

AGENDA ITEM:

| | |
|----------------------------|--|
| REPORT TO: | MERSEYSIDE FIRE & RESCUE AUTHORITY |
| DATE: | 3rd December 2013 |
| REPORT NO. | CFO/140/13 |
| REPORTING OFFICER: | CHIEF FIRE OFFICER |
| CONTACT OFFICER: | AM SEARLE |
| OFFICERS CONSULTED: | SM MARTIN, SM EVANS (BA TELEMETRY 4G/INTERFERENCE PROJECT). |
| SUBJECT: | MFRS BREATHING APPARATUS ASSET REFRESH |

THERE ARE NO APPENDICES TO THIS REPORT

Purpose of Report

1. To request that Members approve the asset refresh of Merseyside Fire & Rescue Service Breathing Apparatus sets ahead of the planned schedule in order to access funding from the Department of Culture, Media and Sport Spectrum Clearance Award Panel.

Recommendation

2. That Members;
 - a) Approve the purchase of new Breathing Apparatus set excluding telemetry at an estimated cost of £219,000 s ahead of the planned schedule in order to access funding from the Department of Culture, Media and Sport Spectrum Clearance Award Panel.and note that the telemetry is expected to be funded by government grant (£133,000)

Introduction & Background

3. Under Government direction, Ofcom auctioned the 800 MHz frequency band to be used for "4G" telephony services. In [telecommunication systems](#), **4G** is the *fourth generation* of [mobile phone mobile communication](#) technology standards This was completed in January 2013. Due to the close proximity of the 4G services bandwidth to the bandwidth the UK Fire and Rescue Service telemetry equipment uses, a potential for interference has been identified.
4. Telemetry is an automatic electronic breathing apparatus control system which monitors the status of individual BA wearers from outside the risk area. A standard Entry Control Board (ECB) is augmented with a "radio base station",

with additional electronic displays, which is required for use with the telemetry equipment. This base station is referred to as an Entry Control Unit (ECU). Radio technology is used to connect "portable units" with "base stations". A "portable unit" is a radio unit attached to the firefighter's BA set which is used to transmit and receive data at pre-set intervals. The equipment provides a number of functions including :

- a) individuals "logged-on" to a base station at an incident. This is achieved by inserting an ID encoded tally key into the Entry Control Board (ECB);
 - b) The transmission of a distress alarm signal from a "portable unit" to any ECB in range;
 - c) The transmission of an alarm signal from a "portable unit" to any ECB in range indicating that the user is withdrawing from the incident for reasons of personal safety;
 - d) The transmission of an alarm signal from an ECB to all "portable units" logged on to the base station to cause an audible alarm on the "portable units" and initiate an emergency evacuation;
 - e) The transmission of an alarm signal from an ECB to a selected "portable unit" to cause an audible alarm and initiate an emergency evacuation of the "portable unit" wearer and any other members of the wearer's team;
5. Due to the potential interference, a Working Group led by the Chief Fire Officers Association (CFOA) with additional representatives from the Department for Communities and Local Government (DCLG) and the Office of Communications (Ofcom), was set up. The group have assessed the existing safety measures and subsequently developed a two phased solution which will manage the potential interference. This solution has been endorsed by both CFOA and DCLG. The Working Group also concluded that the loss of telemetry does degrade the safety measures provided for Firefighters.
6. The two phased solution includes,
- The initial re-tune of all current telemetry units to an interim frequency. This reduces the risk of interference from 4G technology. However this is an interim solution as there still remains a risk of interference from other short range devices.
 - Secondly, the Working Group recommended the requirement to secure another licensed allocation which will involve the development of new equipment (Technical Refresh).

MFRA Current Position

7. MFRA currently operate the Draeger PSS100 Breathing Apparatus set. This model was purchased in 2006/7 by MFRA and would normally have an asset life of about 12 years.
8. The scheduling of an asset refresh is based on a combination of the following factors;

- Statutory legislation: New or existing.
 - Manufacturers' recommendation/warranty: Manufacturers do not guarantee that the equipment will be fit for purpose after a definitive lifespan.
 - Obsolescence: emergence of new technology; existing technology no longer supported by manufacturers.
 - Lifelong condition/End of Life: wear and tear/fit for purpose
9. BA however is not regarded as a single piece of equipment for asset refresh. It comprises of five related elements, which can all have the above criteria applied to them;
- Back-plate & harness: Lifelong condition
 - Facemasks: Lifelong condition
 - Regulators: Manufacturers requirement; every 6yrs (fully swapped out in 2012).
 - Pneumatic hoses: Statutory Legislation; 12yrs; Due to be replaced in 2018.
 - Telemetry batteries; Manufacturers guidance/End of life; 6yrs; being replaced on a rolling programme.
10. Notwithstanding life cycles of individual parts of the breathing apparatus, the complete asset refresh for MFRA BA is scheduled for 2018 to coincide with the swap out of pneumatic hoses and the second swap out of regulators.
11. Breathing Apparatus Telemetry (BAT) successfully retuned all MFRA telemetry units to the interim frequency in March 2013.

BAT Working Group Current Position

12. BAT recommended a solution based on a licensed and protected bandwidth allocation. The Working Group is currently working with the telemetry and BA set suppliers to develop a telemetry solution operating on 469.875 MHz.
13. Department of Culture, Media and Sport (DCMS) are the lead Government department for the sale of spectrum for 4G services. They have established a Spectrum Clearance Award Panel (SCAP) to facilitate funding the process for all affected parties. (This includes UK FRS).
14. Based on the initial considerations of the working group it was proposed for government to pay for the replacement of telemetry alone. Merseyside would have got funded new telemetry but it would have a life of just 3-4 years since MFRA would expect to replace the whole of its Breathing apparatus assets in 2018 including the new telemetry (although the replacement in 2018 would not be funded)
15. Merseyside have been liaising closely with the working group to consider if it would be more cost effective to bring forward the procurement of the Breathing Apparatus to coincide with the new telemetry. The upshot of this is that MFRA would receive a full "set" with an approximate full life of 12 years.

16. MFRA does not currently have the year 2018 in its five year capital programme. The estimated cost of procuring full sets in that year is £352,000. The estimated cost of this Breathing apparatus without telemetry is £219,000. It is anticipated that the DCMS would pay the cost of the telemetry £133,000

Proposals

17. That MFRA;
- Bring forward the BA asset refresh from 2018 to 2015.
 - Synchronise the procurement strategy for BA with the Breathing Apparatus Telemetry (BAT) Working Group technical refresh of BA telemetry.
 - Purchase BA only without telemetry installed.
 - Collaborate with BAT Working Group to provide, finance and install telemetry on the new BA.
 - Include BA Telemetry Entry Control Boards in the asset refresh.
 - Utilise the existing BA procurement framework(s) as the preferred route to market.
18. Members will recall that they have already approved a planned BA cylinder replacement programme (1800L/207bar to 2400L/300bar) This is unaffected by these proposals.

Rationale

19. By adopting this approach, MFRA would;
- Secure funding for the telemetry installations through the BAT Working Group which draws the funding from the Department of Culture, Media and Sport, Spectrum Clearance Award Panel (SCAP). This funding will not be available in 2018.
 - Avoid replacing existing telemetry units in 2015 on BA that would then, require replacement within three years.
 - Include the current (Entry Control Boards) ECB's in the proposed asset refresh therefore opening up the market to other suppliers. The current Merlin Telemetry ECB's are not compatible with any other make of BA Telemetry currently on the market. Consequently, if Draeger (the supplier of the current ECB) do not win the procurement process MFRS would be left with Telemetry systems which are not compatible.

Equality & Diversity Implications

20. There are no Equality and Diversity implications resulting from this report.

Staff Implications

21. There would be training implications for;
- a) All operational personnel in the new BA set.

- b) All BA technicians to enable the testing, maintenance and repair of the new BA. If MFRS opted for a 'total care' package, the training requirement on BA Technicians will be less.

Legal Implications

22. Advice will be sought from Legal, Procurement and Democratic Services regarding the procurement process.

Financial Implications & Value for Money

23. The growth required in the capital programme for 2014/15 would be £219,000 for the purchase of full BA including ECB.
24. The estimated cost of the new telemetry is £133,000 and would be funded by the DCMS.
25. If just the telemetry was replaced now the authority would need to fund the full cost of the new telemetry in only 4-5 years time when the BA is replaced.
26. The growth in the capital programme would ordinarily be funded by additional borrowing. However given the relative small scale of this investment the DCE considers that this can be maintained within the current capital programme because of variations in other areas with no increase in anticipated borrowing. The DCE will report in more detail in the budget process on the overall capital programme
27. In order to qualify for funding under this approach the government has indicated Merseyside must:-
 - a) Costs are only allowable up to an agreed fixed ceiling figure.
 - b) Implementation must be inside the project time-line of March 2015.
 - c) Replacement BA equipment must include telemetry and the unit numbers must not increase as a result of the procurement.
 - d) All redundant telemetry units will be returned to the supplier, for possible future use by the project team. If these units are not required, they can be disposed of by the supplier.
28. In order to ensure that procurement timescales are met it is expected to make use of existing framework arrangements.

Risk Management, Health & Safety, and Environmental Implications

29. MFRA has been operating BA telemetry successfully for six years.
30. The revised TB 1/97 and the national guidance for BA operations that is due to be published acknowledge that BA telemetry enhances Firefighter safety.
31. The provision of new BA with integrated BA telemetry will assist MFRS in creating 'Safe, Effective Firefighters'.

Contribution to Our Mission – To Achieve; Safer Stronger Communities – Safe Effective Fire-fighters”

32. The purchase of new BA sets with Telemetry which operate on a new frequency will eliminate the risk of interference and enhance the safety of our Firefighters.

Glossary

BA Breathing Apparatus

ECB Entry Control Board

CFOA Chief Fire Officers Association

SCAP Spectrum Clearance Awards Panel

DCLG Department for Communities and Local Government

OfCOM Office of Communications

BAT Breathing Apparatus Telemetry

TB Technical Bulletin