

**CALL FOR TENDER**

**FOR THE AWARD OF PROCUREMENT OF THE**

**SUPPLY, INSTALLATION, COMMISSIONING**

**AND TESTING OF FIVE PLUS THREE OPTIONAL**

**(5+3) ELECTRIC RUBBER TYRED GANTRY**

**CRANES FOR CONTAINER TERMINAL USE**

***IN THE FRAMEWORK OF THE MANDATORY***

***ENHANCEMENT: M.E.06***

**Piraeus, Greece**

**JUNE 2020**

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## 1. IN GENERAL

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### **1.1 Preamble**

The Port of Piraeus (Port of Piraeus) is the largest port in Greece, spanning a coastline length of more than twenty-four (24) kilometres and expanding over an aggregate area exceeding five million (5.000.000) square meters.

The Port of Piraeus is situated at the intersection of sea routes linking the Mediterranean with Northern Europe and its geographic position (south of the 38th parallel) enables major line ships to access it without significant deviation from the Far East trade routes.

The Port of Piraeus hosts a complex and unique variety of activities, including: ferry/passenger shipping (it is the largest passenger port in Europe), servicing of all types of cargo, cruise, vessel repair activities, as well as the Port of Piraeus free zone (a control type I customs free zone) operating under applicable tax and customs legislation in the area (Piraeus Free Zone).

### **1.2 The Piraeus Port Authority S.A. (PPA)**

PPA is the legal entity entrusted with the administration and operation of the Port of Piraeus. It was established as a legal entity of public law by virtue of Law 4748/1930, which was restated by Compulsory Law 1559/1950 and ratified by Law 1630/1951, each as subsequently amended and supplemented.

In 1999 PPA was transformed into a stock corporation (Société Anonyme).

In April 2016, following an open public tender process, the Hellenic Republic Asset Development Fund (HRADF), under its capacity as the major shareholder of PPA, and COSCO HK Ltd entered into a Shares Purchase Agreement (hereinafter: SPA) for the acquisition of the majority participation in the share capital of PPA.

In August 2016, PPA ceased to be a state-owned company and since that day it is a private-owned company, due to the concession agreement between Greek State and PPA ratified by Law 4404/2016.

## 2. DEFINITIONS

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For the purposes of understanding the terms of this Call, definitions of the following terms are given herein below:

- a) **“Assigning Company”** or **“the Company”** or **“PPA S.A.”**: the Société Anonyme under the corporate name “Piraeus Port Authority S.A.”
- b) **“Authorized Representative”**: a legal representative of the Candidate (according to the Candidates statutes/bylaws) thereof or a specifically authorised representative (by a decision issued by the Candidate’s competent body), as the case may be, who has the power to bind the Candidate and also has the authority to sign and submit the Candidate’s Offer;
- c) **“Binding Declaration”**: refers to the Binding Declaration as per Law 1599/1986 or in the case of a foreign Candidate a text of analogous form of evidence, in accordance with the provisions of the country of provenance thereof signed by the Authorized Representative. In all cases where there is a reference to the term “Binding Declaration”, it is intended that such is effected by certification of the original signature of the signatory;
- d) **“Tender or Call”**: the said document;
- e) **“Candidate”** or **“Bidder”**: The Legal Entities, Companies, Joint Ventures or Groupings of Legal Entities/ Companies participating in the Tender by submitting an Offer for the supply of equipment and services that are subject matter of this Call for Tender.
- f) **“Interested party”** means Legal Entities, Companies, Joint Ventures or Groupings of Legal Entities/ Companies which intend to take part in the tender procedure by submitting an offer.
- g) **“Procurement Department Protocol”**: The PPA Procurement Department's Secretariat office, located at PPA’s premises at 10, Akti Miaouli, Piraeus, Greece;
- h) **“Contract”** means the Agreement entered into with the Contractor.
- i) **“Concession Agreement”** means the 24.6.2016 amendment and codification into a single text of the Concession Agreement of 13.2.2002 between the Hellenic Republic and Piraeus Port Authority S.A., which was ratified by Law 4404/2016.
- j) **“Contractor or Supplier”**: means Legal Entity, Company, Joint Venture or Grouping of Legal Entities/ Companies selected by PPA to carry out the Supply and services, which enters into a contract on the matter with PPA
- k) **“Eligible Bank”**: means a credit or financial institution or insurance company within meaning of Article 14(1)(b) or (c) of Law 4364/2016 operating lawfully in an EU, EEA or

OECD or Financial Action Task Force (FATF) country, which in accordance with the applicable provisions have such a right, or in a country with a credit rating for long-term investments of at least A- (or equivalent) or higher from at least any two of the rating's agencies Moody's, Standard & Poor's or Fitch. Also ETAA - TSMEDE Fund is considered as acceptable Institution.

- l) **“Tender Evaluation Team”** or **“Committee”** means the PPA Tender Evaluation Committee which consists of senior company executives and will be established by PPA's competent management bodies' decision.
- m) **“Third Party Inspection Company”** means the certified Third Party Inspection Company who will undertake the task of supervision of the entire project according to Article 13 of this Call.
- n) **“Offer”**: The offer to be submitted by the Candidates in the frame of this Tender and/or the main folder of the offer which includes three (3) sub-folders:
  - (i) 1<sup>st</sup> sub-folder named: **“Participation Supporting Documents”**
  - (ii) 2<sup>nd</sup> sub-folder named: **“Technical Offer”** and
  - (iii) 3<sup>rd</sup> sub-folder named: **“Financial Offer”**.
- o) **“Participation Guarantee”** has the meaning attributed to it in Article 7.1, Article 16 and Annex A hereof.
- p) **“Good Performance Guarantee”** has the meaning attributed to it in Article 7.2, Article 16 and Annex B hereof.
- q) **“Advance Payment Guarantee”** has the meaning attributed to it in Article 7.3, Article 16 and Annex C hereof.

### 3. ASSIGNING COMPANY – SCOPE OF TENDER

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#### **3.1 The Assigning Company**

The Assigning Company is PPA.

The address to which the offers are submitted is:

Piraeus Port Authority S.A.  
Central Protocol  
10, Akti Miaouli  
185 38, Piraeus, Greece

#### **3.2 Scope of Tender**

The scope of the tender shall be the 'Award of Procurement of the Supply, Installation, Commissioning and Testing of five (5) Electric Rubber Tyred Gantry Cranes for Container Terminal use', **CIF** ready to operate at Piraeus Port Authority S.A within a delivery time of: Fifty two (52) calendar weeks from contract date, with the option for the procurement of an extra three (3) E-RTG cranes at the same price and delivery time. The optional clause may be implemented by PPA S.A. within a maximum period of six (6) months from assignment of contract to the winning bidder.

Note that for the successful completion of the procurement, the scope of the tender also includes and the selected Supplier shall undertake at no extra cost for PPA SA, the following:

- The insurance during transportation of the said cranes.
- The installation of the delivered Cranes and related equipment at manufacturer's premises and at Pier I Container Terminal.
- The design, fabrication, erection, assembly, testing and commissioning of the Cranes and related equipment at Pier I Container Terminal.
- The technical and operational training at PPA premises for the delivered Cranes and related equipment.
- The supply of all stated spare parts, vendors' list proposals and special tools requested within this Call.
- The process of obtaining the relevant certification for the cranes in Greece according to the applicable and latest Greek and EU legislation, as in force, by providing all the necessary documents to PPA and the competent Greek authorities where required and

proceeding with any necessary act for this purpose.

### **3.3 Time limits for receiving Tender documentation – Provision of clarifications**

Interested parties may receive additional information or clarifications in relation to the present Tender, by submitting questions up to **three (3) days (included)** prior to the expiry of the time limit for the submission of offers in writing to PPA Procurement Department by e-mail to [ertgtender@olp.gr](mailto:ertgtender@olp.gr) and [procurement@olp.gr](mailto:procurement@olp.gr)

After the lapse of the above time limit no other communication or request for clarification as to any terms may be acceptable.

Written responses by PPA S.A. are notified to all interested parties until two (2) working days prior to the expiry of the time limit for the submission of offers.

If it is not possible to provide the said clarifications in time, PPA SA may but is not obliged to extend the deadline for submitting offers for a reasonable period.

In all events, PPA SA may but is not obliged to extend the deadline for submitting offers where:

- a) a request for clarifications is submitted, which in the Company's view is important for shaping the offer or
- b) it is the reasoned request of one or more Candidates in the Company's view.

If as a result of the clarifications procedure it is considered necessary, the Company shall grant interested parties an extension in the deadline for submitting their offers, as stated above.

**The time limit for the submission of offers is the 16 July 2020 until 16:00 Greek time (GMT +2).** Candidates are not allowed to refer to verbal responses or clarifications by PPA S.A.

## 4. SUBMISSION OF OFFERS - OFFER DOCUMENTATION

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### 4.1 Submission of Offers

Since PPA is a private-owned company and due to the immense importance of the procurement (both for PPA and the Hellenic Republic and consequently for the public interest) no objections in relation to the content of this bid invitation (if submitted) will be examined by PPA.

PPA, at its absolute discretion, has the right to cancel or repeat the procedure at any stage.

PPA may also cancel the outcome of the process and to resort to the procedure of competitive negotiations, when there is an emergency cause.

In case less than three Candidates' offers fulfil tender criteria in order for their financial proposals to be unsealed, then PPA reserves the right to cancel the procedure by declaring it as non-successful, unless otherwise stated in the tender documents and/or the Regulation.

PPA also reserves the right to enter into competitive negotiations with all successful Participants after the Evaluation process and before concluding the Contract.

The Offers shall be submitted by the Candidate itself or by the Candidate's Authorized Representative electronically to the following e-mail addresses:

[ertgtender@olp.gr](mailto:ertgtender@olp.gr) and [procurement@olp.gr](mailto:procurement@olp.gr)

Each individual sub-folder (Participation Supporting Documents, Technical Offer and Financial Offer) as well as the entire offer folder will be protected with different passwords which will be sent separately at each stage of the tender at the time, the way and to a specific email which will be notified by the PPA to all participants.

Alternatively, the offers may also be sent to PPA Procurement Department's Protocol by registered post upon proof of receipt (from PPA SA) dated no later than **16 July 2020**.

The Candidates are responsible for dispatching the sealed folder of offer hereof until the receipt of such folder of offer by PPA.

Any insurance costs, custom duties and transport charges related to the submission of the offer shall be fully borne by the Candidate.

The Candidates are responsible for and accept the risk for any event, to include even force majeure, that may have as a result the non-timely or non-duly submission of the folder of offer thereof.

Offers submitted after the above date and time are overdue and shall be returned without being unsealed.

#### **4.2 Language of the procedure**

The official languages of the procedure are Greek or English and all information and all documents from the Candidate or the Contractor to PPA and its Technical Advisors shall be drawn up either in Greek or in English, or accompanied by a lawful Greek or English translation, if in any other language..

Moreover, all written and oral arrangements between the Candidates, Tender Evaluation Team and PPA, shall also be either in Greek or in English.

#### **4.3 Offer Documentation**

The Offer will consist of three (3) sealed sub-folders (1st “Participation Supporting Documents”, 2nd “Technical proposal” and 3rd “Financial Proposal”) which should be incorporated and submitted all together in one (1) sealed folder of offer with the clear wording ‘ORIGINAL’ written on the front envelope or binder for reasons of evaluation.

In the case of submission of an offer in hardcopy, the Candidates are also requested to submit a second identical sealed folder of offer, as above, with the clear wording ‘COPY OF ORIGINAL’ written on the front envelope or binder for reasons of evaluation.

It is clarified that each sealed folder of offer (Original and Copy of original) should contain three (3) **sealed** sub folders:

- i. 1<sup>st</sup> sub-folder named: ***“Participation Supporting Documents”***
- ii. 2<sup>nd</sup> sub-folder named: ***“Technical Offer”*** and
- iii. 3<sup>rd</sup> sub-folder named: ***“Financial Offer”***.

On all folders of the offer, the following titles must be clearly written:

- The word «OFFER».

- The wording “ORIGINAL” or “COPY OF ORIGINAL”
- The title of the Call of Tender.
- The date of submission of the offer.
- The name, address and details of the Candidate.

On each one of the three (3) sub-folders the following titles must be clearly written:

- «PARTICIPATION SUPPORTING DOCUMENTS»
- «TECHNICAL PROPOSAL» and
- «FINANCIAL PROPOSAL».

#### **4.4 Validity of offers**

Offers shall bind the Candidates **for four (4) calendar months** from the submission deadline date. Any offer which sets forth a term of validity less than the above mentioned, shall be rejected.

Participants are advised that they may be requested to extend the validity of their proposals by **a further two (2) months**.

It is at PPA’s sole discretion to consider all proposals as void and invalid and cancel the whole bidding process. No compensation will be paid to the bidders under this circumstance.

##### (i) True and Correct statements

Each Candidate understands that the information contained in its offer will be relied upon by PPA in making its decision with respect to the award of the contract and such information is expressly warranted by the Candidate to be true and correct. Furthermore, each Candidate will furnish such supporting and confirming information, prior to the award of the contract, as may be reasonably requested by PPA.

##### (ii) Reasons for rejecting an offer may include (but are not limited to):

- If any information provided by the Candidate/s is found to be incorrect.
- If a Candidate fails to verify any information provided in the proposal in response to PPA’s request.
- If the ‘ON / OFF’ criteria requirements are not met.
- If adherence to the Tender terms is not followed.
- If the same participant submits more than one (1) offer.

(iv) Due to the exceptionally tight time frames for implementing the mandatory PPA investment program, specified in the Concession Agreement, decisions of PPA SA are final and no protests or objections submitted in relation to them will be taken into account.

## **5. PRESUMPTION RESULTING FROM THE PARTICIPATION IN THE PROCEDURE**

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5.1 Submission of an offer in the tender procedure will constitute a presumption that each Candidate accepts the terms of this Call for Tender, has been apprised of the tender documents and information and is fully aware of the project implementation conditions. In particular, Candidates are obliged to fully apprise themselves of all project implementation conditions including all those specified in this Call for Tender and, consequently, submission of an offer in the tender procedure shall be a presumption that the Candidate/s:

- (i) Have checked, are aware of and accept all technical conditions for the offered cranes in PPA SA Container Terminal facilities.
- (ii) Will be fully responsible for the design, manufacturing and supply of the cranes that will be handed to PPA, according to the provisions and terms of the Standards as described herein.
- (iii) Will fully comply with all written remarks and suggestions from PPA S.A. and the selected Third Party Company,
  - a) during design approval, b) during manufacture, c) during assembly, d) during installation/erection and, e) during final testing and commissioning of the cranes. All costs or corrections to the designs, testing, fabrication of parts or any NDT tests will be carried out at the contractors cost and must be included in the Candidates' financial offer in accordance with the tender Call.
- (iv) In case any assembly/erection works are carried out at PPA SA premises, the full responsibility of the proper assembly/erection preconditions and requirements are at the contractor's sole responsibility, liability and cost.
- (v) Also, the Contractor will be fully responsible and fully liable for any accident that may occur during the assembly or erection works and testing of the cranes at PPA's premises to any PPA's or other third parties' personnel and/or property.

5.2 Any failure by the Candidate to take into consideration all the above issues and requirements using all information possible, is at its own exclusive responsibility and shall not release the Candidate from liability neither from its obligation to comply in full with its contractual obligations if selected for the Award of Tender.

5.3 In light of the above, the Candidates fully and unreservedly guarantee the accuracy of the offer and, if chosen, they will unreservedly undertake to carry out all supply and services and, in general, to perform the project in full compliance with all terms, specs, etc. and the project implementation schedule specified herein.

5.4 Candidates are not entitled to any remuneration for expenses incurred relating to the compilation and submission of information mentioned herein, such as tender dossiers, etc.

5.5 The Committee reserves the right to contact any Public Authority or Body in order to request clarifications about information submitted and to supplement it and Candidates are obliged to respond to that request within the deadline specified by the Committee.

5.6 PPA SA implements an Integrated Quality, Environmental & Energy Management System as per the ISO 9001:2015 for Quality Management, ISO 14001:2015 for Environmental Management and ISO 50001:2018 for Energy Management standards' requirements. Within the framework of implementing this Integrated System, PPA SA has adopted an Integrated Quality, Environmental & Energy Policy, whilst in parallel it sets Quality, Environmental and Energy Objectives. The contractor, throughout the collaboration period with PPA SA, must be aware of the Integrated Quality, Environmental & Energy Policy, which is available on PPA SA official website (<http://www.olp.gr/en/quality-control>). He must comply with PPA SA guidelines and instructions and ensure that his actions do not have any negative impact on the continual improvement of the Integrated Quality, Environmental & Energy Management System, the improvement of the quality of services provided by PPA SA, the environmental and energy performance of PPA SA. The contractor must join PPA SA efforts for improving the quality of services provided, the environmental and energy performance. For this reason, where necessary, the Contractor must participate to relevant actions and initiatives that PPA SA undertakes, whilst in parallel he may submit comments and suggestions for improvement a) to Quality Control & Inspection Department ([quality@olp.gr](mailto:quality@olp.gr)) with regards to the Quality & Environmental Management System and the quality and environmental performance and b) PPA SA Energy Management Team ([energymanagementteam@olp.gr](mailto:energymanagementteam@olp.gr)) with regards to the Energy Management System and the energy performance.

## **6. PREQUALIFICATION CRITERIA**

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### **6.1. Prequalification Criteria**

Each Candidate is obliged, upon penalty of disqualification, to fulfil the following prequalification criteria.

#### **6.1.1 Professional Prequalification Criteria (ON/ OFF criteria)**

Each Candidate that participates in the tender procedure on its own or as a member of a Joint Venture or a Group of companies/entities is obliged, upon penalty of disqualification, to have the following professional qualifications:

1. The Candidate is not bankrupt, in liquidation, is not in compulsory receivership, or bankruptcy compromise, the Contractor's operations have not been suspended or it is not any similar situation under any similar proceedings, is not in proceedings to be declared bankrupt or in proceedings to be placed in compulsory liquidation or compromise with creditors and is not in any similar situation (restructuring, etc.)
2. The managing partners in the case of a limited or general partnership or limited liability Company, and the Chairman and Managing Director in the case of a Société Anonyme or the natural persons exercising management functions in all other cases must not have been convicted on the basis of a final judgement for:
  - a. participation in criminal organizations within the meaning of Article 2(1) of Council Framework Decision 2008/841/JHA
  - b. bribery within the meaning of Article 3 of Council Act of 26 May 1997 and Council Framework Decision 2003/568/JHA.
  - c. fraud within the meaning of the Directive (EU) 2017/1371
  - d. money laundering within the meaning of repealed by the Directive (EU) 2015/849
  - e. Embezzlement
  - f. Fraud
  - g. Extortion
  - h. Forgery
  - i. Perjury
  - j. Bribery

according to the Penal Code or crimes similar in their specific aspects to the above, provided for in foreign legal orders.

3. They must have fulfilled obligations relating to the payment of social security contributions in accordance with applicable Greek law (in the case of a Greek or foreigner Candidate engaged in activity in Greece) or in accordance with the law of the country of establishment.
4. They must have fulfilled tax obligations in accordance with applicable Greek law (in the case of a Greek or foreigner Candidate engaged in activity in Greece) or in accordance with the law of the country of establishment.
5. They must not have committed a disciplinary offence the penalty for which was deprivation of the right to participate in tender procedures (tender procedures for public works).
6. The company (or any other legal person or natural person associated directly or indirectly with it in a manner which, at PPA's unfettered discretion, reveals a real connection to it which could negatively affect implementation of the project) must not have been expelled in any manner, or no such similar penalty must have been imposed on it (such as seizure of a bond, declaration of the party as in forfeit of the contract, termination of the contract) from a construction or other type of project, and in particular (but not limited to) a PPA project or one belonging to another company in the same group to which PPA belongs.

#### **6.1.2. Financial and Economic Standing Criteria (ON/OFF)**

Upon penalty of disqualification, each Candidate must have a minimum total turnover of 50.000.000 €, over the past five (5) years in container crane sales i.e. from 2015 – 2019.

#### **6.1.3. Quality Related Criteria (ON/OFF)**

Upon penalty of disqualification, each Candidate must hold a valid ISO 9001:2015 certificate. The scope of the certificate must be relevant to the subject of the tender call.

#### **6.1.4 Technical Capacity Criteria (ON/ OFF)**

Upon penalty of disqualification, each Candidate must meet the following technical criteria

- 1) It has manufactured within the past five (5) years, at least fifteen (15) E-RTG cranes of minimum width 7 +1 and height 5 +1.
- 2) It has a legally operating sales representative within the European Union and preferably within Greece.
- 3) The legally operating sales representative also has the technical ability to support PPA with any future technical issues and especially within the warranty period of the said cranes.

## **7. GUARANTEES**

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Guarantees shall be required for either participation to the tender procedure and or to the winning bidder / Supplier of the procurement. In case of Joint Venture or of Group of companies/entities, the letters of guarantee are common to all members.

### **7.1 Participation Bank Guarantee**

The Tender Participation Bank Guarantee Letter must be issued by an Eligible Bank, in accordance with the template of Annex A of this Call for Tender and shall be valid for one (1) month longer than the validity of the offer and its possible extension in accordance with article 4.4 of the present Call for Tender, at the amount of one hundred thousand euro (100.000,00 €).

The Participation Bank Guarantee Letter shall be addressed to the Piraeus Port Authority S.A., and, in the event of a Joint Venture or Group of companies/entities, it must be common to all members hereof.

The above Guarantee (irrespective of its type) will be forfeited a) if the Candidate does not fulfil all obligations stated in this Tender and b) if the Temporary winning bidder does not appear to sign the contract.

### **7.2 Good Performance Guarantee**

A Good Performance Guarantee upon signing the Contract is required.

The Good Performance Guarantee Letter must be issued in accordance with the template of Annex B of this Call for Tender by an Eligible Bank in favour of PPA for an amount equal to 10% of the total amount of the contract VAT excluded. The good performance guarantee will be valid until the end of the 'guaranteed good operation' period of the cranes.

No Contract will be signed unless the good performance guarantee is delivered to PPA.

### **7.3 Advance Payment Guarantee**

An Advance Payment Guarantee upon signing of the contract is required.

The Advance Payment Guarantee Letter must be issued in accordance with Annex C of this Call for Tender by an Eligible Bank in favour of PPA for an amount equal to 20% of the total amount of the contract VAT excluded.

#### **7.4 Deposit of the amount of guarantees in the bank**

Alternatively, Candidates may provide the necessary documentation that an equal to the related tender bank guarantee amount, has been deposited, transferred and was made available as guarantee (hereinafter: the Tender participation guarantee) for the participation of the Candidate in the tender, in one of the following PPA's bank accounts:

 ΕΘΝΙΚΗ ΤΡΑΠΕΖΑ	<b>GR1501101900000019050500651</b>
 ALPHA BANK	<b>GR7101401250125002320006462</b>
 Eurobank	<b>GR4902600250000440201113841</b>
ΤΡΑΠΕΖΑ ΠΕΙΡΑΙΩΣ 	<b>GR8501721140005114032172486</b>

#### **7.5 Return of the guarantee amounts**

- i) The Tender Participation Guarantee Letter will be released or the participation guarantee amount will be returned by PPA to unsuccessful Candidates within fifteen (15) working days from the completion of the Tender and to the successful Candidate upon signature of the contract and upon submission and acceptance of the good performance guarantee by PPA SA.
- ii) The Good Performance Guarantee Letter or the good performance guarantee amount will be returned after the end of the warranty period of the cranes and settlement of the claims of PPA, if any.
- iii) The Advance Payment Guarantee Letter or amount will be returned after the final payment.

## 8. SUB-FOLDER OF PARTICIPATION SUPPORTING DOCUMENTS

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### 8.1 Participation Guarantee according to the requirements of article 7.

### 8.2 Professional prequalification documentation in order for the criteria set in 6.1.1. to be fulfilled.

Each Candidate so as to participate in this tender procedure, on its own or as a member of a Joint Venture or Consortium in order to prove the fulfilment of the above mentioned prequalification criteria should submit, on pain of rejection of the Offer, the following participation supporting documents as originals, legally certified copies or valid, simple, clear and easy-to-read information where applicable:

- i. A brief description of the Candidate/s legal entity and business.
- ii. The Candidate/s registration certificate (or equivalent) in force issued by the Candidate/s business registry.
- iii. The Candidate/s competent management body's decision to participate in the Tender, submit the offer and appointing its authorized representative to specifically sign and submit the offer; the authorized representative must have delegated powers to answer on behalf of the Candidate/s to any questions PPA may have, and to sign the agreement (In cases of Individual Enterprises).
- iv. A binding declaration of the Candidate/s:
  - a. stating that it is fully aware of the contents of this call and unconditionally and unreservedly accepts its terms;
  - b. acknowledging that its participation in the process takes place at its sole risk and expense and that the participation as such does not establish any right to compensation from PPA or PPA's personnel;
  - c. acknowledging that disqualification from the Tender or failure to succeed in the Tender does not create any right to compensation for the Candidates;
- v. full contact details for the Candidate/s' authorized representative (including full name, address, phone and fax numbers and email address);
- vi. A social security clearance certificate from the competent authority showing that on the date of offer submission the Candidate was fully aware of its main and supplementary social security contribution debts.
- vii. A tax clearance from the competent authority showing that on the date of offer submission the Candidate was fully aware of its tax obligations.

- viii. A binding declaration according to the law of the country of establishment of the Candidate/s, confirming that the Candidate/s fulfil/s the criteria of Article 6.1.1.
- ix. A binding declaration, affirming:
  - a. That, in case of award of contract to the specific Candidate/s, the Candidate/s accepts and commits to the execution of the procurement, will undertake the procedures for issuing the relevant Certificates of Conformity, CE documentation and any other legal requirement according to Greek Law on behalf of PPA SA in order for the equipment to be fully operative at PPA SA.
  - b. The legal entity that possesses the know-how of the design studies/ manufacturing method/ assembly method / testing method and commissioning method of the crane until certified according to EU and Greek legislation.
  - c. The country and location of manufacture, construction and assembly of the Crane.
  - d. That the offered vendors' list equipment will be readily available for production for at least the next ten (10) years from the date of submission of the statement and that if the equipment is deemed obsolete within this time period that the supplier will propose a relevant replacement part and or equipment which will be directly interchangeable.
  - e. That the Candidate commits to be providing technical support to PPA for the next five (5) years if the Candidate is selected with the award of the Call.
  - f. That all submitted documents are originals or legally certified copies or valid, simple, clear and easy-to-read true copies from the originals.

In the case of a Joint Venture of contracting enterprises or Group of companies/entities, the abovementioned documents must be submitted by all members.

In the case of a Group of companies/entities or a Joint Venture, a private agreement establishing the Joint Venture must also be submitted which appoints the leader of the Joint Venture of contracting enterprises or Group of companies/entities, which must declare the following as a minimum:

- i) The contracting enterprises' agreement to jointly submit the offer.
- ii) The participation percentage of each member in the arrangement.
- iii) The joint representative and process agent for the members of the grouping or Joint Venture, in dealings with PPA S.A. and
- iv) That the members of the Joint Venture shall be jointly and severally liable to

PPA S.A. for implementing the project and in the case of special or quasi general succession, the successors must be bound to continue to participate in the Joint Venture under the same terms.

Furthermore, the grouping of contracting enterprises / joint venture should also submit:

- a) An official copy from the register of minutes of the Company's Board of Directors or the competent body which approved participation in this tender procedure, appointing one or more representatives to submit the tender, and to sign any document relevant to the tender procedure, and appointing a process agent.
- b) A solemn declaration from the legal representative and process agent appointed by decision of the Candidate's competent body, in which he unconditionally and unreservedly accepts his appointment as representative.
- c) Evidence confirming that the Candidate's legal representative has not been convicted for an offence related to his professional activity and conduct, based on a decision applicable *res judicata* (a certified copy of an extract from the criminal record or other equivalent document shall be sufficient).

Note that the corresponding certificates (that the Candidate/s is/are not bankrupt, not in liquidation, etc.), issued by the competent authorities of the country in which the company is established must be submitted, along with other supporting documents requested to the Candidate/s and must be in effect on the date the contract is to be signed. If the said certificates are not issued by the relevant country, they may be replaced by a sworn statement or, if there is no provision for such in the laws of the country of establishment, by a solemn declaration before a judicial or administrative authority, notary public or competent professional body of the country of origin or provenance.

**8.3. Financial and economic prequalification documentation in order for the criteria set in 6.1.2. to be fulfilled**

Copies of the financial statements of the Candidate of the last five (5) audited years, proving compliance with the economic and financial standing criterion of article 6.1.2. hereof.

**8.4 Quality prequalification documentation in order for the criteria set in 6.1.3. to be fulfilled**

A valid ISO 9001:2015 certificate whose scope is relevant to the subject of the tender call.

**8.5. Technical prequalification documentation in order for the criteria set in 6.1.4. to be fulfilled**

Adequate proof (i.e. certificates of acceptance from the buyer of the cranes, contracts, agreements etc.) that the Candidate:

1. Has manufactured within the past five (5) years, at least fifteen (15) E-RTG cranes of minimum width 7 +1 and height 5 +1.
2. Has a legally operating sales representative within the European Union and preferably within Greece.
3. Has the technical ability to support PPA with any future technical issues and aftersales support, especially within the warranty period of the said cranes, through the legal operating sales representative.

**8.6.** The abovementioned participation supporting documents must be valid at the time of contract signing and should be resubmitted by the participants at their own expenses upon request of PPA.

Apart from the hard copy of the documentation, an electronic copy will be submitted. Where discrepancies between the dossier submitted in hard copy and the electronic version are identified, the documents in hard copy will have precedence.

All pages of the original folder to be clearly and consecutively numbered (i.e. 1 – 200) and the electronic version to be scanned with the same numbering

The Evaluation Committee will initially (a) identify the Offers which were duly submitted (at the correct time, place and process) and (b) will immediately proceed with the review and evaluation of the fulfilment of the ON/OFF criteria set above in Article 8 (SUB-FOLDER OF PARTICIPATION SUPPORTING DOCUMENTS). The Offers that were duly submitted and satisfy the ON/OFF criteria, will be defined by the Committee as Offers that are acceptable and will proceed to the next stage of evaluation of the Sub-Folder of Technical Offer.

## 9. SUB-FOLDER OF TECHNICAL OFFER.

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The sub-folder of the Technical Offer should include a description of the proposed Cranes in order to sufficiently demonstrate the Candidates' understanding of PPA's specific requirements according to this Tender Call for the following:

- The supply, erection or installation, commissioning and testing for the Cranes requested within this Tender Call,
- An analytical technical description and specification of the proposed Crane according to the technical requirements of PPA S.A. as stated in ANNEX D,
- The ability to provide the relevant certification for the crane in Greece according to the applicable and latest Greek and EU legislation, as in force, by providing all the necessary documents to PPA and the competent Greek authorities where required and proceeding with any necessary act for this purpose,
- The technical and operational training at PPA premises for the delivered equipment. Technicians will be given the knowledge needed to keep the e-RTGs in top condition and the training course will be a mix of theory and hands-on experience. Operators will be shown how to optimise their day-to-day operational performance and what needs to be checked daily before operations begin. The supplier will submit training agenda and at the end of each training session a respective training form will be signed both by the trainer and the trainees for the actual evidence of the training performed.
- The supply of spare parts and special tools requested within this Call,
- Any other documentation requested in this Call.

Within the sub-folder of the Technical Offer, the Candidate is required to provide a table or equivalent list with comments for each item within Annex D with reference to technical documentation.

Participants are obliged to provide, amongst others, the following documents **as part of their Technical Offer:**

1. The Candidate's proposed warranty period (In effect as of delivery and final acceptance of equipment).
2. The Candidate's proposed delivery time schedule (Stated in calendar weeks by submitting an indicative Gantt chart of the entire process).
3. Lists including technical descriptions of spare parts and special tools offered.

4. An analytical list of the documents and manuals for the proposed cranes.
5. An analytical description of the proposed training for the offered cranes.

## 10. SUB-FOLDER OF FINANCIAL OFFER.

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Participants are requested to submit a financial proposal as shown in Annex E.

The below mentioned costs will be fully born by the Candidate:

- a) The full cost of the Equipment and spare parts and special tools.
- b) All the testing and certification costs including the cost of the Third Party Company.
- c) All documentation and manuals as stated in the Tender Call.
- d) All training costs at PPA S.A. premises.
- e) Costs of transportation and insurance of machinery.
- f) Visa application, travelling and lodging cost in Greece for all Supplier's personnel.
- g) The cost for travel, accommodation, meals etc. for up to two (2) employees of PPA S.A. throughout the duration of construction of the crane. (Six round trip tickets to be provided from the Suppliers location to and from Greece).

The details of the cost of PPA S.A. personnel and the mechanism of charging will be specified in the contract.

- h) In general, any other cost that may occur for the delivery, assembly and commissioning of the Equipment in fully functional and in tested operation mode.

### **Terms and conditions**

- All prices should be stated in Euro, CIF at Container Terminal facilities located in Pier I – NEO IKONIO, KERATSINI, GREECE, excluding VAT.
- No invoices should be issued without prior written consent from PPA SA.
- All costs regarding supply of equipment, delivery, shipping, insurance, erection in their final positions, inspections, certifications, training and any others mentioned in the Call for Tender should be fully borne by the Candidate.

## 11. TENDER AWARD

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The evaluation committee appointed by PPA shall evaluate the proposals on the basis of their responsiveness to the requirements set by this call, applying the evaluation criteria as follows:

Evaluation of Technical Offer/ Technical Score:

- (i) Technical specifications of machinery: up to 70 points
- (ii) Delivery time of machinery: up to 15 points
- (iii) Warranty/Guarantee period of machinery: up to 15 points

**Technical Score (St) = 100 Total Maximum Points**

The formula for determining **the Financial Score (Sf)** shall apply as follows:

**Sf = 100 X FM/F**

Where:

- Sf is the financial score;
- FM is the lowest priced Financial Proposal and
- F is the price of the proposal under consideration.

Proposals will be ranked according to their **combined technical (St) and financial (Sf) scores** using the weights:

Where:

- T = the weight of 60% given to the Technical Score;
- P = the weight of 40% given to the Financial Score; and
- T + P = 1.

The combined technical and financial score, S, is calculated as follows: -

**S = St x T % + Sf x P %**

The Candidate achieving the highest combined technical and financial score (S) will be ranked first and will be the Temporary winning bidder. In the event of an absolute tie the Candidate with the highest Sf score will be ranked first and will be the Temporary winning bidder.

## 12. WARRANTY

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The Candidate shall clearly identify within the offer, the proposed terms of warranty for the crane. The warranty period of the cranes shall be of at least ten (10) years for the metallic structure and at least one (1) year for the effective trouble free working condition of the crane without failure.

Within the warranty period, the Candidate shall be fully and solely responsible to repair or rectify any technical problems or issues that may arise at their own cost, of which are due to sole responsibility of the Candidate or manufacturer of the crane. (Damages and wear and tear parts shall not be subject to the stated warranty period).

The warranty period for the Equipment Spare Parts should be at least one (1) year after hand-over and final acceptance from PPA.

Any additional free warranty provided will be taken into account for the vendor's selection. Components which are repaired or replaced during the warranty period shall be subject to the remaining original warranty period plus one (1) year.

The provided warranty period shall take effect from the date of final acceptance and the signing of the Acceptance Report.

During the warranty period, in case PPA cannot solve a problem, the Supplier should be able to send an expert engineer within ten (10) working days from the written request from PPA unless otherwise reasonably agreed by both parties in writing.

After the warranty period, in case PPA cannot solve a problem, the Supplier should be able to send an expert engineer within fifteen (15) working days from the written request from PPA unless otherwise reasonably agreed by both parties in writing.

The delivery time of Spare Parts should not be more than ten (10) working days during the warranty period and no more than fifteen (15) working days after the warranty period from the written request of PPA, unless otherwise reasonably agreed by both parties in writing.

### 13. TESTING, COMMISSIONING AND ACCEPTANCE

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Various tests (specifically including the insulation test for each electric motor and transformer, appearance inspection, high-tension insulation tests and crane performance Tests) of the cranes specified in the tender documents will be conducted under the supervision of PPA's representatives and the Third Party Company upon the final assembly.

Within three (3) months before shipment, the Supplier will:

- 1) Notify predicted ship schedule and relevant matters;
- 2) Provide shipment and erection procedure of the crane;
- 3) Provide test program and detailed field test and test record forms.

**The following data will be submitted before field testing and commissioning:**

- 1) Test reports and qualification certificates of various materials used for the crane;
- 2) Test reports and qualification certificates of purchased mechanical and electrical equipment;
- 3) Test reports and qualification certificates of main load bearing elements such as twistlocks, high-strength bolts, wire rope fittings etc.;
- 4) Qualification certificates of welds;
- 5) Qualification reports of assembly quality;
- 6) Painting qualification certificates.

Appearance inspection

Visual inspection includes conformity of the following items with the technical specifications and provisions. These items are: every main crane movement mechanism electrical equipment safety devices, brakes, control valves, lighting and inter-communication system;

Structural members and connections, stairs and ladders, walkways, operator's cab and platforms;

All the protection devices;

Container spreader, fittings and connections;

Wire rope and its fittings for secure;

Sheave block shafts and fasteners, connection plate system and rail;

Visual inspection also includes if all necessary certificates have been submitted and reviewed;

Crane visual inspection may be accepted if the following are achieved:

- 1) Correct installation position and complete with all necessary parts;
- 2) Structure without any deflection and/or damage;

- 3) Painting meets specifications requirement with uniform colour and acceptable durability;
- 4) Secure installation of all devices and standardization;
- 5) Piping arranged neatly;
- 6) Without any external oil leakage;
- 7) All identification marks are clearly visible.

#### High-tension insulation test

PPA's technical electrical sector will perform high-tension insulation tests. This should be arranged by PPA before the cranes arrive at PPA's site and shall be executed by PPA immediately after the cranes final assembly.

#### Crane performance Tests

##### Static load test and dynamic load test (In accordance with FEM 1.001 standard)

The purpose of static load test is to examine the load bearing capability of the crane and its structural members and components.

The test is considered successful if the test result shows that there is not any crack, permanent deformation, painting peeling off and/or any damage that affect the crane performance and safety, not any loosening or damage at joints and connection is found after test.

- a. Static load Test: The trolley is positioned in the middle of the trolley girder and the crane is tested with 140% static load. Firstly, 120% load is dynamically lifted and, then, the load is gradually added up to 140% without any shock. During testing, observe deflection of the girder. There should not be residual deformation. Before static load test, deflection of the girder is verified to be within manufacturer specifications.
- b. Dynamic load test: The crane is tested with 120% dynamic load (the overload limit switch is by-passed). The hoisting and trolley motions should be normal under this test. With the overload limit switch connected, the crane is to be tested with dynamic load of 100%, 105% and greater than 110% rated load to verify the activation, reliability and effectiveness of the overload limit switch.

#### Crane durable operation test (acceptance test)

##### Eight (8) hour durable test

The test field is at 50m away from the crane transverse track. A semi-trailer with a fully loaded container which are 8'6" high and 40' long are parked on the tractor lane. Two 9'6" high 40'

containers are stacked at each "Row No.1", "Row No. 2", "Row No.3" and "Row No.4" respectively. Pick up the container from the semi-trailer and lift it up and traverse it passing over "Row No. 1" and "Row No.3" and land it on the container on "Row No. 4" and then immediately lift it up and back to semi-controller and lock it properly. The spreader is lifted up again after twistlocks are off and pass over "Row No.1" and land it on the container on "Row No.3" and then immediately lift up the spreader on the semi-trailer and lock properly. This is an entire duty cycle operation.

After every 10 times of continuous cycles, gantry is operated once to travel 50m and returned to the original point and the cycle operation is continued.

After every four hour operation and in conjunction with gantry travelling every 10 cycles, the wheels are turned by 90° at the cross point of the crane travelling and traversing. The crane is operated to traverse 6m along new direction and then returned to the container and continue the cycle operation. During duty cycle operation, each motion should be, as far as possible, performed at maximum acceleration.

The breakdown time must not exceed 30 minutes during 8 hours.

#### Acceptance report

After the above stated tests have all been successfully completed an acceptance report will be prepared and the tests results and conclusion will be listed.

The report will show the tested crane performance, test date, test place and the witnesses' name.

The report will be prepared by the Supplier and provided to PPA's representatives and the Third Party Company.

Before the acceptance reports are prepared, it is the Supplier's responsibility for safe-keeping the cranes.

Any defect, which occurs during the testing at PPA's site, should be repaired by the Supplier at its own cost, unless it is found to be the fault of PPA.

#### Acceptance

The acceptance is divided into two stages: Ex-works Acceptance (carried out in Supplier's facilities before loading the cranes onto the ship), and Site Acceptance (carried out at the PPA's terminal).

1. The acceptance of the cranes is performed per the quality standards and technical specifications stipulated in this document. Site acceptance will be agreed by all parties and as stipulated in this document.
2. The entire process of acceptance shall be closely related to the contract signing, and design reviewing, etc. PPA shall send up to two (2) representatives to participate in the entire process, especially the Ex-works Acceptance carried out on Supplier's factory before loading the cranes onto the ship. All costs related to PPA's representatives' travel, accommodation and meals shall be at the cost of the Supplier.

### **Test Program for Acceptance**

The Supplier will create the Program for Acceptance to PPA eight weeks prior to Site Acceptance. The first draft of program will be the documents used in former similar projects, which are proven to be practical, scientific and feasible. PPA can raise comments for amending, and after negotiation between both parties, the final Procedure for Acceptance will be formed.

The following points are agreed by both parties:

- 1) Time spent on continuous operation on crane without failures will be eight (8) hours.
- 2) In regard to any kind of reliability test, failures which can be resolved within five minutes should not be added into break down time.
- 3) In regard to over load test, static load should be 140% of rated load, and dynamic load should be 120% of rated load.

In regard to new requirements exceeding above basic principle, PPA should discuss with the Supplier to resolve the problem. Otherwise it is regarded as accepted by PPA.

#### **a. Ex works Acceptance**

The Ex-works Acceptance will be carried out on Supplier's factory. Supplier will give notice eight weeks in advance for such acceptance. PPA's representatives and (Third Party Company) will be invited to participate in the Ex-works Acceptance.

PPA shall send his representative(s) and the Third Party Company to participate in the Ex-works Acceptance according to the agreed schedule.

Supplier will provide the acceptance program and all facilities (including the supervision tools, etc.) required by the Ex-works Acceptance and the Site Acceptance.

PPA and or the Third Party Company shall present a Punch-List according to the specifications stipulated in this document at the time of Ex-works Acceptance to allow the Supplier to solve the Punch-List items until the site acceptance date.

#### b. Site Acceptance

The Supplier shall be responsible for the erection and or commissioning and test runs carried out on the equipment. The official test consists of function test, durability test and load test. The test runs program shall be in accordance with the Acceptance Test program. The Supplier shall be responsible to provide all testing and make the arrangements for carrying out the test runs.

Upon arrival of the cranes or their components at PPA's terminal, Supplier will restore the areas affected by sea transportation. Site acceptance will be done per the acceptance program mentioned in this document after the cranes are powered.

Site Acceptance should be carried out per the Test Program as agreed by all parties (defined in this document). The site acceptance will focus on the conformity of the cranes in technical performance parameters to the specifications.

During the acceptance, minor Punch-List items which will not influence the operation of the cranes are allowed. Supplier is responsible to solve the remaining items within the guarantee period (further details may be arranged and agreed by the two parties).

When the equipment has met all the requirements stipulated in this specification and is fit for operation, the Supplier shall issue a Certificate of Fitness to PPA. Upon receipt of the Certificate of Fitness, PPA shall appoint its representative(s), and the representative(s) shall join the acceptance tests, for which the Supplier shall be further responsible to carry out. The acceptance test shall be carried out not later than seven (7) days after the date the Certificate of Fitness is received by PPA. The Acceptance report has to be signed by PPA, the Supplier and the Third Party Company. PPA reserves the right to reject the Acceptance if the test result is not up to the agreed standard and standard requirement as stated in this document. Once the Acceptance report is accepted and signed by all parties, the Equipment is deemed to be accepted (“Acceptance”).

The Supplier shall provide all necessary instruments, which should be mutually agreed upon by

all parties, and all supplies like lubricants oils, etc. for tests.

During the test, should one or several items fail in meeting the stipulated requirements, the Supplier shall take necessary measures for the second time tests and bear the costs incurred thereafter.

The Supplier shall submit to PPA three (3) copies of all testing reports, technical documents together with complete sets of testing items, results and condition of the equipment in line with the requirements stipulated in the Technical Specification.

If a sudden unfavourable change in the weather should occur during the Acceptance Test, the Acceptance Test shall be discontinued and the date shall be postponed until the first favourable day next following. Any delay in the Acceptance Test caused by unfavourable weather conditions shall be understood to be a permissible delay.

The Supplier is obliged within its offer to provide three (3) internationally recognised certified Third Party Companies of which PPA will choose one (1) of these companies for the above mentioned tasks. All costs related to the Third Party Company shall be fully incurred by the Supplier.

It is further clarified that the Third Party Company shall supervise and report to PPA on a weekly basis regarding the items and tasks that have been checked and supervised from the initial phases of construction and until the final acceptance of the equipment.

## 14. AFTER SALES SERVICES

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Candidates must have authorized a representative within the European Union.

The following after sale services will be provided to PPA by the Supplier:

1) Technical training

Technical training will be performed at PPA's premises. Supplier will at its own cost send an experienced electrical engineer, an experienced mechanical engineer as the trainers. The Supplier is required to teach the maintenance team from PPA for the repairing and maintenance procedure.

The trainees will be PPA's operation and maintenance employees.

The Supplier shall furnish 2 copies of comprehensive teaching material for each crane one month prior to training.

The technical training will be performed after delivery.

- 2) During the first three (3) months of operation, the Supplier will send at least two relevant technicians or engineers to PPA's site for 24 hour service and to provide assistance to PPA in crane operation and trouble-shooting.
- 3) Provide any additional drawings and relevant information for maintenance.
- 4) Spares parts required for changing and repairing will be provided to PPA's site within ten (10) days (Unless otherwise suitably agreed in writing).
- 5) During crane operation Supplier will frequently send representatives to visit PPA for comments to improve continuously the products.

The Supplier is required to perform (free of charge for all equipment and services) the first three (3) months of periodic maintenance that the official maintenance plan indicates. The lubricants will be provided by PPA.

## 15. PAYMENT TERMS

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### 15.1 Payment Terms

The proposed payment terms are the following:

- 30% of the contract amount as advanced payment payable within 15 days after signing of the contract and after receiving;
  - A Good Performance Guarantee of 10% of the amount of the contract upon signing of the agreement, valid until the end of the warranty period.
  - An advanced payment guarantee of 20% of the amount of the contract upon signing of the agreement, valid until final payment.
- 20% upon initial acceptance of cranes at the supplier's premises.
- 40% after delivery of the crane at PPA premises and after the issuance of type approval and any other legal documents for the equipment according to Greek Law on behalf of PPA SA.
- 10% after final acceptance from PPA SA as set forth in Article 13 and after completion of on-site training.

## 16. GENERAL TERMS

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1. The validity of the offer should be for at least four (4) months from offer submission deadline set for this Tender.
2. This Tender is expressly not a Contract between PPA and the Participant, or an offer to Contract.
3. PPA is not bound to accept the lowest or any offers.
4. Nothing in this Invitation, any offer, or any conduct or statement made before or after the issue of this Invitation, is to be construed so as to create legitimate expectations or give rise to any contractual obligations, express or implied, or any obligations in equity. PPA makes no binding representations or undertakings as to how the Proposal process will be conducted.
5. PPA reserves the right to postpone, adjourn or cancel the Tender, as well as to amend the time table of the Tender and of the Tender in general, at any time, or to repeat the Tender, at its sole discretion, without bearing any liability towards the Participants in the Tender or/ and any third parties. Participation in the Tender remains at the Participant's sole responsibility and expense. The Participant does not derive any compensation rights out of this participation other than those set out in the present document. Participation itself in the Tender Procedure equals to Participant's full and unconditional acceptance of the Tender terms and conditions.
6. In case less than three Candidate's offers fulfil tender criteria in order for their financial proposals to be unsealed, then, PPA reserves the right to cancel the procedure by declaring it as non-successful, unless otherwise stated in the tender documents and/or the Regulation.
7. PPA reserves the right to enter into competitive negotiations with all successful Participants after the Evaluation process and before concluding the Contract.  
The present Call for Tenders as well as the Contract will be governed by and construed in accordance with the Laws of Greece. The courts of Piraeus shall have exclusive jurisdiction to resolve any disputes associated with the Tender or the Contract.
8. The Contract will be in the English Language and all written communication between the parties will be in the English or Greek language.
9. All applicable regulations and standards should be complied with.
10. Confidentiality: The parties shall keep the terms of the Tender or/and the Contract strictly confidential and shall not disclose such terms to third parties, except as may be required by Law.

11. If a Participant is found to have made false or misleading claims or statements, PPA reserves the right to reject at any time, any offer submitted by or on behalf of that Participant. Participants should be aware that, giving false or misleading information is a serious offence under the Hellenic Criminal Code.
12. The Participants are prohibited to form alliance or exchange information in the tender process, so as to damage the interest of PPA and also exclude the participation of other bidders.

**16.1 Penalties imposed upon delay of the Supplier in completing the project.**

- i. For a delay of up to 30 days from the end of the contractual deadline for completing the project, PPA reserves the right to impose a penalty of the sum of one thousand euro (€ 1.000,00) which shall be seized per calendar day as a penalty to the Supplier.
- ii. For each day of delay after the period of the previous subparagraph, the penalty shall rise to two thousand euro (€ 2.000,00) per calendar day to the Supplier.
- iii. Where the penalties amount to the performance guarantee figure stated in Article 7.2, provided that there continue to be grounds for imposing a penalty, PPA S.A. shall be entitled to terminate this Contract due to the Supplier's fault, in which case, the said good performance guarantee shall be seized.
- iv. PPA S.A. reserves the right to demand that the Supplier pays any other penalty imposed on it by the Hellenic Republic in accordance with the provisions of the Concession Agreement, which is associated directly or indirectly with failure to meet the deadlines in the contract schedule or with any other related event due to the Contractor's fault.

## ANNEX A: FORM OF TENDER PARTICIPATION BANK GUARANTEE LETTER

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### (TENDER BANK GUARANTEE)

Piraeus Port Authority S.A. (PPA S.A.)

10, Akti Miaouli

185 38, Piraeus Greece

Date: .....

Dear Sirs,

1. We have been advised that:

a)[Full Name], a [Type of Entity], lawfully established under the laws of [jurisdiction], with registered offices at [Full Address of Registered Office], registration number [number of corporations' or similar register], as lawfully represented (the "Candidate") intends to submit a binding offer (the "Offer"), in response to a document entitled "*CALL OF TENDER FOR THE AWARD OF PROCUREMENT OF THE SUPPLY, INSTALLATION, COMMISSIONING AND TESTING OF FIVE PLUS THREE OPTIONAL(5+3) ELECTRIC RUBBER TYRED GANTRY CRANES FOR CONTAINER TERMINAL USE FOR CONTAINER TERMINAL USE*", issued by Piraeus Port Authority S.A. ("PPA" or "you") and dated ..... (the "Call"). Capitalised terms not defined herein shall be used as defined in the Call.

2. We have been advised that the obligations of Candidates regarding their participation in the tender process are several and accept to be bound by and to honour this letter of guarantee whether or not a call on this instrument results from the act or omission of any of the persons named at the beginning of paragraph 3 below.

3. In view of the foregoing and at the request and for the account of the Candidate, we [Full Name of Eligible Bank], acting through our [●] branch of [Full Address], hereby guarantee irrevocably and unreservedly to PPA S.A. for the full and proper observance by, and compliance of the Candidate with the terms and conditions applicable to their participation in the Process, as well as for any and all other financial and non-financial obligations of the Candidate relating to its participation in the Process, each pursuant to Call and the provisions of applicable law, up to a maximum aggregate amount of ..... (€)

4. We shall commit the above amount and shall pay same to you in whole or in such part as you may specify in writing, without any objection or pretext, within two (2) Athens business days following receipt of your first and simple demand in writing or by authenticated SWIFT making reference to this letter of guarantee and stating that the Participant(s) failed to comply with the terms

5. We hereby expressly and irrevocably waive the benefit of division and discussion, our right

to invoke any of the objections of the prime obligor, including personal and non-personal objections and, in particular, any objection provided for under Articles 852-855, 862-863, 866, 867 and 869 of the Greek Civil Code and waiving also any and all of our rights under the said Articles.

6. No approval, act or consent on the part of any of the Participants, the applicant(s) hereof or any third party shall be required for payment of any amounts hereunder. In addition, no objection or disagreement of any of the foregoing persons or their eventual recourse to courts of any jurisdiction or arbitral tribunals seeking non-forfeiture of this letter of guarantee shall be taken into consideration.

7. Subject to paragraph 8 below, this letter of guarantee is of indefinite duration and in any case shall remain in full force and effect until the earlier of: (a) the date on which all amounts available hereunder have been fully and actually drawn and paid to you; (b) upon receipt of your confirmation in writing or by authenticated SWIFT to the effect that you finally and irrevocably release us from any obligations hereunder.

8. This guarantee shall be governed and construed in accordance with Greek Law. The courts of Piraeus shall have exclusive jurisdiction to resolve any disputes associated with this instrument.

Respectfully,

For [Eligible Bank]

[Authorized Signatures]

## **ANNEX B: FORM OF GOOD PERFORMANCE BANK GUARANTEE LETTER**

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### **(TENDER BANK GUARANTEE)**

Piraeus Port Authority S.A. (PPA S.A.)

10, Akti Miaouli

185 38, Piraeus Greece

Date: .....

Dear Sirs,

**1.** Herewith we guarantee, irrevocably and unconditionally, waiving the right to divide and to require the debtor to pay first, in favour of Piraeus Port Authority S.A. Akti Miaouli 10, 18538 Piraeus, Greece and up to the amount of euro [.....] for the good performance of the contract with [...company name....], [...company address..], concerning the tender procedure initiated on [...date..], as subsequently amended accordingly of Piraeus Port Authority S.A. Akti Miaouli 10, 18538 Piraeus, Greece, with the subject: [...tender subject....] of total value euro [.....], in accordance with the number [....] purchase order of yours dated [.....].

**2.** The above amount of guarantee is held at your disposal which we are obliged to pay to you in whole or in part without any rejection or objection on our behalf and without considering the merits of your claim within three (3) days upon your written notice.

**3.** For the purpose of identification your written demand for payment and all other correspondences has to be presented to us in full by authenticated swift message to our swift address [.....] through the intermediary of a bank. Within the validity period of this guarantee, confirming that your original demand for payment or any other correspondence has been sent to us by registered mail or special courier and that the signatures appearing thereon are authentic and legally binding upon your company. Your written demand or other correspondence by registered mail of special courier shall be accompanied by a cover letter issued by the intermediary bank confirming that the signatures appearing on the beneficiary's attached document are authentic and legally binding upon your company. Your written demand and all other correspondence shall be issued in Greek or English language. For the avoidance of doubt, your demand for payment or any other correspondence shall be deemed to have lodged on the date on which your demand for payment or any other correspondence sent via registered mail of special courier is in our possession at our counters in [.....]

**4.** This guarantee is valid until [...] at the latest and will automatically become null and void, if your claim in the above form has not been received by us on or before the above mentioned expiry date regardless of such date being a banking day or not. Upon expiry, we shall be automatically released and discharged from all our liabilities under this guarantee, whether this guarantee is returned to us from cancellation or not.

**5.** We hereby expressly and irrevocably waive the benefit of division and discussion, our

right to invoke any of the objections of the prime obligor, including personal and non-personal objections and, in particular, any objection provided for under Articles 852-855, 862-863, 866, 867 and 869 of the Greek Civil Code and waiving also any and all of our rights under the said Articles.

**6.** No approval, act or consent on the part of any of the Participants, the applicant(s) hereof or any third party shall be required for payment of any amounts hereunder. In addition, no objection or disagreement of any of the foregoing persons or their eventual recourse to courts of any jurisdiction or arbitral tribunals seeking non-forfeiture of this letter of guarantee shall be taken into consideration.

**7.** This guarantee is personal to you and is neither assignable nor transferable.

**8.** If the guarantee is forfeited, the amount of the forfeiture is subject to the applicable stamp duty.

**9.** This guarantee shall be governed and construed in accordance with Greek Law. The courts of Piraeus shall have exclusive jurisdiction to resolve any disputes associated with this instrument.

Respectfully,

For [Eligible Bank]

[Authorized Signatures]

## **ANNEX C: FORM OF ADVANCE PAYMENT BANK GUARANTEE**

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### **(TENDER BANK GUARANTEE)**

Piraeus Port Authority S.A. (PPA S.A.)

10, Akti Miaouli

185 38, Piraeus Greece

Date: .....

Dear Sirs,

**1.** We have been informed that:

You have concluded a sale and purchase agreement (hereinafter referred to as the 'contract') with the company under the name [...] (hereinafter the 'Supplier') with its head offices located at [...] for the supply of ..... and agreed spare parts for use in the container terminal of PPA SA at a total price of euro [...] according to the contract, the Supplier is required to provide you with an advance payment bond in the amount of euro [...].

**2.** This being stated, we,..... bank,... (address), irrespective of the validity and the legal effects of the contract and waiving all rights of objection, defence, discussion and division arising from the principal debt, hereby irrevocably undertake to pay immediately to you, upon your first demand, any amount up to euro [...] upon receipt of your first written request for payment along with your written confirmation that the Supplier has failed to fulfil his contractual obligations under the contract and to refund aforementioned advance payment.

**3.** Our bond is valid until [...] and expires in full and automatically, irrespective of whether the present document is returned to us or not, should your written request for payment and your above-mentioned written confirmation not be in our possession by that date at our counters in [...] bank of [...], [...bank address.....].

With each payment under this bond our obligation will be reduced by the amount of such payment.

**4.** We hereby expressly and irrevocably waive the benefit of division and discussion, our right to invoke any of the objections of the prime obligor, including personal and non-personal objections and, in particular, any objection provided for under Articles 852-855, 862-863, 866, 867 and 869 of the Greek Civil Code and waiving also any and all of our rights under the said Articles.

**5.** No approval, act or consent on the part of any of the Participants, the applicant(s) hereof or any third party shall be required for payment of any amounts hereunder. In addition, no objection or disagreement of any of the foregoing persons or their eventual recourse to courts

of any jurisdiction or arbitral tribunals seeking non-forfeiture of this letter of guarantee shall be taken into consideration.

**6.** This guarantee shall be governed and construed in accordance with Greek Law. The courts of Piraeus shall have exclusive jurisdiction to resolve any disputes associated with this instrument.

Respectfully,

For [Eligible Bank]

[Authorized Signatures]

**Annex D**

**Technical Specification  
Of  
Electrical Rubber Tyred Gantry Cranes**

## **1. TECHNICAL DESCRIPTION**

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Requirement of PPA S.A. in accordance with the tender document is for Electric Rubber Tyred Gantry Cranes (Hereafter stated E-RTG's) with 41ton handling capacity (under spreader) compromising of height for '1over 6containers' / width for '9containers plus drivers lane' with each crane consisting of one (1) telescopic single lift, electrical container spreader.

Candidates shall also be required to propose within their offer the design, fabrication, painting, assembly, Contractor's facility commissioning, PPA's site commissioning, full erection, transportation and performance testing through acceptance by PPA.

Moreover, the winning Candidate will be responsible to provide the following:

1. As-built drawings and technical data for maintenance, operation and maintenance manual.
2. Design review, supervision and inspection reports during fabrication, erection, technical training and after-sales service.
3. Each crane to be supplied with a head-block and container spreader.
4. Two (2) spare spreaders.
5. Main power cable plugs and outlet to be provided for each crane.
6. Two (2) mobile diesel generators set's.

## 2. CRANE FEATURES

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The Candidate should be a specialized container crane manufacturer and experienced in the construction of RTG or E-RTG cranes. The Candidate should ensure that the mechanical and electrical components to be used in construction of the cranes will be of equal or greater quality characteristics of those requested in the Call.

The engine shall comply with the latest applicable EC directive for Non-Road Mobile Machinery (NRMM) emissions.

The diesel engine shall be provided with an electronic speed adjustment device and protection devices against high temperature, low oil pressure and over-speed and under proper and regular maintenance, the interval between overhauls should be above 15,000 hours.

The diesel engine should have ample back-up horse power so that it is able to operate without load.

The Crane shall be provided with tubeless tyre wheels and should allow the wheels to support the crane weight and the eccentric load when the trolley is traversed to one end limit.

The Crane design shall allow the machine to be turned by carousel drive around the E-RTG's centre. The wheels shall also be able to be turned to parking position.

The Crane shall provide with automatic gantry guidance and auto steering system.

The Crane shall provide proper safety protection system, one LCMS system located in the electrical room, a fault display and an alarm system installed in the operator's cabin.

The Crane shall be provided with sway-damping system to ensure perfect anti-sway capability on trolley direction.

Sheaves should be linear-contacting type wire ropes and stairs and ladders should be hot dip galvanized.

The spreader should function (extend, retract and twist-locks) by electric motor control. The spreader should be able to extend and retract to 20ft, 40ft and 45ft positions. The spreader consists of a head block with quick change interconnections.

The cranes should also be provided with special anti-corrosion means.

The winning Candidate shall also provide the following services according to the below:

- 1) At least one (1) year guarantee of non-problematic operation and supply of damaged parts (free of charge) within this period.
- 2) At least ten (10) years warranty for the structure.
- 3) Detailed on-site technical and operator training.
- 4) Competent on-site personnel for maintenance, breakdowns and servicing for the first three (3) months of operation of the cranes.

### 3. STANDARDS AND CODES

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Standards and codes for design and manufacture, unless otherwise clearly stated by the Candidate, shall be the following:

- \*FEM, JIS, IEC, AWS, AGMA, ISO, DIN & SIS
- \*GB3811-2008: Crane Design Rules, Chinese National Standard
- \*GB6067.1-2010: Safety Regulations for Lifting Appliance
- \*GB/T15362-94: Rubber Tyred Container Crane Testing Method
- \*GB/T14783-93: Rubber Tyred Container Crane Technical Condition
- \*JT/T90-94: Port Machinery Wind Load Standard
- \*JTJ244-95: Port Machinery Assembling Inspection Criteria

All measurement units for the Cranes shall be of international standard unit system (metric) unless otherwise clearly stated by the Candidate.

## 4. DESIGN CRITERIA AND OPERATION CONDITIONS

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### 5.1 Design Criteria

Design wind speed:	
Operation condition:	20m/s
Non-operation condition:	55m/s
Temperature:	-10°C ~ +40°C
Humidity maximum relative	100%

### 5.2 Design operating conditions, classification and rating

According to FEM standards, the classification of the Cranes structural and mechanical parts shall be as follows:

#### Crane working classification

Class of Utilization	U7
State of Loading	Q2
Working classification	A7

### 5.3 Types of load to be handled

The Cranes shall be suitable for handling the following:

- a) 20ft, 40ft and 45ft ISO standard containers.
- b) Other containers and cargo by connecting lifting slings to four (4) lugs situated at each corner of the spreader.

5.4 Theoretical duty cycle operation of the cranes is assumed to load and unload 30 containers to and from the chassis per hour.

5.5 Design service life of the bearings (minimum).

1. 25,000 hours for the main hoisting system
2. 25,000 hours for the trolley traversing system
3. 12,500 hours for the gantry travelling system

## 5. DESIGN PARAMETERS

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Main dimensions, tolerances and operation requirement:

1. Rated capacity (SWL): 41 tons (under spreader)
2. Dynamic load test: x 120% of SWL
3. Static proof test load: x 140% of SWL
4. Containers to be handled: ISO 20', 40', 45' containers
5. Electrical spreader 20ft /40ft /45ft telescopic type
6. Tyres 16.00-25 / 28PR
7. Span (Wheel Centre to Centre) According to proposal of Candidate
8. Span (inside) Suitable for nine containers plus drivers lane
9. Overall width According to proposal of Candidate
10. Lifting height (under spreader) Suitable for one over six containers operation
11. Overall length of crane According to proposal of Candidate

### Speed

#### a) Main hoisting

Without load:  $\geq 55\text{m/min}$   
With load:  $\geq 25\text{m/min}$

Maximum acceleration and deceleration time (with load): 2 seconds  
The maximum acceleration and deceleration time (without load): 4 seconds

#### b) Trolley traverse $\geq 65\text{m/min}$

The maximum acceleration and deceleration time: 4 seconds

#### c) Gantry travelling: $\geq 65/120\text{m/min}$ (with/without load)

### Spreader Anti-sway

The Anti-sway device or sway damping system shall work effectively for a short distance travel as well as for a stop after full deceleration.

The operation of the system shall not alter the elevation of the spreader with or without load at any height.

A simple anti-sway system which is of proven design shall be provided.

### Spreader Skew control

The Spreader skew motion to be controllable up to its maximum angle of  $\pm 5^\circ$

One push button switch on the control console shall automatically correct the spreader position to a 'Zero skew' position.

"Zero skew" position shall be indicated with a lamp on the panel in cab.

### Spreader Trim control

The Spreader trim motion to be controllable up to its maximum angle of  $\pm 5^\circ$

One push button switch on the control console shall automatically correct the spreader position to a 'Zero trim' position.

"Zero Trim" position shall be indicated with a lamp on the panel in cab.

Spreader side shift	$\pm 150\text{mm}$
Number of gantry wheels	16 (four tyres at each corner)
Gantry Wheel Turning	0/ 90°

## 6. STABILITY OF THE CRANE

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1. The crane can be held and not be overturned under 1.1 times of the maximum wind load (FEM Standard requirement).
2. When the hoist with rated load is lifted to the up stop position, the trolley collides with the mechanical buffer at full speed and under the extreme wind load at the same direction (the slowdown and over-travel limit switches fail to be activated), the crane remains stable under this condition.
3. The Crane is still stable when the trolley with rated load is traversed to the worst position and one of the tyres is flat.
4. Emergency stop when the gantry at rated speed, with lifting load at highest position, slope no more than 2%, the crane is still stable.

## 7. MATERIAL

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All materials and equipment shall be new, of the highest grade, free from defects and shall conform to the applicable standards and specifications proposed (The Candidate shall indicate in his bid which steel grades will be used).

To ensure material used for fabrication fully meets the design requirements, the Candidate must submit a steel quality report, chemical analysis and mechanical properties test reports with respect to furnace batch number within the quality documentation.

Material must be tracked through the complete production process to ensure the right material is used.

The process includes storage inspection, material requisition, and surface preparation, cutting, fitting and forming. If any original markings are removed by blasting, and rust removal process, the product must be re-marked after that process.

The welding consumables shall be in compliance with the requirement of the appropriate standards and specifications.

Bolts and nuts for connections subject to high load and high-strength connections should be made of medium carbon steel or steel alloy and heat treated where appropriate.

## 8. STEEL STRUCTURE

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### 1. General

The gantry frame structure shall consist of sections, box or tubular members. The main beams and legs as well as sill beams shall be connected via flange joints and HSFG (High Strength Friction Grip) bolts.

### 2. Description of the structural components

The structure beams should consists of individual sealed section, box or tubular members made from steel plates with internal diaphragms and stiffeners. The welding of each beam should be with connection flanges, correctly aligned and welded. The different beams should be connected with flanges.

The trolley should be built as a rigid steel frame made of steel sections. The wheel support points have to be machined with suitable accuracy after the whole frame and other structural elements of the trolley are completed. The structure of the trolley unit must guaranty suitable wheel alignment and allows quick and simple readjustment or manufacturing process shall guarantee correct wheel alignment in a fixed position.

The trolley must have structural safety protections from falling or jumping out of the rails in case of damage to the wheel(s) or axle.

### 3. Stairs, platforms, ladders and walkways

Each walkway should have anti-slip protection features.

The operator's cabin, the E-house, machinery house, and all other components which require routine maintenance must have easy access via staircases and catwalks.

The access to the top of sill beams, to the trolley or to the evacuation route should be by ladders or platforms.

Staircases and catwalks as well as platforms etc. should be provided with non-slip, hot dipped galvanized open grid gratings. Ladders must be also hot galvanized slip proof. Each ladder located at least 5metres above ground level should be equipped with a suitable safety cage.

## 9. MECHANICAL PARTS

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1. Mechanical parts and components should be designed for specified load combinations and in accordance with class of utilization and group classification and have sufficient strength, stiffness, stability and interchange ability.
2. Main hoist sheaves shall be of manufacturer's proposal and made from high quality steel. Manufacturing tolerances must meet the standards set for the sheaves.
3. All wire rope sheaves will be machined with rope groove contours. Grooved surfaces should have an effective heat treatment depth of at least 5mm.
4. Safeguards should be provided on the sheaves to prevent the wire rope from jumping out of the groove. Full attention is to be paid to inspection, lubrication, installation and replacement in the sheave design.
5. All drums shall be of metallic type, suitable for use with the proposed wire ropes and with rope grooves and shall be constructed in such way to minimize wear of drums and also wire ropes.
6. Trolley wheels should be made of 42CrMo4. Surface treatment should have a depth of at least 15 mm that provides perfect wear-resistance. Horizontal roller wheels should be mounted for smooth alignment of the trolley.

Flexible coupling shall be used for the motor and its type and connection configuration with the shaft will be approved by PPA during drawings' review. All the couplings shall be provided with safety guards with lubrication points without removal of these guards. The motor for main hoist shall be connected with gear reducer through elastomeric coupling.

(Safety guards should be fitted outside of the coupling. Safety factor of the high speed couplings should be in accordance with FEM standards.

7. Gears and reducers
  - a) Gears and reducers are to be designed in accordance with the applicable standards.
  - b) Double oil seals are used on the main reducers instead of rubber oil seals to provide wear free operation and thus maintenance work is minimized.
  - c) Oil filling bore and drainage as well as air breather and oil level indicator are provided on the reducer case. When the hatch cover on the upper case is opened, the gear meshing can be checked.
8. Wire rope used should be linear contacting type, regular lay, right hand with tensile strength of at least  $1770 \text{ N/mm}^2$ .
9. Festoon cable or energy chain system shall be fixed at the side of girder.
10. Fasteners should be complied with the proposed relevant standards and threads will be metric size.

Nylon self-locking nuts should be used where there are no special requirements.

Screws and bolts 12 mm diameter and below shall be of stainless steel grade A4 (316).

Screws and bolts above 12 mm diameter shall be with adequate surface treatment for maritime environment.

Where rotation speed is high, steel wires passing through nuts and washers specially made for high strength nuts and pre-tensioning torque should be adopted.

11. Brakes used on the cranes should be of disc type. The brakes should be applied by dish spring or spiral spring and released through hydraulic thruster. The brakes gap shall be automatically compensated. The gap due to wear of the brake lining may also be manually adjusted in case of automatic compensator failure. The brake shoe lining shall be made asbestos-free material. The brake disc shall all be machined and balanced.

## **10. ELECTRICAL ROOM**

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The electric room shall be made of steel plate that provides insulation and prevents water ingress.

The inside of the E-house can be open construction type with adequate metallic handrails where applicable.

The electric room shall be provided with adequate air conditioners and doors to ensure a desirable operation environment. The roof of the machinery house and the electric room shall be sloped to drain water.

## 11. GANTRY TRAVELLING

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The gantry travel system shall consist of equalizer beams, bogies, drive system, travelling wheels and safety guards.

The bogies shall be connected through pins and securing plates to the structure of the E-RTG. Solid steel safety guards are to be provided at both ends of the tyres wheels.

In total sixteen (16) gantry wheels, eight (8) will be driving wheels and eight (8) will be driven wheels.

The gantry motors should have sufficient horsepower to ensure the crane to travel on a slope of 2% and against wind of 25m/s at low speed to the stowage position.

The motors shall be equipped with built-in electro-magnetic disc brakes. In case the power cut off, the brakes set and can be released by loosening the relevant levers or bolts.

The tyres should be of tubeless and heavy duty especially for engineering application. Safety guards are fitted outside of the tyres. To replace the tyres easily, there should be jacking pedestals available and installed.

Each wheel of the crane can be turned through 90° by its applicable motor so that the crane can travel on perpendicular direction.

The wheel turning indicator shall be provided in the operators' cabin. Interlocks are to be provided to ensure that wheels could not be locked until they are fully turned to right position and travelling could not be operated until the wheels are locked.

The wheel turning operation should be performed under non-operation of the gantry travelling and without load. In addition to push-button for wheel turning 90°, there should be a selector switch on the control panel in the electric room and when it is selected to the manual position, the wheels can be operated on the ground level through a local control junction box selector switch.

An anti-collision system should be installed to prevent collision between E-RTG's working on the same track and to protect persons or obstacles entering the track of the E-RTG's.

The system shall be designed to automatically prevent damage in the event that the E-RTG is travelling into possible collision situation. The sensors should not be energized by rain.

Gantry control station should be provided and located under the sill beam (E-room side) and can control a "Left and Right" direction of the gantry travel under 20 % speed.

## 12. TROLLEY AND TROLLEY TRAVERSING

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### Trolley

The trolley frame shall have sufficient rigidity, strength and stability. In addition a protection device should be provided for preventing the trolley from derailing.

A safe and reliable access shall provide between the trolley and the operator's cabin

Trolley platform should be covered with chequered plates.

The tolerance of trolley and trolley wheels must meet ISO / DIN and FEM standards.

The rails are to be fastened to the girders with appropriate clips and under the rails will be laid a flexible rubber pad to absorb relevant vibration.

The trolley frame shall be provided with jacking pads for wheel replacement.

Trolley guide wheels shall also be provided.

The trolley should be equipped with a safety device to avoid the wheels coming out of the rail.

The trolley buffers with enough energy-absorbing ability should be capable to stop a full-speed moving trolley.

One service crane should be provided able to remove the heaviest part within the trolley and lower to the ground.

Both bottom sides of the anti-sway system should have a maintenance platform where and if maintenance is required.

### Trolley traversing

The trolley travelling wheels shall be machined from forged steel with double flanges in accordance with the applicable standards.

The trolley should be able to traverse with rated load up to a slope of 1% against wind (wind velocity 25m/s) and smoothly and reliably braked when traversing down a slope of 1% with wind.

The trolley should have slow down, end stop and over travel limit switches at both traverse ends and in addition to those rubber bumpers and stoppers.

Trolley anchor pin(s) shall be located on the trolley, each anchor pin should have a circuit interlock protection to stop trolley motion when the pin has been connected.

One convex mirror (at least 500mm) located at under trolley platform, in order to ensure the operator able easy to see at rear side situation.

### 13. MAIN HOISTING

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The Main hoist system shall consist of four (4) wire ropes and single drum type and be driven by an AC motor via gear reducer which in turn drives the wire rope drum. The motor must have sufficient horsepower to ensure perfect acceleration performance.

Flexible coupling with braking disc should be fitted between the motor and the reducer. The Candidate shall provide brakes with braking torque of 125% of the rated torque. Brake is of hydraulic thruster operated disc type.

A tachometer is fitted at the rear of the motor for cutting off the motor power in case the motor speed exceeds 110% of the rated speed.

An absolute encoder and cam switch should be fitted at the end of wire rope drum side.

When the headblock is over loaded, it should cut all hoist motions through load-cell pins or sensors.

When the over load indicator light in the operator's cab is on, actual weight show on screen, the acoustic alarm is activated and the main hoist power for lifting circuit is cut off but then the load can be allowed to lower down slowly.

## 14. STAIRS, WALKWAYS AND PLATFORMS

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Access to the operator's cab shall be by stairways with appropriate openings/doors. Straight ladders are used for access from ground level to the electric room. The girder with Festoon or energy chain system should have maintenance access and relevant walkways are to be covered with expanded metal and toe boards with 100mm height. Handrails are 1.1m high and the intermediate railing is 0.55m high (The stairs shall be hot dip galvanized).

Platforms, handrails, walkways, straight and tilted ladders are all designed and fabricated in accordance with the European requirements and in compliance with crane safety rules. At any place where personnel may climb for maintenance, a platform with safety guard is provided.

Main girders walkways of both sides should have sufficient space and be covered by steel grating plate.

## 15. MAINS POWERED RTG

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The Power supply to the RTG from the PPA's pier shall be: 1.000V  $\pm$ 10% AC, 50Hz  $\pm$ 2%, 3 phases with optical fibre cable.

The main power drives, hoist, trolley and gantry travel shall be powered by electrical supply through a cable reel assembly. Power for the auxiliary drives, control and supplies for all lighting circuits on the RTG, shall be provided by electrical supply through a cable reel assembly.

Cable reel device consists of the reel made from high quality steel, a driving unit, a fibre optic rotary connector and a slip ring collector.

Maximum allowed voltage fluctuation of the power supply shall be 1000V  $\pm$ 5%. The E-RTG shall have re-generation when lowering the load, supplying power back to the network.

The cable reel shall be located high enough to prevent ground level collisions. In case of over-tension and slack of the supply cable an automatic shutdown shall be activated. A flexible power supply cable shall be used. Motor cable reel shall be with mono spiral winding drum and torque controlled. Gear box components shall be totally immersed in oil. Slip ring and motors shall be provided with space heaters. Situated in the control box will be 'selection of manual / auto mode and for manual winding on'. Diverting unit shall be double sided, symmetric, mounted on crane structure. Cable reel shall be fitted with cam switches to limit the length of the gantry travel. The main cable distance between cable guide frame with gantry wheel centre to centre will be agreed with the winning bidder though should have the ability to be adjusted  $\pm$  10cm.

Main power cable length of the E-RTG's will be 370metres (Gantry travel distance).

The main disconnecting (isolating) device must have control from ground level and possibility to lock the disconnecting device to on/ off – position.

Main transformer shall be 400 KVA, primary voltage being 1000V/ 3 phase, 50Hz and secondary voltage 400V at 50Hz frequency.

Insulation class shall be according to IEC standards.

The Candidates must design the offered cranes in such way so that PPA SA can monitor and record the electric power consumption indicatively but not limited to per movement and per month as follows:

- Voltage L1L2, Voltage L2L3, Voltage L1L3
- Current L1, Current L2, Current L3
- Active Energy, Reactive Energy
- Active Power, Reactive Power
- Cos  $\phi$
- Frequency

Moreover, the candidates within their technical offers must clearly state the electric power consumption of the offered cranes.

## **16. AUXILIARY POWER SUPPLY**

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Three (3) phase 400V, 50Hz power supply is transferred into 3-phase, 400V/230V, 50Hz through auxiliary transformer and can fulfil lighting, air conditioning, communication and the other auxiliary services.

## **17. AUXILIARY DIESEL GENERATOR**

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A mobile diesel generator set shall be provided for cross travelling as well as stack change when disconnected from mains supply. Mobile diesel generator shall have sufficient supply power for wheel turning, gantry travelling, trolley travelling and spreader hoisting on without load, working lights, power sockets and air conditioning units.

The mobile diesel generator set can be random installed on the bottom of sill beam at non-cable reel side on each E-RTG.

The mobile diesel generator set shall be also provided with a main circuit breaker for power on/off during maintenance and repair.

The Candidates must design the offered cranes in such way so that PPA SA can monitor and record the fuel consumption during auxiliary movements.

Moreover, the candidates within their technical offers must clearly state the fuel consumption of the proposed offered generator. A technical data sheet should accompany the technical offer.

## **18. POWER SUPPLY ON THE SPREADER HEADBLOCK**

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A heavy duty flexible boloney cable with oil-resistant rubber jacket should be used for power supply and control power between the headblock and the trolley. The cable shall be of multi-core type, not less than 2.5mm<sup>2</sup>. The headblock should be fitted with a cable basket that receives and pays out the cable with the headblock lifting up or lowering down. To change the spreader quickly, the water proof plug and receptacle outlet are to be provided between headblock and the spreader. Interlock switches are also provided to prevent the headblock from hoisting without spreader connected and with switches for bypass (change of spreader). The spreader cable should have at least 10% of spare cores.

## 19. MAIN ELECTRICAL EQUIPMENT, CIRCUIT DESIGN AND PLC APPLICATION

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### Circuit design of main electrical equipment

#### 1. Main electrical equipment, circuit design:

Drive control system is of digital programmer controlled drive, digital regulation control by microprocessor to regulate speed in a smooth manner with fast response, high control accuracy, high speed regulation ratio and stable and reliable in operation. There should be several drives control hoist/gantry/trolley respectively. In addition, the hoisting mechanism has constant horsepower control characteristics.

2. To ensure the gantry travelling is operated along a straight line, the crane should be provided with manual steering device that changes the gantry wheel direction.

3. Trolley, gantry and hoisting drive shall be operated individually.

4. Acceleration and deceleration shall be controlled by the operator. However, the drive will have the given integration function, i.e. acceleration and deceleration time remains unchanged if the operator moves the joystick too fast. The drive shall also be provided with speed detection function. When the master controller is returned to neutral position, the speed of appropriate motion is slowed down electrically.

5. Insulation of the motors is Class F and protection of them is IP23 minimum for inside and minimum IP55 for outside. Motors externally should also be fan cooled.

6. Electrical system includes main power circuit, drive circuit, lighting circuit, PLC communication circuit and telephone signal circuit.

### Application of PLC

The PLC system on the crane can process all system control signals including driven system. All interlock and logic control functions, except a few hardware interlocks, are performed by PLC.

The PLC unit should be specially designed for a rough industrial environment application and can be suitable for the environment with high temperature, dust, vibration, humidity and electrical noise. PLC system must have a reliable power failure protection system. UPS battery power should back up the PLC for at least one (1) hour in event of a power cut out.

The PLC's power should be supplied from a control transformer that is relevantly protected and isolated from damage or interference from other circuits.

The PLC should be provided with its program, data memory and failure recording device. Memory shall have larger capacity than the system needs for further expanding.

The PLC system should be able to be linked into a remote communication network and to be provided with an interface for future communication with the port computer network.

## 20. ELECTRICAL FAULT DISPLAY, LCMS AND RCMS

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The cranes shall be provided with a complete fault display and diagnostic system. Display includes hoist faults, gantry faults, trolley faults, alternator faults, diesel engine faults and spreader faults etc.

Local Crane Management System (LCMS) shall be installed in the electric room. This shall provide continuous monitoring, diagnostics and data collection on the crane. The PLC program also can be viewed via the LCMS. One fault display shall be provided in operator's cabin. The supplier shall provide a full description of the proposed CMS, which shall be subject to PPA's approval.

The LCMS should fulfil the following functions:

- Display the status of the crane
- Diagnosis of the cranes fault
- Event log
- Showing the production data on each crane
- Maintenance schedule assistant

Each crane should be provided with RCMS (Remote Crane Management System). The main PC system will be located at Engineering Department Building or other location. The supplier must provide all software and hardware components and coordinate the local frequencies of antenna device, the local effective frequencies channel will be provided to supplier by PPA. Moreover, all function of RCMS with LCMS must be the same.

## 21. OPERATOR'S CAB.

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The operator's cab shall be designed based on ergonomics to give a comfortable environment for the operator. The operator's cab is secured under the trolley and mounted with vibration damping pad. The walls and ceiling are laminated with heat insulation. The cab is enclosed and sealed properly. Materials in the cab should be flame-resistant. Glazed windows are to be provided in the fore half of the cab in front, side and bottom of the cab. Back view mirror should be provided on the both sides. The bottom glass shall be provided with a steel grid for operator's safety but does not obstruct the operator's viewing. The side windows shall be adjustable to fully-closed, half-opened and fully-opened positions. Front and bottom windows are assembled with safety glass.

A protection railing shall provide in the front of the cab to increase safety for the operator. All the window glass can be replaced easily from inside the cab. Windshield wiper to be provided for the front lower window, and rain shade and sun shield are also provided at the windows. All the windows glass can easily be cleaned and should have relevant access. At rear of the cab an access door is fitted. The door is equipped with a lock and door closure. The operator's cab should have adequate lighting and intercommunication means.

Safety access should be provided between the operator's cab and the trolley to ensure that in any case the operator is able to escape from the cab through the crane girder.

The operator's cab shall also be provided with the following equipment:

1. Master controller

The following control components are fitted on the left and right control consoles:

- 1) Hoist/gantry master controller
- 2) Trolley master controller
- 3) Manual / Auto selector for gantry steering
- 4) Controller for gantry steering (travelling along straight line)
- 5) Selector for spreader twistlocks (lock / unlock)
- 6) Spreader position selector switch and position indicator light
- 7) Tyre wheel turning control switch and position indicator light
- 8) Emergency stop button
- 9) Spreader skewing control button
- 10) Spreader side shift control button
- 11) Spreader "home" position control button
- 12) Working floodlight switch
- 13) Wind shield wiper operation switch
- 14) Buzzer alarm and weight screen for main hoist overload
- 15) Washer control switch
- 16) General by-pass button
- 17) Spreader by pass push button
- 18) Landing by pass push button
- 19) One push button switch on the control console shall automatically correct the spreader position to a 'Zero skew' position.
- 20) One push button switch on the control console shall automatically correct the spreader position to a 'Zero trim' position.

## Auxiliary controls and indication:

In addition, switches for floodlight under the cab, walkway lighting, air conditioner and controls of intercommunication equipment are all easily operated in the cab.

### 2. Auxiliary equipment

- 1) Ample spaces are provided in the front of and rear portion in the cab for future installation of display.
- 2) Fire extinguisher
- 3) Load indicator
- 4) At front part of the cab, the indicator lights are arranged for spreader unlock, lock and landed which are green/red/yellow indicator lights respectively. Wind velocity indication and alarm are also provided in the cab.
- 5) Loud speaker
- 6) Air-conditioner

## **22. ELECTRICAL PROTECTION OF THE ELECTRICAL EQUIPMENT.**

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The Crane shall be provided with the following protections:

1. Overload
2. Short-circuit
3. Over current
4. Over voltage
5. Under voltage
6. Phase loss
7. Overheating
8. Frequency protection (AC)
9. "Neutral" position interlock of controller
10. Electricity leakage
11. Any other provided.

## **23. LIMIT SWITCHES, INTERLOCK SWITCHES AND EMERGENCY STOP BUTTONS**

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1. Limit switches and their functions of each motion are listed below:
  - 1) Limit switches of hoisting
    - a. Slow down limit switch at upper end
    - b. Stop limit switch at upper end limit
    - c. Stop limit switch at extreme end limit
    - d. Slow down limit switch at lower end
    - e. Stop limit switch at lower end limit
    - f. Over-speed limit switch activated at 110% of the maximum operation speed
    - g. Rope anti-slack device for lowering.
  - 2) Limit switches of trolley
    - a. Slow down limit switches before trolley runs at the end stop forward and backward
    - b. End stop limit switches at both forward and backward directions
    - c. Over-travel limit switches at both forward and backward directions
    - d. Limit switches for trolley stowage device
    - e. Limit switches for the door of platform outside the operator's cabin.
  - 3) Limit switches of gantry
    - a. Wheel 0° / 90° and spin turn limit switches
    - b. The lock pins interlock system
    - c. Interlock of wheel steering:
- 4) Emergency stop (Emergency stop buttons are provided at the following locations):
  - a. One on control console
  - b. One for each corner at gantry
  - c. One in the electric room
  - d. One near the hoisting motor
  - e. One on the diesel engine (for engine E-stop only)

## 24. INDICATOR LAMPS

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The following indicator lamps are provided on the control consoles:

- 1) Main power on and control on
- 2) Wheels are in "0°" position
- 3) Wheels are in "90°" position
- 4) Wheels are in spin turn position
- 5) Spreader positioning

## **25. ALARM SIGNALS**

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The crane shall be provided with the following alarm systems for the personnel safety:

1. Water-proof type red rotating warning lights and electronic audio alarms fitted near the four legs respectively at ground level and are activated during travelling.
2. An electric bell/siren is provided to warn the relative persons nearby during operation.

## **26. INTERCOMMUNICATION SYSTEM**

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### 1. Telephone system on the crane

Telephones are installed in the operator's cab, electric room, trolley frame and ground level. Intercommunication can be performed by these telephone sets. Cables for telephones are screened cables.

## 27. CABLING& TERMINALS

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### Cabling

All cabling runs in corrosion resistant cable trays, cable ladder, galvanized conduits and plastic coated or metal flexible tubes. The power, control and communication cables are separated by baffles in the cable trays to prevent interference or with a relevant other method.

Multi-core long distance control cable should have spare cores of 10%.

Junction boxes are to be of outdoor watertight construction.

All the cabling on the crane must comply with IEC standards.

The wires, conductors in the cable should be marked with the sleeves printed numbers. Conductors should be copper stranded wires.

### Terminals

Terminals to and from the control panel will be arranged as appropriate for easy access and maintenance. Both ends of the cable conductor should be identified with permanent labels that are identical as shown on the drawings.

10% of terminals in the control panel and junction boxes should be provided as spares.

## 28. LIGHTING AND HEATERS

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Circuit for lighting is divided into several independent circuits and each of them has a number of separate sub-circuits and overload and short-circuit protections.

Lighting fixtures are weather-proof, anti-corrosion and shock-resistant type and are such mounted that they are easily to be repaired.

1. Walkway lighting:  
Lights for stairs, ladders, platforms and walkways can be controlled at ground level and/or from the cabin.
2. Lighting in Machinery house and electric room:  
Relevant lighting shall be provided in these rooms for all machinery and equipment to be clearly viewable and repairable at night or when there are low day light levels.
3. Anti-condensation heaters:  
Anti-condensation heaters are provided in the generator and main motor Control panels and are fed from shore power under non-operation condition.
4. Lighting in the operator's cab:  
A relevant lighting fixture shall be situated in the ceiling of the operator's cabin.
5. Floodlights on trolley and under operators cabin:  
LED technology floodlights shall be mounted under the cab and along the trolley girders to provide excellent viewing of a ground slot in between two 6 - high stacked containers at night and specifically 200 Lux under the trolley measured at ground level when all other girder lights are turned off. The floodlights shall be mounted such that they will not obstruct the view of the driver during container handling operation.
6. Gantry access walkway lighting:  
Four outdoor fully enclosed LED floodlights should be installed at the four gantry legs to provide illumination to the gantry walkways.

## 29. POWER OUTLET SOCKETS

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The following power outlet receptacles should be provided. The power on/off switches must be provided with overload and short-circuit protections.

1. Watertight sockets AC230V, 16A should be provided in the following locations:
  - a. One on the trolley frame.
  - b. At each side of the gantry frame.
2. Power sockets including one AC230V, 16A are provided at the following locations:
  - a. Two sets in the electric room.
  - b. Two sockets of 230V and 16A in the operator's cab.
  - c. One socket of 12V / 5A in the operator's cab.
  - d. Two socket of 24V / 5A in the operator's cab.
3. One outdoor watertight socket 400V, 32A, 3-phase/ 4-wire with earth protection to be provided at the gantry frame and one on the trolley frame.

### 30. PAINTING & SURFACE TREATMENT SPECIFICATION

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**The Candidate shall propose paint / surface treatment according to the following or to an equal/greater standard that should be clearly mentioned and proposed:**  
 Surfaces are prepared to very thorough blast cleaning grade Sa 2.5 according to ISO standard ISO8501-1:2007 and certified according to EN ISO 12944-2 C5-M.  
 (Coat protection should be guaranteed for a minimum of ten (10) years).

<b>Painting of exterior steel construction surfaces:</b>	
Primer coat, zinc epoxy primer	50 ~ 60µm
Intermediate coat, epoxy primer	100 ~ 130µm
Finish coat, polyurethane finish	60µm
Total dry film, DFT	≥ 210µm (nominal)
<b>Painting of interior steel construction surfaces</b>	
Primer coat, epoxy primer	50 ~ 60µm
Finish coat, epoxy finish paint	70 ~ 80µm
Total dry film, DFT	≥ 120µm (nominal)
<b>Surface Treatment</b>	
External walkways, stairways, platforms and ladders	Galvanizing thickness ≥ 80µm (+/- 10%)

### **31. AUTO STEERING AND POSITION DETECTING SYSTEMS**

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Automatic gantry guidance system shall be provided. The system shall eliminate the need for the operator to steer the machine: however the system shall allow the operator to "take over" the controls as he may require. The system shall guarantee minimum deviation from the runway axis with automatic shutdown occurring at a predetermined distance from the runway axis. The Candidate should guarantee an alignment with tracks accuracy of at least +/- 10cm.

A position detecting system should also be provided. The system shall be capable of detecting gantry, trolley and spreader positions (Block, Bay, Row and Tier) through encoders and GPS accurately in order to transfer the container location information to PPA's yard management system (CATOS). The supplier shall provide all hardware and software components of the detecting system to ensure all data (Block, Bay, Row and Tier) can be connected to PPA's VMT devices and all data must be able to communicate effectively.

## **32. SPREADER**

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### Spreader general

The telescopic spreader shall be designed to meet the heavy demands of the container handling industry. All motions of the spreader including telescopic movement and twistlocks movement shall be fully electrical, and controlled from the operator's cabin.

The spreader shall be designed to handle the rated load for ISO 20ft, 40ft and 45ft containers.

All motions of the spreader shall be electrically actuated. Hydraulic spreaders shall not be accepted.

### Spreader frame

The Spreader frame should also be designed in accordance with DIN 15018, manufactured from high quality steel and components to provide robust and reliable operations in a demanding container terminal environment.

### Spreader Twist Lock

1. The twist lock shape shall fit ISO corner fittings.
2. The spreader shall be provided with photoelectric (proximity) switches for detection of unlocking, locking and landing as well as 20'/40' & 45ft position detection.
3. Twist locks shall be floating type and fitted with sleeve type twist lock guides. A grease nipple shall be fitted at a suitable position on the sleeve and the twist lock shank. Spherical washer shall be provided to support twist lock loads.
4. Every twist-lock on each spreader will come with individual certificates certifying the construction materials and testing load results.
5. Twist lock movement from 'unlock' position to lock' position shall be prohibited by mechanical and electrical interlock unless four twist locks are confirmed to be fully inserted into corner fittings and the spreader is fully landed on to a container.
6. Main hoist motion is to be prohibited unless physical positions of all of the twist locks match the 'lock' or 'unlock' command switch position on the control console.

### Spreader flippers

1. The flippers shall be provided at four corners of spreader.
2. The flippers of the ERTG spreader should be electrically retractable.

### Spreader telescoping

1. Telescoping guides/anti-friction buffers shall be designed to allow easy and quick access for replacement.
2. The guides/anti-friction buffers must be able to be replaced without dismantling telescopic beams from the main frame.
3. The operating time for extension or retraction shall be less than 35 seconds for 20'-45' or the opposite.

### Electrical System

1. In accordance with IEE Regulations, the electrical system shall be fitted with an on-board logic control system where cables run to the various electrical components on the spreader.
2. Spreader must have an electrical systems built from high quality components supplied by leading manufacturers and are readily available from suppliers worldwide.

#### Spreader plunger

1. The plunger shall positively detect the landing of the spreader on a container which are handled by twistlocks.
2. The hole for the plunger on the bottom plate of twist lock box and the tip of the plunger shall be chamfered to a minimum of 4mm in radius to prevent jamming of the probe due to mushrooming of the top of the pin.
3. Limit switches shall sense the plunger position, which shall be located to accurately indicate spreader landed and container lifted conditions.

#### Spreader lifting lugs

1. Lifting lugs for handling a damaged container or an odd shaped cargo with slings and shackles shall be fitted at four corners near each twist lock (each lugs with no less than 10 tons capacity).

#### Spreader protection

1. All mechanical and electrical components fitted on the spreader shall be protected from frequent impact and vibration.
2. All the electrical cables connected to the moving parts of the spreader shall be properly protected from damage.
3. All the electrical parts shall be protected from the all types of weather conditions.

#### Shock Absorbers

The Spreader will be equipping with a relevant Impact Suppression System to increase the longevity of the spreader and to reduce impact noise.

### **33. FIRE EXTINGUISHER**

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Fire extinguishers according to Greek and European legislation should be installed in the Machinery room (Trolley), Electrical room, Operator cabin and at both sides of the gantry structure.

### **34. LOAD SIGN AND NAMEPLATES**

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Nameplate of the crane manufacturer and the PPA's logo are provided on both outsides of the crane trolley girder. The crane nameplate bearing principal parameters of the crane is mounted in a prominent place in the operator's cab. All these signs, plates, logos are subject to PPA's approval.

Identification labels showing operation directions and functions are provided at each operation handle and push button.

Signal lamps, indicators and instruments are provided with signs showing their indication. The form and material of the sign of SWL (Safe Working Load) and the Logo of the Port are subject to approval of PPA. All the signs, nameplates and logo are written in English.

## 35. HYDRAULIC SYSTEM

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1. Hydraulic seamless steel tubes are used for rigid structure. Hydraulic hoses are used for those places where flexible connection is required and on the spreader.
2. The oil reservoir will be of high quality and is possible to be cleaned and inspected to ensure cleanliness of the oil during operation. Oil filter is used on the return line with the element easily replaceable.
3. All the hydraulic pipes and hoses are supported at certain intervals through clamps attached to the crane structure for minimizing vibration and noise level. Hydraulic valves and pipes are rust-protected and provided with anti-loosening measures.
4. A clear oil level sight glass is provided at a suitable place on the reservoir that in turn has drainage for water condensation (drained periodically by maintenance staff), reliable strainer, oil temperature indicator etc.
5. Interchange of the hydraulic valves is ensured in accordance with ISO standard no matter which company is selected.
6. Pressure inspection points are provided in the piping which can automatically be closed. Threaded fittings are sealed by thread sealing glue and are provided with sufficient space for tightening the fittings and unscrewing them.

### 36. MECHANICAL / ELECTRICAL EQUIPMENT, COMPONENTS AND TOOLS

Items	Manufacturer	Remarks
<b>Mechanical</b>		
Steel material used for structure	According to the Manufacturer's proposal	Candidate should state material type and total weight.
Electrical Spreader	BROMMA, RAM or OEM	
Gear reducers for main drive (Main Hoist, Trolley and Gantry)	Flender or OEM	
Hydraulic systems	Vickers, Parker or Bosch/Rexroth.	
Brakes for Main Drives	Bubbenzer, Sibre or OEM	
Wire rope drums for main drive	OEM	Candidate may also propose other brands
Wire ropes	Vornbaumen, Teufelberger, Casar or Diepa	
Couplings	OEM	Candidate may also propose other brands
Bearings	SKF or FAG/INA	
Sheaves	OEM	Candidate may also propose other brands
Operator's cabin	Merford or OEM	Candidate may also propose other brands
Power cable reels including the cable reel system)	OEM	Candidate may also propose other brands
Mobile diesel generator Set	Well known European brands are preferred.	Candidate may also propose other brands
Festoon or Energy Chain System	OEM	Candidate may also propose other brands
Tyres	Internationally well-known companies.	According to Candidates proposal
Buffers	OLEM or OEM	Candidate may also propose other brands
Operator seat (U-shaped cushion)	ISRI or GRAMMAR	Candidate may also propose other brands
Paint	COSCO, PPG, HEMPEL or JOTUN	Candidate may also propose other brands

Items	Manufacturer	Remarks
<b>Electrical</b>		
Electrical control system	OEM, YASKAWA, ABB or SIEMENS	
Main motors (Main Hoist / Trolley / gantry)	OEM, YASKAWA, ABB or SIEMENS	
AC inverter system (Main Hoist / Trolley / Gantry / Power cable reel)	OEM, YASKAWA, ABB or SIEMENS	
Control panels	Internationally well-known companies.	
Switchboards	Internationally well-known companies.	
Power supply reel cable	PRYSMAIN or TRATOS	Candidate may also propose other brands
Fix installed cables	PRYSMAIN or TRATOS	Candidate may also propose other brands
Spreader Cables	PRYSMAIN or TRATOS	Candidate may also propose other brands
Festoon/Energy Cables	PRYSMAIN or TRATOS	Candidate may also propose other brands
Joystick Controllers	Spohn + Burkhardt	Candidate may also propose other brands
LED Floodlights	PHILIPS	Or internationally well-known companies.
GPS system (gantry auto steering)	According to manufacturer's proposal	
LCMS/ RCMS	According to manufacturer's proposal	
Walkway, Machine Room, Electrical room lighting	PHILIPS	Or internationally well-known companies.
Air-conditioner in E-house	Daikin-split cassette type, ceiling mounted (inverter) or Mitsubishi	
Air-conditioner in Cab	Daikin-split wall mounted type (inverter) or Mitsubishi	
Main transformer	ABB / SIEMENS or Schneider Electric	
Auxiliary transformer	ABB / SIEMENS or Schneider Electric	
Limit switches	According to manufacturer's	

	proposal	
Load cells	BROSA , Tessis or Sensy	Candidate may also propose other brands

## 37. ADDITIONAL TOOLS AND SPARE PARTS

### 1. Tools list

Item	Tool name	Specification	Brand	Quantity
1	Digital multi meter	-	Fluke	8 pieces
2	Laptop computers (with relative programs pre-installed)	According to manufacturer's proposal	-	3 pieces

### 2. List of spare parts for E-RTG cranes

Electrical Parts			
Description		Location	Quantity
<b>1) <u>PLC</u></b>			
1	CPU	E - house	2 units
2	DI/DO modules(if applicable)	E - house / Driver Cab	2 pieces of each type
3	AI/AO modules (if applicable)	E - house / Driver Cab	2 pieces of each type
4	Communication modules	E - house / Driver Cab	2 pieces of each type
<b>2) <u>Drive</u></b>			
1	Complete set for Converter	E - house	2 sets of each type
2	Complete set for Main Hoist Inverter	E - house	2 sets
3	Complete set for Gantry Inverter	E - house	2 sets
4	Complete set for Trolley Inverter	E - house	2 sets
5	Complete set for Gantry Cable Reel Inverter	E - house	2 sets
6	Dynamic brake (if applicable)		2 pieces of each type
<b>3) <u>Other Components</u></b>			
1	Main Transformer		1 unit
2	Main Hoist motor with encoder		1 set
3	Trolley Motor with encoder		1 set
4	Gantry Motor		2 pieces
5	Motor for wheel turning		2 pieces

6	Power cable reel motor with encoder		2 pieces
7	Motor for side shift		2 pieces
8	Trolley motor brake	Trolley Platform	2 pieces
9	Gantry disk brake set		2 pieces
10	Gantry cable reel brake set		2 pieces
11	Fault display	E- house & driver cabin	2 sets
12	Main Circuit Breaker		2 pieces
13	Main Contactor	E- house	2 pieces of each type
14	Load cells		4 pieces
15	Cam switch for Main Hoist		2 pieces
16	Cam switch for Trolley		2 pieces
17	Cam switch for power cable reel		2 pieces
18	Electrical motor with gear box for spreader twist locks	Spreader	2 Sets
19	Electrical motor with gear box for spreader telescopic feature	Spreader	1 Set
20	Encoder for MH, TT, GT and cable reel		2 pieces each
21	Spreader cable	Spreader	2 units
22	Main Hoist / Gantry joystick with auxiliary contact and encoder	Driver Cabin	2 sets
23	Trolley joystick with auxiliary contact and encoder	Driver Cabin	2 sets
24	HV Cable for gantry cable reel	Power Cable Reel	1 Unit
25	Complete set of festoon/energy cables		1 Set
26	Loud Speaker	Cabin	2 Units
27	Telecommunication system		1 Set
28	Anti-Collision Sensors	Gantry	2 Units
29	Air Conditioner	E-room	2 Unit
30	Air Conditioner	Driver cabin	2 Unit
31	Cable plugs and outlets for gantry cable reel		2 sets
32	Baloney cable plug and outlet	Spreader	2 sets

<b>Mechanical Parts</b>				
<b>No.</b>	<b>Spare Parts Description</b>	<b>Location</b>	<b>Quantity</b>	<b>Unit</b>
1	Complete set high speed brake assembly	Main hoist	1	sets
2	Brake lining for Main Hoist	Main hoist	2	sets
3	Main Hoist gear box	Main hoist	1	set
4	Trolley gear box	Trolley motor	1	sets
5	Gantry gear reducer	Gantry	2	sets
6	Main Hoist high speed coupling with brake disc and elastic spider	Main hoist	1	pc
7	Gear box for skew	Trolley platform	2	sets
8	Trolley high speed coupling with elastic spider	Trolley drive	1	pc
9	Gantry high speed coupling with elastic spider	Gantry drive	2	pc's
10	Main Hoist wire rope (with applicable socket)	Main hoist	16	Pieces
11	Trolley wheel bearings	Trolley	4	Pieces
12	Gantry wheel bearings	Gantry	4	Pieces
13	Trolley guide roller (include shaft, bearing and seal)	Trolley travel	2	sets
14	Rope sheaves	Headblock	4	Pieces
15	Bearings	Rope Sheave	4	Pieces
16	Trolley wheel with shaft	Trolley travel	2	sets
17	Chain for trolley travelling (if applicable)	Main girder	2	sets
18	Propeller shaft (if applicable)	Trolley travel	1	set
19	Chain for skew (if applicable)	Trolley Platform	4	Pieces
20	Drive gear for trolley	Trolley travel	1	sets
21	Operator Seat	Cabin	2	Pieces
22	Wedge Connection Socket for Main Hoist Wire Rope (if applicable)		4	Pieces

### 38. ON / OFF TECHNICAL CRITERIA

N°	Category	ON / OFF Technical Criteria
1	Type	1 over 6 high stacking&9 containers wide + truck lane
2	Safe Working Load (SWL)	Single Lift: 1 x 41 Tonnes
3	Type of load to be handled	20ft, 40ft and 45ft ISO standard containers
4	Dimensions	According to details of technical Annex.
5	Materials	According to details of technical Annex.
6	Fasteners	According to details of technical Annex.
7	Design & Construction	<b>Crane working classification</b> Class of Utilization U7 State of Loading Q2 Working classification A7
8	Spreader – Head-block connections	The Spreader is connected to the head block via four (4) twist locks or pins.
		The spreader shall be designed to handle the rated load for ISO 20ft, 40ft and 45ft containers.
		The spreader is all electrically operated with all functions of the spreader controlled from the crane operator’s cabin.
		The spreaders have electric retractable flippers.
		The classification of the spreader calculated to the SWL of 41 ton, shall be in accordance with the FEM rules 1.001 3rd edition revised 1/10/1998.
9	Electrical	Power supply of the E-RTG's shall be: 1.000V ±10% AC, 50Hz ±2% with integrated fibre optics and cable lengths of 170 meters (Gantry travel distance).
		All the cabling on the cranes shall comply with IEC standards.
		Main transformer shall be 400 KVA, primary voltage being 1000V/ 3 phase, 50Hz and secondary voltage 400V at 50Hz frequency. Insulation class shall be according to IEC 34-1 or equivalent and windings rated at least 155° (F).
		Insulation of the motors is at least Class F and protection of them is at least IP23 minimum for inside room and minimum IP55 for outside door.
		UPS battery power to back up the PLC for at least one (1) hour
		The cranes shall be provided with complete fault display and diagnostic system LCMS & RCMS.
10	Quality Assurance & Quality Control (QA & QC)	Manufacturer will be ISO 9001:2015 certified.
		The cranes shall comply with the requirements of the European Machine Guidelines, particularly Machinery Directive 2006/42/EC.
		The cranes shall be provided with a declaration of conformity and the CE marking and symbol according to the relevant Appendixes of the Machinery Directive.
11	Documentation and Manuals	Indicative drawings of the mechanical construction upon offer, and full detailed mechanical and electrical drawings upon delivery of the equipment’s.
		Operator manual in English

		Maintenance manual in English
		Spare parts books in English

### 39. SCORING CRITERIA

Technical Criteria / Description	Scoring Method	Scoring range minimum	Scoring range maximum
<i>Design criteria (Main structure, Welding, Spherical joints, Fasteners)</i>	<i>Points</i>	<i>0</i>	<i>10</i>
<i>Painting system and corrosion protection</i>		<i>0</i>	<i>5</i>
<i>Mechanical System (Trolley, Gantry travelling system, Head block, Drums, sheaves)</i>		<i>0</i>	<i>20</i>
<i>Operational features (Anti-sway, skew control, trim control, auto-steering, VGM)</i>		<i>0</i>	<i>10</i>
<i>Electrical System (PLC, Cable reel, Transformer, Elect. Cable, electric power consumption etc)</i>		<i>0</i>	<i>10</i>
<i>Tools, components and parts lists</i>		<i>0</i>	<i>15</i>

**Total Max scoring: 70 points**

<b>Delivery Time</b> <i>(Stated in weeks)</i>	<i>Points</i>	0 points for over 52 weeks
		5 points for $\leq 52$ weeks
		10 points for $\leq 50$ weeks
		<b>Maximum 15 points for <math>\leq 48</math> weeks.</b>
<b>Warranty Time</b> <i>(Stated in years for the metallic structure)</i>	<i>Points</i>	0 points for under 10 years
		5 points for $\geq 10$ years
		10 points for $\geq 15$ years
		<b>Maximum 10 points for <math>\geq 20</math> years.</b>
<b>Guarantee Time</b> <i>(Stated in years for non-problematic operation)</i>	<i>Points</i>	0 points for under 1 year
		2 points for 1 year
		4 points for 2 years
		<b>Maximum 5 points for over 2 years</b>

**Total Max scoring: 30 points**

## ANNEX E: FINANCIAL OFFER SUBMISSION FORMS

\_\_\_\_\_ [Date]

To:

\_\_\_\_\_  
 [Name and address of PPA]

Ladies/Gentlemen:

We, the undersigned, offer [.....] in accordance with your Call of Tender entitled “*CALL OF TENDER FOR THE AWARD OF PROCUREMENT OF THE SUPPLY, INSTALLATION, COMMISSIONING AND TESTING OF FIVEPLUS THREE OPTIONAL (5+3) ELECTRIC RUBBER TYRED GANTRY CRANES FOR CONTAINER TERMINAL USE*” dated (\_\_\_\_\_) [Date] and our Offer. Our attached Financial Proposal is for the sum of Euros (\_\_\_\_\_)

[Amount in words and figures] and is our full and final offer that does not include VAT.

Item	Unit Cost (€) (without VAT)	Quantity	Total Cost (€) (without VAT)	Warranty (in years)
E-RTG Cranes				
Spare Parts				
Special Tools/Other equipment				
Testing, training and certification expenses				
Transportation insurance and any other expenses				
<b>GRAND TOTAL:</b>				

Our Offer shall be valid and binding (without any terms) vis-à-vis PPA for four (4) months after the expiry of submission date of the offers, plus two (2) months if PPA SA requests so according to the Tender terms.

We understand you are not bound to accept our Proposal and we are not entitled to any compensation in case of non-acceptance or withdrawal of our proposal.

Yours sincerely,

\_\_\_\_\_ [Authorized Signature]

\_\_\_\_\_ [Name and Title of Signatory]:

\_\_\_\_\_ [Name of Firm]

\_\_\_\_\_ [Address]