



THESSALONIKI
PORT
AUTHORITY S.A.

THPA
CONTAINER PORT STS
OVERHAUL
STTC-V0

August 2018


THPA

CONTAINER PORT Ship To Shore (STS) OVERHAUL

Specific Technical Terms and Conditions


STTC



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1 Object of the contract

1.1 Context

THPA operates the container terminal of Thessaloniki. The terminal is equipped with 4 STS (Ship To Shore) container gantry cranes numbered STS 1 to STS 4

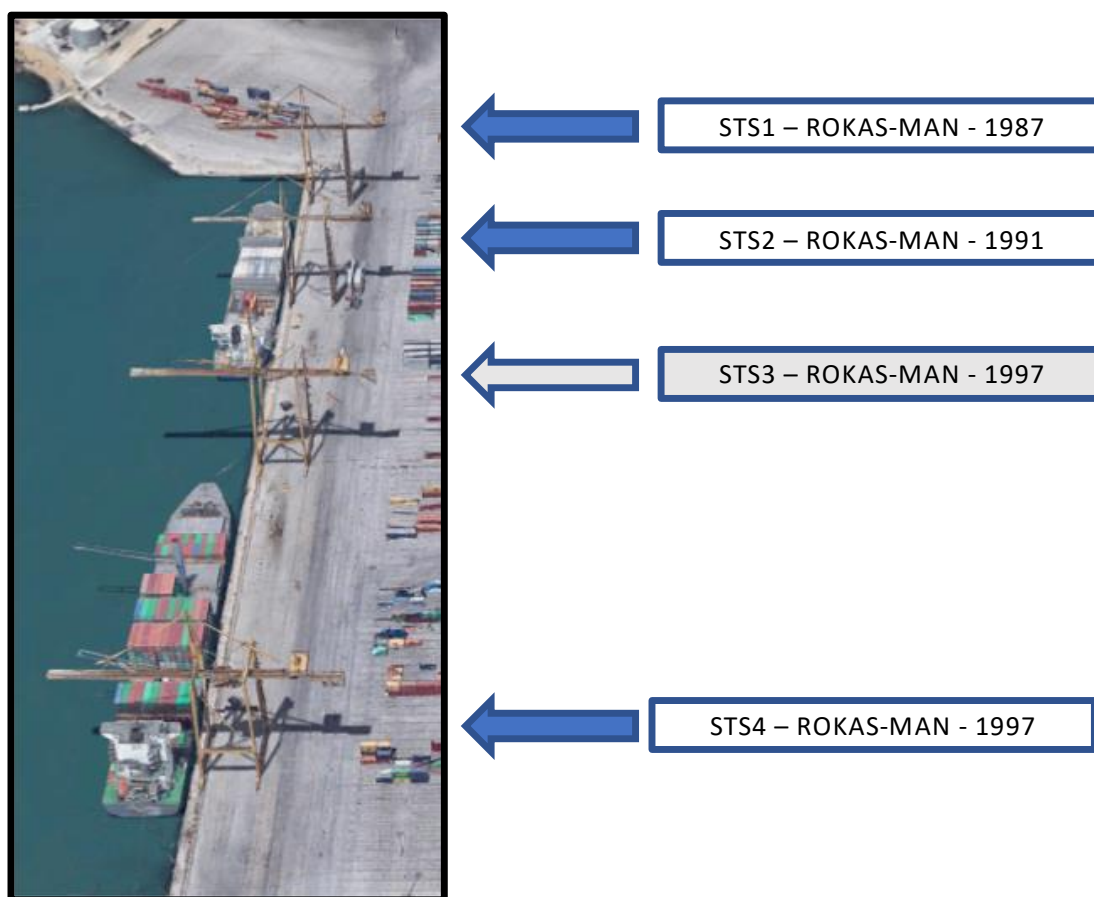


Figure 1 - Container terminal STS

The present tender concerns STS1, STS2 and STS4 (STS3 is not included).


These 3 cranes need to be refurbished. As they will be replaced in short or middle term, the decision of the terminal is to minimize the scope of work to be done, the main goal is to ensure safety for workers, even if some items are related to reliability.

1.2 Contract object

Considering this context, the contract object is to achieve the scope of work detailed in the Specific Technical Terms and conditions (STTC) document in the respect of the Specific Administrative Terms and Conditions (SATC) document. These two documents constitute the basis of the contract.

1.3 STTC object

This document defines all the technical clauses of the contract.

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2 Description of the 3 STS

STS1

- Year of construction : 1987
- Designed by MAN – Constructed by ROKAS
- Control command : BBC except the trolley ABB ACS800
- Capacity: 40 T under spreader.

STS2

- Year of construction : 1991
- Designed by MAN – Constructed by ROKAS
- Control command : BBC (Obsolete)
- Capacity: 45 T under spreader.

STS4

- Year of construction : 1997
- Designed by MAN – Constructed by ROKAS
- Control command : ABB (Replaced in 2016)
- Capacity: 50 T under spreader.

More detailed information concerning these 3 STS can be seen in Annexe1.

3 List of work to be done and results to be achieved

3.1 Generality

The list of item for each STS is presented in the attached Excel file '[4 – LIST OF WORK](#)'. Each item must be quoted in the context of this call for tenders. However, during the finalization of the contract, the final list of points to be treated will be finalized.

3.2 List of work

The list of work is provided, for each STS, in the Excel file '[4 – LIST OF WORK](#)'.

The list give the following information:

N°	Identification Number (starts from 1 for each list)
Item	STS1, STS2 or STS4
Location	<p>To localize the work on the crane. Possible location are:</p> <ul style="list-style-type: none"> • A_FRAME • ACCESS • ALL • BOOM HOIST • BOOM HINGE • DERICK BEAM • ELECT ROOM • REAR BEAM • HOIST • SLEWING • STRUCTURE • TRAVELING • TROLLEY

Drawing	Reference of useful drawings
Skills	The different necessary skills are : ELECT : Electricians MEC : Mechanics NO SPECIFIC PAINTERS WELD : Welders
R/S	R : Item mainly justified for reliability reasons, S : Item mainly justified for safety reasons
Current situation	Description of the current situation
Photo	Photo of the item
Description of work to be done	Description of work to be done by the contractor
Results to achieve	Description of results to achieve
Project supervision control	Description of the method to receipt the work
Spare parts references	Reference of the spare parts
Manpower (H)	To be quoted by the contractor
Spare parts (€)	To be quoted by the contractor
Manpower (€)	To be quoted by the contractor
Total (€)	To be quoted by the contractor

The Excel file '4 – LIST OF WORK' is completed by one folder per STS, '5 - PHOTOS P1', '5 - PHOTOS P2', '5 - PHOTOS P4'. Each folder contains some documents identified hereafter:

STSa_it_tnb_Description

a : 1 or 2 or 4 : Identification of the STS,

it : Item number of the work list

tnb : Type of document followed by a sequential number. Type of document can be : D, for Drawing, P, for photo, S, for specification.

Description : The description of the item.

Example :

STS2_3_P01_MV ROOM ACCESS: Photo number 1 of the mv room access. It corresponds to the item n°3 of the STS2.


4 General requirements

The parts should be replaced or repaired following the state of the art rules.

All tightening torques, as specified in the technical documentation, must be respected by the use of adapted tools.

4.1 Grinding

The Contractor shall take all necessary precautions to avoid projections of emery onto the paint Structure.

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4.2 Welding

The Contractor shall take all necessary precautions to avoid electronic damage and incident.

All welders shall be qualified welders. The document will be provided to THPA.

5 Technical standards to be applied

Standards to comply with are:

- NF EN 287 – 1 - September 2011 “Qualification test of welders. Fusion welding. Part 1: steels »
- NF EN ISO 15607 - May 2004 “Specification and qualification of welding procedures for metallic materials -- General rules”
- NF EN ISO 15609-1 (January 2005) “Specification and qualification of welding procedures for metallic materials -- Welding procedure specification -- Part 1: Arc welding”

5.1 Anti-corrosion protection

Surfaces to be protected by paint will be prepared, as a minimum, by:

- Degreasing,
- Brushing,
- Dust removal from all surfaces.

The surfaces will be prepared in strict compliance with the recommendations of industrial paint guarantees.

Standards to comply with are:

- NF EN ISO 4628 Parts 1 - 7 March 2016 “Paints and varnishes -- Evaluation of degradation of coatings -- Designation of quantity and size of defects, and of intensity of uniform changes”.
- NF EN ISO 12944 Parts 1 - 8 September 1998 “Paints and varnishes - Corrosion protection of steel structures by protective paint systems”
- NF EN ISO 8501-1 September 2007 “Preparation of steel substrates before application of paints and related products. Visual assessment of surface cleanliness. Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings + Additional information: pictorial examples of change of appearance of steel after application of different abrasives.”
- NF EN ISO 8501-2, December 2001 “Preparation of steel substrates before application of paints and related products – Visual assessment of surface cleanliness - Part 2: Preparation grades of previously coated steel substrates after localized removal of previous coatings”
- NF EN ISO 1461 – July 2009 “Hot dip galvanized coatings on fabricated iron and steel articles – Specifications and test methods”

5.2 Hydraulic


Standards to comply with are:

- N.A.S. 163.8 1992 (North American standard) concerning the contamination of hydraulic fluids

6 Spare parts

6.1 Spare parts provided by the terminal

All the specific parts, like motors, gearboxes, coupling..., will be provided by THPA on the request of the contractor.

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All the standard parts, like ball bearings, switches..., will be purchased by THPA on the request of the contractor.

All the greasing items, like lubricant oil, hydraulic oil, grease, will be provided by THPA.

6.2 Spare parts and consumable provided by the contractor

All the consumable, like seals, bolts, screw..., must be provided by the contractor and packaged in its prices.

All spare parts should be original brand.

In case of equivalent parts, the new parts must be validated by THPA beforehand.

7 Specific tools and means of access

7.1 Specific tools

Specific tools are provided by the contractor.

In case of necessity, a cherry picker can be used. This tool must be in conformity with regulation and will be operated by authorized personnel only.

7.2 Scaffolding

In case of necessity, the contractor will install scaffolding. These must be calculated to support the necessary number of workers and their tools and installed by a specialized company in the respect of the applicable rules. Before use the scaffolding will be checked by a competent person, its access is submitted to authorization by this person.

8 Service limits

The proposal is deemed to include :

- All the manpower,
- Consumable and spare parts, except those provided by THPA as define in chapter 6 above,
- All the suggestions due to regulation,
- All the constraints due to terminal access rules,
- All specific tools, cherry picker or scaffoldings which are necessary to achieve the work.

Each quoted item of the work list can be ordered or not by THPA. If an item is finally not ordered, no compensation will be paid to the contractor.



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Annexe1. STS1-2-4 – General state

STS1		Characteristics - History - Inspection		Ref:	STS1_1	
				Version:	V1	
				Date:	06/02/18	
	MAKER :	ROKAS-MAN				
	HAND OVER :	1987	GENERAL CONDITIONS	3		
	AGE :	31				
	CAPACITY					
	MAX LOAD UNDER SPREADER (T) :	40				
	NB OF CONTAINER ROW :			13		
	FEM CLASSIFICATION (1)		LIFETIME AS DESIGN (2)			
	STRUCTURE :	U6 Q2 A6	CYCLES :	1 000 000		
	HOIST :	T7 L2 M7	HOURS :	25 000		
	TROLLEY :	T7 L2 M7	HOURS :	25 000		
TRAVEL :	T6 L2 M6	HOURS :	12 500			
BOOM :	T5 L3 M6	HOURS :	6 300			
<input type="checkbox"/> (1) From calc notices <input checked="" type="checkbox"/> X Estimated		<input checked="" type="checkbox"/> (2) Maximum value, considering the load spectrum taken for design is respected.				
INSPECTION : The purpose of this section is to describe the condition of each element : 1 = Bad - 100 = Good						
STRUCTURE	60	Little corrosion in the boom (Hinge point side) and poor safety against wind (Anchorage pin in poor condition and rail brake out of service).				
HOIST	30	The floor of the machinery room is full of hydraulic oil. Leakage is principally coming from the hydraulic jacks and tank.				
TROLLEY	30	Trolley drives and gear boxes replaced. The hinge point is broken and the rail is in poor condition.				
TRAVEL	10	Lots of default on this motion which is in very poor condition. Wind safety not guaranteed. Protection against collision with STS2 not guaranteed.				
BOOM HOIST	30	The reliability of the boom hoist is not good. The port staff used to let the boom down. During our visit, it was not possible to boom up to the hanging				
ELECTRICITY	20	Control command obsolete. Trolley drives recently replaced. Lots of safety devices are shunted.				
HISTORY	Year	Description	Cost K€	Year	Description	Cost K€
		Trolley drives replaced (AC motors)				
	2018	Replacement of 1 broken travel wheels				
	2017	Replacement of 3 broken travel wheels				
SYNTHESE						
LIFE TIME	Estimated output :	20	Reliability - Availability		Budget	
STRUCTURE	73 (3)	NB CYCLES	During our stay inThessaloniki, the crane was stoped because of travel wheel failure. Impossible to guarantee a good reliability, safety and availability for many reasons : Electricity obsolete, access in poor condition, number of switch shunted, electric cable damaged.		Trolley and hoist have overpassed their lifetime calculation. The cost estimation to keep the crane into operation for two to three years is about 170 K€. This amount of money is a minim to operate in safety but reliability is not guarantied.	
HOIST	145 (3)	NB HRS			The crane is 31 years old, as per our experience, the maintenance cost will continue to increase significantly in the coming years.	
TROLLEY	136 (3)	NB HRS			According to our experience, a 30 years old crane maintenance cost compared to a new one is somewhere between 4 and 5.	
TRAVEL	27 (3)	NB HRS				
BOOM	7 (3)	NB HRS				
(3) Estimated load spectrum						



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STS2		Characteristics - History - Inspection		Ref :	STS2_1	
				Version :	V1	
				Date :	06/02/18	
			MAKER :	ROKAS-MAN		
			HAND OVER :	1991	4	
			AGE :	27		
			CAPACITY			
			MAX LOAD UNDER SPREADER (T) :	45		
			NB OF CONTAINER ROW :	14		
			FEM CLASSIFICATION (1)		LIFETIME AS DESIGN (2)	
			STRUCTURE :	U6 Q2 A6	CYCLES :	1 000 000
			HOIST :	T7 L2 M7	HOURS :	25 000
			TROLLEY :	T7 L2 M7	HOURS :	25 000
TRAVEL :	T6 L2 M6	HOURS :	12 500			
BOOM :	T5 L3 M6	HOURS :	6 300			
		(1) <input checked="" type="checkbox"/> From calc notices <input type="checkbox"/> Estimated	(2) Maximum value, considering the load spectrum taken for design is respected.			
INSPECTION : The purpose of this section is to describe the condition of each element : 1 = Bad - 100 = Good						
STRUCTURE	50	Little corrosion in the boom (Hinge point side) and poor safety against wind (Anchorage pin in poor condition and rail brake out of service). Presence of cracks at the bottom and at the top of the A.Frame access stairs.				
HOIST	30	The floor of the machinery room is full of hydraulic oil. Leakage is principally coming from the hydraulic jacks and tank (Same as P1)				
TROLLEY	30	The hinge point is broken and the rail is in poor condition. Trolley motors and gearbox : Important leakage.				
TRAVEL	20	Lots of default on this motion which is in very poor condition. Wind safety not guaranteed. Protection against collision with STS2 not guaranteed. A lot off motors are missing.				
BOOM HOIST	50	No emergency brakes due to conception				
ELECTRICITY	30	Control command obsolete. Festoon in poor condition. Wiring in bad condition in the driving cabine. Safety devices like anemometer or anti-collision limit switch are missing.				
HISTORY	Year	Description	Cost K€	Year	Description	
SYNTHESE						
LIFE TIME	Estimated output :	20	Reliability - Availability		Budget	
STRUCTURE	82 (3) NB CYCLES	822 040	Considering the genral condition of the crane, reliability is not guarntied. Electricity is in poor condition and control command is obsolete.		Trolley and travel have overpassed their lifetime. The age and the poor state of the crane will necessitate high maintenance costs. The estimated budget to get a minimum of safety is about 270 K€. This is not suffidient to guaranty reliability.	
HOIST	164 (3) NB HRS	41 102				
TROLLEY	155 (3) NB HRS	38 806				
TRAVEL	79 (3) NB HRS	9 875				
BOOM	16 (3) NB HRS	1 026				
(3) Estimated load spectrum						



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STS4		Characteristics - History - Inspection			Ref :	STS4_1	
					Version :	V1	
					Date :	06/02/18	
		MAKER :	ROKAS-MAN				
		HAND OVER :	1997	GENERAL		5	
		AGE :	21	CONDITIONS			
		CAPACITY					
		MAX LOAD UNDER SPREADER (T) :		50			
		NB OF CONTAINER ROW :		16			
		FEM CLASSIFICATION (1)			LIFETIME AS DESIGN (2)		
		STRUCTURE :	U7	Q2	A7	CYCLES :	2 000 000
		HOIST :	T7	L2	M7	HOURS :	25 000
		TROLLEY :	T7	L2	M7	HOURS :	25 000
TRAVEL :	T6	L2	M6	HOURS :	12 500		
BOOM :	T5	L3	M6	HOURS :	6 300		
		(1) <input checked="" type="checkbox"/> From calc notices			(2) Maximum value, considering the load spectrum taken for design is respected.		
		<input type="checkbox"/> Estimated					
INSPECTION : The purpose of this section is to describe the condition of each element : 1 = Bad - 100 = Good							
STRUCTURE	50	Connexion between carrier and main beam cut (Sea and land side). Front tie articulation not centered. Low quality weld on back tie. Corrosion at Portal diagonal brace and portal cross beam connexion (Left and right sides)					
HOIST	60	Drum repaired. Emergency brake hydraulique unit facing the wrong direction. The floor of the machinery room is full of hydraulic oil. Leakage is principally coming from the hydraulic jacks and tank					
TROLLEY	50	Trolley rail in poor condition. Poor weld on new access platform around electr motors. Hinge point to be improved.					
TRAVEL	30	Safety devices missing. Lots of default on this motion which is in very poor condition.					
BOOM HOIST	60	Galvanised but not greased wire ropes. Abnormal noise during the cycle. Buffers in poor condition.					
ELECTRICITY	80	Wiring and box state is pretty good. Electrical revamping in 2016 (ABB). Few daily maintenance faults noticed. Protection missing in electrical room.					
HISTORY	Year		Description		Cost K€	Year	
SYNTHESE							
LIFE TIME	Estimated output :	20	Reliability - Availability			Budget	
STRUCTURE	29	(3)	NB CYCLES	This crane beneficiate of an important refurbishment of the trolley motion. Some issues are still there, particularly for gantry motion. The crane in general is in poor condition, le machinery room is very dirty because of oil leakage (hydraulic and lubrication).		A budget around 180 K€ must be dedicated to increase safety a,s reliability of this crane.	
			581 180				
HOIST	116	(3)	NB HRS				
			29 059				
TROLLEY	104	(3)	NB HRS				
			25 944				
TRAVEL	49	(3)	NB HRS				
			6 122				
BOOM	15	(3)	NB HRS				
			914				
(3) Estimated load spectrum							