

**ตารางแสดงวงเงินงบประมาณที่ได้รับจัดสรรและราคากลาง(ราคาอ้างอิง)  
ในการจัดซื้อจัดจ้างที่มีใ้ใช้งานก่อสร้าง**

ชื่อโครงการ..... การจัดหา Helicopter Visual Approach System (HELIVAS)

กิจกรรม .....จัดหา Helicopter Visual Approach System (HELIVAS)

/หน่วยงานเจ้าของโครงการ สำนักโครงการเรือตรวจการณ้ไกลฝั่ง ลำที่ ๒ บริษัท อยู่กรุงเทพ จำกัด

๒. วงเงินงบประมาณที่ได้รับจัดสรร ๑๓,๘๔๐,๔๕๖.๐๐ บาท (ไม่รวมภาษีมูลค่าเพิ่ม ๗%)

๓. วันที่กำหนดราคากลาง (ราคาอ้างอิง) วันที่ ๒ สิงหาคม ๒๕๕๙

เป็นเงิน ๒๓๙,๕๕๐.๐๐ ปอนด์ (ไม่รวมภาษีมูลค่าเพิ่ม ๗%)

(คิดเป็นเงินไทยโดยประมาณ ๑๑,๑๐๒,๒๕๖.๑๗ บาท อัตราแลกเปลี่ยน ณ วันที่ ๒ สิงหาคม ๒๕๕๙)

๔. แหล่งที่มาของราคากลาง (ราคาอ้างอิง)

จากการสืบราคาปัจจุบัน จากบริษัทผู้ผลิต ๑ ราย ดังนี้

๔.๑ Aeronautical & General Instruments Ltd.

๕. รายชื่อเจ้าหน้าที่ผู้กำหนดราคากลาง (ราคาอ้างอิง)

๕.๑ นางจันทร์ทิพย์ ชำศิริพงษ์ หัวหน้าแผนกบริหารงานพัสดุ

๕.๒ นายธนาพิพัฒน์ วุฒิมวงศ์ พัสตุ ๑

**Term of Reference (TOR)**  
**Helicopter Visual Approach 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 Helicopter Visual Approach System (HVLAS) for the construction of the Royal Thai Navy Offshore Patrol Vessel (OPV)

**2. Requirement**

2.1 Goods shall be 1 (one) set of Helicopter Visual Approach System (HELIVAS) for marine application, including Support Services, Factory Acceptance Test (FAT), recommended on-board spare parts and training.

2.2 The HELIVAS shall comply with NAVAIR, Air Capability Ship Aviation Facility Bulletin No. 1J

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

2.4 Goods shall be manufactured in the United Kingdom.

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, Value Added Tax (VAT), (currently), 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 shall be separated per items as required in 2.1 and validity shall be until 31<sup>st</sup> 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 sold similar system to install in the Royal Thai Navy Offshore Patrol Vessel.
- 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. 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 48 weeks after receiving Purchasing Order (PO) or Contract Effective Date (CED).

## **7. Warranty**

Warranty period shall be not less than 24 months after the ship delivery to the RTN.

## **8. Assurance**

All machinery supplied shall be according to 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 0.2 percent 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 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;

- 10% against the delivery of Equipment Installation Drawings, not later than 5 months after the Contract Signature Date
- 10% against the delivery of Overall Installation Drawings, Deck and Superstructure Cabling Layout drawing, not later than 8 months after the Contract Signature Date
- 10% against the Factory Acceptance Test Certificate
- 60% against Shipment of equipment and documents
- 5% against Harbour Acceptance Trials, but no later than 18 months after equipment delivery
- 5% against Sea Acceptance Trials, but no later than 24 months after equipment delivery

11.2 Payment by this condition 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 the Helicopter Visual Approach System  
for the Royal Thai Navy Offshore Patrol Vessel**

**1. Requirement**

1 (one) set of Helicopter Visual Approach System (HELIVAS) for marine application, including Support Services, Factory Acceptance Test (FAT), recommended on-board spare parts and training.

**2. Technical Specifications**

The HELIVAS shall comply with NAVAIR, Air Capability Ship Aviation Facility Bulletin No. 1J

The Helicopter Visual Landing Aids shall be designed and manufactured in accordance with BS EN 60439-1, BS EN 60947-1 and the IEE regulations for the Electrical and Electronic Equipment on Ships, with Recommended Practice for their Implementation.

Where applicable the Helicopter Visual Landing Aids shall be designed to be compliant with the use of Night Vision Goggles (NVG) as defined in STANAG 1445.

Deck edge/wash/floodlight fittings will be designed to comply with HOSTAC limits, and Radar Cross Section (RCS) requirements.

Enclosures shall provide protection to a minimum of IP67 for Weatherdeck/Hangar items and IP56 for others, in accordance with BS EN 60529.

The equipment offered is produced in accordance with DEF-STAN 05-21, AQAP-1 and ISO9001 and Tick IT.

The HELIVAS equipment has been designed and independently tested to meet the following international specifications:

MIL STD 461E EMC/EMI

MIL STD 167A-1 Vibration

MIL STD 810F Environmental

MIL STD 901D Grade B Shock

Paint and finished supplied for equipment shall be manufacturer standard colours

### 3. Main Equipment

The main equipment shall be at least as followings:

Item	Description
1	<b>Advanced Stabilised Glide Slope Indicator (ASGSI)</b> 1 off Precision Stabilised projector unit with LED based NVG Compliant Beam Format.
2	<b>Stabilised Horizon Bar System comprising:</b> 1 off Precision Stabilised 3 m HBL with NVIS green LED Lighting, and motor drive unit. 2 off 0.6 m Fully Sealed Reference Lights, NVIS Green LEDs 1 off Fault Warning Light, NVIS red LEDs
3	<b>Homing Beacon comprising:</b> 1 off NVIS white LED steady or flashing beacons
4	<b>Wave Off Light System comprising:</b> 1 off Omni-directional Light, NVIS red LEDs 1 off Bridge Control Panel 1 off Emergency Switch
5	<b>Deck Status/Stop-Go Light System comprising:</b> 1 off Stop-Go Light, NVIS red and green LEDs 1 off Bridge Control Panel
6	<b>Overhead Floodlights comprising:</b> 2 off Floodlights, white LEDs
7	<b>Deck Wash Lights White</b> 2 off Deck Wash Lights, NVIS white LEDs
8	<b>Pilot Eye Line Lights comprising:</b> 2 off 0.6 mtr Fully Sealed Edge Lights, NVIS green LEDs
9	<b>Forward Line-Up lights comprising:</b> 2 off 0.6m Fully Sealed Light Fittings, NVIS white LEDs
10	<b>Cross Deck Line-Up lights comprising:</b> 8 off 0.6m Fully Sealed Light Fittings, NVIS white LEDs (two diagonal rows of 4 lights per row)
11	<b>Vertical Drop Lights comprising:</b> 2 off 1.2m Fully Sealed Edge Lights, NVIS red LEDs
12	<b>Flight Deck Edge Lights comprising:</b> 7 off 1.2m Fully Sealed Deck Edge Lights, NVIS green LEDs 10 off 0.6m Fully Sealed Deck Edge Lights, NVIS green LEDs 4 off 0.6m Fully Sealed Deck Edge Lights, NVIS green LEDs
13	<b>Flight Deck Edge/Wash/Flood lights</b> 2 off Deck Edge/Wash/Flood combination lights, NVIS green and white LEDs, and non NVIS white LEDs
14	<b>Obstruction Lights Comprising</b> 2 off Omnidirectional Lights, NVIS Red LEDs
15	<b>Digital Control System comprising:</b> 1 off 15" Multi Operator Control Screen (OCD) Panel Mounted 3 off Control & Power Distribution Unit (CPDU)
16	<b>Hanger Corner Lights comprising:</b> 4 off 0.6mtr Standard edge Lights, NVIS green LEDs
17	<b>Hanger Face Wash Lights comprising:</b> 2 off Wash Lights, NVIS white LEDs
18	<b>Marshalling Wands comprising:</b> 1 set of two hand held battery powered marshalling wands, mains charger, interchangeable covers, red, green, yellow, white.

#### 4 **Technical Data**

The power and lighting specifications of equipment shall be as followings:

Equipment	Input Voltage	Power	Light Source	Light Colour	Light Intensity	Beam Width
ASGSI	90-265V	550W*	LED	Red	5,000Cd Min	40 deg
	50/60 Hz			Amber	5,000Cd Min	40 deg
				Green	5,000Cd Min	40 deg
SHRS	90-265V	400W	LED	Green	100Cd/sq mtr	180 deg
	50/60 Hz					
Homing Beacon	24Vdc	50W	LED	Red	100Cds	360 deg
Wave Off	24Vdc	25W	LED	Red	50Cds	360 deg
Pilot Information	24Vdc	25W	LED	Red	50Cds	50 deg
				Amber	50Cds	50 deg
				Green	50Cds	50 deg
Hangar Edge	24Vdc	3W	LED	Green	100Cd/sq mtr	180 deg
Deck Edge	24Vdc	3W	LED	Green	100Cd/sq mtr	180 deg
Deck Wash	24Vdc	40W	LED	White	15 Lux@10mtr	45 deg
Deck Flood	24Vdc	40W	LED	White	100Lux@10mtr	40 deg
Stern Drop	24Vdc	3W	LED	Green	100Cd/sq mtr	180 deg
Overhead Flood	24Vdc	40W	LED	White	100Lux@10mtr	40 deg
OCD	90-265V	230W	N/A	N/A	N/A	N/A
CPDU	90-265V	100W	N/A	N/A	N/A	N/A

#### 5 **Technical Documentation**

The following documents are required:

- Cable Layout Drawings
- Mechanical Installation Drawings
- Cable Termination Details
- System Manual, includes Operator Instructions
- Technical Manual
- Factory Acceptance Test Record
- All document, 1 hard copies, 1 soft copy shall be provided

#### 6 **Support Services**

Bidder shall provide support services for the installation, Setting to Work, Harbour Acceptance and Sea Acceptance Trials.

#### 7 **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 UK 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.

**8 Spare Parts**

Price and list of recommended base spare parts and carried on-board spare parts for 30 days operation shall be provided.

**9 Training**

9.1 The bidder shall provide Operator Training at the buyer training facilities in Sattahip, Thailand.

9.2 The bidder shall provide Maintainer Training for 8 persons (2 times) at the bidder training facilities in the U.K.