



Thermal Imaging Cameras

Subject: Procurement Report
Date: 8th August 2019
Reference: HWFRS/58

1. Background

Thermal Imaging Cameras (TICs) are an integral part of fire fighting operations as they convert the heat radiation of objects and people into a visible image on a hand held portable device. The areas of application of thermal imaging cameras vary and range from searching for people in burning buildings and in the open (and thus subject to adverse weather usage), to determining sources and location of heat and fire in structures or vehicles.

Thermal Imaging Cameras are used by firefighters to assess fire gas plumes, and heat-permeable barriers, as well as using thermal images to identify victims trapped in fires and other more open areas (e.g. wide area search). They are also used to assess environmental conditions and identify potential hazards, such as assessing a building or objects for heat levels both externally and internally. This important information can then underpin the formation of a dynamic risk assessment (DRA) and improve firefighter safety.

Hereford and Worcester Fire & Rescue Service (HWFRS) operate 41, front line rescue appliances (large fire engines), as well as 11 additional large fire engines for training, Young Firefighters and fleet reserves.

Currently all front line appliance carry a Thermal Imaging Camera, also on water rescue vehicles and by Hazardous Materials, Environmental Protection Officers (HMEPO).

The Service currently has three different types of cameras in service with the following quantities having been purchased:

- 44 (purchased 2012)
- 7 (purchased 2017)
- 15 (purchased 2017/18)

The most prevalent and current Thermal Imaging Cameras purchased in 2012 is now 6 years old and is no longer available as manufacturing has ceased. Spares are difficult and costly to obtain presenting availability and repair issues for the Service. The Service therefore wishes to identify a suitable replacement of Thermal Imaging Camera to be used in its operational activities of equal or better quality and performance.

This document aims to provide a clear and transparent rationale for how the appropriate supplier has been selected to provide Thermal Imaging Cameras. The Service has assessed the appropriate procurement routes, the appropriate available partners and the relevant cost of those partners.

2. Service Review

The review of our Thermal Imaging Cameras provision was done through engagement/ consultation with service delivery via the Fleet Equipment Steering Group (FESG) on their operational requirements.

Market research has been conducted to explore the most recent advances in technology and suitability of products to meet the User Specification.

Camera Technology has improved since purchasing Thermal Imaging Cameras in 2012, the Service wish to understand advancements in technology and how current operational activities can be improved by purchasing a new camera. Listed below are some of the technological advancements available on current cameras.

- Longer Battery Life, current TIC 6 hours
- Better Image quality due to increased resolution
- Better image colourisation
- Wireless charging
- Multiple Modes (Fire Mode, Overhaul, size up. Inspection)
- Ability to configure the camera
- Digital zoom options, current TIC has no Zoom capability
- Electronic Compass
- Heat seeker
- Cold seeker
- Hot gasses monitoring
- Laser pointer
- Larger screens
- Extended temperature range
- Customised to end user

The option for a collaborative procurement was explored via the National Fire Chiefs Council (NFCC) Regional procurement forum on 4th February 2019 and again on the 24th June 2019:-

The responses were as follows:-

- Shropshire FRS don't currently have a requirement for Thermal Imaging Cameras but have jointly agreed to the specification for when purchasing cameras in the future
- Staffordshire and West Midlands FRS have recently renewed their Thermal Imaging Camera provisions so are not looking to procure.
- Warwickshire agreed to collaborate with HWFRS in a joint tender exercise, which would be lead by HWFRS

As part HWFRS review and finalising the process the following documents were agreed.

Finalising of Tender Documents

1. Invitation to Tender, Evaluation Criteria, Specification, Questionnaire **Appendix 1**
2. Pricing Schedule **Appendix 2**

The specification was agreed by the equipment's project officer, equipment manager and service delivery representatives and regional partners included the following headings:-

- Specification Requirements (10% and Pass/Fail elements)
- Mandatory Compliance (Pass/Fail)
- Technical Assessment- Trial Evaluation (30% and Pass/Fail elements)
- After Sales (20% and Pass/Fail elements)
- Price (40%)

The Authority requires a 3 year contract for the provision of Thermal Imaging Cameras with the option to extend for a further 2 years in 12 month increments.

The following tables provides an indication of potential volumes, subject to approval of budget and Integrated Risk Management Plan

Hereford and Worcestershire Fire & Rescue Service					
Financial year	2019/20	2020/21	2021/22	2022/23 Option	2023/24 Option
Thermal Imaging Cameras c/w retractable lanyard excluding batteries	17	17	16	10	10
Rechargeable batteries for the above 2 per camera if interchangeable	34	34	32	20	20
Desktop chargers	2	0	0	0	0
Vehicle Chargers	17	17	16	10	10

Warwickshire Fire & Rescue Service					
Financial year	2019/20	2020/21	2021/22	2022/23	2023/24
Thermal Imaging Cameras c/w retractable lanyard excluding batteries	30	N/A	N/A	N/A	N/A
Rechargeable batteries for the above 2 per camera if interchangeable	60(120)	N/A	N/A	N/A	N/A
Desktop chargers	4	N/A	N/A	N/A	N/A
Vehicle Chargers	30	N/A	N/A	N/A	N/A

3. Procurement

The Tender for the provision of Thermal Imaging Cameras was advertised on 14th June 2019, with a closing date for applications on 12th July 2019.

This collaborative exercise was undertaken as a mini competition lead by HWFRS through Lot 8- Thermal Imaging Cameras and Associated Products of the YPO Framework Agreement- 865 Emergency Response Equipment.

Supplier were able to offer more than one camera.

Lot 8 – Thermal Imaging Cameras

- Angloco Ltd
- Beechwood Equipment
- Terberg DTS (UK) Ltd
- Scott Health & Safety – part of the 3M Group Companies
- Clan Tools and Plant Ltd
- Level Peaks Associates Ltd

- Typhoon International Ltd
- Vimpex

See **Appendix 1** Appendix B Specification for full requirements.

4. Evaluation Stage

Evaluation Stages

- Stage 1- Evaluated Price (40%)
- Stage 2- Evaluated structured response to questions to;
 - Mandatory Compliance (Pass/Fail)
 - Specification Requirements (10% and Pass/Fail elements) and
 - After Sales (20% and Pass/Fail elements)
- Stage 3- Technical Assessment- Trial Evaluation (30% and Pass/Fail elements)
- Stage 4- No amplification/clarification requested

Evaluation questions were based on the following overarching criteria and weighted scores:

Award Criteria	Weightings
Price	40%
Mandatory Compliance	Pass/Fail
Specification Requirements	10% Pass/Fail
Technical Assessment- Trial Evaluation	30% Pass/Fail
After Sales	20% Pass/Fail
Total	100%

5 bids were received from the suppliers listed below.

Suppliers

1. Angloco Ltd
2. Terberg DTS (UK) Ltd (two Thermal Imaging Cameras were submitted by Terberg)
3. Scott Health & Safety – part of the 3M Group Companies
4. Clan Tools and Plant Ltd

Stage 1- Price (40%)

A full cost evaluation was carried out on all of the suppliers returned pricing schedules based on the contract period (3 years).

Stage 2- Mandatory Compliance (Pass/Fail); Specification Requirements (10% and Pass/Fail elements) and After Sales (20% and Pass/Fail elements)

The suppliers tenders submissions were reviewed against the above criteria and specification (**Appendix 1**) with the evaluation panel consisting of Equipment Manager and Procurement and Contracts Manager, agreeing, through consensus, an overall score for each question.

Stage 3- Technical Assessment- Trial Evaluation (30% and Pass/Fail elements)

The 5 cameras were assessed and scored following a Practical Technical Assessment held at Peterchurch Fire Station on 5th August 2019. These assessments enabled representatives from Hereford and Worcester Fire and Rescue Service and Warwickshire Fire and Rescue Service to assess the cameras based on the criteria identified within Appendix 3 of the Information To Tender.

The below table summaries the weighted scores achieved by the suppliers

Hereford and Worcestershire Fire and Rescue Service							
Criteria	Area	TOTAL SCORE AVAILABLE	Angloco Ltd	Clan Tools and Plant Ltd	Scott Health & Safety	Terberg DTS (UK) Ltd	Terberg DTS (UK) Ltd
Appendix 1	Specification Requirements	10% Pass/Fail	7.20% Pass	6.90% Pass	4.20% Pass	4% Pass	4.6% Pass
Appendix 3	Technical Assessment-Trial Evaluation	30% Pass/Fail	25.70% Pass	22.35% Pass	21.90% Pass	22.40% Pass	27.30% Pass
5	Mandatory Compliance	Pass/Fail	Pass	Pass	Pass	Pass	Pass
6	After Sales	20% Pass/Fail	20% Pass	19% Pass	19% Pass	19% Pass	19% Pass
7	Price	40%	25.21%	35.32%	25.95%	40%	39.13%
Total		100%	78.11%	83.57%	71.05%	85.40%	90.03%

Warwickshire Fire and Rescue Service							
Criteria	Area	TOTAL SCORE AVAILABLE	Angloco Ltd	Clan Tools and Plant Ltd	Scott Health & Safety	Terberg DTS (UK) Ltd	Terberg DTS (UK) Ltd
Appendix 1	Specification Requirements	10% Pass/Fail	7.20% Pass/Fail	6.90% Pass	4.20% Pass	4% Pass	4.6% Pass
Appendix 3	Technical Assessment-Trial Evaluation	30% Pass/Fail	25.70% Pass	22.35% Pass	21.90% Pass	22.40% Pass	27.30% Pass
5	Mandatory Compliance	Pass/Fail	Pass	Pass	Pass	Pass	Pass
6	After Sales	20% Pass/Fail	20% Pass	19% Pass	19% Pass	19% Pass	19% Pass
7	Price	40%	26.16%	36.50%	25.37%	40%	39.16%
Total		100%	79.06%	84.75%	70.47%	85.40%	90.06%



5. Recommended Decision

Terberg DTS (UK) Ltd is appointed for the provision of Thermal Imaging Cameras Flir K55 for both Services. HWFRS contract will commence on the 6th October 2019.

Contract Value would be £142,300 based on a 3 year contract, with the option to extend for a further 24 months.

6. Full Audit trail (including Specification/Scoring matrix)

<http://sharepoint1/sites/Procurement/Contracts/OperationalEquipment/HWFRS58%20Thermal%20Imaging%20Camera/Forms/AllItems.aspx?RootFolder=%2Fsites%2FProcurement%2FContracts%2FOperationalEquipment%2FHWFRS58%20Thermal%20Imaging%20Camera%2FTerberg%20Flir%20K55&FolderCTID=0x0120009D05EEB544C793498A0222A3F94F9233&View={EB315F1D-7D31-40FE-B7F4-74FEEDC5033D}>

Appendix 1- Invitation To Tender, Evaluation Criteria, Specification, Questionnaire	 Instructions To Tender TIC v4.docx
Appendix 2- Pricing Schedule	 Appendix G Pricing Matrix v2.xlsx