

**ตารางแสดงวงเงินงบประมาณที่ได้รับจัดสรรและราคากลาง(ราคาอ้างอิง)
ในการจัดซื้อจัดจ้างที่มีใ้ใช้งานก่อสร้าง**

๑. ชื่อโครงการ..... การจัดหา Fire Protection System (Water Mist System)

โครงการเรือตรวจการณ์ไกลฝั่ง

กิจกรรมการจัดหา Fire Protection System (Water Mist System)

โครงการเรือตรวจการณ์ไกลฝั่ง

/หน่วยงานเจ้าของโครงการ สำนักโครงการเรือตรวจการณ์ไกลฝั่ง ลำที่ ๒ บริษัท อยู่กรุงเทพ จำกัด

๒. วงเงินงบประมาณที่ได้รับจัดสรร ๗,๑๕๐,๐๐๐ บาท (ไม่รวมภาษีมูลค่าเพิ่ม ๗%)

๓. วันที่กำหนดราคากลาง (ราคาอ้างอิง) วันที่ ๗ กรกฎาคม ๒๕๕๙

เป็นเงิน ๑๗๒,๐๐๐ ยูโร (ไม่รวมภาษีมูลค่าเพิ่ม ๗%)

(คิดเป็นเงินไทยโดยประมาณ ๖,๗๗๗,๐๒๓.๖๐ บาท อัตราแลกเปลี่ยน ณ วันที่ ๗ กรกฎาคม ๒๕๕๙)

๔. แหล่งที่มาของราคากลาง (ราคาอ้างอิง)

จากการสืบราคาปัจจุบัน จากบริษัทผู้ผลิตโดยตรง ๑ ราย ดังนี้

๔.๑ MARIOFF CORPORATION OY

๕. รายชื่อเจ้าหน้าที่ผู้กำหนดราคากลาง (ราคาอ้างอิง)

๕.๑ นางจันทร์ทิพย์ ชำศิริพงษ์ หัวหน้าแผนกบริหารงานพัสดุ

๕.๒ นายธนาพิพัฒน์ วุฒิวงศ์ พัสตุ ๑

Term of Reference (TOR)
Fire Protection System (Water Mist System)
for the Royal Thai Navy Offshore Patrol Vessel

1. Objective

The Bangkok Dock Company (1957) Limited (Buyer) wishes to announce this Term of Reference (TOR) for procuring 1 set of Fire Protection System (Water Mist System) for the construction of the Royal Thai Navy Offshore Patrol Vessel (OPV)

2. Requirement

2.1 Goods shall be 1 (one) set of HI-FOG® Fire Protection System for marine application, including materials, design and engineering, documentation, installation guidance, commissioning supports, Factory Acceptance Test (FAT), recommended on-board spare parts, and training.

2.2 The HI-FOG® Fire Protection System shall consist of HI-FOG MT4 machinery spaces total flooding system and HI-FOG ML9/ML5 local application system.

2.3 The detail and scope of supplies are in ANNEX A: Technical Requirement Specification.

2.4 Goods shall be manufactured in Finland.

2.5 Goods shall be new and never been used.

3. Condition of Bidding

3.1 The bid price shall include all costs, expenses, fees, and cost for transportation. Transportation shall be CIF Laem Chabang Port, Chonburi, Thailand in accordance with Incoterms 2010 (by vessel with Thai flag or same privilege) and risk shall pass in accordance with the said terms.

3.2 This bid price shall exclude customs duty for the list of materials imported into the Kingdom of Thailand.

3.3 The enumeration of the bid price must be provided in Total Price

3.4 The price validity shall be until 31th August 2016.

4. Qualification of Bidder

4.1 Bidder must be a professional to sell goods in this bid.

4.2 Bidder has never been on the blacklist of the Thai Government, or as a result of not receiving orders to another entity or person who is blacklisted by the Thai Government.

4.3 Bidder must act as principal for its own account and not as agent or broker. If any Bidder has a coordinator in Thailand, the name and contact details of such coordinator must be clearly specified in the proposal.

4.4 Bidder must have own bank account where receive/payment shall be made, except, if each payment is not over 30,000 Bath, the counter party may receive/paid by cash.

5. Document for Consideration

5.1 Bidder's Qualification Document

5.1.1 Copy of Company Registration/Affidavit1 and certified true copy.

5.1.2 Letter of power of attorney, in case of the bidder is authorized the behalf to bid, sign in the bid, or in the other cases. The letter shall be affixed the duty and enclosed with the copy of the identity card or passport and/or household registration, which declare both of the authorizer and behalf. Notarisation is required.

5.2 Technical Specification Document

- 5.2.1 The details of specification of goods in this bid must meet the buyer's requirements. The bidder must clearly identify the manufacturer profile and the country of origin.
- 5.2.2 Copy of List of document showing that the bidder has sold similar Fire Protection System to the BAE Systems Surface Ships Limited for the River Class Vessel project for the UK Royal Navy.
- 5.2.3 If the Technical Specification documents do not comply with item 5.2.1 - 5.2.2, the buyer reserves the right not to consider the bidder.

6. Delivery and Acceptance

- 6.1 If the goods are transported via sea freight that has Thai flag or the same privilege vessel in operation, Thai flag or the same privilege vessel shall be used unless permission has been obtained from the Office of Mercantile Marine Promotion Commission before such Goods are carried by non-Thai vessels or they are goods which according to the Notification of the Minister of transport and Communications, may be carried by non-Thai vessels. Relevant Bill of Lading shall also be provided.
- 6.2 In the event that the delivery will be delayed due to the non-availability of a Thai Registered Vessel, the bidder shall request an exemption from Bangkok Dock and will be responsible for any such costs incurred seeking such an exemption from the relevant authorities in Thailand. The bidder shall give a minimum of 30 days' notice of a request for an exemption.
- 6.3 The bidder must declare document and/or evidence of delivered goods that meet the specification and standard which specified in Contract or purchase order (PO) as stated in all respects.
- 6.4 If the delivered goods from bidder do not meet the requirements, buyer reserves the right to reject those goods. And in this case, the bidder must immediately take the right to change immediately.
- 6.5 Goods shall be CIF Laem Chabang Port, Chonburi, Thailand not more than 7 months after receiving Purchasing Order (PO) or Contract Effective Date (CED).

7. Warranty

Warranty period shall be not less than 12 months after the ship delivery to the RTN.

8. Assurance

The system supplied shall be according to IMO requirements and class rules subjected to class approval. Bidder shall provide the class certificates in original. In some single cases only copies of class certificates could be accepted.

The bidder shall confirm the quality assurance by issuing a copy of its quality plan that complies with ISO (latest standard) at no extra cost to the buyer.

9. Penalty

If the bidder cannot deliver on time as buyer's scheduled, bidder must pay on a daily rate penalty of zero point two percent (0.2%) of the goods value that are not delivered from the date of delivery until the date that the bidder has fulfilled the conditions in the contract or PO.

When the penalty reaches the maximum of ten percent (10%) and if the equipment is still not delivered after this period then buyer shall be entitled to terminate the contract and seek further recompense if buyer has to source an alternative supplier for the equipment. In addition buyer would expect a refund of all payments made.

10. Performance Guarantee

At the time of execution of the contract, the bidder shall submit to buyer a Performance Guarantee in an amount of five percent (5%) of the contract value in favour of the buyer by a first class bank operating in Thailand. The Performance Guarantee shall valid until the end of the agreed warranty period.

In the event the bidder requires an advance payment, the bidder shall issue an Advance Payment Guarantee via a first class bank operating in Thailand and remain valid up to the point of delivery. No advance payment will be made until the Advance Payment Guarantee has been issued to buyer.

11. Condition of Payment

11.1 Payments shall be;

- 1st installment 15% down payment against an advance payment guarantee of 15 percent of contract value in favour of the buyer.
- 2nd installment 80% on the delivery of all materials (accept pump unit) CIF Laem Chabang Port, Thailand
- 3rd installment 5% four months after delivery of the pump unit or upon commissioning approved by the classification society and maritime authority, whichever date comes first

11.2 The 2nd and 3rd installments shall be made out of an Irrecoverable and Confirmed Letter of Credit. The bidder is responsible for any other charges related to the transfer of the bank levy, and consent to such deductions from the amount transferred in that period.

11.3 The bank must be a first class bank operating in Thailand.

12. Export Licenses/End User Certificate

In the event of the bidder's equipment requires bidder's Government to issue an Export License before the equipment can be shipped to Thailand, the bidder must advise buyer immediately and provide the required format of the End- User Certificate needed to satisfy its authorities. It should be noted that the issuing of an End-User certificate can take up to 90 days and this should be taken into consideration when requesting such a document from buyer.

13. Law of the Contract

The contract shall be subjected to the Laws of the Kingdom of Thailand with the right to go to Arbitration in the event a dispute cannot be resolved. Arbitration shall be in accordance with current ICC rules and shall take place in Bangkok, Thailand.

14. Technical Requirement

ANNEX A: Technical Requirement Specification

ANNEX A

Technical Requirement Specification of Fire Protection System (Water Mist System) for the Royal Thai Navy Offshore Patrol Vessel

1. Requirement

1 set of HI-FOG® Fire Protection System (Water Mist System) for marine application, including materials, design and engineering, documentation, installation guidance, commissioning supports, Factory Acceptance Test (FAT), recommended on-board spare parts, and training.

The system shall comprise of the HI-FOG MT4 machinery spaces total flooding system and the HI-FOG ML9/ML5 local application system.

2. Scope of supply

The HI-FOG® system shall be dimensioned to fulfill the applicable sections of Regulation II-2/10 of the International Convention for the Safety of Life at Sea (2009), including all relevant water mist related regulations. In addition it shall fulfill the requirements of the applicable classification society and administration.

2.1 Protected area

The protected spaces shall be the:

- Main engine room, including bilge but excluding casing
- Generator rooms PS & SB
- Aux. Machinery room / JP-5 Pump room

The protected objects shall be the:

- Fire hazard portions of the main engines
- Fire hazard portions of the auxiliary engines

2.2 Materials

The HI-FOG® system shall be individually designed.

The number of components and amount of materials shall be according to the system engineering and shall be identified in the final delivery. The scope of supply shall include all materials and components required to fulfill the required regulations. Materials shall be adequate according to the design.

2.2.1 Pump unit

The system is equipped with a SPU 5+1 pump unit. It contains six electrical motors, one of which is for redundancy purposes. Two high-pressure water pumps are connected to each motor.

Power, per motor: 15.5 kW (380 V / 50 Hz)

Power, total (excluding redundancy): 77.5 kW

Maximum flow: 487 l / min

Maximum system pressure: 140 bar

Unit dimensions (approx.): 2133 x 1410 x 1800 mm (LxWxH)

Service space required: 700 mm around unit

Unit weight, total (approx.): 2,050 kg

Colours:

Frame: Red, RAL 3020

Electric motors:	Blue, RAL 5014
Gear box:	Red, RAL 3020
Electric cabinet:	Grey, RAL 7035

The pump unit contains a stand-by pump, a break tank, filters and separators, and a control cabinet. Upon activation of the system, the motors will start in sequence.

The chloride content of the fresh water shall not exceed 50 ppm and the water shall have a pH of 7.0 – 9.0.

The pump unit shall be delivered factory tested and inspected by a class surveyor.

The HI-FOG system shall be designed to withstand a short circuit current Icu of max. 6 kA.

A drawing of the pump unit shall be enclosed.

2.2.2 Electric panels

a) Release Panel for machinery spaces: Panel includes push buttons and a pressure indicator. It is to be connected to the pump unit control cabinet and the machinery space section valves.

b) Repeater Panel for machinery spaces: Panel includes primary indications for the machinery space system. It is to be connected to the Release Panel

c) Local Release Buttons for machinery spaces: Buttons, one for each local application section, are used for local release of the local application system. They are to be installed inside the protected space, close to an exit, and connected to the Release Panel

The panel fronts shall be black. The cabinets shall be grey, RAL 7035

2.2.3 Section valves

Machinery spaces: 6 pcs

The valves are remote and manually controlled solenoid valves, and are equipped with a flow indicator. They are to be connected to the Release Panel.

2.2.4 Nozzles

Machinery spaces: 51 spray heads

The HI-FOG spray heads are stainless steel units. They are delivered with a stainless steel assembly body for attaching the spray head to the tubing.

A schematic drawing of a spray head and its assembly body is enclosed.

2.2.5 High pressure tubes

The tubes are of welded type and made of stainless steel AISI 316 L. They follow DIN standards and the following sizes are used:

Ø 12 x 1.2 mm

Ø 30 x 2.5 mm

Ø 38 x 3 mm

The final amount shall be based on the tubing arrangement diagram forming a deliverable. The price shall include the amount of tubes required to install

the system in accordance with bidder's drawings and instructions, and with section valve locations selected to minimize the total length of tubes.

In order to avoid interruptions in the installation, bidder shall add a margin to the estimated amount of tubes.

2.2.6 Fittings

The following fittings, as relevant for this project, shall be delivered:

- Clamps
- Cutting rings (DIN 3861)
- Straight fittings
- T-pieces
- Distribution blocks
- Reducing fittings
- Plugs
- Bulkhead penetrations

An estimate of the required number of fittings shall be given. The final amount will be based on the tubing arrangement diagram forming a deliverable. The price shall include the amount of fittings needed to install the system in accordance with bidder's installation instructions, and with section valve locations selected to minimize the total length of tubes.

In order to avoid interruptions in the installation, bidder shall add a margin to the estimated amount of fittings.

2.2.7 Spare parts

The price shall include spare parts in accordance with IMO regulations.

2.2.8 System weight

The bidder shall provide the preliminary weight estimate of the HI-FOG system, including water in wet pipes.

2.3 Documentation

All documentation shall be prepared in English.

2.3.1 System design

The design package shall include:

- One-line diagram of piping arrangement, showing principal routing of pipes, location of section valves, and approximate location of sprinklers and spray heads
- Layout drawing of pump and accumulator units, showing main dimensions and location of pipe connections and attachment points
- Cabling principles
- Connection diagram
- Internal circuit diagram of electric cabinets
- Panel layouts
- Systems description
- Operations manual
- Service and parts manual

The final document can be delivered on CD ROM, if required.

2.3.2 Installation manual

This manual contains instructions on how to install the system.

2.3.3 Others

The followings shall also be provided

- ILS document
- Factory Acceptance Test Record
- All document, 8 hard copies, 1 soft copy shall be provided

2.4 Services

2.4.1 Approval applications

Bidder shall prepare and submit to the relevant classification society and maritime administration documents needed for approval of the system. The system shall be supplied with final approvals.

2.4.2 Commissioning

After the HI-FOG® system has been installed it shall be started up, tested and commissioned.

4 days of commissioning in 1 trip shall be included in the price.

Introduction to the HI-FOG® system operation shall be given as part of the commissioning and it shall take 2 hours.

2.4.3 Training

Operator training for 20 crews shall be provided and price shall be separately quoted. Training shall be at the buyer training facilities in Sattahip, Thailand.

3. Regulations and Approvals

The system shall fulfill the following IMO requirements:

- The applicable parts of Regulation II-2/10 of the International Convention for the Safety of Life at Sea (2009)
- MSC/Circ. 1165 (machinery spaces)
- MSC/Circ. 913 (local application in machinery spaces)

In addition the system shall be delivered approved by LR

4. Factory Acceptance Test

Buyer and the Royal Thai Navy (RTN) reserve the right to attend Factory Acceptance Tests. The bidder will be responsible for all costs in their country, including provision of test fuel and labour in the event that we wish to attend Factory Acceptance Tests. Costs of personnel travel and accommodation whilst in Finland shall be responsible of the buyer. If there is a failure of the equipment not to pass the Factory Acceptance Test, the bidder shall be responsible for all additional costs incurred by the party attending the tests.

The bidder shall give 90 days' notice of the intended date for the Factory Acceptance Test of the equipment to enable adequate planning to be made for a team to visit. The bidder shall provide all assistance required to obtain any visa that may be required to enter the bidder's country.