IT-4464 Bidders' Conference Technical Specification

19th-20th February 2019

Scope of the supply

- Dismantling and supply of overhead cranes with a capacity up to 10 tonnes
- CUSTOM cranes
- 5 years contract
- Fulfill the needs of the consolidation program and any new request
- Ever-changing consolidation program/budget requires flexibility:
  1. Blanket purchase contract
  2. Definition of reference prices

IT-4464_EN_UPL: Price list

Representative cranes:

Crane	A	B	C	D	E	F	G	H	I
Single / Double girder	Single						Double		
Capacity [tonne]	1	1	3.2	5	5	7.5	3.2	7.5	10
Top running (T) / underhung (U)	U	T	T	U	T	T	T	T	T
Span [mm]	1800	12000	12000	8000	12000	10000	9000	14000	12000
Lifting height [mm]	2700	6000	6000	6700	6000	4500	9000	8000	8000

IT-4464_EN_UPL: Price list

Crane type A:

- Single girder
- Underhung
- Manual (chain operated)
- 1 ton capacity
- 25 m railways with suspension supports included

IT-4464_EN_UPL: Price list

Dismantling and Supply of Electrical Overhead Travelling (EOT) Cranes with a capacity up to 10 Tonnes						
Annex to the Tender Form - Price list for the interventions						
	Description	**Qty (1)**	**Price FCA (2)**	**Total price FCA (1*2)**	**Price DAP (3)**	**Total price DAP CERN (1*3)**
1	**Dismantling of EOT Cranes**					
1_1	Dismantling of a single girder crane	13	……...	……	……	……
1_2	Dismantling of a double girder crane	7	……...	……	……	……
2	**Supply and installation of EOT Cranes (Technical Specification Table 1)**					
2_A	EOT Crane type A	6	……...	……	……	……
2_B	EOT Crane type B	2	……...	……	……	……
2_C	EOT Crane type C	4	……...	……	……	……
2_D	EOT Crane type D	2	……...	……	……	……
2_E	EOT Crane type E	2	……...	……	……	……
2_F	EOT Crane type F	5	……...	……	……	……
2_G	EOT Crane type G	3	……	……	……	……
2_H	EOT Crane type H	2	……	……	……	……
2_I	EOT Crane type I	5	……...	……	……	……

- Sections 1 and 2 shall be filled with the FCA and DAP prices for the dismantling / supply and installations of the nine representative cranes
- Technical Requirements: Annex 1 (§§ 1 to 7 only) and Annexes 3A to 3I
- Installation conditions: surface building, examples will be shown during the visit
- Radio remote control not included in the supply! To be quoted as an option
- Quantities shown are realistic but not definitive

IT-4464_EN_UPL: Price list

Prices in section 2 include:

- Site visits
- Design file
- Manufacturing
- Factory Acceptance Tests
- Packaging
- Transport (DAP)
- Training of contractor’s personnel working on CERN site
- Installation (access, handling and lifting equipment included)
- Waste sorting and disposal
- Commissioning and site tests attendance
- Final documentation set
- Preventive and corrective maintenance during warranty
- Training of CERN operators and maintenance personnel

IT-4464_EN_UPL: Price list

Additional Features, Manpower and Equipment		Description / reference sections
1	Span decrease	Decrease of 4000 mm with respect to the nominal span
2	Span increase	Increase of 4000 mm with respect to the nominal span
3	Lifting height increase	Increase of 4000 mm with respect to the nominal lifting height
4	Replacement of electrical feeding line	Dismantling, supply and installation of an electrical feeding line (25 m, 32 A, 380 V, separate conductors, Wampfler or Vahle) with its supports, cabling and main switch
5	Radio remote control with storage cubicle	Annex 2
6	Safety zones managed by PLC and HMI	Annex 1 - § 8.8 / Annex 4
7	Coupled operation (master - slave system)	Annex 1 - § 8.9
8	Anti-collision system between cranes	Annex 1 - § 8.14
9	Load display	Annex 1 - § 8.15
10	Life calculation module	Annex 1 - § 8.16
11	Electronic safety barriers	Annex 1 - § 8.17
12	Installation in underground areas	
13	Daily rate of a team of two technicians	ns on the CERN site, inclusive of all costs such as, but not limited to, travel and subsistence costs
14	Daily rate of a 20 tonnes truck crane	20 tonnes truck crane, transfer and operator (eight hours) included
15	Daily rate of a working platform	Working platform with a lifting height of 10 m for two operators, transfer included

last slides + dedicated visit for price evaluation

Section 3 includes price increases for:

Variations with respect to the «standard» conditions

Additional options

Special installation conditions

Ordering Procedure

- Contractor will be invited for a site visit
- A data sheet will be provided (similar to the Annexes 3A-3I) containing the following information:
  - Delivery schedule
  - Data of the crane to be supplied and installed
  - Additional features
  - Context of installation
- Contractor shall fill the data sheet and submit an offer based on the price list
- Release order will follow

Ordering Procedure

- Prices for items which are not covered shall be, as much as possible, extrapolated from the price list
- Negotiation before order
- No committment to order

Performance of the contract

3.4.1 Detailed Design File

For each EOT crane ordered, the contractor shall submit to CERN for approval, before manufacturing starts, a detailed design file containing:

a) Risk assessment (referring to EN ISO 12100 Safety of Machinery);
b) Mechanical layout drawing showing the following information: EOT crane overall dimension, hook in its extreme positions in the three directions, minimum gap between the crane and the fixed obstacles, speed values, installed power, loads transmitted from the wheels to the rails;
c) EOT crane 3D model showing:
   - definitive design of steel structures and mechanisms;
   - access means to the crane and to its components and details of the areas dedicated to maintenance;
   - location of electrical cubicles, electrical components (switches, cable chain etc.) and cable trays.
d) Electrical circuit diagrams and electrical cubicle layout drawings with calculation notes, when applicable, of the electrical feeding line;
e) Layout of operator controls;
f) Delivery schedule showing the most important phases from design until acceptance tests;
g) Dismantling and installation method statement containing the list of equipment to be used, installation procedure, time schedule, risk analysis, description and drawings of difficult manoeuvres, space requirements with an estimation of time for which the space will be needed.

Performance of the contract

Table 3 – Structure of Final Documentation Set

Document	Elect. copy	Copy 1	Copy 2	Copy 3	Language
EC and EU declarations of conformity	YES	YES	YES	YES	EN or FR
Technical file (see "a)" below)	YES	YES	NO	NO	EN
"As-built" versions of all the mechanical and electrical design documents	YES	YES	YES	YES (only electrical circuit diagrams)	EN
PLC documentation as per Annex 4	YES	YES	YES	NO	EN
Final 3-D model of the crane	YES	NO	NO	NO	-
Bill of materials (see "b)" below)	YES	YES	YES	NO	EN
List of bearings (see "c)" below)	YES	YES	YES	NO	EN
List of electrical cables	YES	YES	YES	NO	EN
Operating and maintenance manual (see "d)" below)	YES	YES	YES	NO	EN or FR
Operator's manual (includes all important crane characteristics and use instructions)	YES	YES	NO	YES	FR
Documentation and certificates of commercial parts	YES	NO	NO	NO	EN

Performance of the contract

Table 4 – Indicative Delivery Schedule

	Type of intervention	Submission of detailed design file (time after the release order)	Delivery / installation (time after the release order)	Acceptance tests at CERN / Completion of works (time after the release order)
1	**Dismantling of an EOT Crane**	2 weeks (dismantling method statement)	-	5 weeks
2	**Supply of an EOT Crane (capacity < 5 tonnes)**	6 weeks	12 weeks	13 weeks
3	**Supply of an EOT Crane (capacity ≥ 5 tonnes)**	6 weeks	16 weeks	18 weeks

Performance of the contract

4.2 Contract Follow-Up and Progress Monitoring

The Contractor shall assign a person in charge of the technical execution of the Contract and its follow-up, as well as a person in charge of the commercial follow-up, during the whole duration of the Contract. These persons shall be able to communicate in one of the official languages of CERN (English or French).

The Contractor shall send to CERN a written progress report every month until completion of the Contract (see § 4.6.9 for reporting during dismantling and installation) containing the following information for each release order under execution:

a) Progress of the activities at the contractor's premises (design, components' purchasing, manufacturing and assembly);
b) Expected dates for factory acceptance tests, delivery of material to CERN, and start of activities on site.

All communications and documents shall be in English or French.

Performance of the contract

4.4.1 Factory Acceptance Tests (FAT)

The contractor shall carry out factory acceptance tests, at least one week before transport to CERN. CERN reserves the right to be present, or to be represented by an organisation of its choice, to witness any tests carried out at the contractor's or his subcontractors' premises. The contractor shall give at least ten working days' notice of the proposed date of any such tests.

For factory acceptance tests, the supply shall be ready to be tested by the contractor as described in the factory acceptance test procedure. The tests shall include a general inspection of the supply, crane geometry measurement and functional tests (without load) during which the crane shall be completely assembled and the correct functioning of the control system validated.

The contractor shall test and validate the correct mechanical geometry, the operation of all movements and of each brake separately under dynamic conditions, and the quality of manufacture and assembly of the supply.

The contractor shall supply a factory acceptance test report for approval before transport of the supply to CERN.

Performance of the contract

4.4.2 Site Acceptance Tests (SAT)

The requirements of the CERN Safety Instruction SSI-M-1-2 and the present technical specification and annexes will be used as a basis for the acceptance tests of the supply at CERN. In order to verify the conformity with the requirements of these documents, the tests will include static tests, dynamic tests and functional tests.

The contractor shall provide test schedules to CERN for approval at least two weeks before the date of the tests.

Acceptance tests will be carried out by CERN who will provide the loads needed for the acceptance tests; the contractor's representative shall be present during acceptance tests.

4.6.3 Joint Inspection Visit at CERN

The contractor shall prepare a dismantling and installation method statement (see § 3.4.1) based on the risk evaluation carried out together with CERN.

At least two weeks before the start of any dismantling or installation work, a joint inspection visit will be organized by CERN.

The contractor's safety correspondent and technical responsible shall participate in the visit and present the content of the method statement; CERN might request the contractor to revise this document following the joint inspection visit.

Performance of the contract

4.6.5 Waste management

Conventional waste shall be handled in accordance with the Host State regulations and shall respect CERN's internal waste sorting procedures to ensure the appropriate management of waste. CERN will make available containers for disposal of waste; the contractor shall sort the waste into the appropriate containers according to CERN's instructions (see § 3.25 of the document *Working on the CERN site*).

Contractor shall lower on the floor the main parts of the EOT cranes (girders, end-carriages, trolley, electric cubicles) which will remain CERN's property and will be removed by CERN.

If there is any equipment that may contain chemicals or oil, the contractor shall ensure that the dismantling and handling is carried out in such a way to avoid chemicals spillage; oil from gearboxes shall be removed once the EOT crane has been dismantled.

4.6.9 Reporting During Dismantling and Installation Work at CERN

During the dismantling and installation work at CERN, the contractor's personnel shall report at least every day to the CERN work supervisor on activities' progress and any other issue that may delay the work's completion.

Every week, the contractor's technical responsible shall submit to CERN a written progress report.

Performance of the contract

4.9 Warranty and Maintenance

The warranty shall be as defined in the tender form. During the warranty period, the preventive and corrective maintenance will be part of the contractor's responsibility, in particular:

a) The preventive maintenance shall be performed once a year;

b) First level breakdown interventions will be performed by CERN without voiding the warranty; they cover all the diagnostic and troubleshooting interventions that can be carried out by specialized personnel equipped with proper measuring and tuning tools.
In the specific case of EOT cranes, first level breakdowns intervention shall include:

- Replacement of consumables and electrical components such as electrical and thermal protections, contactors, switches and cables;
- Adjustment of switches, timers and brakes;
- Settings' modification of PLCs and frequency converters.

c) All the other breakdowns (e.g. failure of electrical, electronic or standard mechanical elements) shall be carried out by the contractor; within 72 hours of notification by CERN, he shall be at CERN ready to perform the diagnosis.
In case of high-criticality EOT cranes where an immediate reaction is required, CERN reserves the right to intervene, using its own maintenance contractor and without voiding the warranty.

Performance of the contract

Work in Underground Areas - Calculation of UPL item 3_12:

- Time consuming access procedure (biometric control, ~100m deep lift)
- Only electric lifting and handling means
- Transfer of material from surface to underground (bottom of shaft) will be CERN responsibility
- Special design may be needed to allow material handling in the underground

Performance of the contract

Work in Underground Areas - Calculation of UPL item 3_12:

- Quotation shall consider that caverns and tunnels will be empty at the moment of the crane installation