

Technical Queries For RTGCs

Sr. No.	Volume- II Clause No.	Page No.	Tenders Specification Requirements	Queries	Clarification From IPGL
1	4.5	148	All limit switches shall be heavy-duty type conforming to requirements of NEMA (National Electrical Manufacturer's Association) or other equivalent international standard.	Limit switches shall conforming to requirements of IEC standard. Small level operated switch, proximity switch and magnet operated limit switch shall be not heavy duty type but suitable for crane application.	IEC Standards accepted
2	4.14	156	Suitable anti collision devices shall be installed on the RTG Cranes to detect the proximity of objects that are likely to cause collision. RF sensing devices to detect proximity of containers in the stacks shall also be provided.	We will use four Banner radar sensors at each gantry leg for objects & containers of anti-collision.	acceptable if the devices will also provide warning to the operator, during gantry travel mode, when the crane is at near collision path with containers
3	4.7	149	Drive and control system	We propose to use Siemens or ABB Drives and main motors, Siemens or ABB PLC, the others will be supplied and integrated by ZPMC. All designing, installation, wiring (panel), commissioning will be carried out by ZPMC engineer. On-site warranty service is also ZPMC's responsibility.	the integration by manufacture is accepted if All component and parts is supplied from accepted LOM list

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4	Part 1 - Genral 1.9 Interfaces with civil works	page 115	The design loading for the stacking area is 60 kN/m ² . The theoretical weight and maximum wheel loads for the crane shall be stated in the tender schedules.	The allowable maximum wheel load is described as load per one wheel	It should not be more than 18 ton/wheel
5	Part 3 – Mechanical 3.1 Main Hoist	page 129	The main hoist machinery shall consist of a single layer deep grooved drum(s) consisting of two sets of driven devices and each set shall be driven by an AC electric motor through a totally enclosed gear reducer	The hoisting device shall be installed on the trolley and shall consist of at least one electric AC motor with two caliper disk brake . AC electric motor(s) shall drive rope drums through an enclosed helical gear reduction unit	Accepted.
6	Part 3 – Mechanical 3.2 Trolley Travel	page 129	The trolley shall be self-propelled with the drive mechanism mounted on the trolley. Four double flanged wheels shall support the trolley. Each wheel shall be driven	The trolley shall be self-propelled with the drive mechanism mounted on the trolley. Four double flanged wheels shall support the trolley. At least two gear box together with brake and motor to be installed	As per specification.
7	Part 3 – Mechanical 3.4 Straight	page 131	The automatic steering system/ Smart Rail DGPS shall be designed such that the travelling accuracy of the crane is within the range of +50mm. An alarm	The automatic steering system/ Smart Rail DGPS or CCTV shall be designed such that the travelling accuracy of the crane is within the range of +50mm. An alarm	As per technical specification

	Line Auto-Steering System		signal ~ shall be automatically stopped.	signal ~ shall be automatically stopped.	
8	Part 3 – Mechanical 3.5 Head Block and Telescopic Spreader	page 132	The head block shall be coupled to the spreader by four (04) twist-lock pins . Coupling and uncoupling of the head block and spreader shall be done manually	The head block shall be designed for quick manual pin connection to the telescoping spreader. The connection between the headblock and spreader shall be designed for the required load combinations and shall limit interface movement vertically to a maximum of 1.5 mm. All four (4) pins shall be fitted with proximity switches that will indicate that all four pins are fully engaged.	Acceptable
9	Part 3 – Mechanical 3.8 Horizontal Fine Positioning	page 135	The horizontal fine positioning system shall be capable of movement of the spreader relative to the trolley, of (+/-) 200 mm for trolley and (+/-) 300 for gantry travel directions.	The horizontal fine positioning system shall be capable of movement of the spreader relative to the trolley, of (+/-) 200 mm for trolley and (+/-) 200 mm for gantry travel directions.	As Per Specification
10	Part 4 – Electrical 4.15 Lighting	page 158	Type of lighting	Please inform of the type of lighting (LED or Metal Halide or others)	As per manufacturer standard design
11	Part 4 – Electrical 4.18 Container Positioning System	page 159	Each crane shall be designed to accommodate the sensors, guiding devices and data interchange channels required for a fully automatic container positioning system which may be part of the future Container Terminal Control System. ~	Please clarify in detail. The requirement of specification is a vague description. In this case, Bidder could not design or make provision for any future integration.	A global positioning system (GNSS) technology and advanced GNSS equipment, combined with an on-board computer that allows for real-time positioning of the RTG and container within centimeter accuracy. Shall be used and that the locations are reported to the TOS

12	List of Manufacturers	Page 161, 162	Hoist/Gantry Brake : Bubenzler, Siegerland(Germany)	Add the manufacturers : Ican(Japan), Hilmar(Canada), Sibre(Germany)	Sibre Germany is acceptable and Ican(Japan) is acceptable with extra 2 years extended Guarantee
			Couplings : Flender/Siegerland/ KTR (Germany)	Add the manufacturers : Nara(Korea), Hwasung(Korea), PIV(Germany)	PIV Germany is acceptable
			Gear reducers Hoist : Flender, Brevini/PIV Germany / Italy / Flender (China-Letter of OEM to be provided)	Add the manufacturers : SEW(Germany)	SEW Germany is acceptable
			Gearbox Trolley : Nord(Germany)	Add the manufacturers : SEW(Germany)	
			Gearbox Gantry : Kessler(Germany)	Add the manufacturers : SEW(Germany)	
			Spreader Baloney Cable : Prysmian (Germany)	Add the manufacturers : Electroteck Kabel (Italy)	Electroteck Kabel Italy is acceptable
			Cable reels/drums Cavotec/Specimas, Stemann Technik (Germany, France)	Add the manufacturers : Wampfler (France), Hanmi-Techwin (Korea)	Wampfler (France) is acceptable
			Electrical cables : Siemens, ABB/LAPP (Sweden / Germany /Europe)	Add the manufacturers : LS Cable(Korea), Gaon Cable(Korea), Seoul Cable (Korea), Nexans(Korea), TMC (Korea)	Nexans (Korea) is acceptable
			Load Measurement : Philips, PAT, Ramsey (Netherland / Germany)	Add the manufacturers : Shinhan Electronic (Korea)	Not Accepted
			Overload Protection System : IFM(Germany)	Add the manufacturers : Shinhan Electronic (Korea)	Not Accepted
			Floodlight : Philips/Lumec-Schreder (Netherland / Germany / China- Accepted with more extended	Add the manufacturers : Sammyungsa (Korea), Daeyang Electric (Korea)	Acceptable

			guarantee)		
			Electrical Components : Siemens, ABB (Sweden/ Germany)	Add the manufacturers : Any international brands as Schneider, LSIS, HHI, etc.	Schneider France is acceptable.

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13	1.4.5	Pg113	Seismic Design Data Horizontal acceleration (50 year) 0.34g Vertical (50% x horizontal) 0.17g	Please clarify if the seismic data given is meant for the acceleration of the ground or for the crane itself. If the data is for the ground, then it would be acceptable and covered by the EN 1998-1 standard.	As per technical specifications.
14	3.1	pg129	Main Hoist The main hoist machinery shall consist of a single layer deep grooved drum(s) consisting of two sets of driven devices and each set shall be driven by an AC electric motor through a totally enclosed gear reducer.	We propose single drum design with single set of driven device shall also be acceptable. Double drum design is not available.	Single drum design with single driven device of high quality from manufacturer such as Siemen or ABB with proven track record, is also acceptable.
15	3.4	pg131	Straight Line Auto-Steering System The automatic steering system / Smart Rail DGPS shall be designed such that the travelling accuracy of the crane is within the range of + 50 mm. An alarm signal shall be provided in the driver's cabin and shall be activated in case cannot keep the crane within the range of + 50 mm. Upon reaching a deviation of more than 100 mm, the crane movement shall be automatically stopped.	Is this accuracy acceptable for IPGL: The Supplier's AGSS DGPS accuracy is typically better than +-100mm but cannot be guaranteed to be +-50 mm due to inaccuracies of the ground and due to the nature of GPS systems. If altered 150 mm (configurable parameter, 150 mm default value) from virtual rail, the system sends a command to PLC to reduce the travelling speed of gantry to half of the maximum value. If altered 300 mm (configurable parameter, 300 mm default value) from virtual rail, the system gives an alarm and sends a command to PLC to stop the RTG automatically. The required +-50 mm accuracy is not needed in practise for safe or accurate usage of the RTG. The	Accepted.

				16above listed accuracy is time tested and acceptable for all situations.	
16	3.5	pg134	Spreader ISO floating type twist-locks shall be provided. The float shall be (+/-) 8 mm.	The ISO twistlock used by Bromma shall have the floating range of +/- 6mm. This design is well proven on the spreaders delivered worldwide. Hence, we propose to keep this standard configuration. With standard design, the spare part is also easily available.	Accepted.
17	3.5	pg134	Spreader The detectors shall be positioned such that they will function on the corner castings of ISO containers and non-ISO type containers.	For non-ISO type container, more information on the types of non-ISO containers used is needed from IPGL in order to assess the compatibility. Please list all of the non-ISO containers that are planned to be lifted.	Accepted
18	3.9	pg136	Operator's Cabin The chair shall be fitted with a high back that can be reclined up to 180 degrees to enable the operator to lie back whilst taking rest.	The operator seat can be reclined to enable the operator to lie back to rest but not full 180 degrees but 120 degrees due to the back wall of the cabin. The cabin should not be longer than necessary so the Supplier requests that the 120 degree recline is approved.	Accepted
19	3.9	pg136	Operator's Cabin The bottom window shall be at least 900 mm width and shall offer optimum visibility to the crane operator. For safety reasons, the front floor windows of the cabin are formed by three separate glasses. The width of the middle glass shall be around 686 mm and it shall not affect the visibility of cabin.	The 2 paragraphs mentioned are contradicting. We propose the latter paragraph (686mm) shall prevail.	Accepted Bottom window as per manufacturer's (OEM Standard Design) design is acceptable.
20	3.19	Pg142	Greased Lubrication System Sets of localized lubrication system shall be	The Supplier proposes only the hoist system shall be fitted with automatic wire rope lubrication	Accepted.

			provided, with one set each installed ... to lubricate the bearings, on the trolley platform to lubricate the wire ropes and on the bogies. Each localized lubrication system shall be provided with a reservoir.	system with reservoir. For other trolley parts lubrication where manual lubrication is impractical, the lubrication points are fitted with extension piping and the nipples brought to a group battery plate mounted in a convenient position with the nipples. There is only one lubrication point at each equalizer beam. Therefore, a portable pump provided for each RTG shall serve the purpose. If accepted, please change the wording also for Pg158, Clause 4.16 B) about the CMS system control scope.	
21	LOM Painting and protective treatments	161, 162	List of Manufacturers Hempel Paint/ Arostal /Ameron – Denmark/Germany	It is not possible to select specific manufacturing locations to some of the components in the list as most of the Western brands do not manufacture the required component in the listed country anymore but somewhere else in EU or only in China. Please allow Manufacturing in EU/USA instead of just Germany in order to make it possible to comply. The Hempel factory that produces the paint is located in Spain or Poland. There is no factory in Denmark or Germany to produce the paint.	Hempel, UK or France is acceptable.
22	Bearings		SKF / FAG / TNT /Schaeffler(INA) Bearings – Sweden/Germany/Japan	The bearing suppliers have production factories around the world for different designations/type. It's impossible to fix Germany or Sweden to produce all kinds of bearings needed on the RTG. Please allow this fact in the LOM.	Subject to submission of documentary evidence from the supplier mentioned in the LOM list.
23	Wire Ropes		Certex, Casar Wire Rope – Germany	Certex wire rope shall be from Finland, not Germany.	Certex Finland is acceptable
24	Motors		ABB / Siemens motors – Sweden / Germany	The model of Siemens motors we use is only made in Czech Republic.	Siemens Czech Republic is acceptable

25	Load measurement		Philips, PAT, Ramsey- Netherland / Germany	The load measurement system and overload protection system are developed by us using our own proven system. The RTG manufacturer's brand shall be acceptable.	As per specification .
	Overload protection system		IFM - Germany		
26	Electrical components		Siemens/ABB– Sweden/Germany	The requirement is too broad as there are hundreds of electrical components, small and large, that are manufactured all over the world in different factories from different brands. Furthermore, Siemens or ABB does not offer or make every single electrical component that is needed for a RTG. Please delete the requirement as it is not possible to follow.	Siemens, ABB is acceptable
27	Tyres		Bridgestone Tyre – Japan	Latest confirmation from Bridgestone is that they are not allowed to sell to Iran. Hence, we propose Continental tyre from Malaysia shall be acceptable.	All Tyres shall be Tubeless, Continental Malaysia Is Acceptable if applicable for container crane operation.
28				Please add a statement to the LOM that if any of the selected sub-suppliers deny selling components that are going to Iran, the Supplier and IPGL will mutually agree to replace the said sub-supplier.	Subject to submission of document / letter from OEM, by mutual agreement to substitute such vender.

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29	Cl 1.5	Pg. 113	The crane shall be capable of full speed trolley travelling and gantry travelling simultaneously only when the head-block is at its upper hoisted position. Otherwise, it shall only be possible to operate gantry, trolley and hoist motions, one at a time.	It is also possible in our crane that trolley traverse and hoisting mechanisms will be operated simultaneously.	Acceptable
30	Cl 1.6	Pg. 114	Inside clear: span Minimum 22 meters for six containers across and one traffic lane. Wheel span (center line of tyres): Maximum 23.50 meters Overall width part of crane: Maximum 26.5 meter	With wheel span is limited to 23.50m, inside clear span of minimum 22m (or even 21.84m) is not reachable in 16-wheel RTG. Max. 24.1m instead of 23.50 m for wheel span is suggested while Max limit for overall width of lower part of the frame (26.50m) is kept.	Acceptable
31	Cl 1.10	Pg. 116	The Manufacturer shall submit proposed arrangement and detail drawings. These shall include the crane GA with overall dimensions, main structure, spreaders, head-block, access-ways, mechanisms, anti-sway system, machinery house, electric room, operator's cabin, control consoles, layout of controls, checker's cabin, passenger lift, and lighting, electrical schematic and single line diagrams.	RTGs are not equipped with Passenger lift.	Passenger lift and checker's Cabin shall be removed from technical spec.
32	Cl 1.10	Pg. 117	Documents and drawings shall be produced specifically for this project and shall be suitably titled as agreed by the Buyer prior to Contract award.	Please describe the documents and drawing coding system.	See section 1.10 and 1.14 of volume II of RFP document.
33	Cl 1.13	Pg. 119	One control panel to test spreader operation in the workshop during maintenance. The panel shall incorporate push buttons,	It is usually out of the crane manufacturer's scope. It will be added to the crane as an option.	Follow technical specification

			selector switches, indicator lamps, programmable logic controllers, input / output devices, spreader multi-pin plug with cable, and all parts necessary to operate and confirm proper operation of all spreader functions. Power supply cable of at least 20 meters shall be provided with the panel.		
34	Cl 1.13	Pg. 120	Four infra-red non-contact thermometers for checking the operating temperatures of equipment. The infra-red thermometers shall be equipped with laser sighting to accurately pinpoint the target where temperature measurements are to be taken.	It is usually out of the crane manufacturer's scope. It will be added to the crane as an option.	Follow technical specification
35	Cl 1.18.1	Pg. 123	Measurement of noise levels, lighting levels, structural deflections, anti-sway system performance, shall also be carried out.	Noise levels, lighting levels, structural deflation measurement will be carried out. Please describe anti-sway performance.	See section 3.7 on Page 135 of RFP document
36	Cl 2.4	Pg. 127	Minimum blast cleaning standard shall be SA2.5. The paint system shall be applied in a minimum of three coats by the air-less sprays method and is overcoat able.	The paint manufacture from AVL describes the painting procedure. Polyurethane coatings are usually not overcoat able.	The specification prevails, Polyurethane based Painting is not mandatory
37	Cl 3.1	Pg. 129	A lever mechanism for manually opening the brakes shall be provided.	It is not recommended because of safety.	Acceptable
38	Cl 3.4	Pg. 131	The system shall also facilitate gantry travel at defined angles.	Micro steering through joystick is not acceptable.	As per Specification
39	Cl 3.4	Pg. 131	The proposed system shall be such that no digging up of the container yard surface will be required.	Please describe the function.	Auto steering system shall be independent from any additional changes on the yard ground
40	Cl 3.4	Pg. 131	Straight Line Auto-Steering System	No swiveling (rotation) mode for gantry.	The automatic steering system shall be designed such that the travelling accuracy of the crane is within the range of +- 50 mm.
41	Pg. 133, Cl 3.5	Pg. 133	Means to adjust the clearance between the sliding pads and the telescopic beams shall	Please describe the function. Any spreaders which are manufactured by the reputed supplier are not	As per manufacture standard

			be provided.	equipped with this item.	
42	CI 3.5	Pg. 133	The telescopic frames shall be mechanically locked to prevent sliding motion when the telescopic motion is not activated.	The spreader telescopic beam by any reputed manufactures cannot be mechanically interlocked.	As per Original Manufacturer Standards
43	CI 3.5	Pg. 134	Top of container (spreader landed onto container) detectors at all four corners of the spreader shall be provided to detect the following: full landing of spreader squarely onto container, no container under spreader, and container suspended under spreader	The RTGs will not usually with this equipment. It will be added to the crane as an option.	As Per Technical Specification.
44	CI 3.5	Pg. 134	In addition, a specified number of equipment / frames shall be provided for occasional lifting of open top containers that are over height.	Please specify the number of equipment.	2 Set is recommended.
45	CI 3.6	Pg. 135	Sufficient clearance shall be maintained between any part of the spreader (with flipper at raised position) with crane structures (e.g. walkway leading to operator cabin) especially when trolley travelling and spreader is skewed to maximum.	Flipper is not applicable but our RTGs is equipped with guide arms.	Acceptable
46	CI 3.19	Pg. 142	Grease Lubrication Systems	There is not any automatic grease system in our RTGs based on our experience and PM docs. Manual greasing schedule is provided for each crane.	Localized Lubrication system is acceptable
47	CI 3.21	Pg. 143	The diesel set shall be mounted on a structural sub-base within an IP 65 enclosure.	The electrical room and diesel engine are at the same side. Therefore, the diesel shall be suspended beneath the sill beam. The canopy is equipped with forced ventilation system. It is not defined any IP for canopy.	Acceptable
48	CI 3.21	Pg. 144	Suitable protective installations and warning devices shall be provided to prevent spillage	Fuel level indicator is included in the system.	Acceptable

			of diesel when refueling.		
49	CI 3.4	Pg. 131	The automatic steering system / Smart Rail DGPS shall be designed such that the travelling accuracy of the crane is within the range of + 50 mm. An alarm signal shall be provided in the driver's cabin and shall be activated in case cannot keep the crane within the range of + 50 mm. Upon reaching a deviation of more than 100 mm, the crane movement shall be automatically stopped.	RTGs are not equipped with automatic steering system.	As per technical specification
50	CI 4.2	Pg. 146	All live conductors shall be shielded.	Some special cables will be shielded to eliminate noise based on design.	Follow technical specification
51	CI 4.3	Pg. 146	Single core cabling shall be PVC insulated of not less than 1.5 sq. mm ² and shall be run in conduit outside panels. Metal conduits shall be earthed.	Some single core wires such as PLC I/O card connections are 0.5 sq. mm. on RTG. All metal Conduits shall be connected to steel structure. There is no real earth connection on RTG.	It is acceptable if applicable for Signal and data Cables
52	CI 4.4	Pg. 148	Cabling shall be retained within the chain using stainless steel clamps.	The chain cables cannot be clamped because of the chain bending mechanism.	Clamps could have clearance for cable bending.
53	CI 4.6	Pg. 149	min. class S3, duty type 80%	Motor class is S3 but the motor duty type is selected based on operation type and design and maybe varied between 10% until 100%.	Minimum duty shall not be less than 60% For main Hoist is shall not be less than 80%
54	CI 4.6	Pg. 149	Variable speed drives shall be force ventilated using ventilation fans driven independently at constant speed.	Variable speed drives shall be force ventilated or self-ventilated based on design.	As per original manufacture practice
55	CI 4.6	Pg. 149	The ventilation fans of the boom hoist motor shall be controlled by a thermostat mounted on the stator and shall continue to cool the motor after boom hoisting or lowering operation is completed.	There is not any boom hoist motor in RTGs, please describe it. We have thermistor in motor winding to prevent motor over temperature.	thermistor in motor winding to prevent motor over temperature, is acceptable. Any boom hoist terms shall be removed from technical Specification.
56	CI 4.6	Pg. 149	Motors mounted indoors shall be IP54, whilst motors exposed to outdoor conditions shall	All motors shall be IP55. Motors have thermistors or thermocouples (based on design) which are	Acceptable. Note: boom hoist shall be removed

			be totally enclosed to IP65 protection complete with drain plugs and breathers, as per manufacturer's recommendation on the main hoist, boom hoist and trolley travel motors, thermocouples shall be provided to measure the temperatures of the windings. The thermocouple readings shall be input to the crane management system and shall warn the driver of high motor temperatures	connected to the control system to alarm and prevent over temperature of windings by crane control system	from technical Specification.
57	CI 4.7 A.	Pg. 150	The parameters settings shall be effected through three methods, i.e. the use of local digital keypads; serially communicated hand held programming panels which can also interrogate the drives and removable programmable ROM cards which allow the settings and programs to be made in remote locations and downloaded on site.	The parameter setting shall be effected through two methods, i.e. the use of local digital keypads and serially communicated hand held programming device.	Acceptable.
58	CI 4.7 A.	Pg. 151	This point shall become the central earth point (CEP) for the system, and is the connection to which the incoming earth must be bonded.	RTGs are mobile cranes. Therefore, we do not have any real incoming earth on RTG.	Local Earth (Structure of the Crane)
59	CI 4.7 A.	Pg. 151	Acceleration and deceleration shall be linear	Acceleration and deceleration shall be linear, S shape or smart type.	No restriction.
60	CI 4.8	Pg. 152	The Manufacturer shall provide wall space (0.75 meter square minimum) within the operators' cabin for the future installation (by others transmission equipment. Signals for transmission shall be marshalled on terminals within a cabinet located adjacent to the reserved space. A 5A 220V supply shall also be made available within the cabinet to supply the data transmission equipment.	There is no extra space in regular cabins. The space and relevant configuration will be specified as an option.	Extra space is not required.

61	CI 4.9	Pg. 152,	The PLC's shall have sufficient memory capacity for more than on plus at least 30 % redundant memory capacity.	Please specify the redundant memory capacity.	30% over the minimum required memory
62	CI 4.9	Pg. 153	All faults shall be displayed sequentially on the fault display panel inside the electrical control enclosure.	All faults and alarms shall be displayed sequentially on HMI in cabin and or on Crane management system monitor in electrical room.	As Per Specification
63	CI 4.9	Pg. 153	A 6 digit (excluding decimals) electronic counter shall be provided to log the numbers of containers handled. The container counter and hour meter shall be installed in a panel with a transparent cover. The panel shall be positioned at a convenient location about 1.5 m above the ground level to enable easy reading by personnel on the ground.	It is not usually used in the crane system. It will be added to the crane as an option.	As Per Specification
64	CI 4.10	Pg. 154	Engine oil pressure and temperature gauges, water temperature gauge, battery charging ammeter, engine tachometer, frequency meter, ammeters, Maximum Demand (MD) indicator and voltmeters shall be provided in the engine starting panel.	Engine oil pressure and temperature, water temperature, battery charging ampere, engine speed, frequency, amperes, and Maximum Demand (MD) indicator shall be provided in the engine starting control /monitoring panel.	Acceptable
65	CI 4.10	Pg. 154	Ammeters and voltmeters for the hoist, trolley and gantry drives shall be provided in the electrical control cubicles.	Amperes and voltage for the hoist, trolley and gantry drives shall be monitored on HMI and CMS system.	Acceptable.
66	CI 4.11	Pg. 154	push button select intercom system shall be provided at the following locations on the crane: - i) Operator's cabin (hands free) ii) Below each sill beam iii) Inside the electrical control enclosure iv) On the trolley platform v) At the engine starting panel Communications units located below the sill beams, trolley platform and starting panel	It is not usually used in the crane system. It will be added to the crane as an option.	As per specification.

			shall be installed in IP65 enclosures.		
67	CI 4.11	Pg. 155	<p>Electric bells shall be installed in the operator's cabin, electric engine alternator enclosure to draw attention of the persons at these areas.</p> <p>Push buttons for these bells shall be provided at the legs of the crane, inside electrical enclosure, inside engine-alternator enclosure, on trolley platform and in the operator's cabin. The bell system shall be powered from the crane's batteries.</p>	It is not usually used in the crane system. It will be added to the crane as an option.	As per specification.
68	CI 4.11	Pg. 155	<p>A public address system consisting of an amplifier with a hands free microphone shall be installed in the operator's cabin.</p> <p>Loudspeaker of IP65 construction shall be installed at the following locations: -</p> <p>a) Below the operator cabin</p> <p>b) At one of the legs of the diesel generator set enclosure side</p> <p>c) At one of the legs of the electrical control enclosure side</p> <p>d) At the top of the trolley platform.</p>	It is not usually used in the crane system. It will be added to the crane as an option.	As per specification.
69	CI 4.11	Pg. 155	<p>The crane intercom system shall be linked to the public address system such that paging can be made from any intercom unit.</p> <p>Screened cables shall be used on both systems.</p>	It is not usually used in the crane system. It will be added to the crane as an option.	As per specification.
70	CI 4.14	Pg. 156	<p>Six warning strobe lights (amber in color) shall be fitted, one at each leg and one at each end of the girder structure on the walkway side. The strobe lights shall be automatically activated when gantry motion is selected.</p>	We have 4 lights on RTGs. 2 extra light on girder will be added as an option.	As per specification.

71	CI 4.14	Pg. 157	RF sensing devices to detect proximity of containers in the stacks shall also be provided. These devices shall provide warning to the operator, during gantry travel mode, when the crane is at near collision path with containers. In lieu, 04 nos. of Ultrasonic sensors are also acceptable.	It is not usually used in the crane system. It will be added to the crane as an option.	As per specification.
72	CI 4.15	Pg. 157	All fluorescent lamps shall be of rapid start type, and equipped with steel guards.	All fluorescent lamps shall be of rapid start type.	Acceptable including suitable guard
73	CI 4.15	Pg. 157	For emergency use 50 % lighting of the provided, the operator's cabin, electrical control enclosure, hoist motor enclosure, diesel generator set enclosure, and on the trolley platform, shall be of the maintained, self-contained, battery backed emergency type installed in power unit.	There is no emergency light on RTG. It will be added to the crane as an option.	As Per specifications
74	CI 4.16 A.	Pg. 158	Temperatures of the motors, engine and alternator shall be monitored continuously and displayed on the screen whenever desired.	There are not any temperature sensors on motors and alternators. Instead of that, we have thermistors or thermo switch for over temperature detection.	Continuous temperature measuring and monitoring of each motor shall be provided
75	CI 4.16 B.	Pg. 158	Control of oil and grease lubrication systems:	There is not any oil and grease lubrication system on RTG. Manual greasing schedule is provided for each crane based on our experience and PM docs.	Localized Manual lubrication is acceptable however lubrication interval shall be settable via CMS
76	CI 4.17	Pg. 159	Covers, pull-boxes, junction boxes and enclosures for motors, hydraulic compartments, etc. shall be made of stainless steel plate with a minimum thickness of 2 mm.	Since the standards equipment will be provided based on AVL, minimum 2 mm thickness is not applicable for all items.	As Per Specification
77	LOM Painting and protective treatment	161, 162	Hempel Paint/ Arostal /Ameron – Denmark/Germany	BAJAK is added based on PMO approved list	As Per Specification

78	Diesel Engine		Volvo / CAT/ Cummins-Sweden/USA/UK	SCANIA is added based on PMO approved list	Scania is acceptable
79	Coupling		Flender / Siegerland/KTR-Germany	LOVE JOY is added based on PMO approved list	As Per technical specification.
80	Gear reducer Hoist		Flender/Brevini/PIV-Germany/Italy/Flender(china-Letter of OEM to be Provided.	MANGAN is added based on PMO approved list	As Per technical specification.
81	Gearbox gantry		Kessler-Germany	Mangan, Elecon are added based on PMO approved list	As Per technical specification.
82	Gearbox trolley		Nord-Germany	Elecon is added based on PMO approved list	As Per technical specification.
83	Trolley Brake		Siemens-Germany	Brake manufacturer is equipped with motor supplier	LOM List for Brake is applicable for outside Brakes
84	Electrical cable		Siemens, ABB/LAPP-Sweden/Germany/Europe	Internal sources, phoenix contact are added based on PMO approved list	Phoenix Netherland is accepted.
85	Load Measurement -		Philips, PAT, Ramsey-Netherland/Germany	Magtrol is added based on PMO approved list	Accepted.
86	Floodlight		Philips / Lumec-Schreder-Netherland/Germany/China-Acceptable with more extended guarantee	Mazinoor, Electroskandia are added based on PMO approved list	Accepted
87	Electrical Components		- Siemens, ABB – Sweden /Germany	Telemecanic, schnieder, finder, omron, weidmuller, Beckhoff, ... are added based on PMO approved list	Telemecanic, schnieder-France, Omron-Japan is acceptable
88	Tyres		Bridgestone-Japan	TVS, Goodyear are added based on PMO approved list	All Tyres shall be Tubeless, Continental Malaysia Is Acceptable if applicable for container crane operation.

Sr. No.	Volume- II Clause No.	Page No.	Tenders Specification Requirements	Queries	Clarification From IPGL
89	1.16	121	Labelling Warning signs and safety notices shall be in both Farsi and English...	All name plates and label language and also drawings & operation & maintenance manual will be only in English.	as per tender documents
90	1.7	114	Standards :	The referred standard in the tender, if there is similar standard in China, the similar China standard will be also acceptable, since it is widely be referred and followed by manufacturer.	"International Reputed standard shall be followed as per approval of the employer"
91	LOM	161 162/		List of Manufacturers Since all the Make have its plant in China or other country, other than its brand original country, the manufactured components from China and other country are acceptable. Also if the product can be bought out from the agents .	manufacturers and the origin of production shall be approved by employer.