in Sveta z dne 23. junija 2022 o dostopu gospodarskih subjektov, blaga in storitev iz tretjih držav do trgov javnih naročil in koncesij Unije ter postopkih za podporo pogajanjem o dostopu gospodarskih subjektov, blaga in storitev iz Unije do trgov javnih naročil in koncesij tretjih držav (instrument za mednarodno javno naročanje, IPI).

#### 1.3. DOKUMENTACIJA V ZVEZI Z ODDAJO JAVNEGA NAROČILA

Vsa dokumentacija v zvezi z oddajo javnega naročila, je objavljena na portalu javnih naročil <https://www.enarocanje.si/>. Dokumentacija je na voljo brezplačno.

Dokumentacijo v zvezi z oddajo javnega naročila sestavlja ta dokument s priložo:

- Priloga 1: Tehnične zahteve/Technical requirements JN 71/2025.

Sestavni del dokumentacije v zvezi z oddajo javnega naročila so tudi vse morebitne spremembe, dopolnitve, popravki dokumentacije ter dodatna pojasnila, objavljena na portalu javnih naročil.

Kontaktne podatke za dodatna pojasnila	Ponudniki lahko zastavljajo vprašanja preko portala javnih naročil <a href="https://www.enarocanje.si/">www.enarocanje.si</a> pri objavi predmetnega javnega naročila.
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	<p>V zavihku »Vprašanja, odgovori in pojasnila« je omogočeno zastavljanje vprašanj s klikom na gumb »Pošlji vprašanje naročniku«. V tem zavihku so po objavi s strani naročnika objavljeni tudi vsi odgovori in morebitna dodatna pojasnila.</p> <p><b>Pošlji vprašanja naročniku</b></p> <p>Naročnik ne bo odgovarjal na vprašanja, ki ne bodo zastavljena na zgornji način.</p>	
Rok za postavitev vprašanj	<p>Rok za postavitev vprašanj je naveden v obvestilu naročila in njegovih morebitnih popravkih objavljenih na portalu javnih naročil <a href="http://www.enarocanje.si">www.enarocanje.si</a>. Naročnik bo na vprašanja odgovoril preko portala javnih naročil <a href="http://www.enarocanje.si">www.enarocanje.si</a> pri objavi predmetnega javnega naročila.</p>	
<b>Ogled je možen in priporočljiv, ni pa obvezen!</b>	Kontaktne podatke za predhodno najavo	Lokacija in predmet ogleda
	<a href="mailto:ogledi.jn@luka-kp.si">ogledi.jn@luka-kp.si</a>	Območje Luke Koper
	<p>Ogled lokacije, delovnih pogojev in obstoječe opreme je možen v terminu do roka za postavljanje vprašanj po predhodni najavi vsaj en dan pred željenim terminom ogleda. Stroške ogleda v vsakem primeru nosi ponudnik.</p>	

#### 1.4. PREDLOŽITEV PONUDB IN JAVNO ODPIRANJE

<b>Predložitev ponudb</b>	
Rok za prejem ponudb	Rok za oddajo ponudb oz. prejem je naveden v obvestilu naročila in njegovih morebitnih popravkih objavljenih na portalu javnih naročil <a href="http://www.enarocanje.si">www.enarocanje.si</a> .
Vložišče	Informacijski sistem e-JN na spletnem naslovu <a href="https://ejn.gov.si">https://ejn.gov.si</a> , pri objavi tega javnega naročila.
Spremembe in umik ponudb	Ponudnik lahko do roka za oddajo oz. prejem ponudb svojo ponudbo umakne ali spremeni. Če ponudnik v informacijskem sistemu e-JN svojo ponudbo umakne, se šteje, da ponudba ni bila oddana in je naročnik v sistemu e-JN tudi ne bo videl. Če ponudnik svojo ponudbo v informacijskem sistemu e-JN spremeni, je naročniku v tem sistemu odprta zadnja oddana ponudba.
<b>Javno odpiranje ponudb</b>	
Čas	<b>Po izteku roka za prejem ponudb</b> oz. kot navedeno v obvestilu o naročilu in njegovih morebitnih popravkih objavljenih na portalu javnih naročil.

Lokacija	Informacijski sistem e-JN na spletnem naslovu <a href="https://ejn.gov.si">https://ejn.gov.si</a> , pri objavi tega javnega naročila.
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## 2. NAVODILA PONUDNIKOM

V navodilih ponudnikom so opredeljena pravila poslovanja naročnika in ponudnikov v postopku oddaje javnega naročila po odprtem postopku ter napotki glede priprave in predložitve ponudbe.

### 2.1. Financiranje naročila

Javno naročilo je financirano s sredstvi Luke Koper, d.d.

### 2.2. Spremembe in pojasnila dokumentacije v zvezi z oddajo javnega naročila

Naročnik si pridržuje pravico, da dokumentacijo v zvezi z oddajo javnega naročila do izteka roka za prejem ponudb delno spremeni ali dopolni. V tem primeru bo naročnik po potrebi podaljšal rok za prejem ponudb. Spremembe in dopolnitve so sestavni del dokumentacije v zvezi z oddajo javnega naročila.

Morebitne spremembe in pojasnila dokumentacije v zvezi z oddajo javnega naročila bodo objavljena na portalu javnih naročil <https://www.enarocanje.si/>. Pojasnila in spremembe so sestavni del dokumentacije v zvezi z oddajo javnega naročila in jih je treba upoštevati pri pripravi ponudbe.

### 2.3. Zaupnost podatkov

Naročnik bo v skladu s 35. členom ZJN-3 zagotovil varovanje podatkov, ki se glede na določbe zakona, ki ureja varstvo osebnih podatkov, tajne podatke ali gospodarske družbe, štejejo za osebne ali tajne podatke ali poslovno skrivnost.

Če ponudba vsebuje podatke, ki za ponudnika pomenijo poslovno skrivnost, mora ponudnik v ponudbi to označiti oz. priložiti, skladno z Zakonom o poslovni skrivnosti, ustrezen sklep o določitvi podatkov, ki pomenijo poslovno skrivnost, iz katerega bo jasno izhajalo, kateri podatki in kje v posameznih segmentih ponudbe pomenijo poslovno skrivnost, vse upoštevaje določbe 35. člena ZJN-3 in druge določbe področne zakonodaje (Zakon o poslovni skrivnosti ipd.).

Če ponudbo odda skupina ponudnikov, velja zahteva po predložitvi sklepa iz prejšnjega odstavka za vsakega posameznega sponudnika, v kolikor poslovno skrivnost predstavljajo podatki v ponudbi, ki se nanašajo na sponudnika.

Za osebni podatek, tajni podatek ali poslovno skrivnost se ne morejo določiti specifikacije ponujenega blaga in količina iz specifikacije, cena na enoto, vrednost posamezne postavke in skupna vrednost iz ponudbe.

Naročnik bo skladno s 35. členom ZJN-3 v primeru vložene zahteve za vpogled v ponudbo obvestil ponudnika in ga pozval, da prisostvuje vpogledu drugih ponudnikov v svojo ponudbo zaradi varovanja svojih interesov.

### 2.4. Oblike sodelovanja gospodarskih subjektov pri oddaji ponudbe

Kot ponudnik lahko v tem postopku javnega naročanja konkurira vsaka pravna ali fizična oseba, ki je registrirana za dejavnost, ki je predmet tega naročila in ima za opravljanje te dejavnosti vsa predpisana dovoljenja za izvedbo tega javnega naročila.

Naročnik si pridružuje pravico, da zahteva dodatna (stvarna) dokazila o izpolnjevanju vseh zahtevanih pogojev.

Samostojna ponudba	Samostojna je tista ponudba, v kateri nastopa samo en gospodarski subjekt (samostojni ponudnik), ki sam izpolnjuje vse razpisane pogoje in zahteve ter sam s svojimi znanji in zagotovljenimi zmogljivostmi v celoti prevzema izvedbo naročila.
Ponudba s podizvajalci	Ponudnik lahko določen del javnega naročila odda v izvedbo podizvajalcu.

	<p>V primeru izvedbe javnega naročila s podizvajalci, je potrebno v ponudbi (OBR-2) navesti VSE podizvajalce, njihove kontaktne podatke in zakonite zastopnike in vsak del naročila, ki ga bo izvedel posamezni podizvajalec (opis del in količina v obliki »% od celote glede na vrednost prevzetih del«).</p> <p>Če bo ponudnik izvajal javno naročilo s podizvajalci, mora v ponudbi poleg zahtevanega OBR-2, predložiti</p> <ul style="list-style-type: none"> <li>- izpolnjene ESPD teh podizvajalcev v skladu z 79. členom ZJN-3 ter</li> <li>- priložiti zahtevo podizvajalca za neposredno plačilo, če podizvajalec to zahteva.</li> </ul> <p>V primeru javnih naročil, pri izvedbi katerih so vključeni podizvajalci, in v kolikor podizvajalci v skladu in na način, določen v drugem in tretjem odstavku 94. člena ZJN-3, zahtevajo neposredna plačila, mora izvajalec v pogodbi o izvedbi javnega naročila pooblastiti naročnika, da na podlagi potrjenega računa oziroma situacije neposredno plačuje podizvajalcem, podizvajalec pa mora predložiti soglasje, na podlagi katerega naročnik namesto glavnega izvajalca poravnava podizvajalčevo terjatev do glavnega podizvajalca (asignacija). Soglasja podizvajalcev za neposredna plačila so priloga pogodbe. Roki plačil glavnemu izvajalcu in njegovim podizvajalcem so enaki.</p> <p>Glavni izvajalec, ki v izvedbo javnega naročila vključi enega ali več podizvajalcev, mora imeti ob sklenitvi pogodbe z naročnikom ali v času njenega izvajanja, sklenjene veljavne pogodbe s podizvajalci.</p> <p>Ponudnik v razmerju do naročnika v celoti odgovarja za izvedbo prejetega naročila, ne glede na število podizvajalcev, ki jih navede v svoji ponudbi.</p>
Skupno nastopanje	<p>Pri javnem naročilu je dovoljena skupna ponudba več pogodbenih partnerjev.</p> <p>V primeru, da skupina ponudnikov predloži skupno ponudbo, je potrebno v ponudbi (OBR-2) navesti VSE, ki bodo sodelovali v tej skupni ponudbi in njihove kontaktne podatke in zakonite zastopnike in vsak del naročila, ki ga bo izvedel posamezni gospodarski subjekt (opis del in količina v obliki »% od celote glede na vrednost prevzetih del«).</p> <p>Pogodbo o izvedbi predmeta javnega naročila (partnersko pogodbo), predloži ponudnik, kateremu se odda javno naročilo. V pogodbi se opredeli vodilnega partnerja, ki bo od naročnika sprejemal obveznosti, navodila in lahko tudi plačila v imenu in za račun vseh sodelujočih, ter delež in vrsto storitev, ki jih opravlja posamezen partner. Pogodba mora jasno določati, da proti naročniku za celotno obveznost in za vsak njen del odgovarjajo vsi partnerji solidarno.</p>
Tuji ponudniki	<p>Ponudniki s sedežem izven Republike Slovenije morajo izpolnjevati enake pogoje kot ponudniki s sedežem v Republiki Sloveniji.</p> <p>Ponudniki, ki nimajo sedeža v Republiki Sloveniji, bodo morali predložiti dokazila o izpolnjevanju pogojev za priznanje sposobnosti v zvezi z oddajo javnega naročila, če so v tej dokumentaciji zahtevana, prevedena v slovenski (npr. potrdila iz kazenske evidence fizičnih oseb; potrdila iz kazenske evidence pravnih oseb; izpis iz ustreznega registra, kakršen je sodni register, če tega registra ni, pa enakovreden dokument, ki ga izda pristojni sodni ali upravni organ v drugi državi članici ali matični državi ali državi, v kateri ima sedež gospodarski subjekt).</p> <p>Če država dokumentov in potrdil iz prejšnjega odstavka ne izdaja ali če ti ne zajemajo vseh primerov iz prvega in drugega odstavka ter b) točke četrtega in b) točke šestega odstavka 75. člena ZJN-3, lahko ponudnik namesto zgoraj</p>

	<p>navedenega, pod kazensko in materialno odgovornostjo, predloži zapriseženo izjavo, da izpolnjuje vse pogoje za priznanje sposobnosti. Ta izjava mora biti podana pred pravosodnim ali upravnim organom, notarjem ali pristojnim organom poklicnih ali gospodarskih subjektov v državi, v kateri ima gospodarski subjekt svoj sedež, in prevedena v slovenski jezik. Ponudnik se zavezuje, da bo na poziv naročnika in na svoje stroške, prevode overil po sodno zapriseženem prevajalcu, kar bo moralo biti na prevodu listine jasno in nedvoumno zapisano in potrjeno. Naročnik si pridružuje pravico, da zahteva dodatna (stvarna) dokazila o izpolnjevanju vseh zahtevanih pogojev.</p> <p>Vsa komunikacija z naročnikom v fazi oddaje javnega naročila in kasneje izvedbe del poteka v slovenskem jeziku.</p>
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## 2.5. Finančna zavarovanja

### 2.5.1. Instrument zavarovanja za resnost ponudbe

Skupaj s ponudbo je potrebno predložiti instrument finančnega zavarovanja (brezpogojno, nepreklicno bančno garancijo, unovčljivo na prvi poziv, izdelano po Enotnih pravilih za garancije na poziv (EPGP) ali enakovredno kavcijsko zavarovanje zavarovalnice) za resnost ponudbe v višini 1.000.000,00 EUR. Instrument finančnega zavarovanja mora veljati najmanj 120 dni od prvega roka<sup>1</sup> za prejem ponudb, navedenega v obvestilu o naročilu na portalu javnih naročil. Naročnik bo po potrebi ponudnika pozval k podaljšanju veljavnosti instrumenta finančnega zavarovanja za resnost ponudbe vsaj do izteka roka veljavnosti ponudbe oz. za izbranega ponudnika do predložitve predvidenega finančnega zavarovanja za dobro izvedbo pogodbenih obveznosti. Ponudnik mora veljavnost instrumenta finančnega zavarovanja za resnost ponudbe pravočasno podaljšati in ga predložiti naročniku vsaj 5 delovnih dni pred potekom njegove veljavnosti, v nasprotnem primeru bo naročnik vnovčil že predložen instrument finančnega zavarovanja za resnost ponudbe in sredsta, ki bodo pridobljena z vnovčitvijo tega instrumenta, upošteval kot neobrestovano varščino, ki bo predstavlja nadomestni instrument finančnega zavarovanja za resnost ponudbe.

Instrument finančnega zavarovanja za resnost ponudbe naročnik lahko unovči, če:

- ponudnik po roku za prejem ponudb svojo ponudbo umakne,
- ponudnik zavrne sklenitev pogodbe, ali pogodbe ne sklene v ponujenem roku,
- ponudnik oz. prodajalec naročniku ne izroči ali ne izroči pravočasno instrument finančnega zavarovanja za dobro izvedbo pogodbenih obveznosti,
- se v času pred izročitvijo instrumenta zavarovanja za dobro izvedbo pogodbenih obveznosti, nad prodajalcem začne postopek zaradi insolventnosti ali izbrisa iz sodnega registra brez likvidacije,
- v vseh drugih primerih, če pride do prenehanja pogodbe iz razloga v sferi prodajalca pred izročitvijo instrumenta finančnega zavarovanja za dobro izvedbo pogodbenih obveznosti oz. vseh drugih primerih, določenih s pogodbo ali dokumentacijo v zvezi z oddajo javnega naročila.

**Instrument finančnega zavarovanja za resnost ponudbe mora biti vnovčljiv iz vseh zgoraj navedenih razlogov.**

Instrument finančnega zavarovanja za resnost ponudbe je lahko predložen:

<sup>1</sup> Kot prvi rok za prejem ponudb se šteje rok, ki je za prejem ponudb določen v obvestilu o naročilu na portalu javnih naročil (in ne morebitni kasneje podaljšan rok za prejem ponudb).



- skupaj s ponudbo pred potekom roka za prejem ponudb, elektronsko v PDF obliki, pri čemer mora biti na samem instrumentu izrecno zapisano, da za njegovo unovčitev, razen zahtevka upravičenca (t. j. naročnika), niso potrebni nobeni dokumenti;
- v originalu s pošto ali osebno pri naročniku, v ustrezno opremljeni ovojnici z oznako javnega naročila, pošiljatelja in navedbo »ne-odpiraj ZAVAROVANJE ZA RESNOST PONUDBE ZA JN 71/2025 »Nabava STS dvigal (sklop 1)« - v roke Oddelek za javna naročila« (v kolikor bo poleg instrumenta finančnega zavarovanja v ovojnici še kakšen drugi dokument, se le-ta ne bo štel kot del ponudbene dokumentacije). Original instrumenta finančnega zavarovanja za resnost ponudbe mora naročnik prejeti, ne glede na način dostave, pred potekom roka za prejem ponudb. V kolikor se dostavlja osebno naročniku, se dostavi v »ekspedit« v pritličju v upravni stavbi Luka Koper d.d. na naslov Vojkovo nabrežje 38, 6501 Koper.

V primeru, da je instrument finančnega zavarovanja za resnost ponudbe predložen samo elektronsko v PDF obliki, je potrebno vanj vključiti spodnji tekst ali tekst primerljiv temu:

»K zahtevi za plačilo poleg zahtevka upravičenca ni potrebno priložiti nobene druge listine, niti originala tega instrumenta ne.«

### **2.5.2. Instrument zavarovanja za avansno plačilo**

Za avansno plačilo je predvidena predložitev instrumenta finančnega zavarovanja za avansno plačilo v skladu s 4. členom Vzorca pogodbe OBR-6 iz te dokumentacije.

Naročnik zahteva, da izbrani ponudnik, pred izdajo finančnega zavarovanja za avansno plačilo, uskladi vsebinsko ustreznost le-tega z naročnikom oz. predstavnikom naročnika navedenim v pogodbi.

### **2.5.3. Instrument finančnega zavarovanja za dobro izvedbo pogodbenih obveznosti**

V roku osem (8) delovnih dni, šteto od dne z obeh strani podpisane pogodbe, je potrebno predložiti instrument finančnega zavarovanja za dobro izvedbo pogodbenih obveznosti v skladu s poglavjem Obveznosti prodajalca oz. 7b. členom Vzorca pogodbe OBR-6 iz te dokumentacije.

Naročnik zahteva, da izbrani ponudnik, pred izdajo finančnega zavarovanja za dobro izvedbo pogodbenih obveznosti, uskladi vsebinsko ustreznost le tega z naročnikom oz. predstavnikom naročnika, navedenim v pogodbi.

### **2.5.4. Instrument finančnega zavarovanja za odpravo napak v garancijskem roku**

Ob prevzemu predmeta naročila (kot eden izmed pogojev za uspešen prevzem) je potrebno predložiti instrument finančnega zavarovanja za odpravo napak v garancijskem roku v skladu s poglavjem Obveznosti prodajalca in poglavjem Garancija oz. 7b. in 14. členom Vzorca pogodbe OBR-6 iz te dokumentacije.

Naročnik zahteva, da izbrani ponudnik, pred izdajo bančne garancije ali kavcijskega zavarovanja zavarovalnice kot finančnega zavarovanja za odpravo napak v garancijskem roku, uskladi vsebinsko ustreznost le tega z naročnikom oz. predstavnikom naročnika, navedenim v pogodbi.

## 2.6. Ponudbena cena

Upošteva se, da je ponudnik pred pošiljanjem svoje ponudbe natančno pregledal dokumentacijo v zvezi z oddajo javnega naročila in se je predhodno seznanil z vsemi relevantnimi podatki, da je spoznal vse bistvene elemente, ki lahko vplivajo na delovanje in uporabo predmeta naročila, da se je seznanil z vsemi predpisi in zakoni glede plačila taks, davkov in drugih dajatev v Republiki Sloveniji, da je v celoti preučil vso priloženo dokumentacijo, da je prišel do vseh potrebnih podatkov ter da je na podlagi vsega tega tudi oddal svojo ponudbo.

Cene v ponudbi morajo biti izražene v EUR brez DDV in z DDV in morajo vključevati vse stroške ponudnika/prodajalca, ki so potrebni za izvedbo naročila (davki, morebitne carine, transportni in zavarovalni stroški, skladiščenje, prevozi oseb in materiala, dnevnic, kilometrini, testiranja na sedežu ponudnika, naročnika ali zunanjih prodajalcih, morebitna dovoljenja, takse, prevajanje, svetovanja, materiali, predelave in podobno). Ponudbena cena vključuje tudi stroške vseh storitev, pregledov, usposabljanj navedenih v poglavju III. Specifikacija naročila, razen če ni izrecno napisano, da storitev oz. strošek ni v ponudbeni ceni. Naročnik naknadno ne bo priznaval nobenih stroškov, ki niso zajeti v ponudbeni ceni. Cene iz ponudbenega predračuna in ponudbe so fiksne in nespremenljive do zaključka izvedbe predmeta naročila.

## 2.7. Tehnične zahteve

**Ponudnik mora k ponudbi priložiti izpolnjeno in podpisano prilogo 1 »Tehnične zahteve/Technical requirements JN 71/2025«.**

Pri izpolnjevanju **Priloge 1 »Tehnične zahteve/Technical requirements JN 71/2025«** (priloga te dokumentacije v xls obliki) je potrebno upoštevati naslednja navodila:

- **ponudnik izpolni vsa zelena polja v stolpcu »Confirmation of requirement [YES / NO]«** (potrditev zahteve), na način, da v zeleno označeno polje vpiše »YES« ali »DA«, v kolikor ponudnik izpolnjuje zahteve, navedene v stolpcih »Description«, ali vpiše »NO« ali »NE«, v kolikor ponudnik zahteve ne izpolnjuje.

V primeru, da ponudnik v zeleno polje ne more vpisati »YES« ali »DA« in ocenjuje, da ponuja enakovredno ali boljše rešitev/opremo, lahko (ni pa obvezno) pred oddajo ponudbe pridobi soglasje naročnika za takšno ponujeno rešitev, preko portala javnih naročil ([www.enarocanje.si](http://www.enarocanje.si)) s postavitvijo vprašanja, (postavitev vprašanja kot določeno v točki 1.3. te dokumentacije).

V primeru, da ponudnik ponuja enakovredno rešitev/opremo, za katero je dobil soglasje naročnika, v zeleno polje vpiše »Equivalent« ali »Enakovredno« in dopiše »Approved« ali »Pridobljeno soglasje«.

V primeru, da ponudnik ponuja enakovredno rešitev/opremo, za katero NI dobil soglasja naročnika, v zeleno polje vpiše samo »Equivalent« ali »Enakovredno«.

V primeru, če ponudnik v zeleno ozančenih poljih v stolpcu »Confirmation of requirement [YES / NO]« vpiše »NO« ali »NE« ali »/« ali takšno polje pusti prazno, bo njegova ponudba izločena.

- **ponudnik izpolni vsa modra polja v stolpcu »Insert description/value«** na način, da vpiše ponujeno vrednost ali opis pri posamezni zahtevi naročnika. V primeru, če ponudnik ne bo izpolnil modrega polja v stolpcu »Insert description/value« in ne bo vnesel ponujene vrednosti ali opisa (polje bo ostalo prazno/neizpolnjeno), bo njegova ponudba izločena, razen če bo

**manjkajoč podatek oz. vrednost nedvoumno oz. jasno razvidna iz drugega dela ponudbene dokumentacije.**

**POMEMBNO:** Naročnik opozarja, da mora ponudnik izpolniti **vsa za izpolnitev predvidena** polja v predhodno navedeni Prilogi 1 (vsa modra in zelena polja). V kolikor bo katerikoli za izpolnitev predvideno polje ostalo **prazno (neizpolnjeno)**, bo takšna ponudba izločena, razen v primerih navedenih predhodno v tem poglavju.

## **2.8. Izračun povprečnih premikov na uro**

Ponudnik mora k ponudbenini dokumentaciji predložiti izračun povprečnih premikov na uro, s katerim bo ponudnik izkazal, da bo posamezno ponujeno dvigalo izvedlo povprečno 35 premikov kontejnerjev na uro (iz ladijskega skladišča na terminalski vlačilec in v obratni smeri) pri razkladanju in nakladanju celotnega ladijskega skladišča (skupen čas se deli s številom kontejnerjev). V izračunu morajo biti upoštevane in našteje vse aktivnosti (pričvrščevanje kontejnerja, dvig kontejnerja, premik kontejnerja nad terminalski vlačilec, spust kontejnerja, odčvrščevanje kontejnerja, itd.) in trajanje posameznih aktivnosti, pri čemer naj se upošteva, da je trajanje aktivnosti na ladijski strani odvisno od lokacije posameznega kontejnerja na ladji. Podrobna vsebina priprave izračuna povprečnih premikov na uro je opisana v poglavju 3. »TECHNICAL DESCRIPTION – SECTION "B"« v točki 3.5.2. »Container handling simulation«.

**POMEMBNO:** V kolikor ponudnik ne bo predložil »Izračuna povprečnih premikov na uro«, bo takšna ponudba izločena, razen če bo manjkajoč podatek oz. vrednost nedvoumno oz. jasno razvidna iz drugega dela ponudbene dokumentacije.

## **2.9. Predložitev ponudbe**

Ponudniki morajo ponudbe predložiti v informacijski sistem e-JN (v nadaljevanju: sistem e-JN) na spletnem naslovu <https://ejn.gov.si>, v skladu s točko 3 dokumenta Navodila za uporabo sistema za uporabo funkcionalnosti elektronske oddaje ponudb e-JN: PONUDNIKI (v nadaljevanju: Navodila za uporabo e-JN), ki je del te dokumentacije v zvezi z oddajo javnega naročila in objavljen na spletnem naslovu <https://ejn.gov.si/aktualno/vec-informacij-ponudniki.html>.

Za tuje ponudnike je priporočljiv ogled tudi spodnjih povezav na <https://ejn.gov.si> v angleškem jeziku in sicer:

- <https://ejn.gov.si/en/ponudnik.html> (english version)
- <http://ejn.gov.si/documents/10193/191051/Registration+instructions+for+foreigners.pdf> (Quick instructions for registering in the e-JN system for foreign suppliers via SI-PASS)
- [https://ejn.gov.si/documents/10193/191051/ejn\\_EO\\_instructions.pdf](https://ejn.gov.si/documents/10193/191051/ejn_EO_instructions.pdf) (Instructions for using the system in english language).

Ponudnik se mora pred oddajo ponudbe registrirati na spletnem naslovu <https://ejn.gov.si>, v skladu z Navodili za uporabo e-JN. Če je ponudnik že registriran v sistem e-JN, se v aplikacijo prijavi na istem naslovu.

Ponudnik v sistemu e-JN v razdelek »Predračun« naložbi obrazec OBR-1 PONUDBA brez prilog in v razdelek »Ostale Priloge« vse ostale zahtevane dokumente vključno s prilogami.

Uporabnik ponudnika, ki je v sistemu e-JN pooblaščen za oddajanje ponudb, ponudbo odda s klikom na gumb »Oddaj«. Sistem e-JN ob oddaji ponudb zabeleži identiteto uporabnika in čas oddaje ponudbe. Uporabnik z dejanjem oddaje ponudbe izkaže in izjavi voljo v imenu ponudnika

oddati zavezujočo ponudbo (18. člen Obligacijskega zakonika<sup>2</sup>). Z oddajo ponudbe je le-ta zavezujoča za čas, naveden v ponudbi, razen če jo uporabnik ponudnika umakne ali spremeni pred potekom roka za prejem ponudb. Ponudba se šteje za pravočasno oddano, če jo naročnik prejme preko sistema e-JN <https://ejn.gov.si> najkasneje do roka predvidenega za prejem ponudb. Za oddano ponudbo se šteje ponudba, ki je v sistemu e-JN označena s statusom »ODDANO«.

Ponudnik lahko do roka za prejem ponudb svojo ponudbo umakne ali spremeni. Če ponudnik v sistemu e-JN svojo ponudbo umakne, se šteje, da ponudba ni bila oddana in je naročnik v sistemu e-JN tudi ne bo videl. Če ponudnik svojo ponudbo v sistemu e-JN spremeni, je naročniku v tem sistemu odprta zadnja oddana ponudba.

Po preteku roka za predložitev ponudb ponudbe ne bo več mogoče oddati.

Dostop do povezave za oddajo elektronske ponudbe v tem postopku javnega naročila je na naslednji povezavi <https://ejn.gov.si>, pri objavi tega javnega naročila.

## **2.10. Odpiranje ponudb**

Odpiranje ponudb bo potekalo avtomatično v sistemu e-JN na spletnem naslovu <https://ejn.gov.si>. Odpiranje poteka tako, da sistem e-JN samodejno ob uri, ki je določena za javno odpiranje ponudb, prikaže podatke o ponudniku, o variantah, če so bile zahtevane oziroma dovoljene, skupni ponudbeni vrednosti ponudbe ter omogoči dostop do dokumenta, ki ga ponudnik naloži v sistem e-JN pod razdelek »Skupna ponudbena cena«, v del »Predračun«. Generira se Zapisnik o odpiranju ponudb z vsemi relevantnimi podatki glede ponudnikov in ponudb, ki je ponudnikom, ki so oddali ponudbe, dostopen v sistemu e-JN. S tem se šteje, da je bil ponudnikom vročen zapisnik o odpiranju ponudb.

S tem se šteje, da je bil ponudnikom vročen zapisnik o odpiranju ponudb.

Po odpiranju ponudb bo kontaktna oseba naročnika vsa obvestila in druge informacije o javnem naročilu praviloma pošiljala preko informacijskega sistema e-JN in odločitve ter objave preko portala javnih naročil ([enarocanje.si](http://enarocanje.si)).

## **2.11. Pregled in presoja ponudb**

Pri pregledu ponudb se preveri in presoja le tiste listine in navedbe, ki so zahtevane v dokumentaciji v zvezi z oddajo javnega naročila.

Glede predloženih listin v ponudbi in navedb (izjav) se v okviru zakonskih določb od ponudnika lahko zahteva dopolnitve, popravke ali spremembe, pojasnila, dodatna (stvarna) dokazila in podajo soglasja k odpravi računskih napak. Če se ponudnik v roku navedenem v pozivu naročnika ne odzove ali ne poda zahtevanih dopolnitev, popravkov ali spremembe, pojasnila, dodatnega (stvarnega) dokazila ali ne poda soglasja k odpravi računskih napak, se ponudba izloči.

## **2.12. Načrt pogajanj**

Pogajanj NE bo.

## **2.13. Odločitev o oddaji naročila**

Naročnik najkasneje v 90 dneh od roka za prejem ponudb sprejme odločitev o oddaji naročila in jo objavi na portalu javnih naročil.

Po sprejemu odločitve o oddaji naročila lahko naročnik iz razlogov in na način, kot je določeno z zakonom odstopi od sklenitve pogodbe oziroma izvedbe javnega naročila.

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<sup>2</sup> [Obligacijski zakonik](#) (Uradni list RS, št. 97/07 – uradno prečiščeno besedilo, 64/16 – odl. US in 20/18 – OROZ631)

#### **2.14. Pravno varstvo**

Ponudnikom je pravno varstvo zagotovljeno po Zakonu o pravnem varstvu v postopkih javnega naročanja.

#### **2.15. Sklenitev pogodbe**

Izbranega ponudnika naročnik pozove k podpisu pogodbe. Izbrani ponudnik mora po prejemu pogodbe v podpis, le-to podpisano vrniti naročniku najkasneje v petih (5) delovnih dneh od prejema, sicer se šteje, da od sklenitve pogodbe odstopa. V primeru, kadar zaradi objektivnih okoliščin to ni mogoče, lahko naročnik na zaprosilo ponudnika privoli na daljši rok.

V roku osem (8) delovnih dni od vročitve z obeh strani podpisane pogodbe izbranemu ponudniku, je ponudnik dolžan predložiti instrument finančnega zavarovanja za dobro izvedbo pogodbenih obveznosti.

V nasprotnem lahko naročnik od pogodbe odstopi brez kakršnih koli obveznosti do ponudnika in od izvajalca zahteva povrnitev nastale škode in vnovči instrument finančnega zavarovanja za resnost ponudbe oz. zavarovanja za dobro izvedbo pogodbenih obveznosti, če je to že bilo predloženo.

### 3. POGOJI IN MERILA ZA IZBOR PONUDB

#### 3.1. Pogoji za priznanje sposobnosti

Obrazec ESPD predstavlja uradno izjavo gospodarskega subjekta, da zanj ne obstajajo razlogi za izključitev in da izpolnjuje pogoje za sodelovanje, hkrati pa zagotavlja ustrezne informacije, ki jih zahteva naročnik. Obrazec ESPD vključuje tudi uradno izjavo o tem, da bo gospodarski subjekt na zahtevo in brez odlašanja sposoben predložiti dokazila, ki dokazujejo neobstoj razlogov za izključitev oziroma izpolnjevanje pogojev za sodelovanje.

Navedbe v ESPD in/ali dokazila, ki ji predloži gospodarski subjekt, morajo biti veljavni.

Gospodarski subjekt naročnikov obrazec ESPD (datoteka XML) uvozi na spletni povezavi: <https://ejn.gov.si/espd> in v njega neposredno vnese zahtevane podatke.

Izpolnjen in podpisan ESPD mora biti v ponudbi priložen za vse gospodarske subjekte, ki v kakršni koli vlogi sodelujejo v ponudbi (ponudnik, sodelujoči ponudniki v primeru skupne ponudbe, gospodarski subjekti, na katerih kapacitete se sklicuje ponudnik in podizvajalci).

Ponudnik, ki v sistemu e-JN oddaja ponudbo, naloži svoj ESPD v razdelek »Dokumenti«, del »ESPD – ponudnik«, ESPD ostalih sodelujočih pa naloži v razdelek »Sodelujoči«, del »ESPD – ostali sodelujoči«. Ponudnik, ki v sistemu e-JN oddaja ponudbo, naloži elektronsko podpisan ESPD v xml. Obliki ali nepodpisan ESPD v xml. Obliki, pri čemer se v slednjem primeru v skladu Splošnimi pogoji uporabe sistema e-JN šteje, da je oddan pravno zavezujoč dokument, ki ima enako veljavnost kot podpisan.

Za ostale sodelujoče ponudnik v razdelek »Sodelujoči«, del »ESPD – ostali sodelujoči« priloži podpisane ESPD v pdf. Obliki, ali v elektronski obliki podpisan xml.

V primeru, da v ESPD zahteva po izpolnjevanju določenih pogojev ni označena, naročnik izrecno opozarja, da mora vsak gospodarski subjekt, ki nastopa v ponudbi, izkazati izpolnjevanje vseh zahtev in pogojev, ki so zanj (glede na obliko sodelovanja gospodarskega subjekta v ponudbi) kakorkoli določeni v dokumentaciji v zvezi z oddajo javnega naročila.

Pojasnila glede ESPD v angleškem jeziku so dostopna na: [https://ec.europa.eu/growth/single-market/public-procurement/digital/espd\\_en](https://ec.europa.eu/growth/single-market/public-procurement/digital/espd_en).

**Izpolnjevanje pogojev bo naročnik preveril pred izdajo odločitve na način, da bo ponudnike pozval k predložitvi ustreznih dokazil skladno s 77. in 78. členom ZJN-3. Ponudniki, ki nimajo sedeža v Republiki Sloveniji, bodo morali predložiti ustrezna dokazila, prevedena v slovenski jezik.**

##### 3.1.1. Razlogi za izključitev

Vsak gospodarski subjekt (ponudnik, partner, podizvajalec), ki nastopa v ponudbi mora izpolnjevati naslednje pogoje:

- Nad gospodarskim subjektom ni začel postopek zaradi insolventnosti ali prisilnega prenehanja po zakonu, ki ureja postopek zaradi insolventnosti in prisilnega prenehanja, postopek likvidacije po zakonu, ki ureja gospodarske družbe, njegova sredstva ali poslovanje ne upravlja upravitelj ali sodišče, njegove poslovne dejavnosti niso začasno ustavljene, v skladu s predpisi druge države se nad njim ni začel postopek in ni nastal položaj z enakimi pravnimi posledicami.
- Gospodarski subjekt na dan ko poteče rok za oddajo ponudb ali prijav, ni izločen iz postopkov oddaje javnih naročil zaradi uvrstitve v evidenco gospodarskih subjektov z



izrečenimi stranskimi sankcijami izločitve iz postopkov javnega naročanja iz 110. člena ZJN-3 (Razlog za izključitev iz alineje a) 4. odstavka 75. člena ZJN-3).

- Naročnik bo na podlagi triindvajsetega odstavka 1. člena Uredbe Sveta (EU) 2022/576 z dne 8. aprila 2022 o spremembi Uredbe (EU) št. 833/2014 o omejevalnih ukrepih zaradi delovanja Rusije, ki povzroča destabilizacijo razmer v Ukrajini, in Sklepa (SZVP) 2022/578 z dne 8. aprila 2022 o spremembi Sklepa 2014/512/SZVP o omejevalnih ukrepih zaradi delovanja Rusije, ki povzroča destabilizacijo razmer v Ukrajini, iz postopka javnega naročila izključil vsak gospodarski subjekt, ki nastopa v prijavi/ponudbi, če se nanj ali na osebe, subjekte ali organe iz prvega odstavka člena 5.k Uredbe (EU) št. 833/2014 o omejevalnih ukrepih zaradi delovanja Rusije, ki povzroča destabilizacijo razmer v Ukrajini, nanaša prepoved iz prvega odstavka člena 5.k Uredbe (EU) št. 833/2014 o omejevalnih ukrepih zaradi delovanja Rusije, ki povzroča destabilizacijo razmer v Ukrajini.

Gospodarski subjekt potrdi izpolnjevanje pogoja s predložitvijo izpolnjenega in podpisanega obrazca ESPD in obrazca OBR-3 Izjava o izpolnjevanju pogojev za sodelovanje in neobstoju razlogov za izključitev.

### **3.1.2. Pogoji za sodelovanje**

#### **3.1.2.1. Ustreznost za opravljanje poklicne dejavnosti**

Vpis v poslovni register: gospodarski subjekt je registriran za opravljanje dejavnosti, ki je predmet naročila in jo prevzema v ponudbi (vsak gospodarski subjekt (ponudnik, partner, podizvajalec) mora izpolnjevati pogoj za svoj del posla).

#### **3.1.2.2. Ekonomski in finančni položaj**

- a) Vsak gospodarski subjekt (ponudnik, partner, podizvajalec), ki nastopa v ponudbi, mora izpolnjevati pogoj, da je v zadnjih treh poslovnih letih (če posluje manj kot 3 leta, v obdobju, odkar posluje) imel povprečni čisti letni prihodek vsaj v višini ponudbene vrednosti (brez DDV) za del posla, ki ga prevzema.
- b) Vsak gospodarski subjekt, ki nastopa v ponudbi mora izpolnjevati pogoj, da na dan oddaje ponudbe nima blokirane nobenega transakcijskega računa, v zadnjih 150 dneh pred rokom za prejem ponudb pa ni imel nobenega transakcijskega računa blokirane več kot 10 zaporednih dni.
- c) Vsak gospodarski subjekt, ki nastopa v ponudbi, razen podizvajalcev in subjektov, ki dajejo (samo) zmogljivosti, mora imeti na dan izdaje bonitetnega obrazca zadnjo aktualno bonitetno oceno AJPES vsaj SB6 ali bonitetno oceno, ki sodi v zgornjih 60% najboljših ocen po lestvici, ki jo uporablja posamezna finančna institucija pri določanju bonitetnih ocen, skladno s pravili te finančne institucije.

Gospodarski subjekt s sedežem v RS izpolnjevanje tega pogoja izkazuje z bonitetno oceno AJPES iz S.BON-1 obrazca, ki ni starejši od 30 dni od prvega roka za prejem ponudb, navedenega v Obvestilu o naročilu na portalu javnih naročil, pred morebitnimi podaljšanji roka za prejem ponudb, ali pa na način, kot je opisano v naslednjem odstavku.

Gospodarski subjekt s sedežem izven RS izpolnjevanje tega pogoja izkazuje z bonitetno oceno drugih bonitetnih agencij oz. enakovrednih institucij, ki ni starejša od 30 dni od prvega roka za prejem ponudb, navedenega v Obvestilu o naročilu na portalu javnih naročil, pred morebitnimi podaljšanji roka za prejem ponudb, pri čemer bo naročnik ponudniku kot

ustrezno oceno priznal tisto oceno, ki sodi v zgornjih 60% najboljših ocen po lestvici, ki jo uporablja posamezna finančna institucija pri določanju bonitetnih ocen, skladno s pravili te finančne institucije, oz. za bonitetne ocene naslednjih bonitetnih hiš: Standard & Poor`s, Fitch Ratings ali Moody`s - najmanj bonitetno oceno BB+ bonitetne hiše Standard & Poor`s, najmanj bonitetno oceno BB+ bonitetne hiše Fitch Ratings in najmanj bonitetno oceno Ba1 bonitetne hiše Moody`s.

Pogoj pod to alinejo mora izpolnjevati vsak gospodarski subjekt (ponudnik, partner v primeru skupne ponudbe), razen podizvajalcev.

Gospodarski subjekt potrdi izpolnjevanje pogoja s predložitvijo izpolnjenega in podpisanega obrazca OBR-3 Izjava o izpolnjevanju pogojev za sodelovanje in neobstoju razlogov za izključitev (oz. OBR-3a za podizvajalce).

Naročnik si pridržuje pravico, da navedbe preveri ter zahteva dodatna dokazila, iz katerih je razvidno izpolnjevanje pogojev.

#### 3.1.2.3. Tehnična in strokovna sposobnost

Pogoje glede tehnične in strokovne sposobnosti mora izpolnjevati ponudnik; v primeru sklicevanja na sposobnosti drugih subjektov, in sicer pogojev v zvezi z izobrazbo in strokovno usposobljenostjo izvajalca storitev ali gradenj in vodstvenih delavcev podjetja ter pogojev v zvezi z ustreznimi poklicnimi izkušnjami, morajo slednji izvesti del naročila, za katere se zahtevajo sposobnosti in biti imenovani kakor podizvajalci ali partnerji v ponudbi..

#### **a) Reference**

Ponudnik, partner v skupnem nastopu ali podizvajalec je od 1. 1. 2021 pravočasno in kvalitetno izdelal in dobavil v eni ali več referenčnih dobavah skupno najmanj 2 (dve) enoti STS dvigal (Ship to Shore) tipa SPPX (Super Post-Panamax) končnemu uporabniku v državah EU.

Kot datum izdelave in dobave bo naročnik upošteval datum končnega prevzema predmeta izdelave in dobave s strani naročnika.

Kot ustrezno dobavljena STS dvigala za priznanje reference bo naročnik upošteval STS SPPX dvigala z:

- dvizno višino pod prijemalom minimalno 46 m nad tirnico,
- dosegom roke minimalno 60 m od morske tirnice in
- nosilnostjo minimalno 65 ton pod prijemalom.

Ponudnik navede referenčne posle v OBR-4 »Izjava o zagotovljenih referencah«. Ponudnik pridobi potrdilo naročnikov za vsako izmed izkazanih referenc OBR-4a »Potrdilo naročnika«.

Po končanem odpiranju ponudb mora ponudnik, v kolikor se za to odloči naročnik, omogočiti ogled in preizkus najmanj enega referenčnega posla. Ogled organizira ponudnik na lokaciji, kjer se nahaja referenčni posel, za najmanj 2 osebi naročnika (predstavnika nabave in uporabnika) na stroške ponudnika.

Naročnik si pridržuje tudi pravico, da od ponudnika zahteva, da predloži dodatna dokazila glede navedenih referenc iz seznama.



## **b) Tehnične zmogljivosti**

Ponudnik mora zagotavljati vse potrebne tehnične zmogljivosti za kvalitetno izvedbo celotnega naročila v predvidenem roku, skladno z zahtevami iz dokumentacije v zvezi z oddajo javnega naročila (specifikacija naročila), pravili stroke ter predpisi in standardi s področja predmeta naročila. Na podlagi poziva ponudnik naročniku v določenem roku predloži morebitna dodatna zahtevana dokazila o zagotavljanju tehničnih zmogljivosti.

Ponudnik potrdi zagotavljanje tehničnih zmogljivosti za izvedbo posla v OBR-5 »Izjava o zagotovljenih tehničnih zmogljivostih«.

### **3.2. Merila za izbiro najugodnejše ponudbe**

Merilo za izbiro ekonomsko najugodnejše ponudbe je najnižja ponudbena cena brez DDV, navedena na obrazcu Ponudba (OBR-1).

## **II. PONUDBENA DOKUMENTACIJA**

### **1. VSEBINA PONUDBENE DOKUMENTACIJE**

Ponudbena dokumentacija mora biti pripravljena v slovenskem jeziku (razen priloge 1, ki je v angleškem jeziku in se jo predloži v angleškem jeziku ter OBR-8, ki je pripravljen v obeh jezikih in se ga takšnega predloži. Bonitetno oceno se predloži v slovenskem ali angleškem jeziku.) ter izdelana skladno z zahtevami in predlogami iz dokumentacije v zvezi z oddajo javnega naročila. Sestavljati jo morajo vsaj naslednji obrazci oziroma dokumenti:

- 1. Izpolnjen in podpisan obrazec Ponudba (OBR-1)**
- 2. Izpolnjena in podpisana priloga 1 Tehnične zahteve/Technical requirements JN 71/2025**
- 3. Izpolnjen in podpisan obrazec Ponudbeni predračun JN 71/2025 (OBR-1a)**
- 4. Izpolnjen in podpisan obrazec Izjava ponudnika o preučitvi in seznanitvi s tehničnimi zahtevami (OBR-1b)**
- 5. Izpolnjen in podpisan obrazec Podatki o ponudniku in podizvajalcih oz. izvajalcih v skupnem nastopu (OBR-2)**
- 6. Izpolnjen in podpisan obrazec ESPD** (za vsak gospodarski subjekt, ki bo vključen v izvedbo javnega naročila oz. ponudbo)
- 7. AJPES S.BON obrazec** (za gospodarske subjekte s sedežem v RS) ali bonitetni obrazec druge bonitetne institucije (za gospodarske subjekte s sedežem izven RS), iz katerega je razvidna bonitetna ocena (za ponudnika in partnerje, predložitev obrazca ni zahtevana za podizvajalce)
- 8. Izpolnjen in podpisan obrazec Izjava o izpolnjevanju pogojev za sodelovanje in neobstoju razlogov za izključitev (OBR-3)** - za ponudnika in partnerje
- 9. Izpolnjen in podpisan obrazec Izjava podizvajalca o izpolnjevanju pogojev za sodelovanje in neobstoju razlogov za izključitev (OBR-3a)** – za podizvajalce
- 10. Izpolnjen in podpisan obrazec Izjava o zagotovljenih referencah (OBR-4)**
- 11. Izpolnjena in podpisana Potrdila naročnika (OBR-4a)**
- 12. Izpolnjen in podpisan obrazec Izjava o zagotovljenih tehničnih zmogljivostih (OBR-5)**
- 13. Izpolnjen in podpisan obrazec Vzorec pogodbe (OBR-6)** - za ponudnika in partnerje
- 14. Izpolnjen in podpisan obrazec Identifikacija ponudnika/poslovnega partnerja (KYC obrazec) oz. izjava/podatki o udeležbi fizičnih in pravnih oseb v lastništvu ponudnika (OBR-7)** (izjavo mora predložiti ponudnik, partner v primeru skupne ponudbe in vsak morebitni podizvajalec, v kolikor zahteva neposredna plačila in njegova udeležba v poslu predstavlja več kot 10.000,00 EUR brez DDV)
- 15. Izpolnjen in podpisan obrazec Izjava ponudnika o spoštovanju kodeksa ravnanja poslovnih partnerjev Skupine Luka Koper (OBR-8)** (izjavo mora predložiti ponudnik, partner v primeru skupne ponudbe) . Kodeks ravnanja poslovnih partnerjev Skupine Luke Koper je objavljen na internetnem naslovu: <https://www.luka-kp.si/slo/pomembni-dokumenti-208>. Dokument je na voljo v angleškem jeziku na internetnem naslovu: <https://www.luka-kp.si/en/company/corporate-documents/>
- 16. Instrument zavarovanja za resnost ponudbe**
- 17. Izračun povprečnih premikov na uro**

Obrazce se izpolni ter podpiše in žigosa, kjer je to določeno. Vse ponudbene obrazce se predloži v "PDF" zapisu.

Navedbe v predloženih obrazcih morajo izkazovati aktualna in resnična stanja ter morajo biti dokazljive. Enakovredno veljajo kopije zahtevanih potrdil in izpiskov razen, če izvirnik ni posebej zahtevan.

Ponudnik se zavezuje, da bo na poziv naročnika in na svoje stroške dokumente prevedel po uradnem prevajalcu (sodnem tolmaču), kar bo moralo biti na prevodu dokumenta razvidno.

### **1.1. Ponudba**

V obrazcu »Ponudba« morajo biti navedeni vsi zahtevani podatki, pri čemer morajo biti izpolnjene naslednje zahteve:

- Pri skupni ponudbi se kot ponudnika navede vodilnega partnerja.
- V ponudbeni ceni morajo biti zajeti vsi stroški in dajatve povezane z izvedbo naročila, vključno z davkom na dodano vrednost (DDV). Poleg ponudbene cene morata biti navedena skupna ponudbena cena (brez DDV) in znesek davka (DDV) na to vrednost. Vse vrednosti morajo biti v valuti EUR.
- V ponudbi morajo biti vneseni podatki za izračun meril za izbiro ekonomsko najugodnejše ponudbe.
- Ponudba mora veljati za celotno naročilo. Delne ponudbe ne bodo upoštevane.
- Ponudba mora veljati vsaj 120 dni po roku, določenem za prejem ponudb.
- V ponudbi mora biti naveden rok izvedbe predmeta naročila.
- Variantne ponudbe in opcije niso dovoljene.
- Ponudbeni rok za izvedbo naročila ne sme presegati razpisanega roka.
- Ponudnik nosi vse stroške, povezane s pripravo in predložitvijo ponudbe. Naročnik ponudnikom ne bo povrnil nobenih stroškov povezanih s pripravo ponudbe, niti kakršnihkoli drugih stroškov, ki bodo nastali tekom postopka oddaje javnega naročila.

Ponudnik v sistem e-JN v razdelek »Skupna ponudbena vrednost« v zato namenjen prostor vpiše skupno ponudbeno ceno oz. ponudbeno ceno iz OBR 1 Ponudba brez davka v EUR in znesek davka v EUR. Ponudbena cena skupaj z davkom v EUR se izračuna samodejno.

V del »Predračun« naloži izpolnjen obrazec »OBR 1 Ponudba « v pdf, obrazec »Predračun« pa naloži v razdelek »Dokumenti«, del »Ostale priloge«. »Skupna ponudbena vrednost«, ki bo vpisana v istoimenski razdelek in dokument, ki bo naložen v del »Predračun«, bosta razvidna in dostopna na javnem odpiranju ponudb.

V primeru razhajanj med podatki navedenimi v razdelku »Skupna ponudbena vrednost«, podatki v OBR 1 Ponudba - naloženim v razdelek »Skupna ponudbena cena«, del »Predračun«, in celotnim Predračunom - naloženim v razdelek »Dokumenti«, del »Ostale priloge«, kot veljavni štejejo podatki v dokumentu, ki je predložen v razdelku »Dokumenti«, del »Ostale priloge«.

### **1.2. Podatki o gospodarskem subjektu**

Gospodarski subjekt lahko v ponudbi nastopa kot samostojni ponudnik, kot ponudnik s podizvajalci, kot vodilni partner v skupni ponudbi, kot partner v skupni ponudbi, kot podizvajalec.

Če v ponudbi nastopa samo en gospodarski subjekt se šteje, da posel, ki je predmet naročila prevzema sam kot samostojni ponudnik. Če v ponudbi nastopa več gospodarskih subjektov, vsak poleg osebnih podatkov navede tudi del posla, ki ga prevzema, ter količino od celote (v %). Prevzeti del posla mora biti naveden in strukturiran tako, da ga je po vsebini in/ali vrednosti mogoče primerjati s predloženim ponudbenim predračunom.

Podizvajalec, ki zahteva naročnikovo neposredno plačilo, mora skladno z zakonom (ZJN-3) priložiti zahtevo, da mu naročnik neposredno poravnava njegovo terjatev do ponudnika.

### **1.3. Dokazila o izpolnjevanju pogojev za priznanje sposobnosti**

Vsak gospodarski subjekt, ki nastopa v ponudbi, mora glede na prevzeti posel predložiti zahtevana dokazila o izpolnjevanju pogojev za priznanje sposobnosti.

Dokazila se zloži po vrsti, kot si sledijo pogoji za priznanje sposobnosti in sicer najprej za ponudnika oziroma vodilnega partnerja, nato za partnerje in podizvajalce.

#### **1.4. Specifikacija naročila in ponudbeni predračun**

V ponudbi mora biti predložena naročnikova specifikacija naročila, iz katere sta razvidna vsebina in obseg naročila. Upošteevane morajo biti vse zahteve iz specifikacije naročila. Specifikacije naročila ponudnik ne sme spreminjati.

Cene v ponudbenem predračunu se navede brez DDV in v valuti EUR.

#### **1.5. Vzorec pogodbe**

Predloženi vzorec pogodbe mora ponudnik izpolniti, podpisati, žigosati in parafirati.

#### **1.6. Instrumenti zavarovanja**

Instrumente zavarovanja se predloži skladno s točko 2.5 teh navodil.

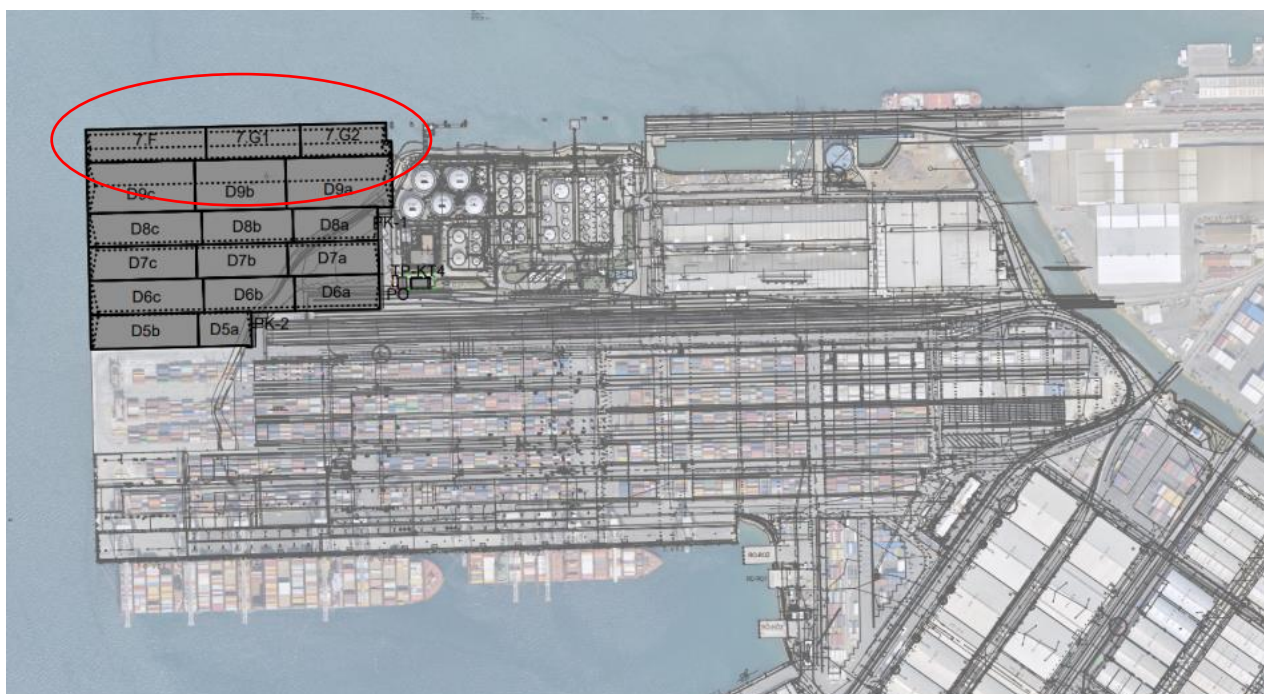
### III. SPECIFIKACIJA NAROČILA

Predmet naročila je nabava treh (3) kosov STS dvigal (Ship to Shore Cranes) tipa SPPX (Super Post-Panamax) za potrebe Luke Koper, d.d. z dodatno opremo tj. s (6) šestimi kontejnerskimi prijemali, (3) tremi košarami za prevoz oseb in (3) tremi OH adapterji (prijemala za izvengabaritne tovore).

#### 1. TEHNIČNI POGOJI IN OSTALI POGOJI NAROČILA

##### 1.1. Lokacija postavitve dvigal

Luka Koper, d.d.; Kontejnerski terminal; vez 7F in 7G



Slika 1: Območje delovanja STS dvigal

##### 1.2. Tehnični opis

Predmet naročila je nabava treh (3) kosov STS dvigal (Ship to Shore Cranes) tipa SPPX (Super Post-Panamax). STS dvigala se bo uporabljala za pretovor 20 ft in 40ft kontejnerjev iz ladje na kopno ter obratno.

V nadaljevanju je podan tehnični opis predmeta naročila, kjer so navedene naročnikove tehnične zahteve in opis STS dvigal z opremo. Ponujena oprema mora izpolnjevati vse naročnikove zahteve.

**Zaradi specifičnih izrazov, vezanih na opremo STS dvigal, je v nadaljevanju vsebina tehničnega opisa iz poglavja 2. GENERAL TECHNICAL DEMANDS – SECTION »A« in iz poglavja 3. TECHNICAL DESCRIPTION – SECTION »B« v angleškem jeziku.**

## **2. GENERAL TECHNICAL DEMANDS – SECTION »A«**

### **2.1. Scope of work**

The following specifications together with the appendices represent the requirements for the supply of 3 pcs Ship to Shore container cranes (STS): design, fabrication, erection, start-up, testing and running in of the cranes. The cranes must be delivered to purchasers' site in a fully assembled condition with pre-shipment testing completed at the manufacturer's site.

The contractor must furnish all appliances and/or accessories that are necessary for the proper performance of the cranes, whether detailed or not in the drawings, called for in the technical specifications, or shown on the data sheet.

### **2.2. Location**

The cranes must arrive in pretested on erection site and fully erected state on the container terminal pier of Port of Koper.

### **2.3. Climate and meteorology**

- a. The climate at the operation site is characterized by a Mediterranean climate with extreme corrosive dust. The mean annual temperature is 15°C, the lowest annual air temperature is -12°C, the highest annual air temperature is 45°C.
- b. Relative humidity values are relatively constant throughout the years with monthly averages ranging from 60% up to 70%.
- c. The cranes must be designed to withstand the wind conditions, as specified in FEM (3rd edition). Results from wind tunnel tests are considered.
- d. All drives, electrical equipment, heat exchangers, air conditioners, expansion joints, etc., must be sized and designed to operate within temperature range of -12°C through +45°C and relative humidity up to 95%.
- e. Annual medium sea level is 220cm. The highest measured high tide was 394 cm measured in November 1969; the lowest measured low tide was 11 cm measured in November 2008.

### **2.4. Design**

#### **2.4.1. Type of cargo**

The crane must be a traveling gantry with a hinged straight boom at waterside, self-driven trolley type. The crane drives and controls must be supplied with a full AC inverter drive, fully digital controls with PLC. The proposed drive and control system must be a proven system successfully operating on a similar-capacity crane in actual container handling operations.

#### **2.4.2. Type of cargo**

The type of cargo to be handled by the crane must be:

- ISO 20ft, 40ft and 45ft containers including high-cube, half-height, flat rack containers.
- Other types of containers with ISO corner fittings at 20', 40', or 45' containers.
- 20 ft, 40ft and 45ft containers of weight up to 51 Metric Tonnes (MT).
- 2 x 20ft containers of weight each up to 32.5 MT.
- Containers with over-height cargoes through an over-height cargo container lifting frame.
- Hatch covers and containers of weight up to 50 MT.



- Damaged containers with slings and shackles attached to lifting lugs of the spreader.
- Heavy lift cargo

At least 75 MT beneath a hook beam attached to the head-block. The heavy lift must be operable through the full hoisting range and across the full distance of trolley travel with 100 MT under hook beam at reduced outreach to be determined by the contractor. The contractor must maximize the load capacity under hook beam according to his design.

### **2.4.3. Design review**

The design must be in two basic stages:

- Conceptual design (layouts, arrangements, etc.)
- Detailed design

The contractor must submit for review all design drawings, calculations (structural, electrical, mechanical) electrical diagrams, catalogues, and any information and drawings used to design, manufacture and erect the cranes.

Review is to verify general conformity of the design with the specifications and does not relieve the contractor of any responsibility.

All information must be submitted together with the offer to enable the Port of Koper and its nominated supervisory company to submit rejections, comments and remarks to the design, before any purchase of material, components, manufacturing or another binding activity has been started. Thus, required modifications shall not affect the progress of the project.

Approval of the design review is pre-condition to start of fabrication. The design shall be in metric form.

As far as practical, sizing and selection of components, electrical and mechanical, must be affected to achieve uniformity between various systems on the cranes.

For each selected component, the contractor shall submit:

- Selected supplier's details and experience
- Technical catalogue and data sheet
- Calculation and selection procedure
- Marking of the selected component on the catalogue.

The contractor must verify that the Port of Koper has approved the specifications of each component as well as its supplier prior to placing an order.

All computer calculations must be presented in such a way that the results can be checked by means of non-programmed calculations, based on generally accepted methods in the field of dynamic steel structure designs, mechanism, drives, etc.

The electrical design must include, but not be limited to:

- Layout and arrangement drawings showing the arrangement of all electrical components on the crane structure (location, dimensions and marking).
- Component layout and internal arrangement of components in cabinets, view from inside and outside.
- Arrangement of control panels and stations.

The final technical specifications must be signed after the design review by both parties.

### **2.4.4. Regulations, Standards and Codes**

The crane electrical, electronic equipment and its mechanism shall be designed and manufactured to comply in all aspects with the requirements of all latest, laws, ordinances, rules, orders, or other legal or regulatory institutes applicable in Slovenia.

Where items are not covered by local statutory requirements, the crane and other goods must be designed and manufactured to at least the standards as specified in this specification. For items which are not specified above, then to at least to the current applicable recommendations of the following organizations:

- EN – European Standard
- FEM – Federation Europeane de la Manutention

Other standards which shall be considered:

- AWS – American Welding Society - Bridges and Dynamically Loaded Structures
- BSI – British Standards Institute
- DIN – Deutsche Industrie Normen
- OSHA – Occupational Safety & Health Administration
- IEC – International Electrotechnical Commission
- IEEE – Institute of Electrical and Electronic Engineers
- ISO – International Standards Organization
- UL – Underwriters Laboratory

Where the crane or any of its mechanisms/components do not comply with any of the above standards the contractor must submit each non-compliant item for review and approval from the purchaser.

The contractor must define all standards used in the design of the crane.

#### **2.4.5. Inspection and follow up in the contractors' premises.**

Detailed design review must be conducted at the contractor's premises, unless decided otherwise by the Port of Koper.

Inspection of parts – structural, mechanical, electrical, cabs and cubicles must be performed, if so decided by the Port of Koper, in the place of manufacturing / assembly / erection / testing.

#### **2.4.6. Inspection and review of documents**

Quality control, review of maintenance manuals and reports, as well as coordination of shipments and erection procedures must be carried out, by Port of Koper or anyone on its behalf, in the contractor's office of the fabrication / erection locations if decided by the Port of Koper.

#### **2.4.7. Safety of machinery**

The crane must comply with the requirements of the European Machine Guidelines, particularly Machinery Regulation 2023/1230. The cranes must be provided with a declaration of conformity and the CE marking and symbol according to the relevant Appendixes of the Machinery Directive. The Supplier/ Contractor is solely and entirely responsible for all aspects of this conformity declaration and CE marking. A single electric power, control or hydraulic component failure or malfunction shall not damage the crane or injure personnel. If possible, component failure or malfunction must safely stop the crane operation. If this is not possible, a redundant system shall be supplied. The redundant system shall both safely stop the crane and prevent operation until maintenance personnel make corrections. A means shall be provided so the maintenance personnel may routinely check each redundant or backup system. The check procedure must be included in the maintenance manual. No crane component shall change state as a result of a power failure. Powering or repowering the crane or any system within the crane shall not result in an unanticipated or potentially unsafe motion or condition. be included in the maintenance manual. No crane component shall change state as a result of a power failure. Powering or repowering the



crane or any system within the crane shall not result in an unanticipated or potentially unsafe motion or condition.

## **2.5. Documentation**

### **2.5.1. General**

All information must be in Slovenian and English language unless otherwise requested by Port of Koper. Original catalogues and technical sheets must be provided.

The documentation mentioned must be comprehensive to include all the relevant information that may be required in case of maintenance, break down or a failure in the structure / mechanical / electrical part.

This will allow Port of Koper personnel to access documentation, obtain spare parts information or any technical information needed for repair, maintenance or ordering necessary parts from the original equipment manufacturer without having to disassemble the part. The documents will be used, among other things, for training maintenance personnel and operators.

Documents must be handed over in two ways:

- Hard copies in three copies. Each volume of documents must be bound in a durable loose-leaf binder.
- Digital media (USB stick)

The digital media and programs will be supplied as follows:

- Ready for use without the need to perform any setup procedure.
- Registered license as required.
- Suitable for unlimited users.
- Full user's manual or operation instructions.

Files shall be prepared under MS Office, Windows (for example: Word, Excel, Access, PowerPoint, MS Project, AutoCAD etc.)

### **2.5.2. Reports**

#### **2.5.2.1. Monthly reports**

The contractor must regularly prepare monthly reports, starting from the effective date of the agreement until acceptance of the cranes. The reports must be submitted to the Port of Koper by the end of each month.

The report must include the following chapters (as a minimum):

- Description of the main activities performed in the preceding month.
- Status of the purchasing of components.
- Open issues.
- Timetable – actual versus planned.

The timetable must be prepared in MS Project showing on a Gant chart the planned versus actual status.

#### **2.5.2.2. Daily time sheets**

The contractor must keep daily works diary during the entire period starting from the Start of erection until the acceptance of the last crane. The time sheets must reflect the major tasks

performed including the number of personnel on site(s) and their respective professions, the major equipment present on site(s) and any unusual event.

The daily time sheet to be presented to the Port of Koper for countersignature.

### **2.5.3. Parts list**

#### **2.5.3.1. Components List**

The contractor must submit to the Port of Koper a complete and comprehensive list of components installed on the crane.

The list must give detailed and completed information on technical data, rating, type, make, ordering reference and all OEM reference of the component. The list must indicate the location and quantity, installed per system, per crane. Reference to each component must appear in the maintenance manual / parts catalogues.

Set of complete technical catalogues, data sheets or brochures must be prepared. The selected components must be marked in the documents.

#### **2.5.3.2. Spare parts list**

90 days after the approval of the plan, the contractor must prepare and submit an updated recommendation for spare parts. The list must be prepared on the basis of complete parts lists and on the basis of delivery time, installed quantity, etc. The prices and delivery times must be indicated in the list. The list must include complete units and a breakdown into individual components at the level of bearings, electrical equipment, separate gears, brake linings, electrical printed boards, etc. In addition, the contractor must indicate for each spare part listed above the name and catalogue number of the manufacturer of that part (OEM).

The reference to each component and its breakdown of parts, where applicable, must be indicated in the maintenance manual.

### **2.5.4. Electrical system files**

The electrical system files must consist of, but shall not be limited to:

- Operation Manual.
- Single line diagrams with text, explaining the function of the electrical system and its components.
- Detailed circuit diagrams of the electrical system.
- Disposition and arrangement drawings, showing all electrical components layout throughout the crane (location, dimension and designation.)
- Components layout and internal wiring diagrams of all cubicles, panels, controllers, motor control centres control consoles and the like.
- Terminal diagram – interconnection wiring diagrams, showing the connections of all components and devices complete with number of conductors and wire numbering.
- Unit wiring diagram showing the internal wiring of shop-made mounting units, e.g., a circuit breaker, a relay set of a regulator (no "black boxes" are permitted. Namely, no units may be left without information as to their purpose, content and interior connection.)
- I/O list with full detailed reference (location, I/O address, connections etc.)
- Cable list (including type and length.)
- Full test data on the cubicles, motors, etc., with field adjusting data, full load
- testing and measurements, dial setting of the potentiometers and the measurements and reading in all points.

- List of components
- Software backup for all programmable equipment, systems, etc.

### **2.5.5. Maintenance manuals and parts catalogues (Mechanical and Electrical)**

The maintenance manuals must consist of the following chapters (minimum requirements):

#### **2.5.5.1. General description**

Description of the cranes, their systems and modes of operation, including general arrangement drawings.

#### **2.5.5.2. Operating instruction**

This chapter will include, as a minimum, the following sections:

- Pre-operation check-out.
- Start-up procedure.
- Operation procedure (operation limitations and conditions.)
- General data of the crane and description of the structure, drives and auxiliary systems.
- Detailed description of all the stands and controls in the operator cab and other control stations throughout the crane – their functions, limitations and interlocking.
- Shutdown procedure.
- Preparation procedures for storms.
- Emergency procedures.

#### **2.5.5.3. Preventive maintenance procedures - (In two split lists electrical and mechanical)**

Procedures for periodic cleaning, oiling, greasing, check-outs, adjustments, etc., arranged for periodic inspection in the following frequencies, or other frequencies as recommended by the contractor.

- Monthly
- Tri-monthly
- Semi-Annually
- Annually

The procedures must provide the following data elements:

- System application
- Location
- Description of the work/adjustment to be performed
- Type of oil/grease/compounds to be used
- Spare parts required to perform the work (hydraulic filters, "O" rings, etc.)
- Special tools required to perform the work

#### **2.5.5.4. Maintenance Instructions - (In two split lists electrical and mechanical)**

This chapter must include instructions and procedures for parts or components replacements, adjustments, and disassembly, repair, overhaul, assembly and testing of components as well as systems.

#### **2.5.5.5. Parts catalogue**

This chapter must include (minimum requirements):

Illustrated parts breakdown, including sub-contractor items such as motors, gear reducers, etc., with sectional drawings or axonometric drawings and a list for each one of the drawings.

Index of all part numbers, appearing in the catalogue in sequence, having the following data elements:

- Designation given by the contractor and OEM detail.
- Drawing number
- Location on the crane / system
- Designation given by OEM

#### **2.5.5.6. Standards**

In-house standards, procedures, etc., related to the design, manufacturing, erection, testing and calculations and to the maintenance of the crane systems and components, must be given in this chapter. Papers can be in English.

### **2.5.6. Lubrication**

#### **2.5.6.1. Lubrication charts**

The contractor must prepare drawings, plastic-coated, lubrication charts for all systems, showing all points to be lubricated, type of lubricant/oil to be used for each point and recommended frequency for re lubrication/oiling.

#### **2.5.6.2. Lubricant list**

In order to enable use of lubricants available in Slovenia, the contractor must provide a list of recommended lubricants for approval by the Port of Koper. Only the approved lubricants must be used during the construction and erection of the crane. The equivalent Slovenian materials must appear on the lubrication charts.

### **2.5.7. Operation manual**

The operation manual file is the basis for the control system programming and is subject to the approval of the Port of Koper. It should include full, detailed and comprehensive description of all the devices on all the control stands, their functioning, interlocking and precondition. Layout schemes of all the control panels, limit switches arrangements and descriptions must be included.

The manual must consist of the following (as applicable):

- General data of the crane.
  - Safety
  - Control stands – Operator cab, Checker cabs, E-room, M-room.
  - Programming unit
  - List of faults
  - CMS system
  - Limit switches (hardware and software – per drive and of auxiliary systems as applicable.)
- Sketches showing the range of functioning must be included.

## **2.5.8. Slovenian translations**

### **2.5.8.1. Applicable Manuals, Labels and Signs**

The following applicable manuals, labels and signs must be prepared in English and in Slovenian language:

- Maintenance manuals, electrical and mechanical.
- Operation manual.
- Operating instructions for operators.
- Preventive maintenance – structural, mechanical and electrical.
- All the labels on the control stands, warning shields and instruction plates must be in Slovenian language.

Translations must be checked and approved by Port of Koper in advance.

### **2.5.8.2. Remarks**

Files listed in previous chapter must include crane general data. General arrangement drawings shall not be translated.

- Spare parts lists and drawings can be only in English language.
- Crane data and systems description must be translated.
- Operation manual must include description of the crane controls and monitoring system.

Translations must be checked and approved by Port of Koper in advance.

## **2.5.9. Type of documents to be submitted**

### **2.5.9.1. General**

The various documents must be prepared and submitted for the approval of the Port of Koper at different timing and whenever a change is made in an already approved system.

All drawings must be submitted in A4 or A3 or A2 or A1 or A0 form folded to A4 and arranged in files according to topics/systems. To ensure legibility, general arrangement drawings, structural/mechanical drawings and other documents with many details must be submitted in their original size as well. The technical sheets or standards and corresponding bill of material / parts list must be attached to each drawing.

If not mentioned otherwise, documents must be submitted in three copies.

The following phases are referred to:

- Design and design assessment
- Fabrication and Erection
- Testing and handing over.
- After acceptance (as made.)

### **2.5.9.2. Design assessment**

- All drawings, electrical diagrams, calculations, static structural, mechanical and electrical components, etc. additional three copies must be submitted upon request to Port of Koper not later than start of design review.
- Parts Components lists – electrical and mechanical - prior to start of fabrication.
- Spare parts lists recommendation – no later than 90 days after the approval of the design.

### **2.5.9.3. Fabrication and erection**

- Changed or modified drawings, parts, etc., - as soon as change was done.
- Quality plan – Prior to start of fabrication.
- Lubricants list and charts – minimum 30 days prior to start of acceptance tests.
- Test program – not later than 90 days prior to start of acceptance tests.
- Training programs in Port of Koper for mechanics, electricians and operators – not later than 90 days prior to start of acceptance tests.
- Service company information – not later than 60 days before the start of Erection. Port of Koper will examine the information provided and approve/disapprove the Service Company within 30 days as of receipt of the information.

A copy of the signed agreement(s) between the contractor and the services companies for the Warranty Period must be submitted to Port of Koper – prior to issuance of the Declaration of Completion certificate and as a condition precedent to its issuance.

- Maintenance manuals and parts catalogues – 60 days prior to start of Acceptance tests.
- Full sets of updated electrical drawings in A3 form and mechanical drawings in A0 form, arranged in files – prior to the start of the erection.
- Operation Manual in three copies – Not later than 60 days prior to start of acceptance tests.

### **2.5.9.4. Testing and handing over**

- Final and approved versions, including the Slovenian translations – 30 days before start of training or start of acceptance tests whichever is executed first:
  - 3 copies of operation manual (handwritten corrected) + one in electronic form
  - 3 copies of operating instructions for operators + one in electronic form
  - 3 copies of preventive maintenance + one in electronic form
- As made set of electrical system files – three copies per crane, upon acceptance of each crane.
- Acceptance file – upon acceptance of each crane. The file must include all certificates of relevant components, recorder charts of all drives, printout of test progress, etc.

### **2.5.9.5. As made documentation (after acceptance of the first crane) and no later than acceptance of the last crane.**

Operation manual – three copies in English + one copy in electronic form and three copies in Slovenian + one copy in electronic form

Circuit diagram, program listing, block diagram, cables list, etc.

- 1 copy A3 form on each crane.
- 3 copies A3 form for the Port of Koper.
- 1 set in electronic form with the drawing's files (AutoCAD or equivalent) for Port of Koper Equipment Department office.
- Full addition of all licenses necessary for each crane.

Drawings – sets of "as made" drawings – structural, mechanical, arrangement of components, etc.

- 3 sets for Port of Koper Equipment Department office (3 sets in A3 form and 3 sets in A0 form).
- 1 set in electronic form with the drawing's files (AutoCAD or equivalent.)

Components – updated parts and components lists, and catalogues files in 3 sets and 1 set in electronic form.

Program and procedures for the periodical warranty inspections

### **2.5.10. EC Declaration of Conformity**

All applied harmonized and other technical standards must be stated in the EC Declaration of Conformity.

## **2.6. Training of operators and maintenance personnel**

### **2.6.1. Operators training**

Operators training must include classroom instruction and instruction on the crane. The training must be given at least to 20 instructors/operators from Port of Koper, who will then instruct the other operators of the port.

Classroom instruction must include teaching of the basic theory of the crane systems and their operation. The duration of the classroom instruction training must be three (3) days. On the job training must include equipment familiarization and operation of the crane for at least 24 working hours (3 shifts) for each operator's instructor.

Before the acceptance tests of the first crane, on-the-job training must be carried out so that operators can participate in the tests and pass the "normal operation test" during the final acceptance test.

All trainings must be conducted in the Slovenian language.

### **2.6.2. Maintenance personnel training**

Maintenance personnel instructions and training must be given to two sections of technicians – mechanics and electricians. Two training sessions must be given to each section of technicians. The intention of the Port of Koper is to assign mechanics and electricians to observe the erection and commissioning activities on the cranes.

All training aids must be left for Port of Koper use after training completion.

Maintenance personnel training must be given prior to the start of acceptance tests of the first crane so that they will be able to participate in the tests and to perform the "Normal Operation Test" during the final acceptance test.

All trainings at the Port of Koper must be conducted in the Slovenian language.

#### **2.6.2.1. Classroom instruction**

- System theory.
- Maintenance manual, operation manual, drawings familiarization and interpretation.

#### **2.6.2.2. On the job training**

- Equipment familiarization.
- Maintenance tasks performance, which will include monthly, tri-monthly, semi-annual and annual inspection and maintenance.
- Systems adjustments.

#### **2.6.2.3. Duration of maintenance training**

Mechanics

- At the Port of Koper and / or at the erection site: Two courses of five days each (total two weeks) including classroom and on the job training. The main part of maintenance training in Koper must be done by commissioning engineer.

#### Electricians

- At the supplier training centre in EU: One training course lasting five (5) days. Travel time is excluded. The supplier is responsible for covering the costs of accommodation, meals, and transportation for the electrical maintenance personnel from Koper to the training location and back to Port of Koper. The training must be conducted at least four (4) weeks prior to the arrival of the first crane in Port of Koper.
- At the Port of Koper: Two courses of five days each (total two weeks) including classroom and on the job training.

The main part of maintenance training must be done by commissioning engineer.

## **2.7. Erection and operation sites and procedures**

### **2.7.1. Erection and operations sites**

Each crane must come in the Port of Koper pretested on erection site and in fully erected state pre commissioned and tested. The unloading area will be at the northwest side of pier 1 at the Port of Koper. Access road, by land, will be provided to the area. The area will be limited in size and is at the operational areas of the port.

The contractor will present to Port of Koper the required dimensions of the erection area and workshop location and the operation area, during each phase of commissioning and testing stages and the respective schedule.

The contractor will be responsible for the fencing and guarding of the erection site.

### **2.7.2. Surface**

The operation site in the port is covered with asphalt. Port of Koper will repair all damages to the operation areas surface, and the contractor will reimburse all costs incurred by the Port of Koper.

### **2.7.3. Facilities**

Port of Koper will supply contractor with water and electricity necessary for the commissioning and testing of the cranes, including water and electricity for his offices and workshops.

## **2.8. Warranty and warranty inspections**

### **2.8.1. Warranty periods**

The warranty period must be at least three (3) years from the issuance of the acceptance certificate for each crane.

The extended warranty period must be at least ten (10) years with regard to structural defects from the issuance of the acceptance certificate for each crane.

Warranty for anticorrosion protection must be at least eight (8) years from the issuance of the acceptance certificate for each crane.



### **2.8.2. Warranty inspections**

The contractor must perform the following periodic inspections and surveys to establish the condition and the status of each crane and its systems:

- 6 months after Acceptance.
- 12 months after Acceptance.
- 18 months after Acceptance.
- 60 months after Acceptance (for structural and painting aspects.)

The survey must be performed by main commissioning engineer and will refer to the structure, mechanical and electrical systems. The main commissioning engineer must be at least 14 days in the Port in Koper during each of his visits.

The contractor must submit a full surveying program for the approval of the Port of Koper prior to the first periodic inspection as specified above.

The program has to be detailed and to include the following chapters:

- Required characteristics.
- The exact procedure and method of surveying.
- Method of conducting control and measuring.
- Survey instruments equipment and power.

### **2.8.3. Warranty claims**

In case of a failure during the warranty period, the Port of Koper will issue a corresponding detailed warranty claim stating the nature of the failure, the demands for repair, etc. The obligation of the contractor with regard to the warranty claims includes all costs, including, parts, labor, shipment etc. The notice about the claims will be sent to the contractor.

In warranty period all failures must be organized and fixed by supplier, without any support of Port of Koper. Port of Koper technical personnel may only address faults during the warranty period by obtaining instructions from the crane supplier and under their supervision. Luka Koper assumes no responsibility for any work carried out to resolve crane operation issues during the warranty period. If the failure is beyond the training and specialties of the Port of Koper technician, Port of Koper must inform the contractor, and the contractor will conduct and supervise the repair work by its own personnel/subcontractors.

In addition, if the contractor fails to perform claim satisfactory, at Port of Koper sole discretion, Port of Koper will carry out the repair work and the contractor must reimburse all corresponding.

The requirements must ensure that the crane supplier is obligated to resolve any malfunction as quickly as possible. Furthermore, it should be stipulated that if the malfunction is not resolved within a specified period (3 days) and the crane cannot be used in the operational process as a result, the crane supplier shall compensate the terminal for the business loss incurred due to this (e.g., EUR 30,000 per day).

## **2.9. Technical support**

The contractor must provide a person (the assigned engineer must be the same person who conducted the commissioning of the cranes) for operational and technical support on site for a period of 1 month per each field (mechanical and electrical), starting with the commissioning of third crane. After this period, the contractor must provide a technician (3 and 5 months) to be present on site for further 2 months as a replacement for the commissioning engineer. The engineers giving the support must be approved by the Port of Koper.

The tasks of the support personnel will be to give additional training, perform and execute modifications, assist and instruct the maintenance personnel, and for further calibration. The

technical support must be given in the following fields: mechanical and electrical as detailed hereinafter.

The mechanical and electrical engineers must be available 24/7 on-site (during night shift 22:00 – 06:00 by phone and arriving on site max. 2 hours after call/claim announcement)..

#### **2.9.1. Mechanical engineer**

Support on site of mechanical engineer stand-by on site for a period of 3 months.

#### **2.9.2. Electrical engineer**

Support on site of electrical engineer stand-by for a period of 5 months.

#### **2.9.3. Optional technical support**

At any time during the term of the agreement, Port of Koper must have the right, at its sole discretion, to purchase from contractor additional mechanical and electrical technical support for additional periods of one (1) month each up to a total period of three (3) months per each field. In this case the contracting parties will conclude Annex to the contract.

### **2.10. Timetable**

#### **2.10.1. The timetables must be prepared in two versions:**

- Per crane (crane timetable.)
- Time consecutive (project timetable.)

The timetable must be based on the gant chart.

#### **2.10.2. General timetable**

General timetable for the complete project must be submitted within 30 days as of the effective date. Each crane in the scope of supply must be marked separately.

#### **2.10.3. The following phases must be detailed**

- Engineering and design review (one month to be considered for the review.)
- Purchasing and supply.
- Manufacturing.
- Erection.
- Shipping.
- Commissioning.
- Testing.

#### **2.10.4. Specific dates must be given in the timetable for**

- Effective Date.
- Delivery to erection site.
- Arrival to the erection site.
- Start of erection (for each crane.)

- Delivery/loading of each crane to Port of Koper.
- Arrival of each crane to Port of Koper
- Completion (ready for test for each crane.)
- Final acceptance (for each crane.)

#### **2.10.5. Additional detailed timetables must be prepared for**

- Fabrication (for the various main sub-contractors.)
- Erection,
- Commissioning and Testing (for each crane.)
- Documentation and training (rough schedule.)

#### **2.10.6. Timetable consideration**

Sufficient and reasonable time must be taken into consideration for Port of Koper response on technical clarifications.

Five weeks to be considered for design review and appraisal.

Expected time schedule:

The term week shall consist of 5 business days.

Acceptance tests schedule start after the contractor issues a "Declaration of Completion" certificate and including the following Stages:

- One (1) week for Port of Koper general visual inspection on erection site.
- Two (2) weeks for functional tests and duty cycle tests on erection site.
- Four (4) weeks for functional tests and duty cycle tests in the Port of Koper.
- Six (6) weeks for normal operational tests (operating crane from driver cabin) and confirmed acceptance from cabin operation in the Port of Koper.
- Eight (8) weeks for remote operation (ROS). During this period usage of crane in operational process must be enabled as much as possible.
- Twelve (12) weeks for OCR functionality and integration with TOS. During this period usage of crane in operational process must be enabled as much as possible.

**In the event of a delay in the handover of the operational functionality of the crane, remote control, or the connection with the OCR + TOS system, the crane supplier must pay a penalty of EUR 30,000 per day.**

### **2.11. Commissioning and Acceptance Testing**

#### **2.11.1. Commissioning**

All crane functionality (except gantry move and load test) must be pre-commissioned and tested on erection site in presence of customer. After the confirmation of the pre-commissioning test from Port of Koper the crane can be transported from erection site.

#### **2.11.2. Commissioning personnel**

The same commissioning engineer must carry out the work from the start of commissioning until the handover of all cranes + specified support period.

### **2.11.3. Final acceptance testing**

The Port of Koper will appoint an external consulting company to carry out the final acceptance testing. The test procedure document will be provided to the contractor in advance of the handover. Before the final acceptance test begins, the contractor must complete and successfully perform full testing of all cranes in accordance with the provided test procedure, by himself. Written test results must be submitted prior to the start of the final acceptance test.

## **3. TECHNICAL DESCRIPTION – SECTION "B"**

### **3.1. General**

Three (3) container ship to shore rail mounted gantry cranes – STS – with additional equipment:

- Spreader: Bromma STS 45 or »equivalent« – 2 pcs per crane
- Over height frame: Tec Container BA-0130E5T (H2700) or »equivalent« - 1 pcs per crane
- Lashing cage: SHT Shuler GmbH or »equivalent« - 1 pcs per crane
- Hook beam with 100 ton capacity – 1 pcs per crane

Three (3) container ship to shore rail mounted gantry cranes – STS – are intended for:

- Container handling using spreaders and Over-High frame,
- General cargo handling using hook,
- Stevedores access to the container twistlock using (Gondola) Cage.

#### **3.1.1. Container handling**

##### **3.1.1.1. Single lift mode**

In single lift mode the crane must handle 20', 40' and 45' ISO containers using telescopic, automatic or fixed spreaders, in ship / quay operation.

##### **3.1.1.2. Twin lift mode**

In twin lift mode the crane must handle 2x20' (twin lift), as well as 20', 40' and 45' ISO containers using telescopic, automatic adjustable twin lift spreaders, in ship / quay operation.

#### **3.1.2. General cargo operation**

The crane may handle occasionally general cargo, using a special 100 tons hook beam.

#### **3.1.3. Heavy lift operation**

Rare occasions of handling heavy cargo, using the special hook beam. The SWL, speeds and acceleration must be determined according to the calculation, design and characteristics of the crane, define for the container handling mode. No adjustment or modification shall be introduced to the structure or to the drives, mechanical and electrical.

### **3.1.4. Mode of operation**

The crane must have the option for manually controlled operation or semi-automatic operation. Under the manually controlled operation, all functions on the crane must be controlled fully by the operator. Under the semi-automatic operation, the operation of the crane must be controlled by PLC system as far as possible within the limits of safety. Manually and semi-automatic operation must be possible from operators' cabin installed on the crane and remote-control desk.

## **3.2. Operating characteristics**

### **3.2.1. Lifting capacity requirements (SWL)**

#### **3.2.1.1. Container handling mode**

Single lift – 51 metric tons under the spreader for balanced 20', 40' and 45' containers.

Twin lift – 65 metric tons under the spreader for two 20' containers.

Eccentricity between the drives for SWL:

- In operation 2/5:3/5
- Overload switching 1/3:2/3

Head block dead weights:

The head block weight must be taken into consideration for the calculation of the SWL at the hoisting ropes

#### **3.2.1.2. General cargo mode**

The SWL must be like the SWL in container handling mode.

#### **3.2.1.3. Heavy lift mode**

The heavy lift shall be operable through the full hoisting range and across the full distance of trolley travel with 100 MT beneath hook beam at reduced outreach (min. 35m), which will be finally determined by the contractor and presented to the supplier during design phase.

#### **3.2.1.4. Load vs. Outreach**

The contractor must provide load vs. outreach diagrams to show the load characteristics of the crane in every mode of operation. The weight of the general cargo and heavy lift hook beams, of the spreader and of the headblock should be stated on the diagram. The reduced speeds and accelerations must be indicated clearly on the diagram of the heavy lift mode.

### **3.2.2. Simultaneous operating**

Crane systems and control will enable the simultaneous operation of the hoist, trolley and gantry drives. Boom operation must block all other drives.

### **3.2.3. Speed rates**

Speed rates must be the same for container handling and general cargo modes.

The speed rates (speed, acceleration, etc.) and all the other crane features must be designed that the crane can reach at least 35 movements between the ship and the quay in real operation. The contractor must demonstrate, **already at the time of submitting the offer**, that the crane design (including speed, acceleration, etc.) enables at least 35 movements between the ship and the quay in real operation.

#### **3.2.3.1. Hoisting speeds**

With full load – min. 90 m/min  
With hook beam – min. 70 m/min  
With empty spreader – min. 180 m/min

#### **3.2.3.2. Lowering speeds**

Must be equal to hoisting speeds.

#### **3.2.3.3. Trolley speeds**

With full load – min. 240 m/min

#### **3.2.3.4. Long travel speed**

With full load – min. 45 m/min

#### **3.2.3.5. Boom movement**

Time to raise/lower the boom - max. 7 min

#### **3.2.3.6. Heavy lift mode**

The speeds in heavy lift mode may be reduced. Hoisting speeds shall correlate to the actual suspended load.

### **3.2.4. Acceleration rates (time) – Container Handling and general cargo modes**

#### **3.2.4.1. Hoisting/lowering**

With rated load - 0,9 m/s<sup>2</sup>  
With empty spreader - 0,9 m/s<sup>2</sup> (3,3s - from 0m/min up to 180m/min)

#### **3.2.4.2. Trolley**

With rated load - 6s against 100% nominal load  
With empty spreader - 6s against 100% nominal load

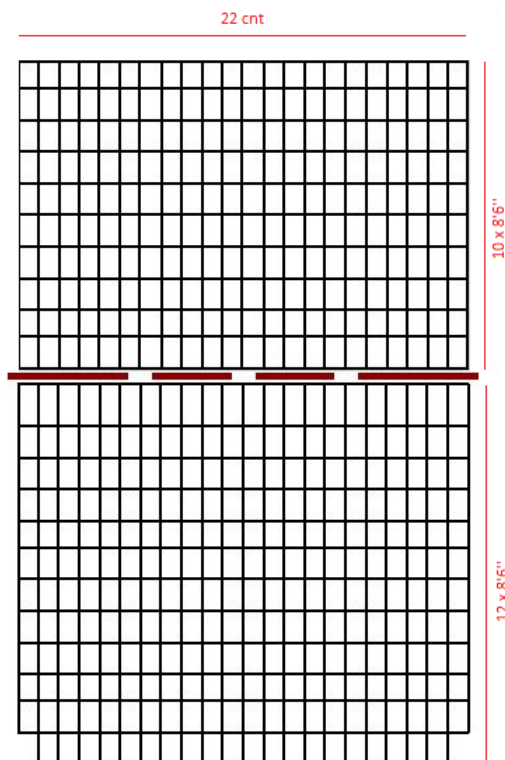
#### **3.2.4.3. Gantry**

With rated load - 6s

### 3.2.5. Container handling simulation

The contractor must demonstrate, **at the time of submitting the offer**, that each individual crane design (including speed, acceleration, etc.) enables **at least 35 movements per hour between the ship and the quay** in real operation.

The simulation must reflect realistic operational conditions and comply with applicable safety standards.



#### 3.2.5.1. Simulation requirements

The simulation of average handling speed shall be based on vessel bay with the following configuration:

- Ship's storage width: 22 containers,
- Under-deck height: 12 containers,
- Above-deck container stack: 10 containers,
- Handling of 40' all 8'6" height dry box containers.

#### 3.2.5.2. The supplier must present

- Time required to unload all (482) containers from the full ship's hold onto terminal tractors/trailers.
- Time required to reload the entire ship's hold with (482) containers from terminal tractors/trailers.

The simulation must consider the handling of containers and replicate realistic STS crane operations, including:

- Placing the spreader on the container
- Locking the twistlocks
- Moving the container

- Placing the container into/on the ship's hold or onto a trailer

### **3.2.5.3. Safety requirements**

All simulated operations must comply with applicable safety standards and best practices. The supplier must ensure that the simulation reflects realistic safety procedures, including but not limited to:

- Safe positioning and securing of the spreader and container
- Proper twistlock engagement and verification
- Controlled crane movements to prevent swinging or sudden shifts
- Clear separation of personnel from operational zones
- Emergency stop protocols and fail-safe mechanisms

The supplier must also indicate any assumptions made regarding staffing, equipment configuration, and operational constraints, and must highlight how safety considerations impact the overall handling time.

### **3.2.6. Maximum wheel loads**

Maximum wheel loads must be calculated for the following conditions:

- In operation – max. 120 tons/wheel
- In storm – max. 120 tons/wheel

In operation with SWL, including dynamic loads and wind blowing from the director causing the greatest single corner load.

In storm conditions without load the boom in the up position, without tie down or any special mooring arrangement.

- Minimum distance between two wheels – 1000 mm.
- The calculated loads must be presented in detail to Port of Koper in the data sheet during design phase.

### **3.2.7. Gantry runway**

Design, layout and tracks tolerances of the runway rails must be in accordance with FEM specifications.

- Rail type – A100.
- Elevation and height difference

### **3.2.8. Buffers**

The crane must be supplied with four (4) hydraulic buffers, which are mounted above the centreline of each rail.

Buffer axis height measured from the top of the rail – 1.250mm.

Maximal end force for each buffer calculated according to FEM must absorb the impact and prevent damage when one crane meets the other.

It must be possible to bypass the electrical end stops of the buffers and to drive two cranes together until both buffers of both cranes are fully compressed.



### **3.3. Major dimensions**

#### **3.3.1. Rail span**

Rail gauge measured between centres of W.S. and L.S. rails is 30m.

#### **3.3.2. Cantilevers**

##### **3.3.2.1. Outreach**

The maximum outreach must be min. 67 meters, as measured from the centre of the waterside rail to the centre of the spreader at its maximum position over the water.

##### **3.3.2.2. Backreach**

The back reach shall not be less than 16 meters of useable outreach with full SWL, as measured from the centre of the land side rail to the centre of the spreader at its maximum position over the lands. The view from the operators cabin must not be obstructed by the cabin cleaning platform.

#### **3.3.3. Clearance under spreader**

The minimum clearance under the spreader must be 48 meters as measured from the top of waterside rail to the bottom of the lifting twistlocks when is at his maximum height.

#### **3.3.4. Hoisting range**

The total hoisting range must be min. 63 meters, as measured from a point on the spreader between its highest and lowest positions (min. 48m above rail level + 15m below rail level).

#### **3.3.5. Buffer to buffer distance**

The crane must be designed with minimum buffer to buffer distance.  
Dimension from buffer to buffer uncompressed must not exceed 27 meters.

#### **3.3.6. Clearance under portal beam**

The clearance under portal beam for passing traffic must be minimum 13 meters.

### **3.4. Electrical system**

#### **3.4.1. General**

If otherwise specified, all electrical equipment must conform to the applicable requirement of IEC, CENELEC and EN standards all electrical materials must be new and bear a label showing to which standard they conform.

The electrical sub-contractor must be the OEM manufacturer of the main AC drives system. Equipment and materials for the same, similar or affiliated applications must be from the same vendor and of the same rating must be interchangeable.

The contractor must be responsible for sizing all components, cable and wires, to suit the functionality of the equipment.

Sizing of component may be affected also to achieve uniformity between various systems on the crane and minimizing the spare parts inventory.

All electrical equipment must be designed to operate in the marine environment in the port.

All screws, bolts, nuts, pins, washers, cable glands and other miscellaneous fastenings and fittings, must be of stainless steel or must be treated to resist corrosion.

Space heaters must be provided in every closed cubicle (controlled by a thermostat.) and in the motors, with provision to energize those heaters when this equipment is not in service, thereby preventing moisture condensation. The current of the space heaters must be monitored by the PLC, to give a warning when a space heater is not operating.

The equipment must be of the latest design that has been in successful proven experience on cranes operating in ports for a period of at least one year. Contractor must submit information regarding the electrical equipment within its technical proposal, as specified (including manufacturer's details, ports where the equipment is installed, time of instalment, contact details).

#### **3.4.1.1. Reliability and continuous operation**

The electrical system must be designed in such a way that it won't have a single point failure. All subsystems must be independent. Failure in one operating system will not prevent normal work from other operating systems. Special care should be given to prevent from any failure to stop the operation of the whole crane except for emergency and safety conditions. In case of a major fault in one drive, only that faulty drive must be tripped. The main switch of the crane shall not be tripped. The contractor will prepare a list of the faults for each drive that will stop the drive only and a separate list of faults that will stop the crane. This list will be submitted for Port of Koper approval during the design review.

#### **3.4.1.2. Marking**

All devices, electrical components and cables must have marking by nameplates or similar means of identification that must be attached to the devices and also to the structure near the device. Cables, wires and each conductor inside and outside of the control cubicles, junction boxes, etc., and at any other cable and wire end must be identified by a plastic label. Method of marking of the various elements must be presented for Port of Koper approval during the design review.

#### **3.4.1.3. Electro-magnetic compatibility (EMC)**

The environment of the port is full of magnetic noises (radar systems, radio communications, etc.) All the control and electrical systems on the crane must be protected against these interferences and continuous, undisturbed operation of all systems must be guaranteed. The systems emission and immunity must comply with the European standards for Industrial electromagnetic environment – performance criterion A. The contractor must submit test certificates, according to those standards before the start of fabrication. Special attention must be given to proper earthing and screening.

#### **3.4.1.4. Electrical system configuration and drives types**

The drives for hoisting, trolley, gantry, cable reel and boom hoist shall be AC drives with AC squirrel cage motors, all the system to be approved by Port of Koper during the design review. The power circuit may be based on two lines IGBT converters with active front-end (AFE) units, for supply of the common DC-link and inverters for the supply of the AC drive motors.

Drive's configuration:

- Hoist – Two fully digital controlled power inverters, one for each hoist motor set.
- Gantry – Two fully digital controlled power inverters.
- Trolley – One fully digital controlled power inverter.
- Boom Hoist – One fully digital controlled power inverter.
- MV cable reel - One fully digital controlled power inverter.
- Spreader cable reel – One fully digital controlled power inverter.
- Personnel lift – One controlled power inverter.

#### **3.4.1.5. Redundancy demand for continues operation in case of inverter failure**

- Redundancy of the DC supply unit in case of failure in one of the line units (AFE converter). It must be possible to continue operation with reduced speed.
- Possibility to continue hoist motion, with reduced speed, in case of failure in one of the hoist drives.
- Possibility to continue trolley or boom motion, with full speed, in case of failure in one of the trolley or boom drives.
- Possibility to continue long travel motion, with reduced speed, in case of failure in one of the gantry drives.
- Other configurations, offered by the contractor during the design stage, are subject to Port of Koper approval.
- Shared use of one inverter for 2 motions is not accepted.

#### **3.4.2. Safety regulations**

The electrical installation must conform to the Slovenian safety regulations and all other applicable local Slovenian regulations, rules & law.

All switchgear, motor starters and all their parts must be designed to withstand, without being damaged, the mechanical and thermal short-circuit stresses induced by short-circuit current during the short-circuit clearance time.

Furthermore, all switchgear and motor starters must be so designed that a person standing near the component shall not be exposed to any danger during short-circuit occurrence.

The electrical design and installation must follow the guidelines in accordance to safety regulation of machinery: IEC 60204-32, EN 954-1, EN61800-3, and EN55011.

#### **3.4.3. System and equipment voltages**

System voltage of incoming power to the crane via the power supply pit in the quay is: 20 kV, 3ph, 50Hz. Additional 5% voltage drop, due to losses in HV power supply trailing cable plus voltage drop on the crane main transformer must be taken into the calculation of the system. The 15% voltage fluctuations can occur only for a few second during peak electrical load of the crane.

The power supply for the AC controlled drives (Hoist, Gantry and boom) must be rated 630 V AC 50 Hz (nominal.)

The power supply for the AC controlled drives (cable drum, service cranes) must be rated 400 V AC 50 Hz (nominal.)

Lighting systems, heaters, air condition system and other auxiliary services must be of 230V AC 50Hz / 400V AC 50 Hz.

Lighting sockets for hand lamps can be of 24V or 12V.

24 V DC control voltage must have a range monitoring.

Voltage for auxiliary AC motors (Eldro's, ventilators, etc.) must be 400 V AC 50 Hz, 3ph or 230 V AC 50 Hz, 1ph as applicable.

#### **3.4.4. Wires and cables**

All cables and wires must be supplied from vendors operating with quality control plans according to valid directives. Relevant certificates must be provided.

All wiring and cables will be submitted to Port of Koper approval. Plans will be approved during design review; materials will be approved by Port of Koper within one (1) month after design review.

##### **3.4.4.1. Middle voltage power supply cable**

The middle voltage power supply cable from the power supply pit in the quay, to the crane cable reel is described in para 4.5.2. This cable must be included in the scope of supply of the crane.

##### **3.4.4.2. Middle voltage power cable (fix installation)**

This cable should be mounted between the cable reel slipping and the middle voltage cubicle. The cable manufacturer is submitted to Port of Koper approval during the design review. The cable manufacturer is submitted to Port of Koper approval during the design review.

##### **3.4.4.3. Low voltage power and control cables outside cubicles**

All low voltage cables outside the cubicles, except communication and shielded cables, must be rated to 0.6/1 KV multi-core power or control cables, flexible stranded cables for medium mechanical stresses, 90°C permissible operating temperature at conductor. In general, minimum cross section area shall be 1.5 mm<sup>2</sup>, coloured according to voltage, needs to use smaller cross section must be approved by Port of Koper. Cables can be type NSHTOEU, (design according to EN standards The power supply for the AC controlled drives (Hoist, Gantry and boom) must be rated 630 V AC 50 Hz (nominal.), UV resistance and self-extinguishing. The cables manufacturer will be submitted to Port of Koper approval during the design review.

Cable for AC motor fix installation shall be shielded cables comply with the EMC standard type Prysmian PROTOFLEX EMV-FC 2YSLCY-J or equivalent approved by Port of Koper in accordance with DIN EN 60228, 0.6/1KV and minimum capacitance between phases and earth. The cables must be approved by the OEM manufacturer of the inverters.

##### **3.4.4.4. Low voltage wires inside cubicles**

All low voltage wires inside cubicles, except communication and shield cables, must be rated 450/750 volt, single – core, PVC insulated wires, flexible stranded cables 70°C permissible operating temperature at conductor. Minimum cross section area 1.5mm<sup>2</sup>, coloured according to voltage. Wires can be type H07R-N (designed according to EN Standards).

##### **3.4.4.5. Energy chain system cables**

The power and communication cabling between the main structure and the trolley must be carried in an energy chain system.

##### **3.4.4.5.1. E-Chain cables general demands**

The cables should be suitable for outdoor E-Chain systems with at least three (3) years proven experience on E-Chain systems on STS with fast travelling trolley at min. speed of 240 m/min.

The cables shall be flexible, Round, TPE sheathed with flexible conductors, finely or very finely stranded, class 5 and 6.

Permissible operating temperature: -35°C to +90°C, Oil resistant, High UV resistant and self-extinguishing.

Each cable shall have a strain relieving centre element stranded with short pitch length.

Cables have to withstand permanent bending tests in energy chain of min. 2-4 million double strokes (back and forth movement) without damage.

Mechanical minimum lifetime of 36 months on clear condition must be confirmed with a written certificate.

The suitability of the cables as aforesaid shall be examined during the design review.

#### **3.4.4.5.2. E-chain control cables**

All control cables shall be type E-Chain flexible round cables. Conductors arranged in bundle design with strain relieving centre element, stranding class 6.

#### **3.4.4.5.3. E-chain AC power cables**

AC cables must be according to DIN EN 60228 0.6/1KV. AC motors power supply cables shall be special cables designed to be connected to frequency converters and to comply with the EMC standards and with minimum capacitance between phases and earth.

The cable shall be with tin coated copper conductors according to DIN EN 60228 class 5 or 6. Conductors arranged in concentric layers around the central textile carrier.

The cables shall be shielded and protected from any frequent interference. The cables must be approved by the OEM manufacturer of the inverters.

#### **3.4.4.5.4. E-chain low level signal and data transmission cables**

Special shielded cable with individually shielded cores or twisted and shielded pairs (each pair separately) shall be used as required for data transfer, communication and low level signal circuits where interference shall be avoided. The cable shall have at least 6 pairs.

Minimum cross-section of the conductors: 1 mm<sup>2</sup>.

The cable should have capacitance of approximately 100nF/Km (between two cores in a pair or between 2 neighbouring pairs.)

Cable type to be submitted to Port of Koper approval during the design review.

#### **3.4.4.5.5. E-chain fibre optic cables**

Fiber optic cables installed in E-chain shall be multi-mode type 50/125µm. Two separate cables with 24 fibre cores each.

Cables and end connections specifications and manufacturer must be submitted for Port of Koper approval during the design review.

#### **3.4.4.5.6. Marking on E-chain cables**

Throughout the cable length at distances not exceeding 100 cm identification designations must be indelibly marked preferable by embossing as follows:

- The manufacturers name or trademark
- Cable type letter code
- Rated voltage and max. temperature
- Number of cores
- Cross-section of the cable conductor
- Year of production

- Designated number for each cable laying on the e-chain to identify the cable from other cables.

#### **3.4.4.5.7. Energy Chain monitoring**

Energy chain must be equipped with:

- Smart push / pull force detection system integrated into the crane PLC.
- System for monitoring the cable tensile force integrated into the crane PLC.

#### **3.4.4.6. Fiber optics**

Fiber optic cables on the crane must be multi-mode type.

Cables and end connections specifications and manufacturer must be submitted for Port of Koper approval during the design review.

#### **3.4.4.7. Cables for pulse encoders**

All pulse encoders which have the connection longer than 50m must be connected with fibre & power cables for the connection from the digital encoder to distribution Enclosure. All pulse encoders which have the connection shorter than 50m must be connected with copper wires & power cables for the connection from the digital encoder to distribution enclosure.

The cables must be suitable for harsh environments protection (e.g. weather, oil, mechanical hazards, etc.).

Each encoder must have at least two additional backup fibre cores. Each encoder must have a terminal box fixed next to the encoder where the power and fibre cables shall be inserted and connected with splice box. From the terminal box there shall be a third cable not longer than 30cm to the encoder. Other design shall be subject to approval by Port of Koper.

#### **3.4.4.8. Spreader cables**

The spreader cable from the trolley to the head-block must be reeled on a cable reel located on the trolley.

The cables must be heavy duty, flexible, fine stranded cables, with multiple cores, rated 0.6/1 KV with minimum 90°C permissible operating temperature at conductors, UV resistance and self-extinguishing. Wire cross section area is 2.5mm<sup>2</sup>. The cable segments in the trolley, running from the trolley to the head block and to the twin lift spreader shall have minimum 48 wires with integrated can-bus wires inside the cable.

The spreader cable must be equipped with fibre optic cores. The minimum number of the cores must be at least 6..

Cables shall be submitted to Port of Koper approval during the design review.

#### **3.4.4.9. Flood lighting fixture wires**

All flood lighting fixtures taps shall be rated to 0.6/1KV, single core, heat-resistant, flexible stranded, 180°C permissible operating temperature at conductor. Minimum cross section area 2.5mm<sup>2</sup>.

#### **3.4.4.10. Screened cables and wires**

Motor power cable shall be fully screened. Power cables shall be separated from data and low-level signal cables.

Shielded wiring shall be used as required for data transfer, communications, and low-level signal circuits.

#### **3.4.4.11. Cables layout**

The layout of the cables, the conduits and the racks must ensure minimum vulnerability to damage that may be caused by the load, moving parts and passing traffic.

Cables from E-room, machinery rooms and other levels shall run as much as possible in a rigid galvanized cable ladders on the crane structure such as girders and crossbeams.

Plastic channels may be used only inside rooms or cabins.

Inside cubicles, wires shall run in covered plastic channels. Bundles or wires shall be supported to minimize the pull at the wire connections to the components.

Cables ties shall be:

- At least every third stainless-steel, plastic-coated UV resistant, for outside installations.
- Plastic, UV resistant, for indoor installations.

#### **3.4.4.12. Junction, pull and outlet boxes**

Junction, pull and outlet boxes shall be of stainless steel, polycarbonate or reinforced polyester with anti-vandal, UV, high temperature, corrosion and chemicals resistant features with gaskets with the same features and weatherproof conduit hubs, or ample dimensions suitable for the size and number of conductors contained within.

Cable glands shall be of stainless steel.

The contractor shall avoid use of outdoor control cubicles (outside of rooms, cabs). In the case of outdoor cubicle with control panel (buttons, keys, etc.) there shall be double door and canopy to protect the components.

#### **3.4.4.13. Wire ends**

All wire ends of flexible conductors must be equipped with a ferrule when they are connected to a screw or spring terminal.

#### **3.4.4.14. Splicing of wires**

Splices must be avoided. Junction boxes may be used for lighting fixtures. Approved splicing can be only in junction boxes.

#### **3.4.4.15. Spare control wires**

Spare control wires must be included in cables runs to control points, such as push-button station, etc. Where no consideration dictates differently the minimum number of spare conductors must be as follows:

No. of conductors required to the device	Minimum number of spare conductors
6 to 14	2
Above 14	15%



### **3.4.5. Middle voltage (MV) system**

#### **3.4.5.1. General**

The crane must be powered through a cable reel system supply 20KV, 3 phase, 50Hz. Low voltage must be accomplished by using a dry type, cast-resin power transformer - Other power supply voltage rates to be approved by Port of Koper.

Line filters to reduce THD and THF must be utilized.

The MV system must be designed mechanically and electrically to suit the use of a mono-spiral cable reel on the crane and cable trench.

#### **3.4.5.2. Middle voltage power cable**

Electrical power must be supplied to the crane through a MV power trailing cable, automatically reeling in and out by a cable reel.

Cable length must enable operational travelling distance of 300 meters, on both sides of the supply pit. Additional cable length of at least 20 meters must be calculated for connections in the supply pit.

The cable must be extra flexible heavy duty trailing cable.

Cable type must comply with all applicable standards in EU.

Cable type must be equipped with minimum 12 optical single mode fibre optic cores.

Sizing of the cable must be according to the power requirements of the crane, with the manufacturer's de-rating for reeling and ambient temperature factors applied to the normal current carrying capacity.

Voltage drop calculations must be made and submitted to the Port of Koper for approval two weeks after approval of the design.

Cable guide must be installed on inner side of the W.S. rail. The distance of the cable centre line to the centre of the W.S. rail must be 1260mm.

The contractor will pull the trailing cable into the supply pit in the quay. Port of Koper will arrange the connection in the pit between the trailing cable and the fix cables in the pit. Following the connection, the contractor must conduct the required tests on the MV system and must provide the necessary certificates and measurements prior to the actual switching on of the MV power supply to the crane.

#### **3.4.5.3. Power cable reel**

The power supply trailing cable must be reeled in and out by a FC power driven cable reel and guidance system on the crane.

The design of the system must be carried out by the system supplier and must be specified to meet the required speeds, marine environment and ambient temperature.

The cable reel must be of a heavy-duty mono spiral type with a feature to adjust the width.

The cable reel drive system must be AC drive with frequency control.

AC drive must be designed by the cable reel OEM and preferable from the same manufacturer as the main drives on the crane. The AC inverter and all the electrical control systems of the system must be installed in the E-room. Drive must be design for operation at 10% above rated line voltage and to have adequate torque when voltage drops 15% below rated line voltage.

The cable reel system must include a lower guide to be installed above the quay and all of the necessary deflection and guidance devices.

The cable reel motor must be totally enclosed with at least IP65 protection. Motors must be designed to operate at 10% above rated line voltage and to have adequate torque when voltage drops 15% below rated line voltage.

Operation of the cable reel must be interlocked respectively with the crane travelling controls. Rotary cam limit switch must be provided to detect "End of cable" and "End of gantry rail" signals. Absolute encoder or analogue rotary transducer must be provided to detect the number of loops on the reel.

Over tension and slack detection systems must be provided separately. If over tension or slack occur gantry drive operation must be stopped.

An additional limit switch must be provided for bridging the slack cable signal switch when passing over the feeding point at the supply pit.

The power cable reel must be equipped with a fibre optic rotary coupler with towing device attached to the power supply slip ring housing. The rotary coupler must provide clear reliable transfer of data. The special optical coupler must be installed in separate housing.

In case of a malfunction in the cable reel system, the crane travelling must be mechanically stopped to avoid damage to the middle voltage cable. On the cable reel and ground level a manual control station must be fitted with which the cable can be manually reeled on or off. The control must be enabled by a key switch.

Manual cable reel control stations (wind on, wind off & reset) must be provided at ground level near the MV cable and on cable drum level.

Reel body, lower guide, collector box their parts etc. must be hot dip galvanized.

#### **3.4.5.4. Middle voltage switchgear**

Type tested and maintenance free medium voltage switchgear in single busbar design.

It is 3 pole metal enclosed and air insulated switchgear (SF6 free). High voltage switchgear must be mounted in the high voltage room.

Circuit breaker (C.B.) unit must conform IEC 62271-1, 60470 with manual spring-operated mechanism, manual stored energy mechanism and motor operating.

Transformer protection:

- The protective relay will be a definite time delay with thermal, instantaneous short circuit for transformers.
- The protective relay should be a digital microprocessor-based relay type REF615D by ABB, Siemens or equivalent approved by Port of Koper. The relay shall trip the H.V. also in cases of short circuit.

The 3 positions disconnecter shall conform IEC 62271-102, 60265-1, 62271-5 and shall have a Padlock for safety.

Voltage/ current transformers shall fulfil the following standards IEC 60044-1, 60044-2, 60044-3.

Service and safety equipment installed at the switchgear:

- Safety carpet in front of the switchgear.
- Portable H.V. earthing device.
- High voltage tester gloves 30Kv Class 3
- Rescue stick
- Insulation stick
- Voltage detector.

The switchgear compartment shall be provided with space heaters (230 VAC) to prevent condensation.

A required earth copper bar shall run along the full length of the switchgear to connect all metallic points of the switchgear. Hinged walls, doors, covers, etc., shall have a flexible earth connection. Control wiring in each section of the switchgear shall terminate in a terminal block, easily accessible and protected by a cover.

All outgoing control wires shall terminate in a master terminal board located in a separate section.

The connection to the switchgear will be equipped with surge arrestors and fulfil IEC 60099 standard.

#### **3.4.5.5. Main power transformer**

Transformer must be 3 ph., two windings, 50 Hz, indoor, step-down, dry type, natural cooled (AN), thermal class F insulated, with copper windings, in accordance with IEC 60076, IEC 60076-11 for IGBT drives.

The transformer must be designed, manufactured and tested according to all applicable IEC standards.

Transformer design must comply with the following features:

- Cast resin insulated under vacuum.
- Moisture resistant.
- Vibration resistant.
- Free from corona.
- Self-extinguishing.
- Flame retardant.

The transformer must be calculated with no forced ventilation. Transformer size must be calculated according to the following criteria:

- Hoist and trolley drives in full acceleration, with rated load and adverse wind condition and Gantry drives at constant speed.
- Voltage drop on the transformer during maximum peak current period shall not exceed 3%.
- Transformer will not be thermally overloaded under any working conditions.

Manufacturer and type are to be approved by the Port of Koper and Calculation shall be presented for Port of Koper review the during design review,

The following accessories must be provided with the transformer:

- Lifting eyes, jacking and pulling provisions.
- Ground terminals.
- Manually operated no load (+/- x 2.5%) tap changers for transformation ratio adjustment.
- Temperature sensor thermistors on each low voltage column.
- Vibration dumping supports.

The transformer must be provided with a specification and connection nameplate in accordance with IEC standards.

Testing must be done in accordance with IEC 60076. Routine test report will be submitted before delivery to Port of Koper.

#### **3.4.6. Electrical control system**

The contractor is responsible for the safe and reliable operation of all equipment in accordance with the requirements of this specification. The electrical installation must provide reliable power for the rapid precise handling of containers in continuous loading and unloading operations.

All electrical installations must be adequately earthed to protect electrical equipment from damage during lightning storm. Lightning arrestors must be provided at the tip of the boom and mast structure of the crane. It shall be connected directly to the ground and insulated from the structure. The structure of the crane must be electrically bonded to the rail.

#### **3.4.6.1. Electrical room (E-room) – low voltage**

The electrical equipment in the E-room must contain, but not be limited to:

- Low voltage distribution system cubicles.
- Inverter / conversion unit cubicles (power section of the drives).
- Programmable controller cubicles.
- Monitoring system cubicles.
- Auxiliary equipment cubicles.
- Integrated fire extinguish system.

#### **3.4.6.2. Low voltage switchboard**

A heavy-duty switchboard of steel construction must be provided for low-voltage distribution.

The minimum protection degree of the cubicles must be indoor – at least IP20/23, outdoor – at least IP65.

The arrangement of the cubicles in the room must be submitted for Port of Koper approval during the design review. Separate housing (cubicles) must be used for 400V equipment, 230V equipment, control equipment.

Equipment grounded must be provided in accordance with applicable standards.

Control wiring in each section of the switchgear must be terminated on easily accessible terminal blocks.

The switchgear cubicles, of the incoming section, must house only load current carrying devices such as: circuit breakers (C.B.) contactors, current transformers and potential transformers. All related control and alarm and monitoring equipment must be mounted in separate cubicles.

The cubicles must be designed to provide additional space of at least 20% for future applications. All inter-connections must be factory wired. All out-going control wires must be available for connection, on separate terminals and not on the equipment.

All panel wiring and terminal blocks must be clearly identified with the designated numbers according to wiring diagrams.

Insulations monitoring via dv/dt detection and protection for improper phase sequence, lack of phase and over/under voltage must be provided for each drive. These protective relays and their protective miniature circuit breakers must be monitored by the fault monitoring system.

Each cubicle must be identified with a durable nameplate. Nameplates must be attached to each device in the cubicles and to the structure itself, near the device.

Circuit breakers must be used for the LV system. 400V circuit breakers must be molded – case type. No fuses are permitted except for the Inverter protection as applicable.

There should be monitoring for automatic tripping of manual disconnection of each circuit breaker. All fuses must be monitored for melting.

No common circuit breaker for devices or components shall be allowed.

The entry of incoming power and control cables into the cubicles should be from the bottom. The wires inside the cubicles / racks must be arranged inside plastic "U" channels with removable covers.

The cubicles must be equipped with space heaters and thermostat.

Crane operation hour counter must be installed in the switchboard (after the main contactor in the E-room) to count "Crane On" time. Hour counter for each drive must be installed on each relevant cubicle, counting only when the corresponding drive is energized.

The measuring system must be composed at least of:

- Voltmeter with phase selector switch (3 positions)
- Three ammeters.
- DC-link voltmeter.

- Electronic energy monitoring and metering device with current values and Max, Min values for voltage, current, power, power factor, frequency, three phase average voltage, average current, active energy, reactive energy. Import/export of device configuration. All information must be transmitted to CMS system and can be monitored from CMS screen.

Internal lighting must be provided in each cubicle, automatically switched by door opening.

In each cubicle there must be a 230V 16A Schuko receptacle.

Contactors and I/O units must be located in the E-room as far as practical. Remote I/O units may be located in other closed locations, e.g., cabs, M-room, etc., or inside cubicles. Locations to be approved by Port of Koper during the design review.

DC power supply units for control systems must be monitored by the fault monitoring system, by a suitable voltage-monitoring relay.

A completely free, easy and comfortable access to each device or equipment must be provided for inspection, maintenance and wire connections. The following guide rules must be kept unless approved otherwise by Port of Koper in writing:

- All equipment shall be installed with its face to the front.
- Equipment installation on side walls is forbidden (including terminal boards.)
- Equipment installation, of any kind, behind another equipment to be avoided.
- Terminal boards shall not be of the double height type, so wires connected to one-layer terminals shall not hide connections to the second layer.

#### **3.4.6.3. Main circuit breaker and main contactor**

The main circuit-breaker shall be with a drawable three-pole air circuit-breaker with minimum rated short circuit capacity of 50 KA /  $\cos\Phi = 0.25$  and according to calculated short circuit current, 400V, 50 Hz and minimum making capacity of 100KA. The current of the circuit breaker shall be changed to comply with another L.V. rating as applicable.

The breaker must have adjustable settings, the unit must be with delayed thermal over current releases and instantaneous Electro-magnetic including current limiting releases.

The breaker must be also supplied with motor operating mechanism with high-speed closing feature, open-circuit shunt releases or under-voltage releases, auxiliary contact blocks and operating handle.

The rated mechanical life of the breaker must be minimum 10,000 make/brake operations by maximum 20 make/brake operation per hour.

The circuit breaker shall have interlocks to prevent it from being inserted into or withdrawn from the equipment in the closed condition. The circuit breaker may be locked also in the withdrawn position. In this case the main contacts will be disconnected but the auxiliary (control) circuits will remain closed to enable performing of functional tests. When the auxiliary circuits are disconnected, by disconnecting the plug connection, the circuit shall be non-operational. With each crane suitable equipment for connecting or disconnecting the main components will be provided, a storage place for this equipment will be provided.

Rated insulation voltage and insulation group shall be in accordance with IEC 60664-1.

The trip feature must be activated only in the following cases:

- Overcurrent (thermal).
- Short-circuit current.
- Under voltage (dropout 0,5 UC and pick-up 0,8 UC app.)
- Emergency stop by push buttons.
- Fire detection in the electrical cubicles or E-room.
- Any other specific faults according to the Port of Koper written approval.

The main circuit breaker shall be monitored for all trips and for the following conditions (each trip or condition with separate record):

- Main circuit breaker "on".
- Main circuit breaker "off".

A L.V. main contactor shall be installed after the L.V. main circuit breaker, to minimize number of operations of the main circuit breaker. The main contactor will serve for all normal "on-off" operations of the crane.

By pressing "Crane On" push button, the main circuit breaker will be switched on and after a time delay (programmable), the main contactor will be switched on. By pressing "Crane Off" push button, the main contactor will be switched off and the main circuit breaker will stay in "on" position. If a drive is running while pressing "Crane Off" push button, the drive will be electrically stopped and then the contactor will be switched off.

All changes must be approved by Port of Koper during the design review.

#### **3.4.6.4. Electrical drives – power inverter (IGBT) units**

##### **3.4.6.4.1. General**

At least two (2) fully digital, microprocessor controlled, inverter power conversion units, shall be provided, as Active Front End (AFE) line units connected between the line supply and the DC-link. The DC-link busbar will serve as power supply to the drive's inverter units. Fully digital microprocessor-controlled inverter power conversion units shall be provided for the drives:

- Hoist - 2 units
- Trolley - 1 units
- Gantry - 2 units
- Boom Hoist - 1 unit.
- A separate cubicle shall be dedicated for each drive and each power conversion unit.

Other line voltage may be offered as an option, subject to Port of Koper approval not later than the design review.

##### **3.4.6.4.2. Line Units (AFE)**

The two line units shall be IGBT converter units as the inverter units for the AC drive motors. They will be active front-end units (AFE) with the following features:

- Same features and structure as for the AC motor inverter units.
- Regenerative feedback.
- Unity power factor ( $\cos \Phi = 1.0$ ) at the line supply, also during start-up of motors and acceleration of drives (independent of the operating conditions.)
- Low harmonic distortion (negligible) and extremely low harmonics are fed back into the line supply, independent of the operating conditions. Total harmonic distortion (THD) and total harmonic factor (THF), with rated load and with peak electrical load, of the 630V line current and line voltage, during hoisting or lowering, shall not exceed 3.5%
- The two units will be connected in parallel to the DC-link busbars. In case of failure in one unit the second unit will enable a limited continuation of crane operation (one motion at a time.)
- DC-link voltage shall be kept constant, during the +10% - 15% fluctuations of the line voltage.
- Connection to the mains will be via mains filter, mains reactor and a dv/dt filter.
- During electrical peak load, the line voltage may drop by 15% from the nominal voltage. Components must be selected to cope with the current increases during the 15% voltage drop period.



### **3.4.6.4.3. Other**

The inverter conversion units shall be three phase, fully digital microprocessor controlled, and providing four-quadrant operation capability, with power regeneration. Its microprocessor shall take care of all close and open loop control functions.

Each drive power section cubicle shall include, but shall not be limited to, the following components:

- Main circuit breaker/fuse (for the drive.)
- Power Inverter unit.
- Diagnostic panel on the door – (local control and display panel).
- Low insulation monitoring unit to prevent motor start.
- Inverters drive unit.
- Filter units.
- Over-current units.
- Fuses if applicable.
- Measuring instruments (V.F.A.)
- Cooling system with equipment control.
- Control of drive breaking and brakes.
- Communication to crane P.L.C.
- Hour meter to count "Power On" of the drive.

The inverter unit must contain, but must not be limited to, the following protective devices and functions:

- Main circuit breaker.
- Over temperature protection.
- Protection against loss of motor regenerative braking capability.
- Encoder loss detection.
- DC voltage level control.

The inverter units must be (latest version) of a make and type that have been in operation on cranes for a period of at least Two years with proven experience on STS cranes. The suitability of the proposed inverter units to the terms aforesaid shall be examined during the design review. They must be of standard converter power stacks and with individual plug-in cards for the control electronics.

The inverter units must be designed to operate continuously between + 10% of the rated voltage and +5% of the rated frequency in all working conditions.

Inverter Module must have the following requirements:

- Each inverter unit (IGBT) shall be of robust design with:
- Galvanic isolated control with built-in self-protection against short circuit faults.
- High switching frequency.
- Low noise level.
- Identical replaceable phase stacks.
- Self-protection utilizing IGBTs for high speed shutdowns
- The motor Inverters modules shall be suitable for operation at low output frequencies <10Hz.
- Inverters fans (if applicable) can be replaced easily and with access to fans screw and enough space for the replacement.

The inverters must be vector controlled with following features:

- Linear through zero speed at full torque.
- Step response within release time of mechanical brakes.
- High dynamic response.



Inverter design for power regeneration:

- Identical motor and regeneration inverter units.
- Immune to mains disturbances.
- Regeneration control board located in central control unit.
- High switching frequency resulting in fast response to mains disturbances and interruptions.
- Low harmonic distortion (negligible) – THD and THF of the current and voltage.
- High efficiency.
- Unity Power Factor ( $\cos \Phi = 1.0$ ).

Inverter diagnostics (but not limited to):

- Local fault indication on each control module and printed circuit board. The status of the faults will be by open text and not by code.
- Integrated fault memory in the digital control module for high-speed fault logging.
- Interface for local and remote programming and diagnostics via profinet, ethernet and USB.
- Other communication connection will be submitted to Port of Koper approval during the design review.

Electrical noise: To suppress electrical noise and to minimize disturbances:

- Adequate filters have to be integrated for the control circuits
- Control cables have to be screened.
- Screen earthing has to be of low resistance.

Cable connectors and front plugs must be used for connecting plant or linking cables within one or more cabinets in a control system. Cable connectors and front plugs must be plugged-in and locked. In case that the inverter unit is composed of 2 units connected in parallel, a current balance monitoring shall be provided to identify which unit is defective.

Special equipment for IGBT replacement aid:

A device for replacing inverters or IGBT modules must be supplied and shall be kept in the electrical room. The device must be capable to lift and move with the biggest IGBT module from the cubicles to outside the electrical room.

The contractor must measure harmonics of each crane and submit the report to the purchaser to demonstrate harmonics are within the permissible values comply to EN standards.

All electrical and electronic equipment must be protected by transient surge suppressor installed as close as possible to the equipment which requires protection from the surge in power and control circuit the surge protective devices and installation must comply to EN standards. The devices must not influence the operation of the insulation monitoring devices.

#### **3.4.6.5. Field weakening (Hoist drive)**

It must be performed in the allowed frequency range of the inverter.

#### **3.4.6.6. Programmable logic controller (P.L.C.)**

The contractor must select programmable logic controllers to control all crane systems. One PLC shall be used as far as practical. The PLC will be powered from separate auxiliary transformer or another independent power supply. The PLC and its equipment must be located in the electrical quiet room in a separate cabinet.

The PLC must be used for, but not limited to, processing signals from position switches, push buttons, level switches, temperature monitors, etc. And for controlling motor drives, brakes, fans, solenoid valves, alarm indicators, monitoring, encoders and troubleshooting system, printer operation, etc. The PLC must have minimum two connection ports for data transfer utilizing standard protocols. One of the ports will utilize TCP/IP protocol.

Minimum 10% spare input and outputs shall be provided for future use.

Each board should have a separate locking device to hold it in its place. Plug-socket connections for interconnecting cables between units and/or terminal strips should be avoided wherever possible.

Emergency operation without PLC: Each drive control must include a bypass feature for operating the drives in emergency mode. This mode will enable operating the drives without PLC. In case of PLC failure this mode will enable operating the drive in reduced speed in order to extract the crane from a ship. The emergency operations without PLC will be enabled by key from E-Room and activated by push buttons from the operator cabin or E-room.

Operation without encoder: Gantry and trolley drives must include a bypass feature for operating the drives without encoder in decreased speed. This mode will enable operating the drives without encoder for extracting the crane from a ship. The operation without encoder will be enabled by key from E-Room and activated by the existing master controllers from the cabin. An event should be triggered while operating without encoder.

#### **3.4.6.7. Crane management system (CMS)**

The CMS system must work online and must be used also to:

- Monitor information in 4 categories – faults, indications status and events, in all crane systems, drives and auxiliary, to enable fast trouble shooting and resuming normal crane operation.
- Monitor status of the crane in several categories – crane off, crane on, idle without container, idle with container, crane has fault drive inhibited, crane has general fault.
- Display the condition, actual values, bit status, operating hours, counters, energy consumption for each drive, etc., of all kinds of signals relevant to the operator / technician.
- Analyse crane events with postmortem software which shall be incorporated in the CMS system.
- Printout the information in chronological order as they occur and to perform a statistical analysis of the faults per a defined period.
- Communicate directly to other sub and auxiliary systems, like inverter units.
- Faults or events or combined, that are stopping the crane operation will have a special remark in the system.
- Any fault or event will have a cross-reference to the appropriate drawing and shall be able to Jump to the specific page in the electrical drawing from the CMS screen.

CMS information must be detailed as far as possible.

CMS must have possibility to bypass some features in the PLC. All bypasses must be recorded in CMS.

CMS computer/server must not be a condition to operate the crane. Crane can operate also without CMS computer/server.

History file shall be used to keep past information for late processing. The CMS must provide a tool for postmortem analysis of the fault with a history of at least 30 days.

The CMS system will provide all relevant information on faults, I/Os, internal flags and markers to locate the source of the faults, its location on the crane and designation in the PLC software program.

CMS web server for remote connection: The CMS must provide remote view password protected with different access levels via web clients. There must be no time limit for connection.

The CMS will enable printing of data to printer and to a PDF file.

CMS will include backup & recovery software with the ability to store complete image of the operating system and data storage to internal and external devices.

CMS remote access between crane and office: A connection for data transfer via the HV trailing cable, from the CMS on the crane to a remote CMS system in the maintenance centre must be provided.

RCMS – remote landside server system: The system must interchange data with the RCMS server. A general layout of the CMS screens, trends and statistic reports must be submitted to Port of Koper during design review.

#### **3.4.6.8. Auxiliary transformers and Auxiliary Power supplies**

The transformers must be indoors dry type, self-cooled and shall be rated for the application requirements and for continuous operation. The transformer shall have 20% reserve power.

Each transformer must be protected by an individual overcurrent device on the primary (or secondary) side, rated or set at not more than 125% of the rated primary (or secondary) current of the transformer.

All transformers installed indoors and rated more than 1 KVA up to 100 KVA must have a separation of at least 300mm from combustible material unless separated by a fire-resistant, heat-insulating barrier.

The nameplate rating on the transformer must indicate the primary and the secondary connections. All power supplies must have a power indicator led which lit when output power is in the range and OK.

#### **3.4.7. Electrical drives (with AC motors)**

##### **3.4.7.1. General**

The general requirement for the electrical digital drives system is to provide reliable power for the rapid and precise handling of containers through the hoist, trolley and gantry motions. In addition, the system shall provide faster hoisting and lowering speeds for loads lighter than the rated load by using an automatic digital system integrated in the drives, while maintaining constant horsepower at the motors.

##### **3.4.7.2. Rating**

All the drives – hoist, boom hoist, trolley and long travel – motors and the inverter units, shall have adequate torque capability to provide the speeds and acceleration rates given above, in addition to having adequate thermal capacity for the load specified in the duty cycle.

##### **3.4.7.3. Drives control**

The power supply for the active front end (AFE) line inverter units must be rated 630 volts AC. Power supply to the AC motors of all the drives must be provided by inverter conversion and must be 630 VAC. All drive components must be of the same voltage rating.

The electrical drives for the main hoist, trolley, gantry travel, and boom hoist shall be stepless, regulated, reversing, adjustable control systems, with current limit and regenerative braking.

#### **3.4.8. Limit switches and control points**

The crane should be provided with properly designed limit switches, or PLC controlled limit function, which are actuated when a relevant drive is passing over a control point.

Limit switches should be so positioned that they stop the drive before any damage occurs, or trolley buffers touch the structure. Connecting box should be located adjacent to limit switches with integrated cable.

Limit switches installed outside the machinery or electrical control room shall be heavy-duty with minimum IP65 enclosures.

Rotating cam limit switches (RLS), when used, shall be heavy duty and shall be directly coupled to a suitable gear system. Each contact, in the rotating limit switch, shall be easily adjustable to operate at any point within the full range of the motion. The transmission shall be selected so that any contact that is opened while motion is in one direction will remain open throughout the remainder of the travel in that direction.

For safety reasons, emergency limit switches, such as over-speed, over hoist, etc., will not be a part of the "normal operation" limit switch arrangement. They should be installed separately so if there is a break in the "normal" limit switches, the emergency limit switch will be independent and shall stop the drive, with no apparent damage to any of the crane parts.

### **3.4.9. Control stations and indicating devices**

#### **3.4.9.1. General**

Selectors and master controllers, pushbuttons, limit switches, control switches and protective and indicating devices must be provided in the various control stations as required for the control and the operation of the crane and its systems.

The contractor must provide during the details design stage a comprehensive list and a schematic layout of all the control panels, their devices and their functions (operator's console, remote operation console/ desk (ROS station), other control stations and auxiliary panels.)

The control panels layouts and description must be submitted for Port of Koper approval.

All control wiring will terminate on terminal blocks appropriately marked with the corresponding terminal wire numbers. All control equipment will be sized for heavy-duty continuous operation.

#### **3.4.9.2. Operator's camera views**

##### **3.4.9.2.1. General**

The operators' cabin and checkers' cabin on sill beam must be equipped with monitor to provide view from different cameras on the crane.

The cameras must be with high resolution chip with improved light sensitivity.

All plugs must be IP69K waterproof resistant and must withstand high pressure cleaning. Cables must be high grade PUR jacket withstands IP69K and protected against mechanical influences (abrasion, cuts, tight tie wraps). Connectors must have contacts protected from corrosion. Equipment must be suitable for working at defined temperature range.

Crane must be equipped with cameras listed below:

- One camera on A-frame.
- One camera on operators' cabin service platform pointing between crane legs.
- One camera on operators' cabin service platform pointing vertically down.
- One camera on trolley pointing vertically down.
- One camera on sill beam close to the checkers' cabin pointing on trucks lane.
- Two cameras on waterside legs pointing on trucks lane.
- Four cameras on all four corners of the boogies.

The exact positions and layout of cameras must be submitted for Port of Koper approval.

#### **3.4.9.2.2. Camera's view in operators' cabin**

The monitor must be minimum 22" LED display 4K resolution with anti-scratch protection and ruggedized structure. The monitor must be installed on an adjustable robust arm suitable for weight of 50Kg. The monitor in the operators' cabin must have function of switching the picture from different cameras automatically between different situations:

- When the boom hoisting or lowering is activated – the picture in the monitor must switch to A-frame camera view.
- When the trolley pass the landside rail - the picture in the monitor must switch to camera on trolley which is pointing vertically down.
- When the spreader is close to the ground level (close to slowdown point) - the picture in the monitor must switch on two cameras on waterside legs pointing on trucks lane (pictures from both cameras must be shown on the monitor at the same time).
- When the crane is moving with gantry - the picture in the monitor must switch to cameras on the left side or right side of the direction which crane is moving (pictures from both cameras must be shown on the monitor at the same time).
- In all other positions of the crane there must be the picture on the monitor from camera on operators' cabin service platform pointing between crane legs.

For operating the crane with Remote Control Console supplier shall provide the same cameras view, but not limited to, if remote operation requires additional camera's view.

#### **3.4.9.2.3. Camera's view in checkers' cabin on sill beam**

The monitor must be minimum 27" LED display 4K resolution with anti-scratch protection and ruggedized structure. The monitor must be installed on an adjustable robust arm suitable for weight of 50Kg. The monitor in the checkers' cabin must have function of switching manually the picture from cameras on:

- One camera on sill beam close to the checkers' cabin pointing on trucks lane.
- Two cameras on waterside legs pointing on trucks lane.
- One camera on trolley pointing vertically down.

Checker must have buttons for switching the picture between each camera (each button must activate the view only from one camera) and one button to show the picture to all four cameras view at the same time.

The crane supplier shall guaranty that all equipment inside the checker's cabin can be moved to remote location and the same functionality can be achieved from "remote checker's desk/office" after crane handover.

#### **3.4.10. Overload and slack rope protection**

##### **3.4.10.1. General**

A digital load measuring system (LMS) must be installed to provide overload and slack rope protection for each rope separately in all modes of operation. The LMS system must meet all the safety standards.

The system will measure the load of the hoist drives – individual and summed as practical.

The system must be fully controlled by the PLC of the crane and fully monitored by the CMS.

The weight of the head-block and of the spreader (tare load) must be adjustable to zero by the tare load suppression system.

### **3.4.10.2. Overload**

The overload protection system will be set to operate under overload conditions of minimum 110%. Further hoisting will be blocked and the fault indication lamp and overload lamp will light. Lowering will be possible. The system must allow operation with eccentric loads as defined in this specification.

In heavy lift operation, the overload system will protect the crane also from over travelling. Trolley travel forward will be stopped electrically when reaching the load vs. reach curve.

The contractor must present the method of overload measuring and overload switching values (individual and summed) for all working modes.

### **3.4.10.3. Slack rope (minimum load)**

The same or additional load measuring system must provide the slack rope protection.

If the hanging load is less than the preset minimum load, lowering is blocked, and the slack rope indication lamp will light. In this condition raising speed is limited to low speed (adjustable) until minimum load is reached.

The minimum load set value (slack rope) will be interlocked with the spreader twist lock on / off operation. A command to close or open the twist lock, initiated by the operator, will be blocked and cancelled if the crane is not in a slack condition.

A special override switch will be provided in the E-room to enable further lowering in a slack rope situation for maintenance tasks such as spreader, headblock or ropes replacement.

## **3.4.11. Anti-collision system**

### **3.4.11.1. General**

Anti-collision systems shall be design to protest collisions during manual or semi-automatic crane operations. Systems between two neighbouring cranes must not interfere with each other.

All anti-collisions systems shall be individually by-passed from CMS.

### **3.4.11.2. Crane to crane**

An anti-collision system must be provided, on each side of the crane – left, right, to prevent collision between two adjacent cranes moving one towards the other. The system will be designed in such a way, that it will sense the movement of one crane towards the other and will reduce the speed electrically, and stop the crane, before the buffers come into contact with the other crane.

The contractor must supply, install and connect the necessary reflectors or other devices on adjacent cranes – both sides as applicable.

### **3.4.11.3. Crane to obstacle**

An anti-collision system must be provided, on each side of the crane – left, right, to prevent collision between crane and obstacles. The system will be designed in such a way, that it will sense the movement of one crane towards the obstacle and will reduce the speed electrically, and stop the crane, before the buffers come into contact with the obstacle.



#### **3.4.11.4. Boom anti-collision system**

System must protect collision between crane and vessel when boom is in all positions (lower/upper).

System must allow to load/unload 20 ft container on position near to vessel bridge.

#### **3.4.11.5. Spreader anti-collision system**

System must protect collision between empty spreader or container attached to the spreader with containers stored on the vessel.

### **3.4.12. Fire detection and extinguishing system**

#### **3.4.12.1. General**

According to Port safety regulations, crane electrical rooms must be equipped with automatic fire detection and extinguishing system.

The system must be supplied from an approved supplier and will include (but not be limited to):

- Detectors – each with indicating lamp, control panels, alarm horns, external flashing lamps, extinguishing gas cylinders, manual switch for fire extinguishing, pressure switches, electrical / mechanical installations, manual actuators, etc.

In case the fire suppression system is triggered during operation, then the crane operation shall be stopped via the PLC and warnings activated.

As the electrical room shall have to withhold overpressure in case of fire suppression action, cables entry must be fully sealed by systems ("Roxtec" or similar) where cables are required to enter the room.

The electrical room is to be integrity tested due to fire system installed. This shall be carried out both at manufacturing plant and again during commissioning of the cranes. A certificate shall be given to the Buyer after each test is completed. The tests shall be witnessed by third party inspector.

The system must be purchased from a vendor who has an active service facility in Slovenia. The system, vendor and service facility are subject to Port of Koper approval during the design review.

#### **3.4.12.2. Detecting zones**

There must be separate zones at the following locations:

- HV switchgear room.
- HV transformer room.
- E-room cubicle (2 zones for each open space cubicle wider than 100 cm. for cross-zone operation).
- E-room space (ceiling detectors).

The fire detection and extinguishing system must be suitable for the special working conditions on cranes with high electromagnetic induction, harmonic distortions, and spikes. Dust and high humidity must be considered as part of the special conditions.

#### **3.4.12.3. Fire extinguishers**

CO2 dry chemical or equivalent manually operated fire extinguishers with CE compliance markings compliant with ISO 5923 and ISO 7165 must installed at least in:



- 1) Operator's cabin,
- 2) Machinery house,
- 3) Electrical room,
- 4) Gantry level (at seaside & waterside),
- 5) Checker's cabin,
- 6) Personal lift/elevator

More fire extinguishers can be provided by applicable safety regulations.

The number of extinguishers at each location shall be defined by crane supplier and included in the crane technical documentation.

### **3.4.13. Lightening systems**

General illumination requirements:

Access way and operating floodlights must be LED technology and include LED and control gear with a minimum operating life of 50,000 operating hours. The manufacturer of floodlights can be Disano or Nanhua. The fixture should be certified by independent certified testing authorities to be electrically safe and be CE approved. Fixtures must comply to EN standards.

Fixtures should be built to handle shock and vibration consistent with mobile container handling equipment without the need for vibration dampening material. All fixtures must be supplied with a repair parts list, be supported locally and maintain a minimum of an IP66 rating.

The light source must have a minimum colour rendering index (CRI) of 70. Floodlight correlated colour temperature (CCT) must be max 3000K and interior and accessway fixtures max 4000K. Floodlights should be of modular design have 10° lockable aiming capability and be modular in design to allow for simple repair and flexibility in fixture performance. Modules shall incorporate cooling design and elements to dissipate water and heat. Lenses must be protected with a separate UV resistant, polycarbonate impact cover, be interchangeable, gasketed and replaceable from the front of the fixture. LED junction temperature data must be provided upon request and floodlights must include a minimum of 20KA surge protection.

The control gear should be 120-277V, fully potted, have a power factor of  $>.92$  (at 230V) and offer over-voltage, over-temperature, over current and short circuit protection. Fixtures shall have harmonic interference THD no greater than 20%. Control gear must be protected from the environment with additional secondary vented cover to prevent direct UV exposure. Fixtures must be outdoor marine-grade with low copper content aluminium, stainless steel fasteners, and safety cables on fixtures over 150W, and have a minimum ambient operating temperature of  $-20^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ .

Floodlight LED fixtures must have optical lenses with minimum 15° beam angle mechanically fastened to the LED module. LED circuit boards shall be sealed against moisture.

The illumination systems must be designed to provide sufficient illumination to all operation areas of the crane including spreader travel paths, trolley, boom and legs.

All Floodlights must be provided with external safety chains securing the floodlight fixture to the crane structure.

Location of the floodlight must be symmetrical and shall assure uniformity of the illumination.

For maintenance purposes, all fixtures must be repairable and accessible from walkways or access platforms.

All lights on the boom (floodlights, maintenance lights...) must switch off automatically when the boom is not in the down position.

#### **3.4.13.1. Stairs and walkways**

A system of outdoor lighting must be provided. The lighting fixtures maintenance free LED aluminium enclosure or stainless steel grade 316 with minimal IK rating of IK08 corresponding to

IEC62262 and minimal ingress protection to IP66. Fixtures must be suitable to work in sea shore ambiance, UV radiation and vibration resistant and suitable for marine application.

LED fixtures must be properly placed to illuminate stairways, platforms and walkways on the crane. The system must provide an average of 30 lux of illumination on all ladders, stairs, walkways, near the floodlight fixtures and junction boxes (outside and inside.) Lighting must be controlled from a multi-circuit panel-board in the E-room. Two-way and three-way switches must be installed on the ladders, stairs and walkways to conveniently control this lighting system. be controlled from a multi-circuit panel-board in the E-room. Two-way and three-way switches must be installed on the ladders, stairs and walkways to conveniently control this lighting system.

Near the entrance to M-rooms, E-room, Elevator stations, checker's cabin, drivers cabin the fixture must provide an average of min. 50 lux illumination.

#### **3.4.13.2. Machinery room and E-room**

Modular linear LED fixtures must be used to illuminate the electrical room and machinery house. Maintained average illumination levels shall be 300lux within the electrical room and machinery house measured at the floor level. Fixtures must include replaceable diffuse lens or cover to provide maximum illumination and optics designed to minimize shadows from equipment.

Local switching must be provided at the access doors.

#### **3.4.13.3. Operator and controller cabs**

The lighting level in the operator's cabin must be adjustable by the operator from 30-100%. Maintained average illumination level must be 300lux.

#### **3.4.13.4. Inside structural elements**

Sufficient fluorescent lighting with an average of 30 LUX of illumination must be provided to ensure safe passage through the structure elements (legs, girders, etc.) where is needed.

#### **3.4.13.5. Floodlights – work areas**

The STS floodlighting system must consist of modular LED floodlights mounted to the main girder sections, trolley, gantry top frame, gantry side girders and cabin.

Illumination levels must be calculated with an illumination loss factor of 0.85 and without trolley floodlights illuminated and must be independent to quay lampposts and moonlight. Illumination level shall not exceed a 3:1 ratio within 3m radius and illumination levels shall be:

- min. 200 lux under trolley,
- min. 100 lux under boom and main girder

Switching on/off of the floodlight must be fully controlled from the operator's cabs, e-room- and ground level.

The floodlights installed underneath the W.S. boom shall turn on/off automatically in accordance with the boom position.

Floodlight arrangement can be done up to contractor calculations. The contractor must provide a computer generated light study for each system, demonstrating that the luminaires and locations proposed satisfy the lighting level requirements defined in this section. Fixture design and lighting calculation must limit light pollution. Each lighting study must be subject to the Port of Koper approval.

#### **3.4.13.6. Guard lights**

The four floodlights (gantry top frame) shall serve to light the quay. These floodlights shall be controlled as follows:

- Together with all other floodlights.
- Push button on the ground level to switch on/off this lights separately from other.

#### **3.4.13.7. Aviation warning lights**

The crane must be equipped with aviation warning lights units with red lenses. These lights must be installed on the end of the W.S. boom (highest point when boom is raised).

- The units shall be supplied with a maintenance free battery charger equipped with a photoelectric switch for automatic control based on ambient light level.
- The battery shall be supervised for low voltage (warning to the operator.) The charger shall be supervised for non-charging condition.
- Backup time of the battery will be 6 hours.

#### **3.4.13.8. Emergency lighting**

Fixed fixtures especially designed for emergency lighting must be provided in the E-room, cabins, M-room, etc.

#### **3.4.14. Receptacles, switches, etc.**

##### **3.4.14.1. General**

Switches, receptacles, and cord connectors must be CEE standard. Outdoor switches and receptacles must be at least IP54 protected, in rubber, UV resistant enclosures with switches having external operators and receptacles having screw caps and gaskets. Receptacles must be of the straight blade three-wire or five-wire grounding type suitable for operation of conventional hand tools.

- 16A receptacles will be 230V 1 phase 3 wires.
- 32A receptacles will be 400V 3 phase 5 wires.

Type and model, to be approved by the Port of Koper during the design review.

Three phase receptacles must be CEE type and single-phase receptacles must be Schuko type.

Three phase receptacles must be protected by a circuit breaker type K.

Single phase receptacles must be protected by a circuit breaker type C.

#### **3.4.15. Infrastructure and networking**

##### **3.4.15.1. Data transfer system (DTS)**

A complete Data Transfer System (DTS) must be installed on the crane, using grid of fibre-optic cables placed throughout the crane. The system must be able to transfer all the operational data – TOS (Terminal operation system) and crane PLC + CMS data. Separate data nets must be used for each of the TOS and for the PLC + CMS.

Fibre-optic to copper converters, with standard connection ports for PC must be installed at least in the following locations: E-room (in each separate compartment,) M-rooms, operator cab and

checkers' cabs. Each converter shall terminate with 4 ports "socket," type RJ-45, Stewart or equivalent (screened, supporting 8 cores connection, complying with category 7 – class F).

### **3.4.15.2. Power supply and UPS**

All networking and infrastructure components (switches, converters, OCR processors, TPS controllers) shall be powered from the crane's UPS system. UPS autonomy shall cover at least 15 minutes of full load to guarantee safe shutdown or recovery of data. Critical network elements shall be dual powered (A/B feeds).

UPS functionality can be covered by another IT equipment related UPS on the crane.

### **3.4.16. OCR system**

#### **3.4.16.1. Definitions & abbreviations**

##### *Terminal Operating System (TOS)*

The integrated terminal-management suite supplied by TIDEWORKS Technology, comprising Spinnaker Planning System, Mainsail Terminal Management System and Traffic Control. The TOS coordinates vessel, yard and gate operations and provides real time job instructions to cranes and mobile equipment. All crane subsystems shall interface with the TOS through secure, authenticated APIs or message brokers to exchange operational data and confirmations.

##### *EC2 – Edicenter 2 Platform*

The Port of Koper's electronic-data interchange (EDI) gateway used for exchange of EDIFACT and other structured messages with shipping lines and external stakeholders. EC2 is directly connected to the TOS and shall receive event notifications from crane automation and OCR systems whenever required by operational workflows.

##### *OCR – Optical Character Recognition System*

The vision-based subsystem automatically reading and recording container numbers, ISO codes, IMO labels, door orientation, seal presence, visible damage and yard-tractor IDs. OCR generates digital event records and image archives and transmits data to the OCR server and to the TOS.

##### *API – Application Programming Interface*

A defined software interface using REST/JSON or AMQP protocols for exchanging structured data between crane subsystems, TOS and EC2. All APIs shall be authenticated, encrypted and version-controlled.

##### *FAT – Factory Acceptance Test*

Pre-delivery test carried out at the vendor's facility to verify functional compliance, performance, cybersecurity configuration and integration readiness.

##### *SAT – Site Acceptance Test*

On-site validation of the installed system under operational conditions, verifying performance, accuracy, latency and interoperability with the TOS and EC2.

##### *TLS – Transport Layer Security*

Encryption protocol (version 1.3 or higher) used to secure all data communications between crane systems, RCMS, ROS, OCR servers and the TOS.

##### *SIEM – Security Information and Event Management*

Centralised log-management and alerting platform (integrated with the Port of Koper Azure environment) receiving logs from cranes, OCR servers and RCMS components for cyber-security monitoring and audit purposes.

*HMI – Human–Machine Interface*

The operator interface used in crane cabins and ROS workstations to display status, alarms, automation sequences and authorisation prompts.

*GDPR – General Data Protection Regulation (EU 2016/679)*

European regulation governing the protection of personal data. All OCR image storage and audit-trail data shall comply with GDPR requirements for retention, anonymisation and lawful processing.

*KPI – Key Performance Indicator*

Quantifiable performance metric used to measure system effectiveness, including but not limited to OCR accuracy, network latency, system availability and response time to alarms.

### **3.4.16.2. Functional description**

An OCR system shall automatically read, recognize, and record container IDs and markings each time a unit is handled by the crane. Cameras shall capture images on the quay side; the system shall simultaneously capture images of container IDs on minimum two sides to ensure highly accurate, reliable recognition. As soon as twistlocks are unlocked, the system shall analyse the data and send extracted information to the OCR server. Capture and analysis shall occur continuously without slowing crane motions and shall perform reliably under day/night, rain, fog, or glare conditions. The OCR shall receive real-time twist-lock, trolley, and hoist data from the PLC to trigger image capture at the appropriate moment. Processed results shall be transmitted immediately to the OCR server and TOS using the DTS integration VLAN.

The system shall handle standard container sizes 20', 40', 45' and twin-lift 2×20'. It shall support all truck lanes under the portal and back-reach area. Image capture shall occur while loading/unloading without holding the operation. The system shall use minimal equipment with high performance and shall operate without special illumination fixtures.

### **3.4.16.3. Data record contents**

Each handling event shall generate a structured record containing, at a minimum:

- Crane ID and Job ID;
- Trolley/hoist coordinates (optionally converted to vessel bay–row–tier);
- Container ID (ISO 6346);
- ISO size/type code;
- Door orientation (forward/aft);
- Seal presence indicator and cropped seal image;
- IMO hazard label class and cropped image;
- Damage flag and roof/side images;
- Yard tractor ID (from roof OCR or RFID or similar systems);
- Timestamp (PTP-synchronised);
- Confidence values for each field;
- Exception codes for the events of a failed read, an IMO mismatch, a missing seal, etc.

#### **3.4.16.4. Performance requirements**

Accuracy rates requirement of the OCR system while TOS Vessel discharge/loading data is not included:

- Container ID  $\geq 98 \%$
- ISO Code  $\geq 97 \%$
- IMO Label classification  $\geq 85 \%$
- Seal presence  $\geq 95 \%$  (excluding twin-lift exceptions)
- Yard Tractor ID  $\geq 99 \%$

The overall system accuracy should be over 95%. Accuracy shall be demonstrated during SAT over  $\geq 1200$  normal operating cycles. Latency from capture to TOS message shall not exceed 2 s; duplicate/false reads  $\leq 0.5 \%$ .

#### **3.4.16.5. Output, storage and user interface**

OCR system should support dual-cycling operations (load and unload container on the same tractor).

The OCR processor shall provide graphical user interface for monitoring the output values. In addition to the monitoring software the system shall store the recorded values in data storage server in the IT data centre.

Retention shall be enforced automatically with tiering and secure deletion; archival tiers shall support object immutability and legal holds.

#### **3.4.16.6. OCR cameras and installation**

Plugs shall be IP69K waterproof resistant and shall withstand high pressure cleaning. Cable shall be high grade heavily shielded outdoor network cable PUR jacket withstands IP69K and protected against mechanical influences (abrasion, cuts, tight tie wraps). Connectors shall have gold plated contacts to protect from corrosion. Camera shall be overall shielded on cable and camera plugs to harshest EMC environments.

There shall be an indication led on the camera to monitor the existence of power.

The installation and location of the cameras must take into account accessibility for maintenance, cleaning and repair.

The design and installation of the system shall be made by the OCR OEM manufacturer service.

The design shall be submitted to Port of Koper for approval during design review.

#### **3.4.16.7. OCR landside server**

OCR landside server shall be located in the port IT/OT department on a temperature-controlled environment. The contractor shall submit the full installation software package and instruction for installing in virtual environment (VMWare/Hyper-V).

The server shall provide exception handling and review capabilities.

The following functionality shall be provided:

- Interact and consolidate the data from multiple Crane OCR systems.
- Integrate with the TOS system
- Provide Archive for all OCR events and damage images.
- The system will allow the user to search certain data by the following criteria and not limited to:

(1) Search by Container ID



- (2) Search by Event ID
- (3) Search by Crane ID
- (4) Search by specific time range

Server maintenance: The server shall manage user accounts and allow only the administrator to maintain the server archive and clean up mechanism.

The supplier should provide the amount of storage capacity that will be needed for back up of images, events, etc for minimum of 30 days.

Operational and archival retention shall be as follows:

Data Type	Operational Storage	Archive Storage
OCR events	90 days	3 years
Recognition images	60 days	3 years
Damage images	90 days	3 years (5 years optional)
System logs	180 days	2 years
User audit trails	180 days	5 years

Archival storage shall enforce immutability and legal hold support per GDPR (EU 2016/679).

### **3.4.16.8. Crane PLC interface**

The OCR system shall be interfacing directly with the crane PLC in order to capture the requested data. An event on the CMS shall be triggered to monitor the active connection to the OCR processor.

### **3.4.17. TPS – Truck positioning system (signalling system for yard tractors)**

The cranes must be equipped with light signalling system for yard tractors.

#### **3.4.17.1. System description**

The system indicates the correct stop position of trucks for loading/unloading automatically without interaction of a signal man.

The system could be used for (i) front 20' (ii) back 20' (iii) 40' containers and (iv) 2X20' containers on the truck. The system shall scan the working lanes and shall be able to position vehicle in more independent lanes. The system shall be parameterized to all types of terminal trailers in the port and not be limited to one direction of driving (system shall detect Yard tractors from both sides of the crane).

Accuracy Rate:  $\pm 5\text{cm}$

The system must be capable to automatically adjust the spreader skew to the truck below the crane.

The systems shall use 3D laser scanners with the following specification:

Degree of protection according to EN60529 – min. IP67

Automatic calibration capabilities. Laser/Class according to EN60825-1 and 21CFR1040.10: Class 1 (Safe for the eyes).

Indication for the truck driver will be realized by using signalling outdoor LED Traffic lights mounted on each crane corner in a good visible range on both sides of the crane (total of 4 traffic LED signalling units).

The system shall use traffic lights to inform driver during tractor positioning.

The traffic lights shall have top covers to prevent penetration of sunlight rays and shall be fixed using stainless steel bracket and fastened with chains to prevent falling down to the lane.

Function description: for the indication of the correct position the traffic lights mounted on the boogies are used. The lamps will light up when the System controller detect the truck on the lanes. The tractor driver drives to the position and if the green light is lighting the tractor is in the correct



position for getting/sending the container. In case he drives too far or too narrow, the yellow/red lights shine. The contractor shall provide full data with regard to the equipment.

The system shall be installed on the gantry – sill beams and side girders. It shall be operational and clearly visible under all weather and working conditions.

The TPS system controller shall be installed in the E-room.

The contractor shall design the appropriate maintenance access to the system components.

All details and dimensions will be given during design review.

The system will be submitted to Port of Koper for approval.

#### **3.4.17.2. Information to the crane PLC**

The system shall provide the following information to the crane PLC:

Lane selection: the crane driver shall select the lane where the truck will be positioned:

- (1) and shall send the data to the crane so in semi-automatic operation the trolley will stop in the selected (by crane operator) lane.
- (2) Skew alignment: should a vehicle come in an angle, the information is sent to the skew control system which sets the angle of the spreader automatically to align with the vehicle.
- (3) Logic indication for Truck in position: the indication will alert the crane driver if truck is in position for loading/unloading a container.
- (4) Container Size and type: the system shall send details of size and type of containers, for example but not limited to: 1x20", 2x20", 1x40" or 1x45" in case of loading to vessel.

#### **3.4.18. Ship profiling system**

The crane shall have a laser-based ship scanning system generating a 3D profile of a bay on the vessel for use in order to provide the optimum safe path for the Semi-Automatic operation. The system shall avoid obstacles over the trolley and hoist movements and guarantee fast and safe operation over the vessel.

The layout of the ship containers shall be shown in the CMS system (there shall be a picture of the rows in the ship bay with the height of each container. The distance remaining until touchdown shall be indicated during lowering).

The system shall be capable of detecting catwalks, hatch covers, overlapping containers, and vessel displacement. It must provide anti-collision logic for both the trolley and hoist mechanisms in all directions, ensuring safe and reliable operation. Additionally, the system should enable soft-landing functions on both the sea and land sides to minimize impact and enhance equipment longevity.

Integration with PLC interlocks is required, and the system must generate CMS alarms whenever obstructions are detected.

Real-time 3D data shall be continuously shared with the CMS/RCMS and ROS platforms to ensure synchronized awareness and operational visibility. The operator displays should present container stacks and clearance zones with clearly defined colour-coded safety margins to assist in visual risk assessment. Furthermore, all event and alarm logs shall be archived within the RCMS for post-incident analysis and continuous improvement of safety and operational efficiency.

#### **3.4.19. Automatic slow down control (Spreader)**

Cranes must have an automatic slow down control at the landside and waterside positions while lowering.

#### **3.4.19.1. Land side position (truck lanes)**

There shall be a software limit switch for reducing hoist speed while lowering the spreader towards the truck/trailer. The control point shall be calculated to achieve soft landing of the container on the truck/trailer (when spreader is locked with a container) and to achieve soft landing of the spreader to the container on the trailer/truck (when spreader is unlocked, without a container).

#### **3.4.19.2. Water side position (above vessel bay)**

There shall be a software limit switch for reducing hoist speed while lowering the spreader towards the containers on the ship. This limit switch shall be achieved by scanning the bay. The PLC shall store the heights of all containers in one bay (top level containers – one 40' bay or left 20' and right 20'). The PLC shall automatically learn the slot positions (bay rows) and the height of the containers in the vessel while the operator is unloading/loading the containers. The slowdown function shall produce a soft landing of the spreader towards the container in the ship (when spreader is unlocked) or if the spreader is locked with a container, it will produce a soft landing of the container towards the ship top level.

There shall be a lamp in the operator cabin indicating that the current slot (varies by the trolley position above the ship) has automatic slow down.

The slowdown of the spreader must be automatic unless the operator sets it to manual operation.

### **3.4.20. Operation modes**

Mode selection, command priority, and interlocks shall be handled by the PLC in accordance with safety hierarchy and Port of Koper operational policy. The CMS/RCMS shall continuously record the selected mode, operator ID, and transition events for audit purposes. The crane shall automatically fall back to Manual Mode after any emergency stop or major alarm.

All automatic motions shall remain within the boundaries of the anti-collision envelope provided by the Ship Profiling System.

Safety devices and limit switches shall remain active in all modes and shall not be bypassed by software or remote commands.

A "dead-man" enable device shall be required for all motion controls, including remote joystick commands.

The cranes shall have the option for manually controlled operation or semi-automatic operation. Manual and semi-automatic operation shall be allowed from operator cabin (on STS crane) and from remote desk (ROS).

#### **3.4.20.1. Manual operation**

In this mode all crane motions are commanded directly by the operator from the cabin console. The PLC shall supervise interlocks for overload, snag, wind, and position limits but shall not generate automatic sequences. The CMS shall display real-time load, wind, and alarm data; all operator commands shall be logged with timestamps.

Transition to Semi-Automatic or Remote Mode shall be inhibited until the spreader is at safe park height and all interlocks are cleared.

#### **3.4.20.2. Semi-automatic operation**

Under the semi-automatic operation, the operation of the crane shall be controlled by PLC system as far as possible within the limits of safety.

Remark: each automatic operation shall be displayed on the driver monitor and confirmed by the crane operator "release" push button.

#### **3.4.20.2.1. Loading cycle**

- (1) The crane operator selects the yard tractor lane position.
- (2) The OCR system shall detect yard tractor ID and container details and RFID system detect yard tractor ID.
- (3) The container details shall be checked/verified with the vessel loading list from TOS.
- (4) The PLC shall automatically position the spreader above the yard tractor and automatically align the spreader in case the tractor is not straight.
- (5) The lowering shall stop at safe height above yard tractor.
- (6) The operator shall manually lower the spreader on the container.
- (7) The system should recognize the size of the single container 1x20', 1x40', 1x45' or the presence of twin (2x20') containers and prevent to land the spreader on the container(s) in the spreader is not in the appropriate mode (single/twin).
- (8) Once spreader is landed on the container the operator shall manually lock the spreader. and manually hoist the spreader 2 meters above the truck to ensure safe release from truck.
- (9) Target positioning on vessel shall be extracted from the Vessel loading list and shall be displayed on the operator monitor – another solution shall be provided in the case that TOS Vessel discharge/loading does not exist to enable the operator easily configure the target position by mean of rows on vessel or ordered loading on the vessel (increase or decrease row for each new container or stay on the same row).
- (10) The operator shall review the automatic command and authorize the operation by a push button.
- (11) The PLC shall hoist the spreader and move the trolley automatically to the target position on vessel using fast, safe optimal path with the assist of laser profile system and other safety elements if needed.
- (12) The container shall be final positioned on the vessel by manual operation.
- (13) The operator shall unlock the spreader from the container and manually hoist the spreader to safe height of at least 2 meters.
- (14) At the moment when the spreader twist locks are opened, PLC shall send job confirmation which should include position on spreader (hoist and trolley values) to the TOS. In case loaded position mismatch a message "Loading position mismatch" shall be recorded in the system and inform operator (crane driver / checker) that the reading of the loading position mismatch and allow the operator to correct/confirm loaded position manually,
- (15) The PLC shall automatically move the spreader back to truck lane after the operator press the release button.
- (16) Repeat load cycle from segment no. 1

#### **3.4.20.2.2. Unloading cycle**

- (1) Container position on vessel shall be extracted from the Vessel discharge and shall be displayed on the operator monitor – another solution shall be provided in the case that TOS Vessel discharge does not exist to enable the operator easily configure the container position by mean of rows on vessel or ordered loading on the vessel (increase or decrease row for each new container or stay on the same row).
- (2) The operator shall review the automatic command and authorize the operation by a push button.
- (3) The PLC shall hoist the spreader and move the trolley automatically to the target position on vessel (approx. 1,5 m above the container) using fast, safe optimal path with the assist of laser profile system.

- (4) The spreader shall be final positioned and landed on the container by the manual operation.
- (5) The operator shall manually lock the spreader twist locks on the container.
- (6) At the moment when the spreader twist lock locked, PLC shall check position of spreader (hoist and trolley values). In case container position mismatch, a message "Unloading position mismatch" shall be recorded in the system and inform operator (crane driver / checker) that the reading of the unloading position mismatch.
- (7) The operator shall manually hoist the spreader to safe height of at least 2 meters.
- (8) The operator shall review the semi-automatic drive to truck positioning and shall authorize the operation by the release button.
- (9) The PLC should move the spreader over the seaside cill beam and stop it. The crane driver should press the release button to enable transition of the spreader to the target position on the selected yard tractor lane position.
- (10) The PLC shall automatically position the container above the yard tractor and automatically align the container in case the tractor is not straight.
- (11) The lowering shall stop at safe height of 8 meters above yard tractor.
- (12) The operator shall manually lower the container from the safe height to the yard tractor and manually unlock the spreader while spreader landed.
- (13) When the twist lock change status (to unlocked) the OCR system shall detect yard tractor ID and container data sends to TOS.
- (14) The operator shall manually hoist the spreader to at least 2 meters.
- (15) Repeat unload cycle from segment no. 1.

The location of monitor and TOS integration protocol to be approved by Port of Koper during the design review.

### **3.4.21. TOS integration**

#### **3.4.21.1. General requirements**

The crane automation system (PLC, OCR, TPS, CMS) shall integrate with the Terminal Operating System (TOS) to ensure accurate, real-time coordination of container moves. Integration shall support both loading and discharge operations, dual-cycling (load/unload on same tractor), and exceptional cases where no TOS vessel plan is available.

The Contractor shall design, implement, and commission a complete, secure, and fully tested data-exchange interface between each STS crane PLC/CMS, OCR and the Port of Koper Terminal Operating System (TIDEWORKS Technology – Spinnaker, Mainsail and Traffic Control) messaging platform.

The objective is to ensure real-time, loss-free transfer of job orders, confirmations, and operational events between the crane automation environment and terminal information systems.

The Contractor shall prepare an Interface Control Document (ICD) describing in full detail all data exchanges between crane automation systems and the Port of Koper TOS (TIDEWORKS). The ICD shall include network parameters, API specifications, message structures, error handling, security, and testing procedures.

The ICD shall be developed jointly with the TOS provider and approved by the Port IT Department before commencement of FAT.

The interface shall be bi-directional:

- From TOS → Crane
- From Crane → TOS

The integration protocol and data model shall be subject to review and approval by Port of Koper during the design review phase. The coordination between TOS and the automation system and the implementation of the described integration shall be in the responsibility of the contractor.

#### **3.4.21.2. Data exchange and synchronisation**

- Events from Crane to TOS:
  - o Container ID, ISO code, door orientation.
  - o Yard tractor ID (OCR/RFID).
  - o Vessel cell location (via bay plan mapping).
  - o Seal presence and seal images.
  - o IMO placard classification and cropped images.
  - o Damage detection events with supporting imagery.
  - o Job confirmation with spreader position at lock/unlock.
  - o Exception codes: Failed read, IMO mismatch, Seal missing, Position mismatch.
- Events from TOS to Crane:
  - o Vessel stowage plan and job instructions.
  - o Assignment of yard tractor to lane.
  - o Confirmation of completed hand-off (container ↔ tractor).
  - o Updates to vessel or yard plan (out-of-sequence moves, changes).
- Timing Requirements:
  - o Job instructions shall be available to the operator terminal in <1 s from TOS dispatch.
  - o Crane confirmation messages shall be transmitted within 500 ms of twist lock event capture.
  - o Retries with exponential back-off must be supported for transient network faults.
- Synchronization:
  - o System shall operate both with and without TOS plan data.
  - o When no TOS data exists, the OCR events shall still be logged, flagged as "no cross-reference," and stored in the server archive.

#### **3.4.21.3. Coordination with TOS provider**

The Contractor shall establish direct technical coordination with TIDEWORKS Technology, the Port of Koper TOS provider, to define and agree on:

- the integration architecture and API specifications,
- authentication and security model,
- message field mappings, and
- testing and certification procedures required for production deployment.

The Contractor shall bear full responsibility for achieving a working, validated interface that meets the functional and performance requirements of both this Specification and the TOS provider.

All communication protocols, schema versions, and endpoint definitions shall be agreed in writing between the Contractor, TIDEWORKS, and the Port IT department prior to commencing system testing.

#### **3.4.21.4. Security and reliability**

Communication between crane systems and TOS shall use encrypted channels (TLS, mutual authentication). Each message shall contain a unique correlation ID to ensure traceability across OCR, PLC, TPS, and TOS logs. API keys and certificates shall have configurable lifetimes and be stored in a secure secrets manager. Store-and-forward buffering shall guarantee no data loss during TOS outage or network downtime.

All messages shall be idempotent to prevent duplication of events.

### **3.4.22. Power regeneration**

Cranes must be equipped with an integrated power regeneration system. This system shall be capable of capturing and converting excess energy generated during crane operations - such as hoisting, lowering, and braking into electrical power. The regenerated energy must be feed back into the electrical grid.

Drives & Motors: All major motors must be capable of four-quadrant operation

Regeneration must remain stable under varying load cycles (rapid lowering, sudden braking, partial loads).

Drive systems must guarantee smooth transitions between motoring and regenerating modes, with no mechanical shocks.

Harmonic distortion shall be monitored and limited according to EN 61000-2-12; the contractor shall submit harmonic test reports for each regenerative unit.

Proper grounding, filtering, and EMC shielding shall be provided to prevent regenerative currents from causing disturbances in other port systems

The regenerative system must comply with grid connection standards such as IEC 61000-3-4 and local utility regulations.

Synchronization between AFE units and the port's medium voltage supply must be ensured to avoid instability or resonance.

The CMS (Crane Management System) should include a dedicated energy meter per motor group to track regenerated energy separately from consumption.

Energy Reporting: Operation manuals must include procedures for monitoring regenerated energy per cycle and per month

Over-voltage and over-current protection must be built into regenerative units to avoid back-feeding faults into the grid.

Energy Performance Guarantee: Supplier must guarantee a minimum level of energy regeneration (e.g.,  $\geq 15\%$  of consumed energy during a typical container cycle).

Operator Training: Training program should include energy-efficient crane operation and how regenerative braking affects handling.

The contractor must provide detailed maintenance instructions for regenerative drives, including testing procedures for AFE modules and recommended spare parts (e.g., IGBT modules, DC-link capacitors).

Maintenance: Include testing procedures for regenerative modules, capacitor health checks, and recommended spare parts lists.

## **3.5. Main technical and design demands**

### **3.5.1. Main frame construction**

The cranes must be designed and constructed in accordance with latest version of FEM standards for heavy lifting appliances.

The manufacturer must submit to the purchaser a full list and original booklets of the latest versions of applicable standards to be used in designing of the cranes.

The main frame must be an all-welded, utilizing the most modern design techniques to provide an attractive structure with a minimum of maintenance. The design shall avoid pockets where water may be collected. Bolted special joints or bolted connections of box type or other closed connections where water seepage may occur shall be equipped with steel pipe drains. All extruded box or pipe members shall be sealed to prevent condensation and internal corrosion. All other members shall be sealed as far as practical.



Field connections must be made with high-tension bolts.  
Field welding must be avoided as far as practical.

#### **3.5.1.1. Boom construction**

The entire trolley rail and components attached to boom construction must be accessible for easy maintenance. Clear and safe walkway with handrails must be provided on entire length of the boom / girder.

Trolley rail must be welded or clamped on entire length of the boom girder by rail clamps and damping pads under the trolley rail, special attention shall be taken at the boom hinge point. The cut in the rails at the boom hinge point must ensure smooth pass and must prevent any hit or jump when the trolley is passing over the hinge point.

**Manufacturers must provide evidence that they have manufactured cranes with offered boom type/structure for at least 10 years and are still operational without any structural problems (mandatory).**

#### **3.5.2. Main hoist system**

##### **3.5.2.1. Configuration**

The main hoist drive system for the crane must consist of two AC motors with two calliper disc brakes driving through a foot mounted gear reducer and must have at least the following features:

- The main hoist drive reduction gearbox must be a totally enclosed, oil bath lubricated type.
- Two thruster calliper operated disc brakes must be fitted on the high-speed pinion shaft. Each brake must be rated at a minimum of 150% full load motor torque and must be capable of stopping and holding the maximum rated load from full rated speed.
- Each hoist rope drum must have a spring set, electrically or hydraulically released calliper disc brake mounted on the drum flange. Each brake individually must be capable of stopping the decent of the maximum eccentric rated load without assistance from a maximum over-speed condition. The controls shall cause the drum brakes to remain released under normal container handling operations.
- At least one over-speed switch must be fitted on the main hoist drum to shut down the drive and set the brakes if the load exceeds 115% of rated speed. This feature is to protect either hoist drum in case of drum coupling failure.
- At least one heavy duty, absolute position encoder must be installed.
- Acceleration from zero speed to a maximum speed or deceleration to zero speed must be smooth and stepless for any load under the head-block.
- Frequent inching (low speed) operation and plugging (floating) operation must be allowed.
- The main hoist wire ropes to the head block shall not interfere with the stacked on-deck containers when the crane is working on a single slot.
- Any openings on the machinery house wall for the passage of all wire ropes must be protected from water ingress. Protection of the wall against sagging ropes must be provided.
- The main hoist system must include an overload warning and tripping system. The system must detect the load under the spreader or the load hook of the hook beam and provide audio and light signal to crane operator when SWL is reached / exceeded.
- The load sensing system must include the installation of load cells.
- A key switch must be provided in the E-room, which must permit selection of either hoist motor so that the hoist system may operate with reduced speed with only one motor operating.



- Eccentric loading conditions shall immediately stop the up motion of the main hoist and flag a fault to the CMS and operator interface panels, and further hoisting shall be prevented. The operator shall be able to lower the spreader at a reduced speed until the condition is cleared.
- All points requiring lubrication must be lubricated with the automatic greasing system.
- A key switch must be provided in E-room, which must allow to hoist up the 110% of the load for dynamic test and 125% of the load for static test of the crane.
- A key switch must be provided in E-house for bypass all conditions and safety features during replacement of hoist ropes.

#### **3.5.2.2. Auxiliary hoist drive**

An auxiliary electrical driven device shall be provided between the one motor and the gearbox. The device shall be coupled manually and shall be used in case of motor failure. It will be designed to hoisting and lowering rated load at slow/reduced speed.

Switch on and operation shall be from the hoist control panel.

The auxiliary drive shall be fully integrated in the crane control, e.g., interlocking, overspeed, trolley position, etc.

#### **3.5.2.3. Trim, List and Skew (TLS functions)**

Each of trim, list or skew motion must be controllable independently from two other motions up to its maximum angle as specified, from any attitude of the head-block.

One push button switch on the control console must automatically reset the spreader position to a 'Zero trim, Zero list, Zero skew' position.

The Trim, list and skew systems must not be a part of the head block systems.

System must provide to crane operator values of angle - trim, list and skew.

##### **3.5.2.3.1. Trim system**

Trim function must be provided that will enable the operator to trim the container to  $\pm 5^\circ$ . The system must include a special push button to activate automatic zero positioning.

##### **3.5.2.3.2. Skew system**

Skew system must be provided that will enable the operator to skew the container to  $\pm 5^\circ$ . The system must include a special push button to activate automatic zero positioning.

##### **3.5.2.3.3. List system**

List system must be provided that will enable the operator to list the container to  $\pm 5^\circ$ . The system will include special push button to activate automatic zero positioning.

##### **3.5.2.3.4. Combined operations**

Combined simultaneous operation of all 3 functions – trim, list and skew in all possible combinations must be possible. Push button switch on the control console must automatically reset the spreader position to a 'Zero trim, Zero list, Zero skew' position.

#### **3.5.2.4. Snag protection**

An efficient energy absorbing snag load system must be provided and connected to the hoist reeving system. The snag system must detect exceptional tension forces on the wire ropes together with the integral load measuring system (LMS) of the crane. It shall not compensate for rope elongation, which occurs during the time between the switching off of the hoist drive by the LMS and the actual halt. The system must absorb the energy and must interrupt the motion of the drives immediately. After a snag event, replacement of parts, manual adjustments or manual charging of an accumulator is not allowed. Hoisting motion must be inhibited, lowering is allowed for predefined range.

#### **3.5.3. Gantry travel system**

##### **3.5.3.1. General**

The crane must be equipped with double flange wheels mounted in equalized trucks with primary and secondary equalizing beams to ensure that the corner loading is equally distributed to all wheels arranged in a single corner.

The equalizers and truck frames must be of heavy steel plate boxed construction.

The wheel truck must be fitted with drop blocks and rail sweepers and the truck assemblies must be furnished with buffers arranged to contact quay end stops, or adjacent crane buffers.

Truck units must be arranged to allow removal with minimum elevating the gantry legs.

Configuration - Each drive system will include:

- AC Motor.
- Double shoe or disk brake between motor and gear with thruster.
- Flexible couplings.
- Bevel and spur gear reducers / open gearing as applicable.
- For maximum protection the drives shall be within the frame of the gantry trucks, as far as practical, and motor should not be mounted on the end truck. The drives should be adequately guarded with a heavy-duty removable steel tube cage.

The gear reducers must be none self-locking so that in a case of a power failure or a motor failure, the crane may be moved along the quay, after the brakes and the storm brake are manually released.

Wheels must be built with live axles as to accommodate the gear reducers. The wheel bearings will be mounted in split bearing housings.

The contractor may propose an alternative design with an easy removal or dismantling of the bogie / wheel.

##### **3.5.3.2. Stowage pin**

Stowage pins must be provided to hold the crane from moving under storm conditions at maximum specified wind velocity. At least one pin per rail must be used.

Stowage pins must be provided with limit switches to prevent starting up the gantry drive system, if the stowage pins are not out of the holding position.

The arrangement of the stowage pins must suit the sockets provided the quay deck. Location and dimensions of the storm pins must be confirmed and agreed with Port of Koper during design phase.

### **3.5.3.3. Storm brakes**

Wheel brakes must be provided on sufficient number of idler wheels and be capable of holding the crane under sustained storm wind (according to technical specification) with gantry brakes released and stowage pins in the disengaged condition.

#### **3.5.3.3.1. Gantry travel protection devices**

An anti-collision system must be provided to stop the crane when nearing adjacent cranes or the end of the runway.

In case of activation of gantry anti-collision system a message must appear in the CMS of the crane and also on the panel in the operators cabin.

#### **3.5.3.3.2. Travelling bells and flashing**

Crane must be equipped with alarm horn sounder (Type: Brigade SA-BBS-107) combined with yellow LED beacon at ground level. They must be energized automatically whenever the gantry motors are energized.

#### **3.5.3.3.3. Gantry skew protection**

The arrangement, electrical connection and the control of the gantry motors / drives or a special control system of these drives must ensure parallel and even travelling. The contractor may propose an active control system to detect skew condition and compensate for out of tolerance situation between W.S. and L.S.

#### **3.5.3.3.4. Quick disconnection of gantry motors**

Special terminal for quick disconnection of each faulty motor must be furnished in the E-room, so further crane travelling is made possible once the failed motor is disconnected.

### **3.5.4. Trolley and the trolley drive system**

#### **3.5.4.1. General**

The trolley drive must be direct drive mounted on the trolley (motor driven).

Hydraulic buffers must be provided at the end of the track on both sides and/or on all trolley corners. Trolley buffers must be calculated to FEM classification. In normal working conditions, the trolley buffers shall not come in contact with the crane structure.

The design must permit to operate the fully loaded trolley on the fixed section of the boom when the waterside hinged section is raised. For this operation the slowdown and main switch should perform the same task as at end of the runway.

Interlock must be provided to prevent trolley travel when the boom is not in one of its final positions.

#### **3.5.4.2. Trolley drive configuration**

The trolley drive must comprise of four separate drive units driving all the trolley wheels. Each unit will consist of:

- AC motor.
- Double shoe brake or disk brake between motor and gear with thruster.

- Flexible couplings.
- Cardan shafts (if applicable.)
- Slip on bevel and spur gear reducers.

#### **3.5.4.3. Auxiliary trolley drive**

At least two auxiliary electrical driven device (one on each side of trolley) must be provided between the one motor and the gearbox. Each device shall be coupled manually and shall be used in case of motor failure. It must be designed to drive the trolley forward and backward with rated load at slow/reduced speed.

Switch on and operation shall be from the hoist control panel.

The auxiliary drive shall be fully integrated in the crane control, e.g., interlocking, overspeed, trolley position, etc.

#### **3.5.4.4. Trolley arrangement**

The trolley must be a rigid frame supporting the machinery platform for the trolley drives. The trolley frame must be equipped with drop block and jacking pads.

Wheels must in live axles to accommodate the slip-on gear reducers (for direct trolley drive.) The wheel bearings must be mounted in split bearing housing for easy removal or dismantling of the wheel. The contractor may propose an alternative design. Bearing must be mounted inside eccentric bushings to enable wheel alignment. The contractor may propose an alternative design. Trolley must be furnished with sets of horizontal guide rollers, designed to take the horizontal forces, produced during trolley travel.

### **3.5.5. Boom hoist system**

#### **3.5.5.1. General**

The boom hoist drive must be located in a machinery house – boom hoist M-room.

Boom rope system must be provided with two wire ropes. The boom structure must be designed so that failure of one rope does not damage the boom.

The drive must include:

- AC Motor.
- Coupling between motor and gear.
- Disk brake between motor and gear with thruster.
- Gear reducers.
- Drum coupling (Malmadie or equivalent).
- Rope drum – single layer rope winding.
- Control for raising and lowering the boom must be provided from operators' cabin and E-room.
- An emergency brake mounted on the outer side of the drum must be provided. The emergency brake must be capable acting alone stopping and holding the boom under all working and emergency conditions.
- The boom hoist rope system must be dual rope system so that if one rope should fail, the other one can support the boom under all working and emergency conditions. The ropes' ends must be fixed to an equalizer. Preferred location of the equalizer is on the W.S. boom.
- Stowed position for crane out of operation must be with the W.S. boom raised.

### **3.5.5.2. Protection devices**

Interlocks must prevent raising the boom, if the trolley is not in its parking position on the fixed boom section.

An over speed protection device must be provided. It must stop the drive, setting both brakes of the drive, whenever the speed exceeds the nominal value by 10%. The over speed must act for full speed lowering or raising.

Another limit switch must be provided as a backup for the upper end stop. The torque of the motor shall be fully monitored and limited near the raised position to prevent damage to the structure if the upper limits fail to stop the boom.

Limit switches must be provided at the equalizer beam to detect difference in ropes length and rope break.

### **3.5.5.3. Auxiliary boom hoist drive**

An auxiliary electrical driven device must be provided. The device must be coupled manually and must be used in case of motor failure. It must be designed to raise/lower the boom at slow speed. Switch on and operation must be from E-room.

The auxiliary drive must be fully integrated in the crane control, e.g., interlocking, overspeed, trolley position, etc.

## **3.5.6. Headblock, Hook beam and Spreaders**

### **3.5.6.1. General**

The headblock must be designed with twist-lock centres to permit interchangeability of spreaders purchased for this project.

### **3.5.6.2. Headblock – Mechanical design**

The headblock assembly must be constructed from a rigid frame with rope sheaves permanently reeved to the hoist system and with robust guards.

The headblock assembly shall be designed for quick connection to the spreader and using pin type latching devices, equipped with leers and positive locking devices. It shall be designed to withstand the heavy loads, shocks and vibrations.

### **3.5.6.3. Headblock – Electrical design**

Power and control to the spreader must be supplied from the trolley by means of special spreader cable.

The spreader cable must be collected and retrieved on a mono-spiral cable reel located in the on the trolley.

### **3.5.6.4. Hook beam**

A special ramshorn double hook beam (capacity of 100 tons) with safety latches/clamps, for general cargo and for heavy load modes of operation must be supplied with the cranes – one hook beam for all three cranes. The beam must be designed to withstand the loads, the shocks and stresses created during general cargo and heavy load modes of operation.

The hook beam must be equipped with two side lugs, with a combined safe working load of 50 tons (i.e. half of the main capacity).

The hook beam must have a secured swivel hook and must be with similar latching devices as for headblock – spreader connection. The hook beam must be equipped with a special stand or legs to facilitate the storage and transportation of the beam as well as connection to the headblock. The hook beams and the stands must be provided with the suitable identification plates. The hook must also be fitted with guides to allow the STS crane girder to engage the hook more easily. The hook beam must be supplied with all relevant documentation and markings indicating its safe working load and its own weight. The supplier must submit to Port of Koper all details, drawing of the hook beam, to be approved by Port of Koper during the design review.

### **3.5.6.5. Spreaders**

A telescopic twin-lift spreader – Bromma STS 45 hydraulic (with centre spread capability) must be provided with the crane. Each crane must be supplied with two (2) spreaders.

#### **3.5.6.5.1. Spreader frame**

The structural frame must be designed and constructed to have adequate safety factors to prevent premature fatigue failure within 4 million load cycles. Access ladders to the man cage on the head block must be fitted to the main frame on either side. Hydraulic oil tank must be stainless steel. Laser cut adhesive decals positioned and defined according to the purchaser requirement must be applied to the spreader to indicate SWL (spreader and pad eyes), asset number and orientation of spreader in respect to the crane.

#### **3.5.6.5.2. Spreader features**

The spreader must have at least the following features:

- Extend / retract automatic system to adjust its length to twist locks position correlating to 20` and 40`, 45` ISO containers, for handling 20`, 40`, 45` ISO standard containers or two 20` containers in twin mode.
- Possibility to adjust gap between 2x 20' container from 0 to 1600mm with full load under spreader.
- Twist locks operation for use with ISO standard containers.
- Individually operated corner guides (flippers).
- Automatic Twin Gap position and gap memory storage.
- Two twenty detection system
- Height indication sensors.
- Monitoring and diagnostic touch panel.

#### **3.5.6.5.3. Extracting and retracting**

Extending / retracting of the spreader, to 20`, 40` and 45` must be controlled from the operator`s cabin and ground level.

The maximum time to extend or retract must be:

- Max. 30 seconds for extending from 20`, to 45`.
- Max. 30 seconds for retracting from 45` back to 20`.

#### **3.5.6.5.4. Twist locks**

The twist lock shape must fit ISO container corner fittings.

The twist lock mounting system must be designed to withstand frequent landing of the spreader and head-block on twist locks during handling of hatch covers and top tier containers.

The locking and unlocking functions of the twist locks must be controlled from the operator cabin and integrated with the crane control.

Time for rotating twistlock for 90° must not exceed 1,5 sec.

#### **3.5.6.5.5. Limit switches**

Limit switches must be integrated in the spreader to provide the following minimum functions. All the functions must be interlocked with the relevant functions and operation of the crane:

- Blocking of hoisting unless all twist locks are locked or unlocked.
- Preventing locking or unlocking unless all corners are well seated onto the container.
- Allowing twist locks operation only under slack rope condition. A command to open the twist locks, given in non-slack condition, must be aborted.
- Spreader at 20°, 40° or 45° position.

#### **3.5.6.5.6. Indications**

The lamps must be fixed to the spreader through a suspended bracket designed to withstand vibration and acting as shock absorbers. One set indication LED lights is installed on the spreader and the signals are returned to the control stands in the operator's cab:

- White lamp – all 4 or 8 twist locks in single or twin mode properly seated.
- Red lamp – twist locks open.
- Green lamp – twist locks locked (in single or twin mode).
- Blue lamp – Spreader in twin mode.

#### **3.5.6.5.7. Flippers**

Flipper must be capable of withstanding impact of miss-landing of the spreader where only one lowered flipper lands on the top of a container.

Four hydraulic flippers must be provided on the spreader. The lower section of the flippers must be constructed of a detachable part made of high tensile strength steel. These lower parts must be bolted for easy replacement. The control of the flippers must be from the operator's cabin. The operator must be able to activate flippers individually or all together simultaneously. The time for up and down movements, of all four flippers, must be maximum five (5) seconds. After lowering the flippers, they must be under condition hydraulic pressure in order to absorb the shocks. All four flippers must be protected with flipper fail protection (steel chain or wire rope).

#### **3.5.6.5.8. Guiding plates**

Four reinforced sliding hardwearing plate must be provided on the spreader for easy guiding of the spreader inside the ship cells.

#### **3.5.6.5.9. Wear pads**

Wear pads made of hard abrasive resistance material must be used between the sliding telescoping beams. The pads shall act also as shock absorption and noise reduction media.

#### **3.5.6.5.10. Lifting lugs**

Four lifting lugs, one near to each corner on the twist lock and beams must be mounted to enable the handling of distorted, irregular or over height open top containers capacity lifting bugs 4X12.5t.



Four lifting lugs, one near to central beam on the twist lock and beams must be mounted to enable the handling of distorted, irregular or over height open top containers capacity lifting bugs 4X16.25t

#### **3.5.6.5.11. Lifting pockets**

Lifting pockets must be constructed underneath the spreader structure to enable handling the Spreader with a front lift truck (FLT). The arrangement of the pockets size and position must be agreed with Port of Koper during design phase.

#### **3.5.6.5.12. Classification**

The classification of the spreader calculated to the SWL, must be in accordance with the FEM rules 1.001 3rd edition revised 1/10/1998.

#### **3.5.6.5.13. Structure and mechanical system**

The spreader structure and specially the corner assemblies must be designed to sustain the loads, stresses, impact, and vibrations generated during the operation. Stresses inflicted when the spreader is dropped on a container should be considered as well.

The spreader corners must protrude at least 100 millimetres below the spreader structure, to enable handling of distorted containers. The bottom of the spreader must be specially reinforced and protected against operational damages.

A ladder must be provided at the spreader sides for climbing up for maintenance. Power chain (steel or plastic type) may be used for the telescoping motion and for protection of moving parts.

#### **3.5.6.5.14. Corrosion protection**

The supplier must use materials to minimize corrosion and subsequent maintenance as a result of corrosion. It must be accomplished by the following:

- Use of stainless steel grade A4, where practical.
- Protection of materials subject to corrosion by coating.
- Hot dip galvanizing in accordance with ASTM-A385.
- Sealing of structural members.
- Sealing by non-acid silicone compound.

All hardware parts must be treated against corrosion. Screws, bolts, and such, pins, studs, pipes and fittings, springs, washers and other miscellaneous fastenings material must be of stainless steel grade A4 (316).

#### **3.5.6.5.15. Spreader communication with crane PLC**

The communication between the crane and the spreader must be via the spreader cable via fibre optic.

All necessary converters, gateways and protection needed to get a reliable communication from the spreader to PLC must be installed on the crane and the spreaders which must be supplied in this scope.

The communication wires must be integral part of the spreader cable.

Spreader diagnostics and information:

- The spreaders must have installed real time monitoring system for access to spreaders statistics and performance. Monitoring system shall enable detecting, preventing and resolving issues,
- Monitoring system shall be accessible on local screen, with crane PLC and via wireless connection,

- Real time monitor of spreader shall be accessible via wireless communication. At least three (3) tablets (note books) with appropriate software shall be delivered.
- The spreaders must provide outputs for handling the error and information messages (info, warning, and errors). The crane PLC must read these messages and include them in the CMS.
- In addition to the error messages there must be info screen with the available information data from the spreader installed in the CMS and operators cabin including twist-lock counter, total number of lifted containers in several modes (normal, twin, pos1...3), total number of lifted containers since last service.

Operation modes through spreader control I/O and communication:

- The PLC must communicate with the spreader via communication mode and also via standard control wires 230 Volts I/O. In case of communication problems, the spreader must operate with the standard 230 volts.

Spreader height indication:

- The input from the two ultrasonic sensors in the spreaders must be connected to the PLC and configured in the program as slow down limit switches to slow down the spreader when approaching the container.

Spreader status in the CMS system:

- All possible information from the spreader must be displayed and monitored in the E-room, this including all I/O from the spreader to the crane and vice versa.

### **3.5.7. Operator's and checker's cabins**

#### **3.5.7.1. General**

##### **3.5.7.1.1. Structure**

The cabins must be of a welded construction with stiffened and braced steel frame, designed to withstand all operating conditions. The cabins, accessories and control equipment must be constructed according to the latest developments in ergonomics.

The cabins, including the access doors must be water and dust tight and acoustically insulated, with minimum level of noise and vibration according to ILO codes. Materials used in the cabins must be fire retardant. Interior trim must be accomplished by using modern décor materials. Ample space must be provided to permit inspection, adjustment, repair and maintenance of the control console, computer terminals and control equipment.

Cabin design shall provide wide operative visibility and the highest priority must be given to the operator's and checker's active and passive safety.

##### **3.5.7.1.2. Chairs**

Upholstered agronomic chairs fully adjustable spring or air cushioned with weight adjustment must be provided in the abs with easy access to all the controls, for cabin chair. The chair type is subject to the Port of Koper approval during the design review. The control stands must be integrated in the chairs mounting frames or mounted on the walls as applicable.

##### **3.5.7.1.3. Doors and windows**

The doors must be equipped with heavy-duty means for exterior locking. A device to secure the doors in the open and shut position shall be provided.

Windows must be of safety glass giving complete view of all working areas. Special attention must be given to window design, to enable easy opening and cleaning. Open window may be secured easily in any position.

The upper row of windows must be of tinted glass. All windows must be equipped with folding spring type shutters.

#### **3.5.7.1.4. Air condition**

Domestic split type air condition for cooling and heating units must be provided in the operator's cabin and in the controller's cab. The system must be purchased from a vendor who has an active service facility in Slovenia. The system, vendor and service facility are subject to Port of Koper approval during the design review. The height of the cabin must be sufficient for installation of air conditioning system on the ceiling. Installation of the units must be designed to withstand the working conditions of the crane and to provide easy access for maintenance.

Cabin must be also equipped with canalised heating of windows.

Each of the air conditioning system shall be capable of maintaining an inside uniform temperature in the room of 24°C when the ambient temperature is 45°C.

#### **3.5.7.1.5. Approvals**

During the design review the contractor must submit to Port of Koper approval full and detailed data about the material and parts used in the cabins as well as full detailed fabrication drawings.

### **3.5.7.2. Operator's cabin and remote operator's desk**

#### **3.5.7.2.1. General**

The operator's cabin must be mounted on separate sets of wheels to minimize vibration and noise. Robust shock-absorbing system shall be installed. Cabin shall be positioned below and, in the centreline of the trolley to provide fully visibility of all operations.

Floor glasses shall be designed to grant the operator the maximum visibility during the operation of the containers, in complete safety.

Fresh air treatment system shall keep the cabin pressurized and avoid the entrance of dust/toxic elements in the cabin.

Interior dimmable light shall be used inside operator's cabin.

Glass heating and defogging system shall be installed.

Adjustable protections systems for sun irradiation shall be installed.

Robust and adjustable supports for CCTV monitors, HMI system and touch screen, communication systems etc. allowing the cabin to be prepared for the installation of all the new technical and cognitive effective solutions, to operate under total safety and control.

Windshield wipers with washers must be provided for front and side windows.

The cabin door must open outward. A foldable upholstered chair for the crane instructor must be installed at the cab wall. A rear window must be installed on the back wall to enable the operator to guard his motion when moving backwards.. Attention must be given to the cleaning of the floor window from the inside and from the outside. Storage cabinet must be provided for coats, portable water cooler, etc.

The cabin must be equipped with ergonomically designed operator control station chair. The control station must be designed to reduce crane operator lower back stress including complete support to the forearm. The operator seat must be equipped with electric adjustable boxes, quick adjusting of seat position and electrical adjustment of the seat height. The internal design must be similar to the cabin existing in STS cranes in Port of Koper. During the design review the contractor must submit to Port of Koper approval detailed fabrication drawings of the cabin.

When moving towards the ship from the quay, the operation shall be facing the ship. The manufacturer of the cabin must be Brieda.

*Brieda Dynamic Control Station* must be used as crane driver workstation inside operator cabin.

All cable channels should be hidden in the wall plates with option to access the cables by unscrewing the inside wall plates.

All operations of the crane must be controlled from the operator's cabin and from Remote-control desk.

#### **3.5.7.2.2. Remote operators desk**

The remote-control workspace must be equipped in a way that closely resembles the workstation inside the crane cabin. The type and layout of the controls and joysticks must allow for easy adjustment of the workstation to ensure similar crane control as in the crane cabin.

The remote-control desk shall be manufactured by Brieda, such as the *Brieda Remote Desk or the Brieda Ground Control Station*.

The final layout of remote station, including location and proposed controls and joysticks will be submitted to Luka Koper for approval.

#### **3.5.7.3. Access**

Access to the operator's cabin must be from the quay level via a stairway to a platform at the cab and must be accessible when the trolley is in the parked position. Ladders are not allowed.

A passenger lift must be provided. As far as practical, the access to the ground station must be via the same stairway leading to the operator cabin.

In addition, provision must be made for safe exit and entry to the operator's cabin in any position of the trolley along the boom in case of an emergency condition. The cabin, girder, boom design and machinery room design must allow the operator to escape from the operator's cab in safe manner via the walkway of the girder and the boom at any point of the trolley travel range. An interlock must prevent trolley travel if the gate leading from the surface on the gantry to the cabin is open.

#### **3.5.7.4. Checker's cabins**

One checker's cabin must be mounted on the landside under the sill beam, second checker's cabin must be installed on the sill beam (on the cable reel side). Cabins arrangement must provide a complete view of chassis lanes and of container number during the operations. The checker's cabins must be designed to the maximum practical size. The final position and arrangement of the cabin's must be approved by Port of Koper during design phase.

Interior dimmable light shall be used inside checker's cabin.

Adjustable protections systems for sun irradiation shall be installed.

The access door and the windows can be of a slide type. A window must be installed in the access door to provide clear view. Desks must be provided inside both cabins. Minimum depth shall be 70 cm (to accommodate a computer terminal, keyboard, printer, etc.) All cable channels must be hidden in the wall plates with option to access the cables by unscrewing the inside wall plates. During the design review the contractor must submit to Port of Koper approval detailed fabrication drawings of both cabins.

### **3.5.8. Machinery room**

#### **3.5.8.1. Structure**

Water and dust tight machinery rooms must be provided, with design and dimensions of ample size to adequately contain all mechanical, electrical equipment, rope re-reeving systems, overhead crane, mechanics workbench, and shall have enough space for safe access for maintenance.

The rooms must have a steel-framed covered roof, corrugated or flat sheet steel walls and checkered plate floor on steel supporting members.

Galvanized and pre-painted plates must be used as far as practical.

Special attention must be given for easy and safe access for maintenance.

The fix machinery rooms (not mounted on the trolley) must be provided with the following minimum maintenance equipment: machinery hoist, air compressor, ropes re-reeving device, tools locker and workbench. Electrical outlets must be provided at the bench and each other sides of the machinery walls.

Guides must be provided for protection of ropes where they pass through openings in the machinery room enclosure. Openings must be designed to minimize water and dust penetration.

#### **3.5.8.2. Machinery room ventilation**

A ventilation system must be provided in the machinery rooms to introduce clean air into the room in sufficient quantities to keep the motors, bearings and other components at safe operating temperature during summer period when ambient temperatures will be high and to maintain over pressure in the rooms. The system must be forced ventilated, namely, pushing the incoming air through the filters.

All incoming air must pass through two stage filtering system:

- 1st stage – coarse self-cleaning disposable element.
- 2nd stage – fine disposable element.

The design must ensure that servicing of the filter elements shall be done easily.

#### **3.5.8.3. Auxiliary hoist in machinery house**

For maintenance purposes the machinery house must be equipped with an overhead service crane to move items inside the machinery house and to and from the ground level.

An electrically operated machinery service hoist must be provided. Horizontal and vertical (3 axis) travel motions of the machinery hoist must be also electrically operated. Floor, roof and side openings with safety catches must be arranged in such way that all components in the rooms and the trolley drive components could be assembled and disassembled, as well as lowered onto the ground.

The capacity of the machinery hoist must be determined in accordance with the heaviest components to be handled.

A safe maintenance platform for the auxiliary hoist must also be installed to provide access to all the parts of the equipment.

Handling of components of the hoist and trolley drives should be demonstrated.

During the design review the contractor may propose alternative solution subject to Port of Koper approval.

#### **3.5.8.4. Auxiliary hoists on A-frame, back-reach level**

Crane must be equipped with auxiliary hoists on A-frame and back-reach level. All hoists must be electrical driven with capacity at least 500kg.

#### **3.5.8.5. Re-reeving devices**

Electro-mechanical re-reeving devices must be provided for the easy replacement of any main hoist and boom hoist ropes. Solution subject to Port of Koper approval during design review.

### **3.5.9. Electrical rooms (LV and MV)**

#### **3.5.9.1. Arrangement and structure**

An enclosed E-room must be provided of sufficient size to contain all required electrical system – control, drives, distribution panels, monitoring system, etc. and safe access for maintenance.

#### **3.5.9.2. General**

The rooms must be framed of structural steel, thoroughly braced to withstand the operational conditions. Galvanized and painted corrugated steel sheet must be used as far as practical. The rooms must be adequately insulated to provide the adequate temperature. Using of modern, fire-retardant decor material, must accomplish interior décor. The rooms will be provided with a floating floor to ease laying of the electrical cables between the different cubicles. The rooms will be made as air tight. Cables entry must be through joints, conduit, pipe, or other attachments, which pierce the insulation and sealed at the point of entry. Cable entries should be only through the floor. Any floor opening must have safety protection girder.

#### **3.5.9.3. MV room**

The main transformer and the M.V. switchgear must be housed in a separate room. A galvanized wire mesh separation must be located between the main transformer compartment and the HV switchgear compartment. The entrance to the transformer section must be by a door locked with padlock.

The MV room must be air-conditioned with two A/C units.

If the MV room has a common wall with the LV room, a separate door with a lock must lead from the LV room to the HV room.

If the HV room is completely separated from the LV room, it must be furnished with a door open outside. If the HV room is located away from the LV room, direct and short route must be provided. The transformer must be located inside a close fenced system with fence door separate padlock for blocking the entrance to unauthorized personnel. The fence must block insertion of a hand.

#### **3.5.9.4. LV room**

The LV room can be equipped with two doors in two walls. Entrance to the room must be separate from the machinery room. The width of the room must allow free pass of minimum 100 cm when the doors of opposite cubicles are open.



### **3.5.9.5. Air conditioning**

The LV rooms must be equipped with minimum two (2) separate groups of industrial air conditioning (cooling) systems (2 sets). The same systems may be used for cooling the HV room if applicable. Each of the air conditioning system (group) must be capable of maintaining an inside uniform temperature in the room of 24°C when the ambient temperature above 45°C. The units must be designed for continuous operation and must be equipped with de-icing valves. Special attention must be given to collection and drainage of condensation water. The systems must be controlled by thermostats. The control unit must govern the switching between the units on a time basis (programmable) and must switch the idle unit in case of failure in the working unit or extreme hot conditions. The control panel must be mounted on the wall. Remote control shall not be used. The control panel will have an option for manual control and adjustment. The systems will be purchased from a vendor who has a service facility in Slovenia. The system, vendor and service facility are subject to Port of Koper approval during the design review.

### **3.5.10. Miscellaneous**

#### **3.5.10.1. Stairs, Ladders, Platforms, Walkways**

Stairs and walkways must be provided from the quay level to the operator cab, to the boom M-room and E-room level. Stairs (not ladders) must be used as applicable. The ascent stairs and the personnel lift must be located outside on the land side leg with minimal protrusion to the working lanes and the back reach area. The staircase design with enable rescue in case of failure in the lift. Ascent to the pylon must be via stairs.

Service platforms, stairs and ladders must be provided with proper illumination for easy and safe access to needed for operation, service, inspection or maintenance. Stairs, ladders and platforms must be constructed and installed in accordance with the provisions of all valid standards.

Gates must be used for safety as far as practical. Hinges of a gate shall be spring return. A limit switch interlocking the relevant crane functions shall be installed at each gate. Electro-mechanical locks to keep the gate in the closed and open positions must be used. This electro-mechanical locks must be easy replaceable (with connectors).

Stairs, ladders and walkways and service platforms must be hot deep galvanized. Parts will be designed at adequate size for galvanizing and bolted joist will connect the parts after galvanizing.

#### **3.5.10.2. Capacity board and name plates**

Capacity boards showing the maximum rated capacity of the crane and other identification data, such as "Crane number", must be mounted on the outside of the girders. They must be readily legible when viewed from the ground area adjacent to the crane. Name plates involving the identification, safety, operation and maintenance directors must be in Slovenian language. The contractor must submit to the Port of Koper a complete list of these name plates for the proper translation and lettering during the design review.

#### **3.5.10.3. Compressor and compressed air supply**

A complete compressed air system of sufficient capacity, must be provided for maintenance purposes. The compressor must be located in the M-room.

The system must include, but not be limited to, the following:

- Water and oil separation unit with automatic mechanical discharge.
- Rubber shock absorbers for mounting.
- Electrical switches (on/off) at the compressor.



- Outlets shall be provided in the room. Each outlet will be equipped with a quick disconnect coupling.
- A flexible hose of 25 meters each shall be provided at the compressor to reach all relevant parts of the equipment.

The system must be purchased from a vendor who has service facility in Slovenia. The system, vendor and service facility to be approved by Port of Koper during the design review.

#### **3.5.10.4. Doors, locks and keys**

The doors to the E-rooms, M-rooms, operator's cabin and controller's cabin must be watertight and dust tight. The doors should hang on 3 hinges with grease nipples. A roof, 200mm wide must be installed above the door. The doors must be equipped with automatic closures, catches to keep the door open in any position with lock with keys. The locks must be of a standard type in use in Slovenia. Each door must be provided with brackets to accommodate a standard hanging padlock (not to be supplied.)

#### **3.5.10.5. Provisions for Terminal operation system (TOS)**

##### **3.5.10.5.1. General**

The port utilizes a Terminal operating system (TOS) from Tideworks. For that purpose, the crane must be equipped with the necessary provisions and data transfer system. TOS network is using a fibre connection from the crane MV cable to the landside network station. The contractor must provide a switch in the E-room connected to the fibre cable and routing the network data system to the cabin and to the checker's cabins. The following equipment must be supplied and installations executed by the contractor for that purpose.

##### **3.5.10.5.2. Operator's cabin and Checker's cabins**

An additional double wall socket with supplied from a separate circuit, must be provided. The socket must be protected by a special circuit breaker in the abs in addition to the standard protection required for the circuit that shall be installed in the E-room. Rating should be: 24V DC 5A via power supply.

Fiber-optic to copper converters + two ethernet wall sockets (RJ45) must be installed near the 24V sockets for TOS PC.

A special mounting bracket must be installed in the operator and in the checker's cabins for mounting a monitor (supplied by others.) The bracket must be an integral part of the cab structure designed for a monitor of 50 kg.

The bracket must have features to enable the alignment – tilting and slewing of the monitor and its adjustment in height.

#### **3.5.10.6. Energy chain system**

The power and communication cabling between the main structure and the trolley must be carried in an energy chain system.

The E-chain system must be heavy-duty cable carrier with reinforced mounting brackets.

The system must consist of (minimum requirements):

- Heavy-Duty cable chain
- Quick connect chain cross bars
- Rollers integrated into the chain side link.
- Each roller link must have min. 4 rollers.

- Floating moving arm
- Mounting brackets
- Service platforms

Installed energy chain system shall be delivered with chain monitoring on-line system to control:

- pull/push force,
- cable tensile force

and must be connected to crane CMS for activating alarm messages. To prevent damages on energy chain, trolley movement must stopped.

The design of the system must be carried out by the system supplier and must be specified to meet the required speeds in the marine environment prevailing, paying particular attention to the issues of temperature and all-weather condition. The whole installation must be in accordance with the manufacture's recommendations in regard to clearances, bending radius and towing arm detail. The power chain system OEM manufacturer must be employed to carry out a final alignment check at the crane constriction site to ensure that the manufacture's installation requirements and tolerances have been satisfied. A certificate to this effect must be provided by the OEM supplier and forwarded to the purchaser's representative through the main contractor.

The energy chain cable system must include 20% spare wires on each 2.5 mm<sup>2</sup> cable, and 6 cores multi-mode fibre-optic cables.

All metallic materials must be stainless steel 316. All nuts are self-locking nut to resist loosening under vibration and torque.

Chain arm must have floating moving arm to eliminate mechanical stress of the chain carriers toward the mounting brackets.

System must have quick connect chain cross bars for fast approach to the inside cables.

The chain side link and chain cross bars has to be from the same material.

Roller bearing must be from stainless steel.

Chain radius must be double of the minimum bending radius of the biggest cable.

The design of the E-chain system and bracket and the cable arrangement inside the chain must conform e-chain manufacturer recommendation and approval.

#### **3.5.10.6.1. Service platform for energy chain system**

Safe service platforms must be provided for easy reach and maintenance of the E-chain system. One platform on the chain fix point and one platform on the girder end.

#### **3.5.10.6.2. Safety precautions**

The design must take safety manners such as gates and sensors for preventing injuries from traveling energy chain along the boom.

#### **3.5.10.7. Passenger lift**

Rack and pinion type passenger lift must be provided latest model by Alimak or equivalent. The lift must be installed on the land side and must be integrated with the ascent to the crane.

Lift stations must be provided at the following levels (minimum):

- ground level,
- cable reel/checker's cabin level,
- operator cabin,
- E-room/M-room level.

Each station (ground, checker's cabin, operator's cabin, E-room/M-room) must have a call lift button installed.

Call lift button must be installed also:

- inside E-room/M-room
- inside operators cabin
- inside checkers cabin on sill beam
- access to the crane (ground level)

Lift must have an emergency exit to enable personnel to escape in case of power failure. A drive-controlled motor must allow for soft start and soft stop at each landing. Brake must be applied only after motor comes to a zero speed after soft stopping.

Lift shall be fitted with automatic rack lubrication system. The lift shall include emergency stop, lighting, and emergency lighting. Testing equipment for certification purposes and any other specialized tools are to be provided.

Lift must be equipped with a maintenance platform to allow safe access to any locations where extraordinary maintenance works to be performed.

The wind proof channel / canopy surrounding the landings shall not be constructed by expanding or perforated metal sheets. A safety locking pin is to be provided at the lowest landing to mechanically secure the lift during maintenance. The lift drop cable junction box shall be in such a way that it can be easily and safely accessible from the crane stairway. Lift should include a personal safe descent device in the case of emergency to enable personnel to evacuate from elevator cabin safely from any position.

The main technical characteristics must be:

- Lifting capacity – at least 450 kg (min. 3 persons.)
- Dimension of lift: 910 x 1170mm
- Frequency drive
- Emergency stop button inside cabin
- Greasing system
- Ventilation inside lift
- Service platform under ground level landing
- Voice communication

#### **3.5.10.8. Anti-sway system**

The swaying of the suspended container must be continuously monitored and controlled electronically, during trolley travel and hoist operations. The sway-stop system must prevent the swing under the most adverse operating conditions. The Anti-Sway control must reduce the time for fine positioning of the spreader with prevention continues prevention of the sway in both manual and semi-automatic operation. The sway-stop system must have a proven good experience utilized on STS cranes for at least one year.

System description, past experience and functions will be examined and finalized during the design review.

#### **3.5.10.9. Spreader cable reel**

The spreader cable must be reeled on a cable reel. The cable reel must be a heavy-duty type equipped with all the necessary guiding and deflection devices. The reel system must be mounted on the trolley. The cable reel must have a separate independent AC drive with frequency control. The cable reel must be furnished with a spreader cable to the required length. The cable reel will be adjustable for different kinds of cables (different diameter of cables) The cable reel motor or motors shall be totally enclosed, non-ventilated with IP54 protection. motors must be designed to operate at 10% above rated line voltage and to have adequate torque when voltage drops 15%

below rated line voltage. The cable reel must be spiral type with single row cable width, other types to be approved by Port of Koper.

The design of the system must be carried out by the system supplier and shall be specified to meet the required speeds, marine environment and ambient temperature. The supporting structure and girders must be sufficiently rigid to avoid unacceptable levels of vibration or noise.

The operation reel must be electrically interlocked with the crane hoist drive system. In case of a malfunction in the cable reel system, the hoist drive must be mechanically stopped.

Rotary cam limit switch must be provided to detect the number of loops on the reel and "End of Cable" signal.

Over tension and slack detection system must be provided. If over tension or slack occur hoist drive operation will be stopped.

The collector assembly must be totally enclosed to IP54 and equipped with the necessary number of slip rings with minimum 15% spare. A space heater will be provided in the collector housing.

The control of the system and the AC inverter shall be installed in the E-room.

#### **3.5.10.10. Outfit for storage of over height frame / lash container**

A rigid outfit structure must be installed on top of the W.S. sill beam to be used for storing a telescopic over height frame, and a lash container on top of the L.S. sill beam. The fixture must be designed for the weight of a telescopic over height frame and the dynamic force during the placing of the over height frame or lash container on the carrier. Access to the carrier and service platforms around must be provided.

#### **3.5.10.11. Ground level command station and monitoring panel**

At the ground level (access side on the crane) there must be a command station in a stainless-steel cubicle for maintenance purposes. Commands station must have at least below listed functions:

- Crane on/off
- Hoisting command (slow/fast)
- Gantry command (slow/fast)
- Trolley command (slow fast)
- Horn
- All spreader commands with possibility to bypass landed condition

At the ground level (access side on the crane) there must be a touchscreen monitoring panel (similar to the panel in operators cabin) to monitoring active faults, events, messages for maintenance purposes. The maintenance panel must be in a stainless-steel cubicle with heater and fan.

The supplier must submit to Port of Koper all details around functionality of ground level command station and monitoring panel during the design review.

#### **3.5.11. Auxiliary lifting devices**

##### **3.5.11.1. Over-height frame**

One over height frame per crane must be supplied. The over-height frame should be type BA-030E5T (H2700) produced by Tec Container. The OH frame must be designed as direct attachment on spreaders for handling oversized containers, flat racks and platforms.

No adjustments or additional equipment is permitted for attaching the AOHF on spreader. No external power supply or hydraulics is permitted neither for attaching nor in operation of the AOHF.

OH frame shall be constructed as "Standing alone" construction - without needs for additional parking stand.

Capacity requirements (SWL):

- 50t for lifting 20', 40' or 45' ISO standard containers

#### **3.5.11.1.1. Operational features**

The over-height frame must have the following features:

- The over-height frame must be designed for heavy duty operation for lifting single 20', 40' and 45' ISO standard containers.
- The over-height frame is picked up and put down by the spreader like an ordinary container.
- Twist locks of over-height frame turn only after it has been correctly placed on to a container and all four safety pins fully depressed,
- OH frame must be constructed in a way that allow using STS spreader with TTDS activated on Bromma spreader,
- Required force for spreading (empty) OH frame should not exceed 4.500 kN.

#### **3.5.11.1.2. Twist locks (TL)**

The twist lock must be in accordance with BS 5237 or equivalent. The locking and unlocking functions of the twist locks must be controlled from the operator cabin and integrated with the crane control. In addition, the twist locks assembly must be provided with mechanical safety devices:

- To prevent the closing of the twist locks unless the over-height frame is well seated in the container pockets.
- To prevent the opening of the twist locks if a container is hanging in midair.

A solution should be provided for the easy and quick release of the twist locks in case of damage or other failure or when the over-height frame is stuck in the container pockets.

#### **3.5.11.1.3. Indications**

The sound and light indicator must be fixed on the over-height frame

*Light indicators:*

- Each side shall be equipped with two rows of led lights (green/yellow/red), and light signal for weak batteries.
  - o Red light – twistlock unlocked,
  - o Green light – twistlock locked,
  - o Yellow light – OH frame landed.
  - o Different colour – weak (almost empty) batteries

Lights must be visible from top and side view - different position of cabin (STS – top view and reachstacker - side view).

*Sound indicator:*

High-power sirens (one per side) shall be installed for indicate twislock change position or faults on frame.

#### **3.5.11.1.4. PLC and operator monitor**

Operator monitor (information screen) shall be installed on easy accessible position with information, but not be limited to:

- Status of all sensors.
- Cycles: total and partial counter. (The partial can be reset).

- Battery level in per Cent and Volts.
- Status of output of PLC.
- Working hours.
- Manual drive of the twistlocks (for maintenance purpose)

#### **3.5.11.1.5. Lifting pocket**

Lifting pockets must be constructed underneath the structure to enable handling the over-height frame with a front lift truck. The arrangement of the pockets must be 350 x 220mm.

#### **3.5.11.1.6. Capacity board and number**

Capacity boards showing the SWL of the over-height frame and other identification, such as serial number and port number, must be mounted on both sides of the over-height frame.

#### **3.5.11.1.7. Materials**

All materials and equipment must be new, of the highest grade, free from defects and must conform to the applicable specifications and requirements of this specifications. Steel grades must be selected according to FEM.

#### **3.5.11.1.8. Corrosion protection**

The supplier must use materials to minimize corrosion and subsequent maintenance as a result of corrosion. It must be accomplished by the following:

- Use of stainless steel grade A4, where practical
- Protection of materials subject to corrosion by coating Hot dip galvanizing in accordance with ASTM-A385.
- Sealing of structural members.

#### **3.5.11.1.9. Other**

Solar panels shall be installed on the OH frame and auxiliary battery charger shall be delivered with OH frame. Low battery indicator must be installed and well visible.

The OH frame shall be delivered with monitor for real-time information system and wi-fi connection with frame PLC.

#### **3.5.11.2. Container top safety frame (Lashing cage)**

The supplier of container top safety frame (Lashing cage) should be SHT Shuler GmbH. The minimum requirements for the lashing cage are:

- Permissible number of persons: 2 on each side of the lashing cage.
- Dimensions: 20' container size with the possibility of expansion to 40' and 45'.
- Each side of the lashing cage must be equipped with two rods for releasing the pins (actuator poles).
- Each side of the lashing cage must have interior and working area lighting with a switch.
- Each side of the lashing cage must be equipped with two warning buttons on both sides accessible to the operator to activate the visual and audio warning signal (minimum 100 dB).
- The PSC must have a possibility to transport them with the reach stacker and forklift.
- The lashing cage must comply with: EN ISO 12100-1:2005, EN ISO 12100-2:2005, EN 1808 standards.

- PSC basket must allow to be used up to wind speeds of 22 m/s.
- Each side of PSC must be self-sustainable with electrical power.
- Each side of PSC must have secondary additional safety harnesses attached to main frame of PSC.
- All hardware parts must be treated against corrosion.

The container top safety frame must be designed to carry personnel from the ground level to the container ship whilst connected to the spreader of the crane. The frame must be so designed that personnel can work safely from within its confines to access twist-lock pockets and lashing equipment attached to containers on board the vessel.

Connection to the spreader must be done via the standard twist-locks but a secondary safety fixing method to attach the safety frame to the spreader must be incorporated which can be manually locked as the spreader lands. Entering PSC cage cannot be possible, if secondary safety mechanism isn't activated. A means of safe access to the frame in its stored position from ground level must be provided. A means for safe storage of PSC onto STS rear cross traverse must be provided in RED colour, while PSC cage is white with yellow accentuations.

All decals and instructions must be attached to the container top safety frame and in each side of PSC cage in Slovenian language.

Storage position must permanently be located on top of the landside sill beam with gather guides on the sill beam to assist relocation after use and to provide secure storage whilst the crane is operating.

### **3.6. Accesories**

#### **3.6.1. Remote landside server system (RCMS)**

The landside (office) RCMS server system must collect all necessary data from the cranes which is in this tender and provide real time status, statistic information, trends and graphs for both technical and management personnel. The information must include all necessary data to detect weak points, downtimes, performance per defined time periods (pre-defined work shifts, day, week, and month) and provide statistics to measure the reliability of the crane and performance of the operators. The server must provide customized KPI reports automatically generated by the system for one or more crane which are on this tender.

The system must support the following requirements:

- Installation in Hyper-V virtual environment (it could be pre-prepared image to import it directly in to the Hyper-V)
- Operating system Windows server 2025

Supplier should provide CAL licenses if required for multiple user access.

#### **3.6.2. Tools storage locker and mechanics table platform**

Two standard industrial metal storage lockers and one mechanics table platform with 4 inch wide clamps must be furnished and installed in the machinery house. One storage locker must have parts storage bins of variable sizes. Other locker with have adjustable shelves. The storage lockers size must be at least 120x50x160cm (WxDxH).

#### **3.6.3. Special tools for maintenance**

All special mechanics tools necessary for maintenance, repair and inspection of the crane and its equipment must be provided.



One set of special mechanical tools must be provided for each crane. The set of tools must include but not limited to the following items:

- Special adjusting and maintenance tools for all mechanical parts of the crane to be used for maintenance, repair and inspection.
- Set of sockets wrench with adjustable torque ratchet for bolts in excess of 13mm used in the mechanical parts of the drives, drums, clamps and etc.
- 5Kg hammer.
- Straight jaw plier.
- Snap ring pliers for rings over 35mm diameter.
- Pulleys for rope replacement.
- Wire rope clamps.
- Ratchet winch with minimum SWL of 2.5 ton.
- 2x lightweight crowbar 1.2m long

#### **3.6.4. Tools and storage locker for electrical room**

A standard locker for electrician tools must be furnished and installed in the electrical room. The locker must be big enough to keep all required maintenance tools for repair and exchange the largest drive unit installed in the electrical room. In addition, there shall be wall locker for keeping all documentation of the crane min. size 150x35x100cm.

All special electrical tools necessary for maintenance and replacement of the drives units and other equipment installed in the room which are heavier than 20Kg must be provided for each crane.

The set of tools will include but not limited to the following items:

- Tools for lifting and mobilization of drive units and other parts heavier than 20Kg for lifting and lowering the parts from and to quay level.
- Torque ratchet with set of bolt sockets and special beats needed for the replacement of electrical equipment's on the crane.

#### **3.6.5. Portable test bench for operating and testing spreaders**

One unit of portable control panel for operating and testing spreaders in the workshop and at site must be supplied. The panel must incorporate push button switches, selector switches, indicator lamps, PLC, input / output devices, spreader multi-pin connector, cables and all parts and software necessary for operating and confirming all the functions and safety features of the spreader. Power supply cable and plug must be provided. The functionality of the panel must be similar as on the crane (plc interlocks, communication with the spreader, memory gap and etc.). The test bench must be mobile on wheels. Wheels must be with stoppers. The test bench enclosure, panel, accessories must design to conform minimum IP55 protection.

### **3.7. Dimensions, tolerances and adjustments**

All dimensions tolerances and adjustments, which are necessary for erection, proper installation and successful performance and maintenance of the equipment must be shown in a detailed technical description of the crane and main drawings.

Axles and bores must be according to the standard bore unit of the ISO.

All dimensions must be in metric form.

### 3.8. Design criteria

#### 3.8.1. General design

The specified criterion represents minimum acceptable standards. If, in the contractor's opinion, any of the standards specified are inadequate or insufficient for the intended use, it will be the contractor's responsibility to use more stringent criteria.

The overall design requirements must be those set forth in FEM specification (section 1, heavy lifting equipment, 3rd edition October 1998) concerning the classifications and requirements for steel construction, mechanisms, materials and equipment.

#### 3.8.2. Duty cycle

The design and the selection of all the electrical and mechanical components must be based on the following principles:

- Continuous duty cycle given.
- Ambient temperature.
- Handling of a 51 ton container in single mode and 2x 32.5 ton containers in twin lift mode.
- Employing maximum speeds and acceleration and simultaneous motions.

#### 3.8.3. Crane classification

The classification of the crane must be in accordance with FEM rules and calculated to the SWL of 65 metric ton under the lifting spreader.

##### 3.8.3.1. Steel Structure

Mode of operation	Class of utilisation	State of loading	Group classification
Containers single lift – 45 tons	U8	Q3	A8
Containers twin lift – 65 tons	U7	Q2	A6
General cargo & heavy lift	U3	Q3	A4

##### 3.8.3.2. Mechanisms

Mechanism	Class of operation	State of loading	Group classification
Containers single lift – 45 tons	T8	L3	M8
Containers twin lift – 65 tons	T7	L3	M7
General cargo	T4	L2	M2
Heavy lift	T3	L2	M3
Trolley	T7	L3	M8
Gantry	T5	L3	M6
Boom hoist	T4	L3	M5

##### 3.8.3.3. Materials

All materials and equipment must be new, of the highest grade, free from defects and must conform to the applicable specifications and requirements of this specification. Steel grades must be selected according to FEM standard. Load bearing structure – only killed steel must be used for the load bearing structure. Steels must be purchased from manufacturers listed in the "approved manufacturers list" of a classified company. The steels must be delivered with certificates as in EN 10204/1995. A classification company must act as the purchaser's authorized representative (to be

approved by Port of Koper). "Classification company": does not necessarily mean the classification company contracted by Port of Koper for supervision before start of manufacturing. All relevant substantiated costs will not be borne by the Port of Koper.

### **3.8.4. Design factors**

#### **3.8.4.1. Stability design factors**

Stability against overturning must be checked by calculation in accordance with the requirements of the FEM.

The crane must be stable against overturning and sliding in all conditions, including storm conditions, without the need of anchoring or tie down devices. Stability against sliding in storm conditions must be achieved only by the storm pins and the storm brakes (wedges).

### **3.8.5. Wind conditions**

#### **3.8.5.1. Crane in normal operation**

Maximum wind speed 22m/sec (79,2 km/h), with rated load to the full range of trolley runway – W.S. boom lowered or raised, and the full range of gantry runway.

#### **3.8.5.2. Crane out of service**

Above wind speed of 25 m/sec (90 km/h). The trolley in the parking position, and the W.S. boom in the up position.

No tie down or anchoring is allowed beside the storm pin.

### **3.8.6. Structural design**

Structural design of the crane must conform to the 3rd edition (10/1998) of FEM specification. The contractor must state the factors used in his design, taking into account dead weights, dynamic operating loads, inertia loads and collisions. Also the method of combining loads should be demonstrated.

The material to be used must be identified for each major component.

The method of calculating the loads and stress must be indicated.

Information on allowances, the design and safety factors with reference to fatigue, static failure and for corrosion must also be provided.

Particular attention must be given to the stiffness of machinery foundation and supporting structure, so that the installation must be free from deflections and from vibrations.

All welding must be performed by shielded electric arc method and, where practical, using automatic machines. Welding electrodes used for manual welding must be of the high-ductility, low-hydrogen, coated type and must be suitable for welding in any position as required.

The contractor must submit for Port of Koper review WPS for the "Load Bearing Structure" before start of manufacturing.

NDT test results of plates and welds in critical area and of trolley rails must be made available during manufacturing.

Structural box girder members must be fully sealed as far as practical and designed to prevent "breathing". All entrances must be through airtight hubs continuously welded and coated on the interior.

Sealed structural parts that cannot be painted inside, or according to Port of Koper demand must be air tested.

All bolted connection must be maintenance free.

### **3.8.7. Corrosion protection**

The contractor must use materials to minimize corrosion and subsequent maintenance as a result of corrosion. It must be accomplished by the following:

- Use of stainless steel where practical.
- Protection of materials subject to corrosion by coating.
- Hot dip galvanizing in accordance with ASTM-A385.
- Sealing of structural parts.
- Sealing by non-acid silicone compound.
- Special corrosion preventive system must be applied to the cross section of rails-bolted connection on the girders (if applicable).
- The surfaces of all axles, shafts and their housing must be coated with (Molykote) spray or equivalent, before assembly.
- Sealing materials and compounds must be selected to withstand the special environment condition in Slovenia and presented for Port of Koper approval during the design review.

### **3.8.8. Mechanical design**

#### **3.8.8.1. General**

All mechanical parts and systems, including vendors, must comply with the requirements of this specification. The mechanical equipment must be fully capable of operating the crane in conjunction with the type of motors specified herein at the indicated speed and rated and design loads, with ease, safety, and minimum noise and vibration.

All components must be designed so that they can be easily assembled, adjusted, and repaired, and must be readily accessible for inspection, lubrication, cleaning and maintenance.

All parts or fastenings which may get loose by vibration must be secured by positive locking devices such as counter-nut, wires, etc.

The machinery and equipment must be so arranged and designed that free/out of control running of any mechanism in case of loss of power is prevented. All drives must be fail-safe. Machinery must be positioned on bases by means of welded shear blocks or fitted dowels installed after alignment. All pillow blocks must be of wrought steel. Cast iron will not be accepted. Mechanical design of load carrying parts must be calculated according to FEM 3rd edition (10/1998), booklet 4, in accordance with the group of mechanism specified in this specification.

#### **3.8.8.2. Ropes**

The contractor must furnish all wire ropes complete with fittings. End connections of the rope must have devices for rope length compensation. Wire ropes must be selected according to FEM specification, with the following minimum safety factors:

- Hoist ropes – minimum 6.
- Boom hoist ropes – minimum 4 for single rope (8 for the complete system).

The contractor must present the calculation of the safety factor during the design review.

A minimum of three (3) full turns on the drums must be left when the spreader is in the lowest position.

All wire ropes must be galvanized. They must be treated by the OEM with an approved lubricant and treated again during the erection as required.

The contractor must furnish the Port of Koper a copy of the test certificate for each wire rope before start of erection the first crane.

### **3.8.8.3. Drums and sheaves**

Rope drums must be made of rolled, welded steel construction with machined grooves as per DIN 150612. The grooves must be smooth and shall have a depth and groove pitch compatible with the wire rope that must be spooled.

- Pitch diameters must be calculated according to FEM specification.
- Drums must be driven direct from the low-speed shaft of the respective reducer, using a coupling or equivalent.
- Drums must be mounted on shafts utilizing antifriction type bearings to assure shaft-alignment and minimize vibration.

Sheaves must be provided with steel guards to prevent the ropes from jumping out of the grooves or being stuck between the sheaves body in all working conditions including slack.

The arrangement of the drums and sheaves must be such that the fleet angle of the rope shall not exceed 3°.

### **3.8.8.4. Gear reducers**

Main hoist, trolley and gantry gearing must be designed in accordance with the relevant ISO or DIN (39901) standards.

Gear reducers must have the following minimum service factor, based on the torque required for the nominal load of the drive:

- Hoist, Trolley drives - 1.75
- Gantry, Boom hoist drives - 1.40
- Other gear reducers - 1.20
- The thermal ratings of the gear reducers shall not be exceeded during duty cycle operation in 45 degree C ambient temperature without the use of special cooling devices.

Gear reducers of the hoist, trolley and gantry must be totally enclosed in oil bath cases. Forced oil pump lubrication is not allowed. Trolley reducer may be shaft mounted (preferred).

- Shafts must turn in anti-friction bearings. Gears for gantry travel must be of a welded (not cast) construction.
- Slip on gears must be mounted using shrink disk – "Ringfeder" or equivalent. Flanged connection may be used for the trolley gear reducers.
- Gear must be provided with suitable means to check oil-level and an outlet for oil sampling and draining. Drain pipe must be equipped with a valve and a chained plug. Each reducer must be provided with a permanently attached nameplate containing all relevant data.

### **3.8.8.5. Bearings**

Rotating bearings on the crane must be of the anti-friction type. Bearings life span for systems defined in this specification above must be selected on the basis of minimum 25000 operating hours (FEM class T7). Other bearings must be selected on the basis of minimum 12,500 operating hours (FEM class T6). The bearings load must not exceed under any operating conditions 75% of the tabulated static capacity. Bearing caps must be removable for inspection. Bearings must have seals. Seals shall be of a spring-loaded type.

Bronze sleeve bearings are subject for special approval. If approved they must be designed on a conservative basis after determination of the PV factor (unit pressure times surface velocity) and proper consideration of the operating conditions.

All bearing housing must be of cast or fabricated steel, machined as required and securely mounted on base by means of bolts and dowels.

Adequate allowance must be provided between all bearing housing and structural bases to permit initial alignment and subsequent realignments, if required. The use of shims must be avoided as far as practical.

### **3.8.8.6. Shafts**

All shafts must be fabricated from high grade steel and must be adequately sized for the application. Complete data covering the physical and chemical properties and heat treatment of the material proposed must be shown on the drawings.

All shafts must be treated with MoS<sub>2</sub> compound prior to assembly.

### **3.8.8.7. Brakes**

#### **3.8.8.7.1. General**

Brakes must be capable to stop the drive with the rated load from full speed unaided by motor regeneration, without overheating or other damages. Brakes will meet ANSI b30.2.0-1976 sec. 2-1.9 requirements (or equivalent).

Braking under normal operation conditions must be electrical (regenerative braking).

The braking torque must be at least 200 percent of the torque required at the shaft on which the brake is mounted or of the motor rated torque. Aluminium parts are not allowed. Fittings, pins, shafts, etc., must be of stainless steel.

All brakes must be equipped with:

- Automatic wear compensation devices.
- Limit switches to detect a closed brake and to prevent the braked drive from being started. The use of proximity limit switches is preferred. Limit switches for the gantry brake drives should be of a proximity type.
- Manual release for manually open the brakes by maintenance personnel.

All brakes must be spring set and thruster release.

- Thruster release must have at least IP54 type enclosures.
- Integral brakes in the motors are not allowed.
- Hoist brakes must be of disk type.
- Other brakes may be of disk or double shoe brakes.
- One (1) brake must be provided for each motor.

The brakes located outside must be furnished with protective covers. Covers design must ensure lightweight and easy procedure for removal by a one guy alone. Covers must be split as far as practical to achieve this objective. Latches and stoppers must be provided to secure the covers in place. Suitable opening must be provided in brake covers to enable inspection of the thruster functioning and spring set without removing the covers.

#### **3.8.8.7.2. Hoist and boom system**

Minimum two (2) working brakes and two (2) safety brakes (one on each drum) must be provided on hoist system.

Minimum one (1) working brake and one (1) safety brakes must be provided for boom system.

Each brake must be equipped with brake monitoring device.  
The monitoring device must contain the following items:

- Monitoring display.
- Thruster stroke.
- Brake pads temperature.
- Brake torque.
- Brake cycle counter.
- Brake wear.
- The monitoring device must communicate with the crane PLC and all information must be monitored by CMS system. Each signal from the brake must have a possibility to individually by-pass it from CMS of the crane.

The control of the hoist/boom system must prevent the brakes from opening unless the motors developed sufficient torque to hold the load and prevent sagging.

The control circuits must be designed so that normal operation brakes will close only when the associated motor has been slowed down to approximately 10% (or less) of rated speed by means of electrical braking. However, if the control power fails for any reason, all brakes must be set immediately.

#### **3.8.8.8. Wheels**

Wheels provided for the long travel and trolley system shall be selected on the basis of FEM specification section 1 para 4.2.4 booklet 4.

Wheels must be built according to DIN 15078 and DIN 15079.

Trolley wheels can be also flangeless and the horizontal forces will be transmitted to the railhead from the trolley frame by means of horizontal guide rollers.

Gantry wheels must be double flanged and designed to operate on A100 type rails.

The trolley and long travel wheels must be built with spherical roller bearings and live axles to accommodate the slip on gear reducers where applicable.

The wheel bearings must be mounted in split bearing housings. An alternative design to provide easy dismantling or removal of a wheel/bogie may be adopted.

#### **3.8.8.9. Buffers**

Trolley's corners must be provided with hydraulic buffers of sufficient capacity to prevent damage to equipment in case of collision with buffers stops at the end of the trolley runway.

The crane gantry must be provided with four hydraulic buffers, one at each corner, mounted at a height of 1250mm.

#### **3.8.8.10. Coupling and coupling guards**

Calculations of couplings must be based on the manufacturer's recommendation. The service factor must be calculated for over 160 starts per hour.

Removable steel guards must be provided over all couplings.

- Coupling must be flexible Flender 3 parts type "N-Eupex" or equivalent. The replacement of the rubber elements must be possible without detaching of the motor of the gear reducer/brake. The material of the rubber elements should be for high temperature applications.
- Flender "Arpex" (all steel) coupling or equivalent may be used only for the hoist drive.



### **3.8.8.11. Lubrication**

Lubrication of all mechanical operating parts must be provided in accordance with manufacturer instructions. Oil lubrication must be used for speed reducers, enclosed gears, and couplings. Sheaves, motor bearing, shaft anti-friction and slide bearings and sliding surfaces must be grease lubricated. Where grease fittings are not readily accessible, extensions of stainless steel tubing must be provided to allow servicing from convenient and safe locations. Lubrication points must be centralized as far as practical, using dividing sequential units.

Grease nipples must be according to DIN 3404. Where applicable, grease nipples must be protected from damage by counter bored holes or slots.

Crane must be fully greased before handover.

### **3.8.8.12. Hydraulic system**

All hydraulic components to be of heavy-duty type, and to be made of high quality steel. All cylinder rods to be chrome plated.

All hydraulic pipes, rigid and flexible, fittings, etc., must be corrosion protected (copper alloy or stainless steel). Installation must be done in the way to provide best protection against physical damages.

Hydraulic system should be designed with minimum use of pipes and hoses. Flexible hoses, where used must be heavy duty, high-pressure type, and short as possible and easily replaceable.

## **3.8.9. Maintenance design factors**

To reduce crane down time, to ease maintenance and repair jobs and to reduce maintenance cost, maintainability factors must be introduced into the crane design, to the extent that is practical. The periodical preventive maintenance must not require higher inspection frequently than monthly inspection (followed by 3-monthly, semi-annual and annual). The crane and its systems must be designed accordingly.

### **3.8.9.1. Diagnostics**

Diagnostics ("Trouble shooting") techniques, procedures and test-equipment must be developed by the contractor to achieve an overall reduction of system down-time.

## **3.9. Shop work**

### **3.9.1. General**

All structural, mechanical, hydraulic and electrical work must be performed by and directly supervised by, qualified skilled personnel.

Material cutting, weld preparation, welders' certification and welding quality assurance must meet the requirements of the relevant ISO standards. Tack welds must be ground off or integrated in the final weld seams. Intermittent welds must be permitted for stiffeners diaphragms and bracing only (inside structural box sections.)

Structural parts must be jig welded and jig drilled to assure accurate fit-up in the field. Shop erection must be utilized as far as practical.

Mechanical components must be assembled as necessary prior to shipping to demonstrate the fit of all mating parts for power, control and light circuits.

After satisfactory shop testing, the crane parts must be suitably and legibly marked, disassembled and prepared for shipment in as large units as practicable for transport and field erection. All electrical wires must be cut to length where possible and properly tagged.

### **3.9.2. Cleaning and painting**

The paint system is a re-coatable epoxy paint system paints. Alternative paints and / or paint systems may be suggested by the contractor, subject to Port of Koper approval during the design review.

Paints manufacturer instructions must be strictly followed.

#### **3.9.2.1. Steel structure preparation**

All steel material (plates, preformed bars, pipes, shapes, etc.) must be dry shot or grit blasted to cleanliness grade Sa 2 ½ according to ISO 8501 and roughness grade medium S or fine to medium G (45-65 µm, Ry5 according to ISO 8503).

Blasted surfaces must receive a coat of weldable zinc silicate (gray) shop primer. Dry film thickness (DFT) = 25-µ.

#### **3.9.2.2. Painting of inside surfaces (of unsealed box girders)**

After fabrication, all welds spatter, slag, etc., must be thoroughly removed and sharp edges rounded off. Damaged painted areas and welds (excluding the inside of sealed and pressure tested sections) must be cleaned by spot re-blasting or cleaned by power tools to St3 cleanliness as per ISO 8051. Dust, oil, grease and dirt must be cleaned with a viscous emulsion cleaner, washed with high-pressure clean tap water and dried completely prior to the application of the first coat.

Repair and stripe coat:

The cleaned areas – damaged areas, plates' edges and all welds must receive one stripe coat, by brush. DFT = 80µ. Stripe coat to cover 2-3 cm on each side of the edge or weld. Repair coat must be applied to adjacent 5-6cm on all sides of the cleaned / welded areas.

#### **3.9.2.3. Painting of outside surfaces (including internal walls of the rooms)**

After fabrication, all welds spatter, slag, etc., must be thoroughly removed and sharp edges rounded off. Damaged areas and welds (excluding the inside of sealed and pressure tested sections) must be grit blasted again to cleanliness grade Sa 2 ½ according to ISO 8501. Spot re-blasting is mandatory.

Dust, oil, grease and dirt must be cleaned with a viscous emulsion cleaner, washed with high-pressure clean tap water and dried completely prior to the application of the first coat.

Repair and stripe coat:

The cleaned areas – damaged areas, plates' edges and all welds - must receive one stripe-coat of zinc rich epoxy paint by brush (satin.) DFT = 50µ. Stripe coat to cover 2-3cm on each side of the edge. Repair coat must be applied to adjacent 5-6cm on all sides of the cleaned / welded areas.

#### **3.9.2.4. Summary – epoxy paint system**

##### **3.9.2.4.1. Internal paint system**

- Layer - Paint DFT (µ)
- Weldable Shop primer
- Repair/stripe coat - 80

- First coat - 125
- Total (min) – 150

#### **3.9.2.4.2. External paint system**

- Layer - Paint DFT ( $\mu$ )
- Weldable Shop primer
- Repair/stripe coat - 50
- First coat - 65-75
- Second coat - 125
- Top coat - 100
- Total (min) – 315

Instruction for use including intervals between coats to be strictly obeyed. Each layer must have a different shade.

Stripe-coats by brush application to be performed on all welds, sharp edges, corners and areas difficult for paint spraying and/or access.

#### **3.9.2.5. Vendor components and installations**

Mechanical and electrical components, such as cubicles, motors, switches, cables, brakes, etc., must be installed only after the area beneath them and adjacent to them, including mounting brackets, cable trays, etc., - have received the last layer of paint. During the application of the last layer of paint on the complete crane these components shall be protected and will be left clean with their original paint.

Time interval between each layer must be according to the recommendation of the paint manufacturer. Additional 72 hours required before transporting the painted parts for further assembly.

Shop painting must be held back to a minimum of approx. 10cm from any field weld joint (except for the initial weldable primer coat.)

Non-ferrous metals, corrosion-resisting steel and surfaces in sliding or rubbing contacts shall not be painted.

#### **3.9.2.6. Galvanized parts**

Ladders, staircases, walking and maintenance platform must be hot dip galvanized according to ISO

1461. The coating must be executed on a completely finished part. No further work, e.g., welding cutting, grinding, etc., must be done after the galvanized coating. Repair of damaged galvanized parts will be with 2 layers of zinc rich epoxy primer, containing minimum 80% zinc by weight in the dry film DFT - 100 $\mu$  min. Small galvanized parts may be degreased, sweep blasted, and finish painted. Large galvanized section will remain without further treatment (stairs, railing, platform, etc.)

#### **3.9.2.7. Paint repair and painting of side welding**

Original painted surfaces which were damaged during transportation, erection and/or field welding must be repaired applying the following system:

Cleaned with hand or power tool steel brushes to St 3 Without polishing the surface. Roughening up of the surrounding areas about 5-6 cm with emery paper nr. 40 or nr. 60. Dust, oil, grease and dirt must be cleaned with suitable solvents or carbon remover.

Paint procedure shall be as follows:

- Strip
- Layers of epoxy paint

Repair of hot dip galvanized parts must be with 2 layers of high zinc rich epoxy primer containing at least 80% zinc by weight in the dry film 100µ min.

### **3.9.3. Hardware**

All hardware parts must be treated against corrosion. Screws, bolts, nuts, pins, studs, greasing pipes and fittings, springs, washers and other miscellaneous fastenings and fittings must be of stainless steel grade A4 (316). Bolts and such above 12mm diameter must be hot dip galvanized in a centrifugal method according to ISO 1461.

Painting may be added.

Use of stainless steel grade A4 (316):

- Cubicles located outdoors.
- Bolts and such 12mm diameter and bellow must be of stainless steel.
- Latches must be used for securing of covers.
- Hinges must be of stainless steel with greasing nipple. They must be bolted (not welded) to the structure.
- Surface rust, formed on stainless steel from transportation, welding/grinding etc. should be carefully cleaned and passivated.

### **3.9.4. Vendor components systems**

All vendor components must be specified with special paint for marine application and high durability.

The mechanical and electrical supply and installation of all vendor parts and systems including access, cables marking, etc., and must comply with the requirements of this specification.

### **3.9.5. Quality control**

#### **3.9.5.1. General**

Quality assurance and quality control play a vital role in establishing and maintaining a high quality product. Detailed and comprehensive inspections and examinations must be made and complete data must be collected and recorded to secure the quality work required and to warrant the called for standards are met. The contractor must be responsible for providing all the necessary QA and QC procedures, maintaining continual surveillance and inspection activities during the entire periods of fabrication, erection and testing. Special processes for survey of manufacturing methods, etc., must be provided.

The contractor must arrange for continuous and near at hand supervision and coordination in every major location of activity.

Vendor items must be checked and tested for compliance with applicable standards and specifications. Inspection and test reports, release notes, compliance certificates, etc., shall be reviewed by the Port of Koper during the manufacturing and fabrication. Test reports and certificates must be furnished for (minimum requirements):

- HV power trailing cable
- HV switch gear
- Electrical motors

- Electrical transformers
- Gear reducers
- Wire ropes
- Hydraulic pumps and cylinders
- Steel
- Brakes
- Welders certifications
- Welding procedures structure

#### **3.9.5.2. Quality plan**

The contractor must issue the quality plan in a comprehensive programmed file. The file must include all the information and data referring to the QA and QC, for material and components purchasing, manufacturing, assembly, inspection, erection, commissioning and testing, including activities, procedures, instructions, etc. The file must be reviewed and approved by the Port of Koper prior to start of fabrication. The subcontractors must use it as well as supervisors nominated by Port of Koper.

#### **3.9.5.3. QA and QC tables**

The up QA and QC tables must be prepared for each structural, mechanical and electrical part, system, assembly and for each erection procedure. The table must include the description of the steps (cutting, fitting, welding, shop erection, measuring, NDT, painting, etc.) Each step would be signed when completed by the manufacturer, the contractor QA personnel and the Port of Koper its nominated classification company or Port of Koper representative.

Steps will be defined as hold, witness, monitor or review points as appropriate for each party. Full signature and approvals on the relevant tables must form the precondition to allow the corresponding parts, assembly and such to be put to next step or procedure.

#### **3.9.5.4. Painting inspection**

The painting sub-contractor must keep daily inspection report. The submitted inspection reports must include testing according to ISO 12944-7 – "Execution and supervision of paint work." Inspection of the paint work must be executed in the shop, prior to the transportation to the assemble shop or to the erection site. Final paint inspection reports and reference area paint reports must be included in the acceptance tests and documentation, guide lines must be according to ISO 12944:

- Daily inspection report – Inspection of the paint-work must be executed in the shop, prior to the transportation to the assemble shop or to the Erection Site. Final inspection must be included in the acceptance tests.
- Reference areas and guaranteed surfaces – number of guarantee surfaces depends on the total surface to be painted and the number of the main manufacturers participating in the fabrication.
- The paint manufacturer must conduct all tests including adhesion tests and must countersign on each guarantee surface record.
- Full QA report and a final certification of conformance (C.O.C) will be issued for approval before delivery to Port of Koper.

Warranty for the painting of the steel structure must be at least 7 years as of acceptance of the cranes as per degree of rusting Ri 3 (area rusted 1%) in accordance with ISO 4628/3 (DIN 53210).

### **3.10. Project administrative requirements**

#### **3.10.1. Document Submission**

##### **3.10.1.1. Project organisation chart**

The contractor must submit to the purchaser a project organization chart within two (2) weeks after the date of the agreement.

The organization chart must show the organization of the contractor's resources, which he intends to employ in the total project from shop manufacturing through to the site commissioning phases. This will clearly identify the departments involved, the people responsible for each element and the number of personnel directly involved in administering the project.

##### **3.10.1.2. Project schedule / programme**

The contractor must submit to the purchaser a project schedule (program) within two (2) weeks after the date of the agreement.

The programme (and any revisions thereof) must be presented in the form of a logic linked timed schedule covering all activities appertaining to the manufacture of the crane(s). The contents must include but not be limited to the following:

- Commencement date.
- Engineering design period.
- Submission of drawing/design calculations and operating and maintenance instructions and for the approval thereof by the engineer.
- Procurement of materials and components.
- Manufacturing periods for the main structural sections.
- Erection in the contractors facility.
- Shop test and commissioning.
- Transportation period.
- Site commissioning.
- Completion date(s)
- Contractual payment milestones (estimated time of invoice issuance)
- Dates when purchaser supplied information or permits are required

Further the programme must include the times by which the contractor requires the purchaser:

- to furnish any drawings or information,
- to provide access to site,
- to have completed any necessary civil engineering or building work (including foundations for the plant),
- to have obtained any import permits or licences, consents, wayleaves and approvals necessary for the purposes of the works,
- to provide electricity, water, gas, air and other services on the site or any equipment, materials or services which are to be provided by the purchaser.

The programme must be provided in "MS Project" and PDF format and shall be presented in a way that clearly shows each activity connected in a logical program sequence. Each activity must show the duration, early start and early finish and shall identify the critical path of the project.

### **3.10.1.3. Project progress report**

The programme must subsequently be updated and submitted to the Purchaser at intervals of no more than one (1) month throughout the course of the project until the taking-over certificate for the last crane has been issued.

The monthly update will show actual progress against the original baseline so that effect of any slip or improvement in progress can be easily identified.

### **3.10.1.4. Crane delivery method statement**

No later than three (3) months before the arrival of the first crane(s), the contractor must submit a method statement for the purchasers approval for the roll-off or lift-off or discharge of the crane(s) to the purchasers quay deck. The method statement must include:

- The total area required for the roll-off or discharge operation.
- Full details of the transportation vessel and the stowage of the crane(s).
- Orientation of the vessel when offloading.
- Number and position of bollards and moor lines.
- Length and position of sea anchors (if applicable).
- System of transferring the crane to the quay deck.
- All skid beams and skid beam centres (if applicable).
- All positions and magnitude of loadings applied to the quay deck during the offloading operation.

The proposal must also show a period of occupancy and the length of the Purchaser's berth required for roll-off or discharge operation.

### **3.10.1.5. Site work method statement**

No later than three (3) months before the arrival of the first crane(s), the contractor must submit to the purchaser a site work method statement for the purchasers approval showing all activities from arrival of the crane(s) through to taking-over.

The method statement must include:

- The total area required to complete the crane(s) and to store the loose items and spare parts.
- Roll-off, Lift-off or discharge scheme and date of performance.
- Key activities of the commissioning / completion and duration.
- Number of days required from the date the crane is ready for starting up and load testing.
- Date the crane(s) will be test commissioned and handed over to the purchaser.
- Date the crane(s) will be finally handed over to the purchaser.
- Other key dates of significance.

**All these points must be strictly subject to the purchasers approval.**

### **3.10.1.6. Daily plan and report**

For the duration of the period of site work at the purchaser's site, the contractor must submit, at daily intervals in a form approved by the purchaser, his progress of activities and tests carried out. This daily plan shall also indicate weather conditions, number of contractors personnel and subcontractors engaged at site together with the activities planned for the next day.



### **3.10.2. Design drawings and calculations**

#### **3.10.2.1. Design management system**

With the submittal of the conceptual design, the contractor must submit to the Port of Koper full details of the contractor's system of drawing management, which shall be maintained throughout the project.

The contractor must demonstrate that a logical system of drawing administration exists and must clearly establish to the Port of Koper, the procedures and current practices in place which deal with alterations, modifications and re-issue of drawings from the design stage through to the as built drawings.

The contractor must provide and maintain a drawing register for all submitted, reviewed and resubmitted design documents, including the document numbers, version number and dates.

#### **3.10.2.2. Design review**

The contractor's design documents shall be reviewed by the purchaser's appointed review engineer.

Design review meeting(s) to further clarify design details and review comments shall take place. All costs incurred to the purchaser or his representatives in connection with the design review meeting(s) must be borne by the purchaser.

The review engineer's comments on the drawings or submittals shall not waive the contractor's duties or obligations to achieve satisfactory performance of the crane as set out in the contract.

The purchaser undertakes no duty to the contractor to neither identify nor notify to the contractor any errors or omissions in the contractor's design.

#### **3.10.2.3. Conceptual design**

The contractor must submit to the purchaser a conceptual design, which outlines his proposal for the crane(s) for his review. The conceptual design must show clearly by drawings, calculations and descriptions the major design details.

#### **3.10.2.4. Detailed Design**

Following review and acceptance of the conceptual design, prior to the fabrication or ordering of components, the contractor must submit detailed drawings and calculations.

General arrangement drawings, calculations and other data, must be submitted from time to time at the request of the purchaser for review.

#### **3.10.2.5. Final design**

Following the review and acceptance of the detailed design, the contractor must submit to the purchaser all documents reviewed and if necessary revised according to the purchaser comments or for other agreed reasons.

No alterations to the final design shall be allowed unless specifically approved by the Port of Koper (=Design freeze).

### **3.10.2.6. As-build drawings**

The contractor must submit to the purchaser three (3) sets full-size hard copies (in the original drawing size) and one (1) sets in electric form (PDF format) the following as-built drawings within 30 days after the date of issue of the taking-over certificate for the first crane(s):

- All drawings that were previously submitted for the purchaser's review and revised as built as at the shipment date.
- Detailed drawings for wearing parts showing machining tolerances, wherever applicable, and wear limits:
  - i.) Brake drums (or discs)
  - ii.) Brake shoes
  - iii.) Wheels
  - iv.) Drive couplings
  - v.) Sheaves
  - vi.) Anti-friction bearings
  - vii.) Bushes
  - viii.) Bearing plates
  - ix.) Oil seals and o-rings
  - x.) Table for consumable parts of electrical machineries
  - xi.) All other wearing parts.
- Detailed electrical control circuit drawings, control logic programs, and wiring diagrams.
- Full details of all bought-in equipment, drawings instructions, etc.
- List and specification of structural connection bolts and machinery fitting bolts with tightening torque value for each location/size.
- The contractor must revise and resubmit drawings for replacement in case any modification or revision is made on the works (as defined in the agreement) after the initial submission.

### **3.10.3. Quality assurance inspection and test protocols**

#### **3.10.3.1. Quality assurance program / manuals**

Contractor must submit to the purchaser a quality assurance program for review within one (1) month after the date of the agreement.

The program must consist of a general quality assurance program, which states contractor's general practice and organization to control the quality standard during design, procurement, fabrication and erection periods, and a specific quality assurance program.

The specific quality assurance program must relate particularly to the cranes and equipment to be supplied in this contract and must include key inspection and test items during fabrication and delivery through to hand over of the crane to the purchaser with proposed timing and locations of conducting such inspection and test.

This quality assurance program must cover all the inspection and review items as set out in inspection / test control sheets.

Test certificates confirming the material mechanical property of steel plate and forging bars or steel bars must be submitted.

Mechanical property testing must be conducted on all critical mechanical fastener systems. These tests must be conducted in accordance with the mechanical property test requirements. Port of Koper shall require records of this testing for review.

An organization chart with names of the quality assurance team personnel for this contract for each major stage of fabrication, delivery, commissioning and defects liability period must be included in this program.

### **3.10.3.2. Pre-shipment inspection and test on completion protocol**

No later than four (4) months before the shipping date of the first crane(s), the contractor must submit to the Port of Koper for his approval a pre-shipment test and test on completion protocol. The testing procedures must be in the form of the pre-shipment inspection and test on completion protocol as provided with the contract agreement and must contain detailed field and function check procedure to fully demonstrate the specified requirements and the suitability of the crane for container handling operations. The procedure must describe the tests to be performed, the indications to be measured and the method by which they are measured. It must contain the design or acceptable values of each measurement along with blanks in which the tester can enter the measured values.

Provision must be made within the procedure for the tester and the Port of Koper representative to initial and date each separate test.

The testing procedures must be duly completed by the contractor following each individual test or each series of tests conducted at the contractor's facility and at site. Where necessary the Port of Koper representative shall verify the results.

The contractor must submit the completed pre-shipment inspection section of the protocol before loading of the respective crane on to the vessel.

The contractor must submit the completed pre-shipment inspection and tests on completion procedure no later than one (1) month after the notification of successful completion of the test on completion.

### **3.10.4. Operation and maintenance instructions**

#### **3.10.4.1. Operation manuals**

The operation manual must clearly state the start-up procedure of every device on the crane including all bought-in equipment, and all the points to be observed or checked during the start up.

The operation manual must be provided in English and Slovenian language.

The contractor must provide three (3) sets of each of the required languages of the operation manuals to the purchaser three (3) months before arrival of the first crane(s) at the site. Receipt of these operation manuals is one of the preconditions for the issuance of the pre-shipment certificate.

Corrections must be made for any changes made in the instructions during the commissioning period, and three (3) sets of each of the required languages of the revised operation manuals must be submitted one (1) month after the notification of successful completion of the tests on completion of the first crane(s)

One sets of above instructions must be submitted in electric form.

#### **3.10.4.2. Maintenance manual**

The maintenance manual must include maintenance intervals and procedures for all the bought-in equipment, and also calibration instructions and standards for meters, gauges and any components, which require periodical calibration to allow calibration by the purchaser's maintenance staff.

The maintenance manual must include a complete list of wearing parts showing the allowable limit of wear for each part.

The maintenance instructions must be based on a scheme which utilizes runtime hours rather than calendar intervals for defining the preventive maintenance tasks wherever possible, runtime hours

must be those measured by the runtime meters such as Hoist, Trolley, Gantry, Boom and Control-on hours.

The maintenance manual must be provided in English and Slovenian language.

The contractor must provide three (3) sets of each of the required languages of the maintenance manual to the purchaser one (1) month before the date of the first crane departure from the contractor's manufacturing site. Receipt of the maintenance manuals is one of the preconditions for the issuance of the pre-shipment certificate.

Corrections must be made for any changes made in the instructions during the commissioning period, and the three (3) sets of each of the required languages of the revised maintenance manual must be submitted one (1) month after the notification of successful completion of the tests on completion of the first crane(s).

One sets of above instructions must be submitted in electric form.

#### **3.10.4.3. Lubricant list**

The contractor must supply a complete list of oil and lubricants to be used on the crane three (3) months after the date of the agreement for the purchaser's approval.

All the oil and lubricants used for the crane must be selected from those available locally in the country of operation and used by the purchaser.

#### **3.10.4.4. Structural maintenance program**

The fatigue criteria in this specification are based on producing a damage tolerant design. Because of the variation of fatigue performance and that usage may exceed the design conditions, there is a risk that a structure or component may fail in service. When fatigue cracks develop, the remaining structure should sustain the maximum working load until the cracks are discovered. satisfactory performance of the damage tolerant design, therefore, depends on adequate methods of fatigue crack detection and the ability to repair or replace the damaged component. The intent of this section is to define a metho

of routinely inspecting for fatigue cracks to significantly improve the structural reliability. Periodic structural inspections are required to detect cracks that have developed during d the life of the crane. The inspection intervals defined below are based on fracture mechanics calculations, reliability analysis, and the fact that fatigue cracks can be classified as infant and aging failures. The delivery inspection and warranty inspection should detect infant failures and subsequent periodic Maintenance inspections should detect aging failures. Infant failures are primarily due to deficient fabrication; underestimation of fatigue damage, which may be due to deficient design or excessive loading; or a combination of these. Aging failures are primarily due to cumulative damage from normal operations and properly designed and manufactured components.

Since the integrity of the structure depends on inspections, interpretation of the results, and the choice of repair, it is important for the contractor and the Port of Koper to review all reports.

No later than three (3) months before the arrival of the crane(s) the contractor must submit a structural maintenance program for review. The program must be based on the principles of fracture

mechanics and shall include the following information for both infant and aging failures:

- Inspection intervals
- Locations to be inspected
- NDT procedures to be used
- Reporting procedures
- Repair procedures

- Documentation showing the parameters used to determine the inspection intervals in accordance with the criteria specified below

Inspection methods must be selected to detect fatigue cracks. Only critical locations need to be inspected by NDT methods such as MT, DPT, RT, and UT. Critical locations on all members are those locations where fatigue cracks, if any, would be expected to initiate. The inspected region shall extend a reasonable distance beyond critical points. MT must be used at critical locations of fillet welds and UT shall be used at critical locations of butt welds. VT must be used at all locations of potential fatigue cracks.

Unless agreed otherwise, structural maintenance program inspections will be performed by an independent agency retained by the purchaser and in accordance with the structural maintenance program. The structural maintenance program must be reviewed by the contractor's responsible engineer and he must certify that he has reviewed the program and is satisfied with it. The program must be included in the maintenance and inspection manual.

- The warranty inspection will be made prior to the end of the warranty period, but no later than 200,000 moves. All FCM details and all details that are scheduled to be inspected at an interval of 24 years or less shall be inspected. The inspection procedures used for the warranty inspection must be the same as those used for subsequent periodic maintenance inspections.
- Subsequent periodic maintenance inspections will be made according to the recommended inspection intervals from the structural maintenance program. The first periodic maintenance inspection period will begin after completion of the warranty inspection.
- Within 30 days after the warranty inspection or any periodic maintenance inspection(s) occurring during the structural warranty period, the contractor must submit a plan to repair any defects found. Upon the purchaser's approval of the contractor's plan, the contractor must repair the defects that are not the result of the purchaser's misuse of the crane, at the contractor's expense. The purchaser's independent agency will inspect the repaired defects. If any of the repairs are not acceptable, the contractor must make additional repairs as necessary. The costs of the additional inspection and repairs shall be borne by the contractor.

The contractor must provide permanent access ladders and platforms at all inspection locations, with inspection intervals of 12 years or less. Access must meet applicable safety laws and regulations.

### **3.10.5. Shop inspection & tests**

#### **3.10.5.1. Shop inspection and verification**

Inspection and testing of the crane must be performed to verify or demonstrate the crane's conformance to this specification and the purchaser's requirement as set out in the other contract documents, following the approved specific quality assurance program.

Without limitation to the purchaser's rights under the agreement, the contractor and the purchaser must agree to the content, nature and extent of the review, inspection and tests to be carried out to any of the works at each of the following stages:

- Design.
- Technical specification.
- Fabrication and assembly.
- Pre-shipment.
- Upon delivery.
- Tests pursuant to the conditions of contract, which, if successful will lead to the issue of a taking-over certificate.

- Such further tests as otherwise may be required that in the opinion of the purchaser is pursuant to the conditions of contract.

The purchaser reserves the right for itself or any party authorized by the purchaser to inspect the crane at any time during fabrication and delivery.

Inspection and test items shall generally include (but not limited to) the following fundamental items:

- Materials and components sources and identification of standards applied.
- Workmanship overall.
- Inspection of operational and maintenance safety, test of all safety equipment and safety devices.
- Inspection of operational efficiency, functional test of all components equipped for operation.
- Inspection of maintenance efficiency, functional test and inspection of all equipment for maintainability.
- Rated load tests, 1/2 loads tests and no-load tests including test and measurement of speeds and accelerations.
- Overload (proof load) tests including stability test and measurement of structural deflection.
- Accessories and spare parts inventory.
- Operating instruction and maintenance manual review.
- Weight verification as necessary.
- Statutory inspection and tests.

#### **3.10.5.2. Pre-shipment and test**

Cranes, which according to the agreement, must be fully erected in the contractor's facility, must be tested prior to shipment on erection site.

The contractor must prepare a shop assembly and crane erection program including all tests and dimensions to verify the proper installation and assembly of the crane's components. The drawings must include assembly procedures, drawings, dimensional acceptance criteria, structural member dimensional checks, structural frame alignment dimensions, structural pin and bore fits, structural bolt torques and machinery alignments.

The contractor must inspect the assembly of components and crane erection throughout the process to verify and to be satisfied that the requirements of the specification are being fully complied with in all respects.

The cranes must be fully lubricated in accordance with the manufacturer's recommendation prior to any shop testing. A lubrication checklist must be included in the test documentation.

The assembled crane must be inspected and tested at the contractor's assembly facility. All installations and functions must be verified for compliance to the specification. The crane testing must follow the pre-shipment inspection and test on completion protocol and as a minimum include the following:

- Verify trolley speed, acceleration according to specification.
- Verify hoist speeds, accelerations according to specification.
- Verify gantry motor rotation direction and other gantry and gantry cable reel functions to the extent possible (typically limited due to space limitations at the Contractors erection location).
- Boom travel sufficient to verify the hinge geometry. Boom hoist under crane power from operating to the stowage position and from stowage position back to operating position using automatic controls for slowdowns and stops. The boom must hang on the disc brake at highest load position as a verification of disc brake operation.



- The sway control and anti-sway system must be set up and tuned under a range of load conditions. Verify the sway control and the effectiveness of the electronic anti-sway. (If applicable).
- Snag system release under reduced load. Snag load trip of hoist utilizing a lower than normal snag setting.
- Trim, list and skew motions.
- All interlocks and limit switch settings, and software logic.
- Safety and protection systems.
- Function tests of all systems.
- Rated load and proof load tests.
- Function test of jib cranes and all service cranes.
- Brake dynamic torque values must be verified for each drive by driving through each brake and calculating the braking torque from the current draw. Thermal capacity of the brakes must be verified in the same manner with torque, time and brake revolutions recorded. All brakes shall have their linings properly burnished or seated to the manufacturer's recommendations prior to conducting these tests.
- Check structural alignment and integrity.
- Inspect and demonstrate that all electrical wiring and wiring components are installed and properly marked.
- 24-hours heat run test of all systems using rated load. The heat run test is not required in case the endurance test is performed at the contractor's site.

The cranes static wheel loads shall not exceed the wheel loads referred to in this specification. Should any crane's static wheel load exceed any such wheel load this shall constitute a defect and the contractor shall not be entitled to dispute this on any grounds or in any circumstances. The contractor must be required to carry out appropriate and accurate tests in order to identify the static

wheel loads of the completely assembled crane complete with the rated load at the maximum outreach, in between the legs and at maximum back-reach. A procedure for performing the tests must be submitted to the Port of Koper for his approval prior to the tests being performed. These tests must verify that the static wheel loads do not exceed the declared wheel loads shown in the form of tender. These tests must be carried out in the presence of the purchaser or his representative.

### **3.10.5.3. Purchaser representatives**

Purchaser representatives will attend the contractor's works from start of fabrication until shipment of the last crane(s).

The purchaser representatives must adhere to the contractor's site safety and health regulations.

### **3.10.5.4. Defect list / Punch list / NCR**

The purchaser or his representatives must be allowed to gain access to any part of the crane(s) during their assembly at the contractor's facility and during the site-commissioning period for the purposes of inspecting part or completed works. If in their opinion certain parts of the Works does not meet with the requirements of the agreement, or is deemed as bad practice or poor workmanship, then these shall be noted as a defect and informed to the contractor in a list.

The compilation and provision of this list by the purchaser or his representative will in no way relieve the contractor from his obligation to provide defect free crane(s).



The contractor must be obliged to correct these defects and any other defects according to the set milestones below, prior to performing tests on completion, heat run (manufacturing site endurance test) and crane loading.

- Tests on completion (65% punch-list completion)
- 24 hr heat run test, also referred to as manufacturing site endurance test (85% punchlist completion)
- Loading (98% punch-list completion)

In exceptional circumstances an alternative appropriate punch-list completion rate may be approved by the purchaser.

The rectification of defects in the defects list must be carried out in a thorough and workmanlike manner. The contractor shall prepare and submit to the purchaser a rectification report that confirms defect completion together with a description of the action taken.

### **3.10.6. Shipment and delivery**

#### **3.10.6.1. Clearance for shipment**

Each crane must be tested for functions of all the devices and systems in the contractor's yard before shipment in accordance with the approved pre-shipment Inspection and test on completion protocol.

Port of Koper or its representative must work with the contractor to witness preshipment tests. Port of Koper or its representative will issue a "Pre-Shipment Certificate" to the contractor when tests and punch-list have been completed to his satisfaction.

#### **3.10.6.2. Notification of ETA site**

The contractor must notify the purchaser of the estimated time of arrival of the marine transport vessel ("ETA"), which is carrying the goods (or any part of the goods) at least six (6) weeks prior to such ETA. Upon receiving such notice, the purchaser shall tentatively allocate a berth at site for delivery and unloading of the goods. The purchaser shall inform the contractor of any restricted berthing periods which may exist one (1) week before and after the notified ETA.

The contractor must confirm to the purchaser the date of actual departure of the vessel from the loading port and thereafter without fail the daily noon position of the vessel together with an updated ETA by daily email transmission to the purchaser to include but not limited to the following information:

- Call Sign/Vessel Name
- Condition of sea fastenings
- Speed in Knots
- Latitude
- Longitude
- Weather including wind-speed
- Sea conditions and swell including wave height
- Time: LT/UTC
- ETA (LT)

The exact berthing time and berthing position for the vessel shall be agreed and fixed at least one day prior to the ETA between the purchaser and the contractor based on the contractor's daily position and ETA report.

### **3.10.6.3. Navigation requirement**

The contractor must be responsible for following all necessary procedures to ensure the safe passages of vessels whilst navigating in the port. The contractor must maintain close contacts with the relevant maritime authority in the country of operation.

### **3.10.6.4. Berthing and roll-off requirements**

The crane must be rolled off or lifted off from a vessel onto the designated position of the quay, then shifted to a designated test position by the contractor. Such operations must in no way over-stress any part of the piled quay deck and the yard. Specifically, any loads on the quay apron, waterside of the waterside crane rail beam are prohibited.

The vessel must leave the berth as soon as practicable after completion of the unloading. The contractor must inform to the purchaser the estimated time of departure ("ETD") of the vessel at least four (4) hours before such ETD.

All the necessary calculations, design, engineering, preparation works and clean up works for the roll-off and shifting the crane to a designated test position and testing at the site must be the responsibility of the contractor. The preparation works must include obtaining necessary technical information of the quay from outside consulting engineers and obtaining necessary clearance or permit for the works from government offices concerned.

The contractor must have obtained all necessary approval, clearance, permits, etc. required for the site works prior to the vessel departing from the contractor's facility.

### **3.10.7. Site works**

#### **3.10.7.1. Work permits**

All engineer/supervisors dispatched for start-up, testing and training must arrange working permits in advance according to the Port of Koper rules.

#### **3.10.7.2. Site safety and security**

The contractor must comply with the purchaser's security requirements for making entry or exit to and from the terminal and inside the terminal.

The contractor and its subcontractors must be responsible for protecting their own plants, tools, temporary site offices and other belongings from weather, fire or theft. The contractor must be responsible for sufficient fencing, guarding, lighting and watching of all the works on the site until taken over. The contractor must not use any naked light on the site without the specific consent of the engineer or the engineer's representative.

The cranes must be protected by the contractor from high wind, fire, collision and any other possible risks until the crane or other works are taken over by the purchaser.

Erection all risk insurance, third party liability insurance, workmen's compensation insurance and other necessary insurances must be secured and maintained by the contractor in accordance with the conditions of contract.

#### **3.10.7.3. Site erection area and facilities**

The purchaser must make available to the contractor the agreed area required to complete the cranes, and for the contractor's office and storage containers.

The contractor will at his own cost provide for the installation of office and storage containers.

#### **3.10.7.4. Site office communication and electricity**

The contractor must at his own cost provide for the installation of a telephone line for outside call and internet.

The purchaser must make available on the site for use by the contractor for the purposes of the works the supply of electricity.

#### **3.10.7.5. Clearance of site**

From time to time during the progress of the works the contractor must clear away and remove from the site all surplus materials and rubbish and, on completion, all contractor's equipment. The contractor must at all times leave the site and the works clean and in a safe and workmanlike condition to the purchaser's reasonable satisfaction.

Upon completion of the site works, the contractor must remove any office and storage spaces, equipment, apparatus, etc. from the site and clean the area occupied by the contractor during the site works to the reasonable satisfaction of the purchaser.

#### **3.10.7.6. Contractor's representatives**

One English speaking principal site engineer shall be dispatched prior to arrival of the cranes to the site to plan and coordinate the work and to communicate with and report to the purchaser. He must stay in the purchaser's locality for the entire period from delivery to taking over and after handover of the cranes to the purchaser.

A sufficient number of qualified start-up engineers and training engineers must be dispatched to the purchaser's terminal to handover the cranes in an expeditious manner.

The contractor must provide a qualified and competent electro/mechanical service engineer to remain on site (according to purchaser demands) after issue of the taking over certificate for the final crane. The contractor's service engineer will be required to provide support to the purchaser's maintenance engineers, assist with fault diagnosis and identification and to liaise with the contractor's office.

#### **3.10.8. Site inspection and tests**

##### **3.10.8.1. Test on completion**

The cranes and other works must be verified at site as operational and safe under any load conditions prior to the tests on completion.

The tests on completion will be as defined in the approved pre-shipment inspection and test on completion protocol. The contractor must show the purchaser by documentation or by physical demonstration (in either case as determined by the purchaser) that all functions of the crane(s) or other works are safe and conform to the agreement. The contractor must correct or modify whatever aspect is found unsafe. The crane(s) and other works must pass the statutory tests, which will be carried out and witnessed by the purchaser's representative.

##### **3.10.8.2. Proof load test**

The proof load test forms part of the tests on Completion. The crane(s) must be required to undergo a test to demonstrate the stability of the crane(s). The proof load must comply with country law and must be at 110% of maximum lifted load for the dynamic test and 125% of

maximum lifted load for the static test. Details of the proof load test will be as defined in the approved pre-shipment inspection and test on completion protocol.

The contractor must be responsible for the issuance of a proof load certificate from an inspection authority acceptable to the local authorities in Slovenia.

The test load for the proof load test will be provided by the purchaser.

### **3.10.8.3. Endurance test**

The endurance test forms part of the tests on completion. The cranes must be required to undergo a test to demonstrate the combined operation of all crane systems and the reliability of the components. The endurance test must consist of repetitive cycling as follows whilst handling the crane's rated load.

- Pick up the container at the halfway point of the full back-reach of the crane.
- Hoist up above half of the crane maximum lifting height.
- Trolley forward to the centre between the crane rails.
- Lower to approximately 1-meter height above quay level.
- Wait 30 seconds.
- Hoist up above half of the crane maximum lifting height.
- Trolley forward to halfway position of the crane full outreach.
- Lower to approximately 1-meter height above quay level.
- Wait 30 seconds.
- Hoist up above half of the crane maximum lifting height.
- Trolley back to the centre between the crane rails.
- Lower container to ground.
- Unlatch the container.
- Hoist up to approximately 5 metres below the crane maximum lifting height.
- Trolley back to the halfway point of full back-reach.
- Lower to approximately 3 metres above quay level.
- Repeat cycle in reverse order.
- After each 30-minute operation the crane(s) must gantry for a minimum of 30 metres to a new position and the cycle repeated. The crane must then gantry back to the original test position.

This cycle is a preliminary proposal, and the final test cycle shall be determined by the crane configuration and in agreement with the purchaser.

The endurance test must be continued for a period of 24 hours. During the initial 16 hours, faults eliminated within 15 minutes must not result in the failure of the endurance test, with the provision the total amount of downtime in the first 16 hours does not exceed 30 minutes. In the event of a malfunction in the final 8 hours of the endurance test, the endurance test must be continued until 8 hours of trouble-free operation have been logged.

Throughout the period of testing the current, voltage, speed, main drive mechanism temperature, noise and vibration must be recorded at intervals of 1 hour. Any malfunctions or problems and any remedial action taken during the test must be recorded.

The crane operators for the endurance test must be provided by the contractor.

### **3.10.8.4. Taking over certificate**

The taking over certificate will be issued on successful completion of the tests on completion (including the endurance test and proof load test), and training as defined in this specification. The taking over certificate must include the punch list as defined in this specification.

Clarification: Any outstanding training at the time of taking over must be completed within two (2) months of the date specified in the taking over certificate. A detailed training schedule for must be provided prior to taking over.

#### **3.10.8.5. Remedial works**

Outstanding items (also called "punch list items") must be rectified by the contractor after the taking over within eight (8) weeks or a period as agreed by the purchaser and the contractor. The purchaser will give the contractor access to the works as necessary to resolve the punch list items.

#### **3.10.9. Crane model**

The contractor must provide two (2) scale models of the cranes. The models must be 1:200 scale and shall bear the specified crane livery and logos.

### **4. Splošno**

V poglavju III. »Specifikacija naročila« so navedene tehnične zahteve in opis STS dvigal z opremo. Ponujena oprema mora izpolnjevati vse naročnikove zahteve. Oprema mora biti nova.

**Ponudnik s podpisom obrazca »Ponudba« (OBR-1) in Izjava ponudnika o preučitvi in seznanitvi s tehničnimi zahtevami (OBR-1b) izjavlja, da je podrobno preučil tudi celotno vsebino v poglavju III. »Specifikacija naročila« in da je seznanjen z vsemi tehničnimi zahtevami in opisi ter da se z njimi v celoti strinja. V primeru morebitnih pomanjkljivosti v tehničnih zahtevah in opisu naročila mora ponudnik naročnika na to opozoriti ali postaviti vprašanje preko portala javnih naročil [www.enarocanje.si](http://www.enarocanje.si).**

V kolikor je v tehničnih zahtevah naveden proizvajalec in/ali tip opreme, velja dodatek »ali enakovredno«.

### **5. Zakonodaja**

Ponujena oprema in vgrajeni deli morajo ustrezati vsem veljavnim predpisom, za prodajo in delovanje na območju Evropske unije, morajo biti v skladu z veljavnimi standardi EU in morajo izpolnjevati vse navedene tehnične zahteve. Dobavljena oprema mora biti opremljena z izjavo EU o skladnosti »CE«.

**V kolikor ima ponudnik pripombe, predlog spremembe ali pomisleke v zvezi s tehničnimi specifikacijami ali drugimi poglavji te dokumentacije v zvezi z oddajo javnega naročila, jih lahko izrazi na način postavitve vprašanj na portalu [eNarocanje](http://www.enarocanje.si), pod predmetno objavljeno javno naročilo.**

#### **IV. OBRAZCI**

- **PONUDBA (OBR-1)**
- **PRILOGA 1 TEHNIČNE ZAHTEVE/TECHNICAL REQUIREMENTS JN 71/2025**
- **PONUDBENI PREDRAČUN JN 71/2025 (OBR-1a)**
- **IZJAVA PONUDNIKA O PREUČITVI IN SEZNANJENOSTI S TEHNIČNIMI ZAHTEVAMI (OBR-1b)**
- **PODATKI O PONUDNIKU IN PODIZVAJALCIH OZ. IZVAJALCIH V SKUPNEM NASTOPU (OBR-2)**
- **OBRAZEC ESPD V ELEKTRONSKI OBLIKI**
- **IZJAVA O IZPOLNJEVANJU POGOJEV ZA SODELOVANJE IN NEOBSTOJU RAZLOGOV ZA IZKLJUČITEV (OBR-3)**
- **IZJAVA PODIZVAJALCA O IZPOLNJEVANJU POGOJEV ZA SODELOVANJE IN NEOBSTOJU RAZLOGOV ZA IZKLJUČITEV (OBR-3a)**
- **IZJAVA O ZAGOTOVLJENIH REFERENCAH (OBR-4)**
- **POTRDILO NAROČNIKA (OBR-4a)**
- **IZJAVA O ZAGOTOVLJENIH TEHNIČNIH ZMOGLJIVOSTIH (OBR-5)**
- **VZOREC POGODBE (OBR-6)**
- **IDENTIFIKACIJA PONUDNIKA/POSLOVNEGA PARTNERJA (KYC OBRAZEC) oz. IZJAVA/PODATKI O UDELEŽBI FIZIČNIH IN PRAVNIH OSEB V LASTNIŠTVU PONUDNIKA (OBR-7)**
- **IZJAVA PONUDNIKA O SPOŠTOVANJU KODEKSA RAVNANJA POSLOVNIH PARTNERJEV SKUPINE LUKA KOPER (OBR-8)**

**PONUDBA**

št. ponudbe: \_\_\_\_\_

št. javnega naročila: JN 71/20251. Naročnik: LUKA KOPER, d.d., Vojkovo nabrežje 38, 6501 KOPER2. Predmet naročila: Nabava STS dvigal (sklop 1)

3. Ponudnik: \_\_\_\_\_

4. Ponudbena cena

Ponudbena cena brez DDV

--

EUR

Ponudbena cena z DDV

--

EUR

Ponudbena cena vključuje vse stroške in dajatve v zvezi z izvedbo naročila.

5. Poreklo blaga: \_\_\_\_\_ *(ustrezno dopolnite)*

6. Ponudba velja za celotno naročilo, v skladu z dokumentacijo v zvezi z oddajo javnega naročila, ki je sestavni del te ponudbe.

7. Cena je fiksna za celoten obseg predmeta naročila.

8. Ponudba velja še 120 dni po roku za prejem ponudbe.

9. Naročilo se obvezujemo izvesti skladno z zahtevami iz dokumentacije v zvezi z oddajo javnega naročila.

10. Ponujena oprema in vgrajeni deli ustrezajo vsem veljavnim predpisom, za prodajo in delovanje na območju Evropske unije in so v skladu z veljavnimi standardi EU.

11. Rok izvedbe predmeta naročila in prevzema je naveden v Vzorcu pogodbe (OBR-6).

12. Finančni pogoji so razvidni iz vzorca pogodbe.

13. Javno naročilo bomo izvedli tako, kot je navedeno v ponudbi in ga ne bomo prenesli na drugega izvajalca. Naročnika bomo nemudoma obvestili in mu sporočili s katerimi podizvajalci sodelujemo, za kakšno vrsto del ali materialov in vrednost del ali materialov, sicer smo naročniku dolžni poravnati stroške ali ostalo škodo, ki mu nastane zaradi nepravočasnega obvestila.

14. Izjavljamo, da smo si pred oddajo naročila podrobno preučili dokumentacijo v zvezi z oddajo javnega naročila in popise tehničnih zahtev, tako da smo vsemi značilnostmi in specifikami seznanjeni in da se z njo v celoti strinjamo. Na morebitne pomanjkljivosti v popisu/obsegu naročila smo naročnika opozorili. Naknadno iz tega naslova ne bomo uveljavljali nikakršnih zahtevkov.



15. V primeru, da bomo izbrani za izvedbo predmetnega javnega naročila, bomo v roku osem (8) delovnih dni od prejema s strani obeh pogodbenih strank podpisane pogodbe, naročniku izročili instrument zavarovanja v višini 10 % pogodbene vrednosti z DDV, kot jamstvo za dobro izvedbo pogodbenih obveznosti, z veljavnostjo vsaj še devetdeset (90) dni po predvidenem končnem prevzemu.

Datum: \_\_\_\_\_

Ponudnik

Kraj: \_\_\_\_\_

žig

\_\_\_\_\_  
(ime priimek in podpis  
pooblaščenice osebe)

**OBR-1a**

**PONUDBENI PREDRAČUN**

**JN 71/2025 Nabava STS dvigal (sklop 1)**

<b>Nabava STS dvigal (sklop 1)</b>						
	Naziv	Količina	Enota	Cena na enoto v EUR brez DDV		Vrednost postavke V EUR brez DDV (= količina x cena na enoto)
1	Super post panamax STS dvigalo	3	kos		=	
2	Kontejnersko prijemalo - spreder	6	kos		=	
3	Košara za prevoz oseb	3	kos		=	
4	OH adapter	3	kos		=	
Ponudbena cena (brez DDV) (Opomba: vsota postavk 1 do 4)						*

(\*vrednost, ki jo ponudnik vpiše na obrazec Ponudba OBR-1)

**Vse cene so izražene v evrih.**

**Cene in vrednosti so obračunane in zaokrožene na dve (2) decimaliki.**

Datum:  
Kraj:

Žig

Ponudnik:

(Ime, priimek in podpis  
pooblaščen osebe)

**OBR-1b**

**IZJAVA PONUDNIKA O SEZNANJENOSTI S TEHNIČNIMI ZAHTEVAMI  
JN 71/2025 Nabava STS dvigal (sklop 1)**

Spodaj podpisani, za ponudnika \_\_\_\_\_ (naziv ponudnika), izjavljamo, da smo natančno preučili celotno vsebino dokumentacije v zvezi z javnim naročilom JN 71/2025 »Nabava STS dvigal (sklop 1)«, vključno s celotnim poglavjem »III. SPECIFIKACIJA NAROČILA« od strani 21 do strani 122 in prilogo 1 »Tehnične zahteve/Technical requirements JN 71/2025«, ter da smo v celoti seznanjeni z vsemi naročnikovimi tehničnimi in ostalimi zahtevami in opisi iz dokumentacije.

Potrjujemo, da se z vsemi tehničnimi in ostalimi zahtevami naročnika tudi iz poglavja III. SPECIFIKACIJA NAROČILA podpoglavja 2. GENERAL TECHNICAL DEMANDS – SECTION »A« in iz podpoglavja 3. TECHNICAL DESCRIPTION – SECTION »B« od strani 21 do strani 122 v dokumentaciji v zvezi z javnim naročilom, vključno s prilogo 1: »Tehnične zahteve/Technical requirements JN 71/2025«, v celoti strinjamo.

Datum: \_\_\_\_\_

Ponudnik

Kraj: \_\_\_\_\_

žig

\_\_\_\_\_  
(ime priimek in podpis  
pooblaščen osebe)

**PODATKI O PONUDNIKU IN PODIZVAJALCIH OZ. IZVAJALCIH V SKUPNEM NASTOPU**
**1. PONUDBA**

Ponudbo za izvedbo javnega naročila JN 71/2025 »Nabava STS dvigal (sklop 1)« podajamo (se označi z X):

- ☐ Samostojno  
☐ S podizvajalci  
☐ Skupno ponudbo

**2. PODATKI O PONUDNIKU**
**2.1 Podatki o ponudniku**

Popolna firma ponudnika	
Naslov ponudnika	
Zakoniti zastopnik oziroma pooblaščen oseb ali več pooblaščenih oseb za podpis pogodbe	
Možnost digitalnega podpisovanja pogodbe s kvalificiranim digitalnim potrdilom <sup>3</sup> vseh pooblaščenih oseb za podpis pogodbe	DA / NE
Matična številka	
Identifikacijska številka za DDV	
Številka transakcijskega računa (IBAN)	
Naziv in naslov banke:	
BIC/SWIFT	
Telefon	
e-naslov	
Razvrstitev družbe glede na 55. člen Zakona o gospodarskih družbah	
Predstavnik prodajalca (ime priimek, e-mail, tel.)*	

\* podatek za pogodbo

<sup>3</sup> Glej Uredbo (EU) št. 910/2014 Evropskega parlamenta in Sveta z dne 23. julija 2014 o elektronski identifikaciji in storitvah zaupanja za elektronske transakcije na notranjem trgu in o razveljavitvi Direktive 1999/93/ES ([Uredba - 910/2014 - EN - e-IDAS - EUR-Lex](#)).

## 2.2 Ponudba s podizvajalci – podatki o podizvajalcih

Ponudniki točko 2.2. izpolnijo v primeru, da bodo pri izvedbi javnega naročila sodelovali s podizvajalci.

Pri javnem naročilu z oznako JN 71/2025 bomo sodelovali z naslednjimi podizvajalci:

Št.	Popolni naziv podizvajalca, naslov, zakoniti zastopnik, matična številka, davčna številka, telefon** in e-naslov**	Opis dela izvedbe naročila, ki ga bo izvedel podizvajalec	Zahteva neposredna plačila DA / NE	Količina (% od celote glede na vrednost prevzetih del)
1.				
2.				
3.				
4.				

Opomba: V kolikor ponudnik nastopa z večjim številom podizvajalcev, v ponudbi priloži zahtevane podatke v tabeli z enakovredno vsebino. Dodatni list mora biti podpisan in žigosan s strani ponudnika, prav tako mora biti razvidno, da so podatki podani za predmetno javno naročilo.

## 2.3 Skupna ponudba

Ponudniki točko 2.3 izpolnijo v primeru, da so predložili skupno ponudbo.

Pri javnem naročilu z oznako JN 71/2025 sodelujemo naslednji ponudniki:

Št.	Popolni naziv vsakega ponudnika (tudi vodilnega iz točke 2.1), naslov, zakoniti zastopnik, matična številka, davčna številka, telefon in e-naslov	Opis dela izvedbe naročila, ki ga bo izvedel so – ponudnik	Količina (% od celote glede na vrednost prevzetih del)
1.			
2.			
3.			
4.			

Datum: \_\_\_\_\_

Ponudnik

Kraj: \_\_\_\_\_

žig

\_\_\_\_\_  
(ime priimek in podpis pooblaščen osebe)

**IZJAVA O IZPOLNJEVANJU POGOJEV ZA SODELOVANJE IN NEOBSTOJU RAZLOGOV ZA IZKLJUČITEV**

Ponudnik / partner: \_\_\_\_\_

Pod kazensko in materialno odgovornostjo izjavljamo, da:

- a) nad nami ni začet postopek zaradi insolventnosti ali prisilnega prenehanja po zakonu, ki ureja postopek zaradi insolventnosti in prisilnega prenehanja, postopek likvidacije po zakonu, ki ureja gospodarske družbe, naša sredstva ali poslovanje ne upravlja upravitelj ali sodišče, naše poslovne dejavnosti niso začasno ustavljene, v skladu s predpisi druge države se nad nami ni začel postopek in ni nastal položaj z enakimi pravnimi posledicami;
- b) na dan ko poteče rok za prejem ponudb ali prijav, nismo izločeni iz postopkov oddaje javnih naročil zaradi uvrstitve v evidenco gospodarskih subjektov z izrečenimi stranskimi sankcijami izločitve iz postopkov javnega naročanja iz 110. člena ZJN-3 (Razlog za izključitev iz alineje a) 4. odstavka 75. člena ZJN-3);
- c) smo vpisani v poslovni register, registrirani za opravljanje dejavnosti, ki je predmet naročila in jo prevzemamo v ponudbi in sicer za dejavnost \_\_\_\_\_;
- d) v zadnjih treh poslovnih letih, za katera so že javno objavljeni bilančni podatki, smo imeli povprečne letne čiste prihodke od prodaje vsaj v višini ponudbene vrednosti (brez DDV) za del posla, ki ga prevzemamo.
- Naš povprečni čisti letni prihodek od prodaje v obdobju zadnjih treh poslovnih let oz. v obdobju odkar poslujemo je znašal: \_\_\_\_\_ EUR.
- e) na dan oddaje ponudbe nimamo blokirane nobenega transakcijskega računa, v zadnjih 150 dneh pred rokom za prejem ponudb pa nismo imeli nobenega transakcijskega računa blokirane več kot 10 zaporednih dni;
- f) imamo zadnjo aktualno bonitetno oceno po pravilih Basel II vsaj SB6 oz. tej oceni primerljivo oceno, skladno z določbami dokumentacije v zvezi z oddajo javnega naročila.
- g) se na nas in na vse osebe, subjekte ali organe iz prvega odstavka člena 5.k Uredbe (EU) št. 833/2014 o omejevalnih ukrepih zaradi delovanja Rusije, ki povzroča destabilizacijo razmer v Ukrajini, ne nanaša prepoved iz prvega odstavka člena 5.k Uredbe (EU) št. 833/2014 o omejevalnih ukrepih zaradi delovanja Rusije, ki povzroča destabilizacijo razmer v Ukrajini.

Na podlagi poziva bomo naročniku v določenem roku predložili dodatna zahtevana dokazila o izpolnjevanju zgoraj navedenih pogojev.

Datum: \_\_\_\_\_  
Kraj: \_\_\_\_\_

žig

Ponudnik / partner

\_\_\_\_\_  
(ime priimek in podpis  
pooblaščen osebe)

OBR-3a

**IZJAVA PODIZVAJALCA O IZPOLNJEVANJU POGOJEV ZA SODELOVANJE IN  
NEOBSTOJU RAZLOGOV ZA IZKLJUČITEV**

Podizvajalec: \_\_\_\_\_

Pod kazensko in materialno odgovornostjo izjavljamo, da:

- a) nad nami ni začel postopek zaradi insolventnosti ali prisilnega prenehanja po zakonu, ki ureja postopek zaradi insolventnosti in prisilnega prenehanja, postopek likvidacije po zakonu, ki ureja gospodarske družbe, naša sredstva ali poslovanje ne upravlja upravitelj ali sodišče, naše poslovne dejavnosti niso začasno ustavljene, v skladu s predpisi druge države se nad nami ni začel postopek in ni nastal položaj z enakimi pravnimi posledicami;
- b) na dan ko poteče rok za prejem ponudb ali prijav, nismo izločeni iz postopkov oddaje javnih naročil zaradi uvrstitve v evidenco gospodarskih subjektov z izrečenimi stranskimi sankcijami izločitve iz postopkov javnega naročanja iz 110. člena ZJN-3 (Razlog za izključitev iz alineje a) 4. odstavka 75. člena ZJN-3);
- c) smo vpisani v poslovni register, registrirani za opravljanje dejavnosti, ki je predmet naročila in jo prevzemamo v ponudbi in sicer za dejavnost \_\_\_\_\_;
- d) v zadnjih treh poslovnih letih, za katera so že javno objavljeni bilančni podatki, smo imeli povprečne letne čiste prihodke od prodaje vsaj v višini ponudbene vrednosti (brez DDV) za del posla, ki ga prevzemamo.
- Naš povprečni čisti letni prihodek od prodaje v obdobju zadnjih treh poslovnih let oz. v obdobju odkar poslujemo je znašal: \_\_\_\_\_ EUR.
- e) na dan oddaje ponudbe nimamo blokirane nobenega transakcijskega računa, v zadnjih 150 dneh pred rokom za prejem ponudb pa nismo imeli nobenega transakcijskega računa blokirane več kot 10 zaporednih dni;
- f) se na nas in na vse osebe, subjekte ali organe iz prvega odstavka člena 5.k Uredbe (EU) št. 833/2014 o omejevalnih ukrepih zaradi delovanja Rusije, ki povzroča destabilizacijo razmer v Ukrajini, ne nanaša prepoved iz prvega odstavka člena 5.k Uredbe (EU) št. 833/2014 o omejevalnih ukrepih zaradi delovanja Rusije, ki povzroča destabilizacijo razmer v Ukrajini.

Na podlagi poziva bomo naročniku v določenem roku predložili dodatna zahtevana dokazila o izpolnjevanju zgoraj navedenih pogojev.

Datum: \_\_\_\_\_

Podizvajalec

Kraj: \_\_\_\_\_

žig

\_\_\_\_\_  
(ime priimek in podpis  
pooblaščen osebe)



**IZJAVA O ZAGOTOVLJENIH REFERENCAH**

Pod kazensko in materialno odgovornostjo izjavljamo, da so spodaj navedeni podatki o referenčnem naročilu resnični. Na podlagi poziva bomo naročniku v določenem roku predložili morebitna dodatna zahtevana dokazila o uspešni izvedbi navedenega referenčnega naročila.

	REFERENČNI POSEL
Naziv referenčnega posla:	
Naročnik:	
Dobavitelj/izvajalec:	
Podizvajalec (v kolikor je gospodarski subjekt nastopal kot podizvajalec glavnega izvajalca oz. dobavitelja):	
Datum izvedbe posla (mesec, leto – od – do)	
Kraj izvedbe posla:	
Vrednost celotnega posla (brez DDV):	
Delež gospodarskega subjekta, ki nastopa v ponudbi, pri referenčnem poslu glede na vrednost celotnega posla (brez DDV):	
Opis vsebine referenčnega posla	

Priloga: Potrdilo naročnika (OBR-4a) za vsako izmed izkazanih referenc

V kolikor je gospodarski subjekt pri izvedbi referenčnega posla nastopal kot podizvajalec, mora predložiti bodisi referenčno potrdilo, podpisano s strani končnega naročnika, bodisi referenčno potrdilo podpisano s strani glavnega izvajalca/dobavitelja referenčnega posla, kateremu pa mora predložiti še potrjene reference končnega naročnika glavnemu izvajalcu/dobavitelju. Vsebina potrdila mora biti skladna z vzorcem.

V kolikor gospodarski subjekt izkazuje referenčno naročilo z opravljenim naročilom za naročnika Luka Koper d.d., mu ni potrebno prilagati Potrdila naročnika. V polju naročnik poleg navedbe Luka koper d.d., navede še podatek kontaktne osebe s strani Luke Koper d.d. pri izvedbi tega posla (skrbnik pogodbe). Naročnik bo preveril izpolnjevanje zahtevanih pogojev v lastnih evidencah. Priporočljivo je, da ponudnik vseeno preveri pri naročniku ali mu bo tako referenčno delo potrdil oz. upošteval.

Datum: \_\_\_\_\_

Ponudnik

Kraj: \_\_\_\_\_

žig

\_\_\_\_\_  
(ime priimek in podpis  
pooblaščen osebe)

**POTRDILO NAROČNIKA**

Naročnik: .....

za predmet naročila:

.....,

z datumom končnega prevzema \_\_\_\_\_ (mesec, leto)

**potrjuje**, da je dobavitelj (navesti gospodarski subjekt)

.....

**naročilo izvedel pravočasno in kvalitetno.**V okviru tega posla je bilo izdelano in dobavljeno STS SPPX dvigalo z naslednjimi lastnostmi  
(ustrezno obkrožiti, po potrebi dopisati):

- dvizna višina pod prijemalom minimalno 46 m nad tirnico DA / NE
- doseg roke minimalno 60 m od morske tirnice DA / NE
- nosilnost minimalno 65 ton pod prijemalom DA / NE

Kontaktna oseba naročnika, pri katerem se lahko dobijo dodatne informacije: .

.....,

tel. ...., e-pošta.....

Podpisnik potrdila naročnika ..... (navesti ime in priimek)

Funkcija oz. delovno mesto podpisnika potrdila pri naročniku .....  
(navesti funkcijo)

Datum:

Žig:

Podpis :

\_\_\_\_\_

*Opomba: Ponudnik lahko kot dokazilo po tem obrazcu priloži tudi druga ustrezna potrdila, ki jih je z namenom sodelovanja v postopkih javnega naročanja pridobil v drugih postopkih, v kolikor bodo iz potrdil razvidni vsi podatki, kot so razvidni na tem obrazcu OBR-4a.*

**IZJAVA O ZAGOTOVLJENIH TEHNIČNIH ZMOGLJIVOSTIH**

Izjavljamo, da imamo zagotovljene vse potrebne tehnične zmogljivosti za kvalitetno izvedbo celotnega naročila v predvidenem roku, skladno z zahtevami iz dokumentacije v zvezi z oddajo javnega naročila (specifikacija naročila), pravili stroke ter predpisi in standardi s področja predmeta naročila. Na podlagi poziva bomo naročniku v določenem roku predložili morebitna dodatna zahtevana dokazila o zagotavljanju tehničnih zmogljivosti.

Datum: \_\_\_\_\_

Ponudnik

Kraj: \_\_\_\_\_

žig

\_\_\_\_\_  
(ime priimek in podpis  
pooblaščen osebe)

**OBR-6**
**VZOREC POGODBE**

LUKA KOPER, pristaniški in logistični sistem, delniška družba, Vojkovo nabrežje 38, 6501 KOPER, ki jo zastopata predsednica uprave \_\_\_\_\_ in član uprave \_\_\_\_\_, kot KUPEC

Identifikacijska številka za DDV: SI89190033  
Matična št.: 5144353000

in

\_\_\_\_\_ (naziv prodajalca), \_\_\_\_\_ (naslov prodajalca), ki ga zastopa \_\_\_\_\_ (pooblaščen zastopnik prodajalca za podpis pogodbe), kot PRODAJALEC  
Identifikacijska številka za DDV: \_\_\_\_\_  
Matična št.: \_\_\_\_\_

sklepata naslednjo

**P O G O D B O**

št. JN 71/2025-št. naložbe \_\_\_\_\_/45-\_\_\_\_\_

**I. PRAVNA PODLAGA IN PREDMET POGODBE**
**1. člen**

Referenčna številka razpisnega postopka kot podlaga za sklenitev pogodbe je JN 71/2025 »Nabava STS dvigal (sklop 1)« na podlagi odprtega postopka v skladu s 40. členom Zakona o javnem naročanju (Ur. l. RS, št. 91/15, 14/18, 121/21, 10/22, 74/22 – odl. US, 100/22 – ZNUZSZS, 28/23 in 88/23 – ZOPNN-F, v nadaljevanju ZJN-3).

**II. PREDMET POGODBE**
**2. člen**

- 1) Kupec kupuje in prodajalec prodaja 3 (tri) enote STS dvigal (Ship to Shore) tipa SPPX (Super Post-Panamax) za potrebe Luke Koper, d.d. in sicer po klavzuli DDP pristanišče Luka Koper (Incoterms 2020) (v nadaljevanju predmet pogodbe), vključno z ostalo opremo, navedeno v ponudbenem predračunu.
- 2) Karakteristike predmeta pogodbe, njegovi sestavni deli in oprema ter obveznosti prodajalca, povezane z dobavo in montažo predmeta pogodbe vse do popolnoma sestavljenega stanja z izvedenimi vsemi testiranj, so podrobno določeni v prodajalčevi ponudbi, ki je kot priloga sestavni del te pogodbe. V primeru kakršnekoli neskladnosti med to pogodbo in ponudbo, prevladajo pogodbeni določila.

**III. POGODBENA CENA**
**3. člen**

- 1) Kupec se obvezuje, da bo v skladu z 2. členom te pogodbe prodajalcu izvršil plačilo za predmet pogodbe:  
Pogodbena cena v EUR brez DDV: \_\_\_\_\_
- 2) Dogovorjena pogodbena cena je fiksna. Pogodbena cena vključuje vse lokalne davke (razen DDV), dajatve in druge možne bremenitve (skupno "izdatki"), ki nastanejo neposredno v

povezavi z dobavo predmeta pogodbe, brez DDV. Kupec ni dolžan izvesti nobenega drugega plačila prodajalcu, razen pogodbene kupnine z morebitnim obračunanim DDV-jem.

- 3) Montaža dvigal in transportni stroški predmeta pogodbe do končne lokacije v Luki Koper so vključeni v pogodbeno ceno. Dobava predmeta te pogodbe je v popolnoma sestavljenem stanju z izvedenim prvotnim testiranjem na lokaciji sestavljanja dvigal in končnim testiranjem na končni lokaciji v Luki Koper. Končni prevzem predmeta te pogodbe se izvede na končni lokaciji v Luki Koper.
- 4) Prodajalec je dolžan urediti carinjenje predmeta pogodbe v EU.
- 5) Pri izdaji računa prodajalec obračuna DDV na pogodbeni znesek v skladu z veljavno zakonodajo.

#### IV. PLAČILNI POGOJI

##### 4. člen

- 1) Kupec se zavezuje plačati dobavljeno opremo v naslednji dinamiki:
  - kupec bo plačal 25% pogodbene vrednosti po sklenitvi pogodbe, na podlagi prejetega avansnega računa in originalne nepreklicne, brezpogojne bančne garancije (izdelane po Enotnih pravilih za garancije na poziv/EPGP, revizija iz leta 2010) za zavarovanje plačanega avansa v višini 25% pogodbene vrednosti, ki je plačljiva na prvi poziv in veljavna še najmanj 30 dni po nameravanem prevzemu predmeta te pogodbe, t. j. po podpisu prevzemnega zapisnika;
  - kupec bo plačal 25% pogodbene vrednosti 4 mesece po sklenitvi pogodbe, na podlagi prejetega avansnega računa in originalne nepreklicne, brezpogojne bančne garancije (izdelane po Enotnih pravilih za garancije na poziv/EPGP, revizija iz leta 2010) za zavarovanje plačanega avansa v višini 25% pogodbene vrednosti, ki je plačljiva na prvi poziv in veljavna še najmanj 30 dni po nameravanem prevzemu predmeta te pogodbe, t. j. po podpisu prevzemnega zapisnika;
  - kupec bo plačal 40% pogodbene vrednosti v roku 8 dni po uspešno opravljenem kontrolnem pregledu, skladno z 10. členom te pogodbe, na podlagi prejetega avansnega računa in originalne, nepreklicne, brezpogojne bančne garancije (po EPGP 2010) za zavarovanje plačanega avansa v višini 40% pogodbene vrednosti, ki je plačljiva na prvi poziv in veljavna še najmanj 30 dni po nameravanem prevzemu predmeta te pogodbe, t. j. po podpisu prevzemnega zapisnika. V primeru, da se izvede kontrolni pregled ločeno za vsako dvigalo, bo kupec za vsako plačal 1/3 od 40% pogodbene vrednosti v roku 8 dni po uspešno opravljenem kontrolnem pregledu posameznega dvigala, na podlagi prejetega avansnega računa in originalne, nepreklicne, brezpogojne bančne garancije (po EPGP 2010) za zavarovanje plačanega avansa v višini 1/3 od 40% pogodbene vrednosti, ki je plačljiva na prvi poziv in veljavna še najmanj 30 dni po nameravanem prevzemu posameznega predmeta te pogodbe (posameznega dvigala), t. j. podpisu prevzemnega zapisnika, za posamezno dvigalo. V primeru zamude pri prevzemu predmeta pogodbe mora prodajalec podaljšati veljavnost vseh bančnih garancij za vse plačane avanse iz tega odstavka, tako da bodo veljavne še najmanj 30 dni po novem datumu predvidenega dokončnega prevzema, dogovorjenega s kupcem, t. j. 30 dni po predvidenem podpisu končnega prevzemnega zapisnika.
  - kupec bo poravnal preostalih 10% pogodbene vrednosti z nakazilom na prodajalčev bančni račun v roku 75 dni po uspešnem dokončnem prevzemu predmeta te pogodbe (podpisanim končnem prevzemnem zapisniku s strani obeh pogodbenih strank) na podlagi prejetega računa (končni račun) ter originalne, nepreklicne, brezpogojne bančne garancije (po EPGP, leto 2010) za odpravo napak v garancijski dobi, skladno s 14. členom te

pogodbe. V primeru, da se izvede prevzem ločeno za vsako dvigalo, se navedeni 75 dnevni rok plačila šteje od datuma zadnjega uspešnega prevzema.

- 2) Pogoji za izstavitve končnega računa je potrjen končni prevzemni zapisnik, podpisan s strani obeh pogodbenih strank in dostavljena originalna, nepreklicna, brezpogojna bančna garancija za odpravo napak v garancijski dobi, kot je določeno v 14.členu te pogodbe.
- 3) Plačilo se izvrši na prodajalčev bančni račun št. .... odprt pri banki .....
- 4) V skladu z 2. členom te pogodbe, prodajalec navede številko te prodajne pogodbe na računu, ki se nanaša na predmet pogodbe.
- 5) V primeru zamude pri plačilu, mora kupec plačati zakonske zamudne obresti.

#### 5. člen

- 1) Prodajalec si do izvršitve plačila celotne kupnine, v skladu s 3. členom te pogodbe, pridržuje pravico na lastništvu predmeta te pogodbe.
- 2) Pogodbeni stranki soglašata, da kupec lahko na lastno odgovornost v 75 dnevem plačilnem roku do končnega plačila, v skladu s 4. členom te pogodbe, uporablja predmet pogodbe po prevzemu, brez plačila kakršnekoli odškodnine in ne izključujoč garancijskih obveznosti prodajalca v skladu s to pogodbo.

### V. DOBAVNI POGOJI

#### 6. člen

- 1) Prodajalec se obvezuje, da bo izvedel dobavo in montažo ter ostale s predmetom povezane aktivnosti v skladu z 2. členom pogodbe na lokaciji v Luki Koper najkasneje do **25. 11. 2027**. V tem roku mora biti med strankama podpisan končni prevzemni zapisnik in naročniku dostavljena originalna, nepreklicna, brezpogojna bančna garancija za odpravo napak v garancijski dobi, kot je določeno v 14.členu te pogodbe.
- 2) V primeru, da kupec zamudi s plačilom zneska iz prve in druge ter tretje alineje prvega odstavka 4. člena pogodbe, se dobavni rok podaljša za isto število dni.
- 3) V primeru dodatnih kupčevih zahtev ali sprememb, ki se nanašajo na predmet te pogodbe kot je določeno v 2. členu te pogodbe, se za izvedbo dodatnih kupčevih zahtev sklene pisni aneks k tej pogodbi.
- 4) Dodatne kupčeve zahteve iz prejšnjega odstavka se podrobno določijo v pisnem aneksu, prav tako morajo biti medsebojno pisno dogovorjeni novi pogoji in stroški za izvedbo dodatnih zahtev.
- 5) Dobava in montaža predmeta pogodbe se izvede na določeni končni lokaciji v Luki Koper.
- 6) Rok dobave in montaže iz 1. odstavka tega člena se lahko podaljša iz utemeljenih razlogov. Na nastop takih razlogov, ki lahko po tej pogodbi vplivajo na spremembo roka dobave, mora prodajalec nemudoma, vendar najkasneje v 2 (dveh) delovnih dneh od dneva, ko izve zanje, pisno opozoriti kupca in ga zaprositi za podaljšanje roka, ter obrazložiti razloge, zaradi katerih bi bilo podaljšanje roka potrebno. Pogodbeni stranki izrecno soglašata, da se pogodbeno dogovorjeni roki za izvedbo predmeta pogodbe lahko spremenijo zgolj sporazumno, kupec pa nima nikakršne obveznosti ali dolžnosti privoliti v kakršnokoli podaljšanje roka. Sporazum o spremembi pogodbenega roka mora biti sklenjen v pisni obliki kot aneks k tej pogodbi.

### VI. OBVEZNOSTI PRODAJALCA

#### 7a. člen

- 1) Prodajalec se obvezuje, da bo:
  - dobavil opremo s profesionalno skrbnostjo in v skladu z določili te pogodbe;
  - zagotovil brezhibno delovanje opreme, brez dejanskih in pravnih napak, ki bo ustrezala vsem veljavnim standardom CE certifikata v Evropski uniji ter tehničnim zahtevam in



vsem standardom, ki se nanašajo na varovanje in varnost pri delu, kvaliteto in kapaciteto, itd.;

- obveščal in ažuriral kupca o vsem kar bi lahko vplivalo na kvaliteto in pravočasno izvedbo pogodbenih obveznosti;
  - predložil in uredil primerne garancije v skladu s 4., 7b. in 14. členom te pogodbe;
- 2) Ob dobavi opreme mora biti zagotovljena in kupcu predana vsa predpisana in s pogodbo zahtevana spremljajoča dokumentacija.

#### 7b. člen

- 1) Kot pogoj za veljavnost te pogodbe, prodajalec predloži kupcu zavarovanje za dobro izvedbo pogodbenih obveznosti v roku 8 delovnih dni od prejema s strani obeh pogodbenih strank podpisane kopije te pogodbe.
- 2) Kot instrument zavarovanja se zahteva predložitev originalne bančne garancije za dobro izvedbo pogodbenih obveznosti, ki je sestavljena v skladu z Enotnimi pravili za bančne garancije na poziv (EPGP) Revizija 2010, objava MTZ št. 758 ali enakovredno kavcijsko zavarovanje.
- 3) Vrednost in valuta je 10 % pogodbene vrednosti iz 3. člena te pogodbe z DDV.
- 4) Veljavnost zavarovanja je najmanj devetdeset (90) dni po predvidenem končnem prevzemu, tj. datum, ki je v prvem odstavku 6. člena pogodbe med strankama dogovorjen kot skrajni rok za dobavo in montažo predmeta pogodbe.
- 5) V primeru, da prodajalec ne izpolnjuje svojih pogodbenih obveznosti glede dogovorjene kvalitete, količine in rokov, ki so določeni v tej pogodbi, lahko kupec unovči finančno zavarovanje za dobro izvedbo pogodbenih obveznosti. Finančno zavarovanje za dobro izvedbo pogodbenih obveznosti se lahko unovči tudi v primeru, da prodajalec med garancijskim obdobjem ne izpolni garancijskih obveznosti, ki so določene v tej pogodbi;
- 6) Instrument zavarovanja za dobro izvedbo pogodbenih obveznosti se vrne prodajalcu takoj po podpisu končnega prevzemnega zapisnika, na podlagi katerega kupec v celoti prevzame predmet te pogodbe in po prejemu instrumenta zavarovanja za odpravo napak v garancijskem roku v skladu s 14. členom te pogodbe.
- 7) V primeru delne dobave, prodajalec lahko podaljša veljavnost vsakega instrumenta finančnega zavarovanja do medsebojno dogovorjenega roka s kupcem. V nasprotnem primeru je kupec upravičen do unovčitve instrumenta zavarovanja za dobro izvedbo pogodbenih obveznosti.

#### 8.člen

- 1) Odgovornost prodajalca po tej pogodbi je omejena na znesek dejanske neposredne škode, ki jo je imel kupec. Skupna največja prodajalčeva odgovornost do kupca v zvezi s to pogodbo ali deli je omejena na skupno pogodbeno ceno. Prodajalec v nobenem primeru ni odgovoren za kakršno koli posredno ali posledično škodo, vključno z, vendar ne omejeno na, izgubo proizvodnje, izgubo dobička, izgubo uporabe ali izgubo pogodb.

### VII. POGODBENA KAZEN ZA ZAMUDO

#### 9.člen

- 1) Pogodbeni stranki s to pogodbo določata tudi pogodbeno kazen, in sicer za sledeče primere: (a) za zamudo, (b) za zamudo v širšem smislu, ki nastane zaradi napak (nepravilne izpolnitve) ter (c) za neizpolnitev. Skupni znesek pogodbenih kazni ne more preseči 10 % skupne pogodbene vrednosti.
- 2) Če prodajalec zamudi z izpolnitvijo pogodbene obveznosti oziroma, če zamudi rok dobave ali vmesni rok iz 10. člena te pogodbe iz kateregakoli vzroka, razen v primeru višje sile, dolguje kupcu 30.000,00 evrov za vsak začeti dan zamude (pogodbena kazen za zamudo). Plačilo pogodbene kazni za zamudo ne sme presegati 10 % skupne pogodbene vrednosti. Pravica do pogodbene kazni za zamudo nastane na podlagi pogodbe in dejstva zamude, kupec pa si je ni dolžan ponovno pridržati. Kupec lahko zato pogodbeno kazen za zamudo uveljavlja, tudi če si ob sprejemu zamujene izpolnitve prodajalca pravice do pogodbene kazni ni izrecno pridržal.

- Kot dan izpolnitve pogodbenih obveznosti za potrebe te določbe se šteje dan, ko je zapisniško sporazumno ugotovljeno dejstvo izpolnitve obveznosti (primopredaja – podpis končnega prevzemnega zapisnika).
- 3) Če prodajalec pravočasno konča pogodbeno dela, vendar s stvarnimi ali pravnimi napakami, ki so prodajalcu pravočasno sporočene, in prodajalec do roka izvedbe pogodbenih del napake ne odpravi, je prodajalec dolžan plačati pogodbeno kazen za čas, ki teče od naslednjega dne po roku za izvedbo pogodbenih del odprave napak do odprave vseh napak (pogodbeno kazen zaradi napak), in sicer za vsak začetni dan neodprave napak 30.000,00 evrov, skupno pa ne več kot 10% skupne pogodbene cene. Kot dan notifikacije napake se šteje dan, ko je bilo prodajalcu odposlano sporočilo o napaki po elektronski pošti ali s priporočeno pošto; kot dan odprave napake pa dan, ko je zapisniško ugotovljeno, da so bile vse grajane napake odpravljene ali, če zapisniško ni ugotovljen dan odprave napak, dan, ko so bile vse napake dejansko odpravljene, predmet pogodbe pa ponovno izročen v nemoteno uporabo kupca.
  - 4) Plačilo katerekoli pogodbene kazni prodajalca ne odvezuje od obveznosti po tej pogodbi, kakor tudi ne od odškodninske odgovornosti, v kolikor škoda presega pogodbeno kazen, vendar le do vrednosti te pogodbe.
  - 5) Za višino izračunane pogodbene kazni, o čemer kupec prodajalcu izstavi račun, se vzpostavi terjatev kupca do prodajalca in se obveznost kupca za znesek pogodbene kazni zmanjša oz. se z le-to pobota.
  - 6) Pogodbeno kazen za neizpolnitev v višini 10% pogodbene vrednosti lahko kupec uveljavlja v vseh primerih, ko pride do razveze pogodbe zaradi odstopa od pogodbe zaradi zamude ali napak ali iz katerega koli drugega razloga na strani prodajalca.

## **VIII. PREVZEMNA KONTROLA KOLIČINE IN KAKOVOSTI**

### **10. člen**

- 1) Prodajalec mora vsaj 14 dni pred planirano izvedbo prevoza predmeta pogodbe, iz proizvajalčevega(ih) obrata(ov) ali druge lokacije (na primer lokacija sestavljanja dvigala) na predhodno definirano lokacijo v Luko Koper, o tem pisno obvestiti kupca, da lahko kupec opravi pregled dvigal. Kupec ima pravico do kontrolnega pregleda in testiranja dvigal, komponent in jeklenih konstrukcij v proizvodnih obratih in na proizvajalčevi lokaciji montaže dvigal ali na drugi lokaciji. Kupec ne krije stroškov, ki bi nastali zaradi daljšega trajanja pregleda, odprave na pregledu ugotovljenih neskladnosti in zamika prevoza in dobave dvigal v Luko Koper. Po ugotovitvi skladnosti dvigal, komponent in jeklenih konstrukcij z vsemi pogodbenimi zahtevami se podpiše zapisnik o navedenem pregledu in testiranju, ki je podlaga za prevoz dvigal. S podpisom zapisnika o pregledu in testiranju dvigal se kupec ne odpove nobenim zahtevkom, prav tako se podpis ne smatra za prevzem dvigal. Ta pregled ne povzroča nobenih pravnih posledic za kupca.
- 2) Prodajalec mora obvestiti pooblaščen osebno kupca, da je blago, ki je predmet pogodbe, pripravljeno za prevzem.
- 3) Končna prevzemna kontrola količine in kakovosti opreme v skladu z 2. členom te pogodbe se izvede v Luki Koper s strani kupčeve prevzemne komisije. Prevzem se izvrši takoj po tem, ko kupec prejme pisno obvestilo prodajalca o pripravljenosti za prevzem.
- 4) Prevzem se izvede v okviru 12 tednov od dobave dvigal v Luko Koper, z aktivnim sodelovanjem pooblaščenih predstavnikov prodajalca in prevzemne komisije kupca, po proceduri, kot je opisana v nadaljevanju z upoštevanjem vmesnih rokov:
  - v enem (1) tednu od dobave se izvede splošni vizualni pregled s strani Luke Koper na mestu postavitve dvigal.
  - v dveh (2) tednih od dobave se izvede funkcionalne preizkuse in preizkuse delovnega cikla na mestu postavitve.
  - v štirih (4) tednih od dobave se izvede funkcionalne preizkuse in preizkuse delovnega cikla v Luki Koper.

- v šestih (6) tednih od dobave se izvede preizkuse običajnega obratovanja (upravljanje dvigala iz kabine) in obratovanja iz kabine v Luki Koper.
  - v osmih (8) tednih od dobave se izvede preizkuse za daljinsko upravljanje (ROS). V tem obdobju mora biti uporaba dvigala v delovnem procesu omogočena v največji možni meri.
  - v dvanajstih (12) tednih od dobave se izvede preizkuse za polavtomatsko obratovanje, vključno z OCR funkcionalnostjo in integracijo s TOS. V tem obdobju mora biti uporaba dvigala v delovnem procesu omogočena v največji možni meri.
- 5) Kupec ne sme prevzeti predmeta pogodbe v uporabo pred sprejetjem ali izdajo prevzemnega zapisnika.
- 6) Pogodbeni stranki soglašata, da kupec lahko upravlja s predmetom pogodbe na svojo lastno odgovornost ves čas do poteka 75 dnevnega roka za plačilo končnega računa v skladu s 4. členom.

#### 11. člen

- 1) V primeru, da prevzemna komisija ugotovi, da dobava ustreza pogodbenim zahtevam, se sestavi in obojestransko podpiše prevzemni zapisnik, ki je osnova za plačilo. V primeru, da prevzemna komisija pri prevzemni kontroli količine in kvalitete ugotovi, da dobava ne ustreza pogodbenim zahtevam ali da manjka katerikoli dokument, ki bi moral biti priložen, se sestavi primopredajni zapisnik, v katerem se zavrne dobavo in navede zahtevo, da prodajalec odpravi napake oz. pomanjkljivosti. Te napake se navedejo v primopredajnem zapisniku in prodajalec jih mora nemudoma odpraviti. Obe pogodbeni stranki podpišeta prevzemni zapisnik. V primeru, da prodajalec zavrne podpis zapisnika, mora biti to navedeno v zapisniku in dobava se tako smatra kot zavrnjena.
- 2) Prodajalec se obvezuje, da bo odgovarjajočo dobavo izvršil na svoje lastne stroške v najkrajšem možnem roku po prejemu prevzemnega zapisnika, kjer so te pomanjkljivosti navedene.
- 3) V primeru, da prodajalec ne izpolni obvez v roku iz prejšnjega odstavka tega člena, je odgovoren za škodo, ki jo utrpi kupec zaradi dobave, ki ne ustreza pogodbenim zahtevam, vendar le do vrednosti te pogodbe.

#### 12. člen

- 1) Kupec pooblašča za svojega predstavnika g. \_\_\_\_\_; tel: \_\_\_\_\_; e-pošta: \_\_\_\_\_, prodajalca pa bo zastopal g. \_\_\_\_\_; tel: \_\_\_\_\_; e-pošta: \_\_\_\_\_.
- 2) Pogodbeni stranki sta dolžni pisno obvestiti nasprotno stranko o spremembi osebe iz predhodnega odstavka v treh dneh po spremembi.

### IX. DOKUMENTACIJA

#### 13a. člen

- 1) Skupaj s predmetom te pogodbe mora prodajalec za dobavljen predmet pogodbe predložiti dokumentacijo skladno z zahtevami razpisne dokumentacije JN 71/2025.
- 2) Pogodbene stranke so dolžne drugo stranko pisno obvestiti o spremembi osebe iz prejšnjega odstavka v roku treh dni po spremembi.

#### 13b. člen

- 1) Dokumenti, slike, poročila, tehnične informacije, definicije, opisi, priročniki in kakršna koli druga intelektualna lastnina, ki jo dobi kupec, se brez soglasja prodajalca ne sme uporabiti za noben drugi namen razen za postavitve, zagon obratovanja, delovanje ali vzdrževanje opreme. Razen za namene iz tega odstavka se teh materialov, bo pogoju da bi to pomenilo

kršitev pravic intelektualne lastnine iz te pogodbe ali veljavne zakonodaje, ne sme drugače uporabljati ali kopirati, reproducirati, prenesti ali posredovati tretjim osebam.

- 2) Ne glede na določbe tega člena, kupec lahko proda ali odda v najem predmet te pogodbe tretjim osebam ter jim v tem primeru izroči tudi dokumentacijo iz prvega odstavka in zagotovi pravice v obsegu, kot izhaja iz prvega odstavka tega člena.

## X. GARANCIJA

### 14. člen

- 1) Prodajalec zagotavlja, da ima oprema oziroma blago, ki je predmet dobave po tej pogodbi, vse dogovorjene tehnične in druge značilnosti opreme, ki so navedeni v poglavju "III. Specifikacija naročila" in v prilogi 1 »Tehnične zahteve/Technical requirement JN 71/2025«. Prodajalec tudi zagotavlja, da oprema ustreza vsem predpisanim standardom, kakovosti in zmogljivosti, kot tudi varnosti in varovanju pri delu, tako da jih kupec lahko uporabi v skladu s "Tehničnimi zahtevami".
- 2) Prodajalec daje na predmet te pogodbe naslednje garancije:
  - za brezhibno delovanje vsaj 36 mesecev od datuma prevzema,
  - antikorozijska zaščita najmanj 8 let od datuma prevzema in
  - konstrukcija dvigala brez razpok in napak najmanj 10 let od datuma prevzema.

Ta garancija je dana pod pogojem, da se predmet pogodbe v vseh pogledih pravilno vodi, upravlja, servisira in vzdržuje, v skladu z prodajalčevimi navodili in pod posebnimi navedenimi pogoji obratovanja.

Iz garancije so izvzete naslednje postavke:

- a. popravilo ali zamenjava, ki sta nujna zaradi običajne obrabe ali zaradi vandalizma;
  - b. potrošni material;
  - c. popravila, nadomestitve ali prilagoditve, ki jih je izvedel ali začel kupec;
  - d. manjkajoča poročila o napakah v zgoraj navedenem garancijskem obdobju;
  - e. napake ali škoda, ki so nastali zaradi malomarnosti, za katere je odgovoren kupec razen prodajalčevih malomarnosti, nesreča, zloraba, neprimerna namestitvev (razen naprav, ki jih je izdelal prodajalec ali njegov podpogodbениk), če kupec ne upošteva navodil za uporabo predmeta pogodbe.
- 3) Garancijska doba začne teči z datumom prevzema predmeta pogodbe v skladu z določilom 10. člena te pogodbe (v primeru, da bodo delni prevzemi, začne teči garancijska doba za predmet posameznega delnega prevzema z dnem uspešnega prevzema predmeta posameznega delnega prevzema).
  - 4) Garancija vključuje brezplačne rezervne dele, transportne stroške in vse stroške v zvezi s popravili, vključno s stroški pošiljanja, stroški v zvezi s prihodom pooblaščenega servisnega inženirja in izvedbo del ter vse nadomestne dele in (u)porabljen material za odpravo napake/okvare.
  - 5) Kupec mora takoj po odkritju napake pisno (po e-mailu ali po navadni pošti ali drugače pisno) obvestiti prodajalca o napaki na predmetu pogodbe.
  - 6) Prodajalec se obvezuje, da bo kupcu izročil kot instrument zavarovanja bančno garancijo za odpravo napak v garancijski dobi, in sicer v roku 8 dni po datumu prevzema predmeta pogodbe (v primeru delnih prevzemov se rok osmih dni šteje od datuma prevzema zadnjega izmed predmetov delnih prevzemov).
  - 7) Vrsta instrumenta zavarovanja za odpravo napak v garancijski dobi: Originalna bančna nepreklicna, brezpogojna garancija za izpolnitev garancijskih obveznosti v garancijskem obdobju sestavljena v skladu z Enotnimi pravili za bančne garancije na poziv (EPGP), revizija 2010, objava MTZ št. 758 ali enakovredno kavcijsko zavarovanje. Višina zavarovanja je: 5 % pogodbene cene iz 3. člena, vključno z DDV.

- 8) Veljavnost finančnega zavarovanja je 10 let in 1 mesec od datuma prevzema opreme (v primeru, da bodo delni prevzemi, se 10 let in 1 mesec šteje od datuma zadnjega izmed prevzemov opreme).

Garancija se lahko unovči pod naslednjimi pogoji:

- v primeru, da prodajalec med garancijskim obdobjem ne izpolni garancijskih obveznosti, ki so določene v tej pogodbi;
- v primeru, da prodajalec objavi plačilno nesposobnost, prisilno poravnavo ali stečaj.

V garancijskem obdobju prodajalec odpravi vse napake in nepravilnosti, ki predstavljajo razliko med dejanskim delovanjem in tehničnimi zahtevami.

- 9) V primeru, da prodajalec ne predloži kupcu instrumenta zavarovanja za odpravo napak v garancijskem obdobju v skladu s tem členom, je kupec upravičen do unovčitve instrumenta zavarovanja za dobro izvedbo pogodbenih del v višini zahtevanega instrumenta za odpravo napak in zadržanja denarnih sredstev v višini zahtevanega instrumenta za odpravo napak do izteka roka iz osme alineje tega člena.

#### 15. člen

- 1) Prodajalec se obvezuje, da bo v garancijskem obdobju na svoje stroške odpravil v spodaj določenem roku vse napake na predmetu pogodbe, opremi in/ali materialu.
- 2) Ugotovljene oz. zaznane napake/okvare bo kupec sporočil primarno na prodajalčev e-naslov:

oz. sekundarno na prodajalčev telefon \_\_\_\_\_ (s kasnejšim obvestilom na prodajalčev e-naslov), kamor kupec poda garancijski zahtevek, v katerem navede zlasti, vendar ne izključno: naravo oz. opis okvare, zahteve za popravilo itd. Pošta, poslana na elektronski naslov, se v dvomu šteje za vročeno nemudoma po pošiljanju, razen če se dokaže, da pošta ni prispela do prodajalca.

- 3) Prodajalec se je dolžan odzvati na prejet zahtevek v 24 urah od trenutka pošiljanja e-pošte (o čemer seznani kupca v pisni obliki) in v tem roku prične z aktivnostmi za odpravo napake/okvare. Napako/okvaro je dolžan odpraviti v roku 48 ur od trenutka pošiljanja e-pošte (bodisi sam bodisi preko svojih podizvajalcev oz. pogodbenih partnerjev). V primeru, da prodajalec ne začne z odpravo napak oz. ne odpravi napake v predhodno navedenih rokih, ga kupec ni dolžan ponovno pozivati k odpravi napake oz. pristopu k odpravi napake, temveč kupec lahko izvede popravilo sam (skladno z navodili, dobljenimi ob prevzemu oz. po navodilih proizvajalca dvigala) ali naroči popravilo s strani drugega subjekta (pooblaščenega za odpravljanje napak na opremi oz. poseganje v opremo) na stroške in tveganje prodajalca. V primeru, da kupcu ne bo znan podatek, kateri subjekt, ki ni prodajalec, je pooblaščen oz. upravičen za odpravo napake na opremi, bo kupec prodajalca pisno pozval, da mu sporoči ta podatek; prodajalec je dolžan naročniku v roku 48 ur po prejemu poziva pisno posredovati omenjen podatek o tem (drugem) subjektu. V kolikor prodajalec ne bo posredoval omenjenega podatka v roku iz tega odstavka, lahko kupec naroči popravilo s strani drugega subjekta po presoji naročnika, na stroške in tveganje prodajalca. Za tak primer prodajalec izjavlja, da se odpoveduje uveljavljanju zahtevkov iz tega naslova. S posredovanjem naročila na drugi subjekt iz razlogov navedenih v tem odstavku, kupec ne izgubi pravic in ugodnosti, ki izhajajo prodajalčeve garancije za predmet te pogodbe. Nadalje kupec ne prevzema nobene odgovornosti za dela, izvedena za odpravo napak/okvar pri dvigalih / pri delovanju dvigal med garancijskim obdobjem.
- 4) V kolikor prodajalec ne pristopi k odpravi napake v rokih iz tretjega odstavka tega člena in dvigala zaradi tega ni mogoče uporabljati v delovnem procesu (dokazno breme, da ga je bilo mogoče uporabljati v delovnem procesu, nosi prodajalec), je prodajalec kupcu dolžan plačati 30.000 EUR na dan, kar odraža pavšalno odškodnino zaradi nemožnosti uporabe dvigala. Skupna višina zneska zaračunenega iz tega naslova lahko znaša največ 10 % skupne pogodbene vrednosti.



- 5) Prodajalec ni odgovoren za zamude pri odpravi napak v primerih, ki so urejeni v 18. členu te pogodbe.

16. člen

- 1) Prodajalec se obvezuje, da bo zagotovil razpoložljivost rezervnih delov in morebitno intervencijo iz poprodajne storitve za predmet pogodbe in rezervne dele iz te pogodbe za dobo vsaj 20 let od prevzema predmeta pogodbe.
- 2) Prodajalčeva garancija iz prvega odstavka tega člena ne poteče v primeru likvidacije, stečaja ali kakršnegakoli prenehanja dejavnosti s strani proizvajalca.

17. člen

- 1) Za nadomestne oz. dele, ki so popravljeni med garancijsko dobo veljajo isti garancijski pogoji kot za originalne dele oz. predmeta pogodbe. Vendar pa garancija na zamenjane in popravljene dele ne velja več kot 36 mesecev od zamenjave oz. popravila oziroma v primeru antikorozijske zaščite 8 let od popravila oziroma v primeru odprave napak na konstrukciji 10 let od popravila (na tisti del, ki bo saniran).

**XI. IZVZEM OBVEZNOSTI**

18. člen

- 1) Višja sila za čas njenega trajanja podaljša vse pogodbene roke, ki v času trajanja višje sile ne tečejo.
- 2) Višjo silo predstavljajo vsi dogodki ali okoliščine, ki se lahko zgodijo po podpisu pogodbe in ki jih pogodbeni strani ne moreta pričakovati, se jim izogniti ali jih preprečiti. Brez omejitev za zgoraj navedeno, so primeri višje sile naravne nesreče, požari, vojne (razglašene ali ne), stavke, upori, revolucije, izpad električne energije, nedobava goriva, neizvedba transporta, izpad dobave opreme in drugega blaga ali storitev, naravne nesreče, vladni akti, prepoved na izvoz ali izvoz, požari, eksplozije, poplave, nesreče, sabotáže, nespremenjeni vremenski pogoji, izgredi in okvare ali izgube med prevozom ali skladiščenjem tudi zamude pri dobavi s strani podpogodbениkov (ki je posledica višje sile kot opredeljeno v tej pogodbi), izjemno močni vetrovi, megla, led in druge slabe plovne razmere, ki jih pogodbeni stranka ne more predvideti in lahko preprečijo zamude v ladijskem prevozu in onemogočijo pravočasno dostavo opreme na lokacijo ali pravočasno nakladanje na ladjo.

19. člen

- 1) Pogodbena stranka, ki utrpi takšno višjo silo, mora takoj o tem obvestiti drugo pogodbeno stran z e-mailom z navedbo razloga in približnega trajanja višje sile.
- 2) Po prenehanju višje sile, mora pogodbeni stranka obvestiti drugo pogodbeno stranko na enak način kot ob njenem nastanku. Pogodbena stranka, ki utrpi višjo silo, mora dokumentirati vzrok za tak primer višje sile in nosi dokazno breme obstoja višje sile.

20. člen

- 1) V primeru, da je trajanje višje sile daljše od treh mesecev, se pogodbeni strani dogovorita o nadaljnjem izvajanju te pogodbe. V primeru da ne dosežeta dogovora, lahko vsaka pogodbeni stranka odstopi od pogodbe brez uveljavljanja pravice do odškodninskih zahtevkov.
- 2) V primeru, da so bili posamezni predmeti pogodbe že dostavljeni v skladu z določbami te pogodbe, bo kupec prodajalcu plačal njihovo ceno.

21. člen

- 1) Za vsa vprašanja, ki niso urejena s to pogodbo, stranki soglašata z uporabo določil Obligacijskega zakonika (OZ).

**XII. PROTİKORUPCIJSKA KLAVZULA IN RAZVEZNI POGOJ****22. člen**

- 1) Pogodbeni stranki potrjujeta, da sta seznanjeni in se zavedata dejstva, da je predmetna pogodba nična, če je ali bo v katerikoli fazi sklepanja ali izvajanja te pogodbe kdo v imenu ali na račun prodajalca predstavniku ali posredniku kupca obljubil, ponudil ali dal kašno nedovoljeno korist za pridobitev posla po tej pogodbi, za sklenitev posla pod ugodnejšimi pogoji, za opustitev dolžnega nadzora nad izvajanjem pogodbenih obveznosti ali za drugo ravnanje ali opustitev, s katerim je ali bo kupcu povzročena škoda ali pa je ali bo omogočena pridobitev nedovoljene koristi predstavniku ali posredniku kupca in/ali prodajalca ali njegovemu predstavniku, zastopniku ali posredniku.
- 2) Pogodbeni stranki se zavezujeta izogibanja vsakršnih ravnanj, ki bi povzročila ničnost pogodbe po prejšnjem odstavku tega člena. Ta izjava predstavlja izjavo v skladu s predpisi o integriteti in preprečevanju korupcije.
- 3) Prodajalec s podpisom te pogodbe izjavlja, da v katerikoli fazi sklepanja oz. izvajanja te pogodbe ni in ne bo sklepal poslov s člani uprave, nadzornega sveta ter poslovodji in prokuristi družbe ali njihovimi družinskimi člani ter se seznanja, da je za te posle v skladu z 270a. členom Zakona o gospodarskih družbah dolžan predhodno obvestiti družbo kupca, saj je za sklenitev potrebno soglasje nadzornega sveta oziroma soglasje skupščine. Prodajalec izjavlja, da je seznanjen z vsebino tega odstavka pogodbe, z obveznostjo obveščanja in so mu znane posledice, ki iz njega izvirajo, zato soglaša, da posebna pisna izjava prodajalca neobstoju navedenih okoliščin ni potrebna oziroma se le-tej odpoveduje.
- 4) Ta pogodba preneha veljati v primeru nastopa razveznega pogoja, ki se uresniči, če je kupec seznanjen, da je sodišče s pravnomočno odločitvijo ugotovilo kršitev obveznosti iz drugega odstavka 3. člena ZJN-3 s strani izvajalca pogodbe o izvedbi javnega naročila ali njegovega podizvajalca ali če je naročnik seznanjen, da je pristojni državni organ pri prodajalcu ali njegovem podizvajalcu v času izvajanja pogodbe ugotovil najmanj dve kršitvi v zvezi s plačilom za delo, delovnim časom, počitki, opravljanjem dela na podlagi pogodb civilnega prava kljub obstoju elementov delovnega razmerja ali v zvezi z zaposlovanjem na črno in za kateri mu je bila s pravnomočno odločitvijo ali več pravnomočnimi odločitvami izrečena globa za prekršek.
- 5) V primeru seznanitve kupca s kršitvijo mora ta o tem obvestiti prodajalca v desetih dneh. Prodajalec lahko v roku, ki ga določi kupec, ki pa ne sme biti daljši kot 15 dni, predloži dokaze, da je sprejel zadostne ukrepe, s katerimi lahko dokaže svojo zanesljivost kljub obstoju kršitev. Če obstaja kršitev pri podizvajalcu, lahko prodajalec v istem roku predloži dokaze, da je podizvajalec sprejel zadostne ukrepe, s katerimi lahko dokaže svojo zanesljivost kljub obstoju kršitev. Če prodajalec ni predložil dokazov za podizvajalca ali če jih je, pa kupec oceni, da ti ukrepi ne zadoščajo, lahko prodajalec zamenja podizvajalca v roku, ki ga določi naročnik in ne sme biti daljši od 15 dni v skladu s 94. členom ZJN-3, ali sam prevzame del, ki ga je oddal v podizvajanje temu podizvajalcu, če ta zamenjava ali prevzem ne pomeni bistvene spremembe pogodbe. Če prodajalec ni predložil dokazov zase ali za podizvajalca ali če jih je, pa kupec oceni, da ti ukrepi ne zadoščajo, ali če prodajalec ne prevzame del sam ali predlaga novega podizvajalca ali če kupec v skladu s 94. členom ZJN-3 pravočasno predlaganega novega podizvajalca zavrne, se razvezni pogoj uresniči pod pogojem, da je od seznanitve kupca s kršitvijo in do izteka veljavnosti pogodbe še najmanj šest mesecev.
- 6) V primeru izpolnitve razveznega pogoja se šteje, da je pogodba razvezana z dnem sklenitve nove pogodbe o izvedbi javnega naročila, kupec pa mora nov postopek oddaje javnega naročila začeti nemudoma, vendar najkasneje v 60 dneh od seznanitve s kršitvijo. Če kupec v tem roku ne začne novega postopka javnega naročila, se šteje, da je pogodba razvezana šestdeseti dan od seznanitve s kršitvijo. V takem primeru kupec unovči finančno zavarovanje



za dobro izvedbo pogodbenih obveznosti v celotnem znesku, razliko do polne odškodnine pa zahteva v plačilo od prodajalca.

### **XIII. VELJAVNOST POGODBE**

#### **23. člen**

- 1) Pogodba je sklenjena, ko jo podpišeta obe pogodbeni stranki in postane veljavna pod izpolnitvijo odložnega pogoja predložitve instrumenta zavarovanja za dobro izvedbo pogodbenih obveznosti.

### **XIV. KONČNO DOLOČILO**

#### **24. člen**

- 1) Pogodba se lahko spremeni ali popravi s podpisanim aneksom, ki ga potrdita in podpišeta obe pogodbeni stranki. V primeru, da kakršnokoli določilo iz te pogodbe je ali bi postalo neveljavno, to ne bi smelo vplivati na preostala pogodbeni določila. Neveljavno določilo se mora zamenjati z veljavnim določilom, ki mora do največje možne mere služiti namenu, ki mu sledita pogodbeni stranki.
- 2) Ta pogodba, vključno z dodatki, sezname itd., predstavlja celoten sporazum med pogodbenima strankama glede predmeta te pogodbe in nadomešča vse predhodne ustne ali pisne dogovore in sporazume med pogodbenima strankama.
- 3) Pogodbeni stranki bosta morebitne spore nastale iz te pogodbe ali zaradi te pogodbe uredili sporazumno, v primeru, da sporazumna rešitev ne bo mogoča, bo za rešitev sporov pristojno sodišče v Kopru ob uporabi slovenskega prava.
- 4) Prodajalec s sklenitvijo te pogodbe izjavlja, da je seznanjen z Etičnim kodeksom kupca, ki je objavljen na spletni strani kupca.
- 5) Prodajalec se zavezuje ravnati tudi skladno s Kodeksom ravnanja poslovnih partnerjev družb Skupine Luka Koper, ki je prav tako objavljen na spletni strani kupca in za kar je tudi podpisal »Izjavo dobavitelja«, ki je sestavni del Kodeksa.
- 6) Ta pogodba je sestavljena v slovenskem in angleškem jeziku. V primeru neskladja med besedilom v slovenskem in angleškem jeziku prevlada besedilo v slovenskem jeziku. V primeru, da se pogodba podpiše lastnoročno, je pogodba napisana v dveh izvodih, od katerih prejme vsaka pogodbeni stranka po en izvod. V primeru, če se pogodba podpiše elektronsko, pa je izvirnik pogodbe v digitalni obliki.

Koper, \_\_\_\_\_ (Place), \_\_\_\_\_

Kupec/Purchaser

Prodajalec/Vendor:

Predsednica uprave

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Član uprave

\_\_\_\_\_

**IDENTIFIKACIJA PONUDNIKA/POSLOVNEGA PARTNERJA (KYC OBRAZEC)  
oz. IZJAVA/PODATKI O UDELEŽBI FIZIČNIH IN PRAVNIH OSEB  
V LASTNIŠTVU PONUDNIKA**

Podatki v tem vprašalniku se zbirajo za namen izvedbe aktivnosti skrbnega preverjanja poslovnih partnerjev in preverjanja nasprotja interesov v postopkih oddaje javnih naročil v skladu s šestim odstavkom 14. člena Zakona o integriteti in preprečevanju korupcije, Ur. l. RS, št. 69/11 – uradno prečiščeno besedilo, s spremembami, in ostalih nabavnih postopkih.

**1. Podatki o ponudniku oz. gospodarskem subjektu**

Naziv ponudnika in pravna oblika:	
Matična številka:	
Naslov (sedež ponudnika):	
Osnovna dejavnost ponudnika:	
Telefon:	
E-pošta:	
Spletna stran:	

**2. Podatki o osebah, pooblaščenih za zastopanje gospodarskega subjekta (člani uprave, direktorji ali prokuristi)**

Ime in priimek:	
EMŠO:	
Položaj/nastopa v vlogi:	
Stalno prebivališče:	
Ali je oseba, pooblaščen za zastopanje politično izpostavljena oseba?* <input type="checkbox"/> DA <input type="checkbox"/> NE	

Ime in priimek:	
EMŠO:	
Položaj/nastopa v vlogi:	
Stalno prebivališče:	
Ali je oseba, pooblaščen za zastopanje politično izpostavljena oseba?* <input type="checkbox"/> DA <input type="checkbox"/> NE	

Ime in priimek:	
EMŠO:	
Položaj/nastopa v vlogi:	
Stalno prebivališče:	
Ali je oseba, pooblaščen za zastopanje politično izpostavljena oseba?* <input type="checkbox"/> DA <input type="checkbox"/> NE	

Ime in priimek:	
EMŠO:	
Položaj/nastopa v vlogi:	
Stalno prebivališče:	
Ali je oseba, pooblaščenca za zastopanje politično izpostavljena oseba?* <input type="checkbox"/> DA <input type="checkbox"/> NE	

*\*Politično izpostavljena oseba je v skladu z določili Zakona o preprečevanju pranja denarja in financiranju terorizma (ZPPDFT-2, Ur. l. št. 48/22 in 145/22) vsaka oseba, ki deluje ali je v zadnjem letu delovala na vidnem javnem položaju v državi članici ali tretji državi, vključno z njenimi ožjimi družinskimi člani in ožjimi sodelavci. Fizične osebe, ki delujejo ali so delovale na vidnem javnem položaju so: voditelji držav, predsedniki vlad, ministri in njihovi namestniki oziroma pomočniki, izvoljeni predstavniki zakonodajnih teles (poslanci Državnega zbora in Državnega sveta), člani vodstvenih organov političnih strank, člani vrhovnih in ustavnih sodišč ter drugih sodnih organov na visoki ravni, zoper odločitve katerih, razen v izjemnih primerih, ni mogoče uporabiti rednih ali izrednih pravnih sredstev, člani računskih sodišč in svetov centralnih bank, vodje diplomatskih predstavništav in konzulatov ter predstavništav mednarodnih organizacij in visoki častniki oboroženih sil, člani upravnih ali nadzornih organov državnih podjetij, predstojniki organov mednarodnih organizacij (kot so na primer predsedniki, generalni sekretarji, direktorji, sodniki), njihovi namestniki in člani vodstvenih organov ali nosilci enakovrednih funkcij v mednarodnih organizacijah.*

*Ožji družinski člani politično izpostavljene osebe so: zakonec ali zunajzakonski partner, partner iz sklenjene ali nesklenjene partnerske zveze, starši ter otroci in njihovi zakonci ali zunajzakonski partnerji.*

*Ožji sodelavci politično izpostavljene osebe so vse fizične osebe, za katere je znano, da so skupaj dejanski lastniki ali da imajo kakršne koli druge tesne poslovne odnose s politično izpostavljeno osebo ali fizična oseba, ki je edini dejanski lastnik poslovnega subjekta ali podobnega pravnega subjekta tujega prava, za katerega je znano, da je bil ustanovljen v dejansko korist politično izpostavljene osebe.*

### 3. Podatki o članih nadzornega sveta gospodarskega subjekta

Ime in priimek:	
EMŠO:	
Stalno prebivališče:	
Ali je član nadzornega sveta politično izpostavljena oseba?* <input type="checkbox"/> DA <input type="checkbox"/> NE	

Ime in priimek:	
EMŠO:	
Stalno prebivališče:	
Ali je član nadzornega sveta politično izpostavljena oseba?* <input type="checkbox"/> DA <input type="checkbox"/> NE	

Ime in priimek:	
EMŠO:	
Stalno prebivališče:	
Ali je član nadzornega sveta politično izpostavljena oseba?* <input type="checkbox"/> DA <input type="checkbox"/> NE	

Ime in priimek:	
EMŠO:	
Stalno prebivališče:	
Ali je član nadzornega sveta politično izpostavljena oseba?* <input type="checkbox"/> DA <input type="checkbox"/> NE	

#### 4. Podatki o lastniški strukturi gospodarskega subjekta:

##### a) fizične osebe (navedite vse osebe z lastniškim deležem 5% ali več)

	Ime in priimek	EMŠO	Stalno prebivališče	Lastniški delež (%)
1				
2				
3				
4				
5				

##### b) pravne osebe (navedite vse osebe z lastniškim deležem 5% ali več)

	Naziv podjetja	Matična št.	Sedež	Lastniški delež (%)
1				
2				
3				
4				
5				

#### 5. Podatki o dejanskih lastnikih - Ultimate beneficial owner gospodarskega subjekta

Kot dejanski lastnik gospodarskega subjekta se šteje vsaka fizična oseba, ki je končni lastnik stranke ali jo nadzira ali kako drugače obvladuje, ali fizična oseba, v imenu katere se transakcija izvaja (glej tudi Zakon o preprečevanju pranja denarja in financiranja terorizma (ZPPDFT-2) (Uradni list RS, št. 48/22, 145/22 in 17/25) 40., 42. do 44. člen). Kot dejanski lastnik gospodarskega subjekta se šteje:

- A. Fizična oseba (osebe), ki je lastnik ponudnika oz. gospodarskega subjekta in ga obvladuje z neposrednim lastništvom zadostnega poslovnega deleža, delnic (vključno z delnicami, ki se glasijo na prinosnika), glasovalnih oziroma drugih pravic, na podlagi katerih je udeležena pri upravljanju gospodarskega subjekta. Kazalnik neposrednega lastništva, ki ga ima v gospodarskem subjektu fizična oseba je lastništvo več kot 25% poslovnega deleža, glasovalnih ali drugih pravic, na podlagi katerih je podana udeležba pri upravljanju pravne osebe, ali lastništvo 25 odstotkov in ene delnice.
- B. Fizična oseba (osebe), ki obvladuje ponudnika oz. gospodarski subjekt s posrednim lastništvom zadostnega poslovnega deleža, delnic (vključno z delnicami, ki se glasijo na prinosnika), glasovalnih oziroma drugih pravic, na podlagi katerih je udeležena pri upravljanju gospodarskega subjekta. Kazalnik posrednega lastništva, ki ga ima v gospodarskem subjektu fizična oseba je posrednega lastništva več kot 25% poslovnega deleža, glasovalnih ali drugih pravic, na podlagi katerih je podana udeležba pri upravljanju pravne osebe, ali lastništvo 25 odstotkov in ene delnice.
- C. Fizična oseba (osebe), ki ima obvladujoč položaj pri upravljanju sredstev ponudnika oz. gospodarskega subjekta ali ima možnost nadzorovati, usmerjati ali kako drugače bistveno vplivati na poslovodne odločitve gospodarskega subjekta na podlagi zagotavljanja sredstev (npr. na podlagi pooblastila, pogodbenega razmerja s ponudnikom, ipd.).
- D. V primeru, kadar ni ugotovljena nobena fizična oseba kot dejanski lastnik po točkah A., B. ali C., se za dejanskega lastnika gospodarskega subjekta šteje ena ali več oseb, ki zasedajo položaj poslovodstva tega gospodarskega subjekta (osebe pooblašene za zastopanje ponudnika oz. gospodarskega subjekta – glej točka 2).

**Ugotovljena je vsaj ena fizična oseba kot dejanski lastnik po točkah A, B ali C (ustrezno označi):**

☐ DA ☐ NE

**V kolikor je ugotovljena vsaj ena fizična oseba kot dejanski lastnik po točkah A, B ali C, se v nadaljevanju navede vse dejanske lastnike po točkah A, B ali C.**

## Fizične osebe:

### Dejanski lastnik 1

Ime in priimek:	EMŠO:
Stalno prebivališče:	
Tip dejanskega lastništva (ustrezno izberite): <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C	Lastniški delež (vpisati odstotek neposrednega ali posrednega lastništva pri tipu dejanskega lastništva A ali B): _____ %
Ali je dejanski lastnik politično izpostavljena oseba?*: <input type="checkbox"/> DA <input type="checkbox"/> NE	

### Dejanski lastnik 2

Ime in priimek:	EMŠO:
Stalno prebivališče:	
Tip dejanskega lastništva (ustrezno izberite): <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C	Lastniški delež (vpisati odstotek neposrednega ali posrednega lastništva pri tipu dejanskega lastništva A ali B): _____ %
Ali je dejanski lastnik politično izpostavljena oseba?*: <input type="checkbox"/> DA <input type="checkbox"/> NE	

### Dejanski lastnik 3

Ime in priimek:	EMŠO:
Stalno prebivališče:	
Tip dejanskega lastništva (ustrezno izberite): <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C	Lastniški delež (vpisati odstotek neposrednega ali posrednega lastništva pri tipu dejanskega lastništva A ali B): _____ %
Ali je dejanski lastnik politično izpostavljena oseba?*: <input type="checkbox"/> DA <input type="checkbox"/> NE	

## 6. Z gospodarskim subjektom povezane družbe

Za povezane družbe po Zakonu o gospodarskih družbah se štejejo pravno samostojne družbe, ki so v medsebojnem razmerju tako, da:

- ima ena družba v drugi večinski delež (družba v večinski lasti in družba z večinskim deležem);
- je ena družba odvisna od druge (odvisna in obvladujoča družba);
- so koncernske družbe;
- sta dve družbi vzajemno kapitalsko udeleženi, ali
- so povezane s podjetniškimi pogodbami.

	Naziv podjetja	Matična št.	Sedež
1			
2			
3			
4			
5			

## 7. Informacije o obdelavi osebnih podatkov

Luka Koper, d.d. se zavezuje, da bo zbrane podatke obdelovala izključno za namene izvedbe skrbnega preverjanja poslovnih partnerjev v postopkih naročanja v skladu z internimi akti Luke Koper, d.d. in Zakonom o integriteti in preprečevanju korupcije (ZIntPK) in v postopku oddaje in izvajanja javnega naročila, ob spoštovanju vseh relevantnih predpisov s področja varstva osebnih podatkov ter obveznosti Luke Koper, d.d., ki izhajajo iz teh predpisov.

Zbrani osebni podatki ne bodo posredovani nepooblaščenim tretjim osebam in bodo shranjeni na predpisanih mestih ob uporabi ustreznih tehničnih, organizacijskih in kadrovskih varovalnih ukrepov, dokler bo potrebno za izpolnjevanje namena, za katerega so bili zbrani, in zaradi spoštovanja predpisanih rokov arhiviranja, po preteku pa se trajno uničijo. Luka Koper, d.d. bo osebam, katerih osebni podatki se obdelujejo, omogočila uresničevanje pravic v zvezi z varstvom osebnih podatkov (pravica do obveščenosti, pravica do dostopa do osebnih podatkov, pravica do dopolnitve, popravka ali izbrisa osebnih podatkov, pravica do omejitve obdelave, pravica do prenosljivosti in pravica do ugovora) pisno na naslov Luka Koper, d.d., Vojkovo nabrežje 38, 6501 Koper z navedbo »Varstvo osebnih podatkov« ali po e-pošti [varstvo.podatkov@luka-kp.si](mailto:varstvo.podatkov@luka-kp.si).

## 8. Izjava o točnosti podatkov

S podpisom te izjave gospodarski subjekt pod kazensko in materialno odgovornostjo jamči za verodostojnost, točnost in resničnost podatkov ter potrjuje, da je seznanjen z okoliščinami, da je pogodba, ki bi jo Luka Koper, d.d. lahko sklenila s ponudnikom neveljavna v primeru, da so vse ali katere koli navedbe v tem dokumentu nezanesljive, netočne ter neresnične in neutemeljene. Luka Koper, d.d. si pridržuje pravico preveriti točnost vseh podatkov, navedenih v tej izjavi. **Ponudnik mora tekom trajanja poslovnega sodelovanja nemudoma obvestiti Luko Koper, d.d. o vsaki spremembi podatkov, ki so predmet tega dokumenta.**

**Pooblaščen zastopnik ponudnika oz. gospodarskega subjekta:**

<b>Ime in priimek:</b>	
<b>Položaj/nastopa v vlogi:</b>	
<b>Podpis:</b>	
<b>Datum:</b>	

<b>IZJAVA PONUDNIKA</b> <b>O SPOŠTOVANJU KODEKSA RAVNANJA</b> <b>POSLOVNIH PARTNERJEV SKUPINE</b> <b>LUKA KOPER</b>	<b>DECLARATION BY THE TENDERER</b> <b>ON COMPLIANCE WITH THE CODE OF</b> <b>CONDUCT FOR BUSINESS PARTNERS OF</b> <b>THE LUKA KOPER GROUP</b>
<p>Potrjujemo, da smo seznanjeni z določbami Kodeksa ravnanja poslovnih partnerjev Skupine Luka Koper, ki je objavljen na <a href="https://www.luka-kp.si/o-podjetju/pomembni-dokumenti/">https://www.luka-kp.si/o-podjetju/pomembni-dokumenti/</a> in izjavljamo, da imamo skupne vrednote, da spoštujemo in ravnamo skladno s kodeksom ter uveljavljamo navedene vrednote in bomo spoštovanje le teh uveljavljali tudi pri naših poslovnih partnerjih.</p> <p>Spoštovanje Kodeksa ravnanja poslovnih partnerjev Skupine Luka Koper zagotavljamo z izvajanjem sledečih ukrepov obvladovanja tveganj korporativne integritete:</p> <ol style="list-style-type: none"> <li>Podjetje ima formalno sprejeto politiko za preprečevanje korupcije z izrecno izjavo o ničelni toleranci do koruptivnih ravnanj?  <input type="checkbox"/> DA    <input type="checkbox"/> NE </li> <li>Podjetje je vzpostavilo sistem upravljanja s tveganji korupcije, ki zajema jasno in smiselno opredeljene zaščitne ukrepe za preprečevanje korupcije v vseh dejavnosti, ki so pod nadzorom podjetja? <ol style="list-style-type: none"> <li>V podjetju se izvaja redno ocenjevanje tveganja korupcije?  <input type="checkbox"/> DA    <input type="checkbox"/> NE </li> <li>V podjetju se izvajajo postopki skrbnega preverjanja poslovnih partnerjev?  <input type="checkbox"/> DA    <input type="checkbox"/> NE </li> <li>Podjetje ima izdelane politike in delovna navodila za izvajanje notranjih kontrol in zaščitnih ukrepov v poslovnih procesih, ki so ocenjeni z več kot nizkim inherentnim tveganjem korupcije, vključno z nabavo, prodajo in področji posebnega pomena kot so sponzorstva, donacije, darila in pogostitve?  <input type="checkbox"/> DA    <input type="checkbox"/> NE </li> </ol> </li> </ol>	<p>We hereby confirm that we are familiar with the provisions of the Code of Conduct for business partners of the Luka Koper Group, which is published on the link <a href="https://www.luka-kp.si/en/company/corporate-documents/">https://www.luka-kp.si/en/company/corporate-documents/</a>, and declare that we have common values, that we respect and comply with the Code of Conduct and we assure that the values and the principles stated therein will be respected also by our suppliers and subcontractors.</p> <p>Compliance with the Code of Conduct for business partners of the Luka Koper Group is ensured by implementing the following corporate integrity risk management measures:</p> <ol style="list-style-type: none"> <li>Does the company have a formally adopted policy for the prevention of corruption with an explicit statement of zero tolerance to corrupt practices?  <input type="checkbox"/> YES    <input type="checkbox"/> NO </li> <li>Has the company established a corruption risk management system that includes clearly and meaningfully defined safeguards to prevent corruption in all activities controlled by the company? <ol style="list-style-type: none"> <li>Is the company conducting a regular corruption risk assessment?  <input type="checkbox"/> YES    <input type="checkbox"/> NO </li> <li>Does the company carry out due diligence procedures on business partners?  <input type="checkbox"/> YES    <input type="checkbox"/> NO </li> <li>Does the company have policies and working instructions for implementing internal controls and safeguards in business processes that are assessed with more than a low inherent risk of corruption, including procurement, sales and areas of special interest such as sponsorships, donations,</li> </ol> </li> </ol>



<p>d. Zaposleni so deležni ustreznega usposabljanja o sistemu upravljanja s tveganji korupcije, pričakovanih podjetja glede skrbnega ravnanja vseh zaposlenih ter postopkih sankcioniranja v primeru kršitev?</p> <p><input type="checkbox"/> DA   <input type="checkbox"/> NE</p> <p>e. Vzpostavljene so zaupne poti za prijavo nepravilnosti, ki zaposlenim omogoča prijavo nepravilnosti?</p> <p><input type="checkbox"/> DA   <input type="checkbox"/> NE</p> <p>f. Drugi ukrepi za zagotavljanje korporativne integritete (navedite kratek opis drugih ukrepov):</p> <p>_____</p> <p>_____</p> <p>S podpisom te izjave ponudnik pod kazensko in materialno odgovornostjo jamči za verodostojnost, točnost in resničnost podatkov ter potrjuje, da je seznanjen z okoliščinami, da je pogodba, ki bi jo Luka Koper, d.d. lahko sklenila s ponudnikom neveljavna v primeru, da so vse ali katere koli navedbe v tem dokumentu nezanesljive, netočne ter neresnične in neutemeljene. Luka Koper, d.d. si pridržuje pravico preveriti točnost vseh podatkov, navedenih v tej izjavi. Ponudnik mora tekom trajanja poslovnega sodelovanja nemudoma obvestiti Luka Koper, d.d. o vsaki spremembi podatkov, ki so predmet tega dokumenta.</p>	<p>gifts and banquets?</p> <p><input type="checkbox"/> YES   <input type="checkbox"/> NO</p> <p>d. Do employees receive adequate training on the system for corruption risk management, the expectations of the company regarding the due diligence of all employees and the sanctioning procedures in case of violations?</p> <p><input type="checkbox"/> YES   <input type="checkbox"/> NO</p> <p>e. Are there confidential whistleblowing channels that allow employees to report irregularities?</p> <p><input type="checkbox"/> YES   <input type="checkbox"/> NO</p> <p>f. Other measures to ensure corporate integrity (please provide a brief description of other measures):</p> <p>_____</p> <p>_____</p> <p>By signing this declaration, the tenderer guarantees, under criminal and material liability, the authenticity, accuracy and truthfulness of the information and confirms to be aware that the contract that Luka Koper, d.d. may conclude with the tenderer may be invalid if all or any of the statements made in this document are unreliable, inaccurate, untrue and unfounded. Luka Koper, d.d. reserves the right to verify the accuracy of all data provided in this statement. During the course of business cooperation, the tenderer must immediately inform Luka Koper, d.d. of any change in the information that is the subject of this document.</p>
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Kraj / Place:	Datum / Date:
Naziv in žig podjetja / Company name and stamp:	Ime, priimek in podpis pooblaščen osebe / Name, surname and signature of the authorised person: