Tyne & Wear Fire and Rescue Authority

ICT STRATEGY

2012-15

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1. INTRODUCTION

1.1. ICT is a key element of the infrastructure underpinning TWFRA's service delivery, organisational efficiency and effectiveness. The availability and capacity of new technologies is subject to rapid development, with new possibilities and products available every year. TWFRA has embraced and benefited from many of these developments, whether independently or as part of national projects such as Firelink. ICT has supported operational delivery through significant improvements in communication and the availability of live risk information; it has also enabled efficiency through server virtualisation and increased network capability.

1.2. However, given the ever changing nature of technology and the requirement to operate within a smaller financial envelope under the Comprehensive Spending Review 2010, it is essential that the Authority has a clear position on how ICT will be used as an enabler, and the level of investment required to support this over the coming years.

1.3. This ICT Strategy is a key corporate document which outlines how the Authority intends to optimise the use of ICT in order to achieve its objectives. It is underpinned by the ICT element of the Asset Management Plan which sets out in detail the ICT assets owned by the Authority and the use made of these.

2. Strategic context

2.1 The ICT Strategy sets out our medium to long term plans for the use of ICT to support the delivery of the four corporate goals:

- To prevent loss of life and injury from fire and other emergencies and promote community wellbeing
- To respond appropriately to the risk
- To plan and prepare for exceptional events
- To deliver a modern, effective Service ensuring value for money with staff that reflect the communities that they serve

2.2 The resources associated with the ICT Strategy are agreed by Authority through the Capital Programme and Medium Term Financial Strategy.

2.3 The ICT strategy is not a technical document or an action plan for the ICT team. It relates to the use of ICT to underpin the priorities of the whole organisation, and is owned by SMT and managed through the organisation's ICT Steering Group.

2.4 The relationship between the ICT Strategy and overall corporate strategy is shown below:

| Local priorities- Sustainable Community Strategies | National guidance | Political will | Integrated risk mgt | Current and desired future performance |

Strategic Community Safety Plan (Corporate Plan)

Key corporate strategies (medium term financial strategy, **ICT Strategy**, HR strategy, asset management plan etc)

Spending Review and budget savings

Service and District Plans

Personal work programmes

3. ICT objectives

3.1 In delivering the corporate goals, the specific aim for the use of ICT is:

To provide fit for purpose, cost effective information and telecommunication systems to support service delivery

3.2 The specific objectives for the use of ICT are:

a) To provide applications and devices which support effective service delivery.

b) To maintain resilient network and communication infrastructure

c) To provide support to all users of ICT systems

d) To facilitate efficiency across the organisation by supporting data integration, process improvement and reduced duplication

e) To ensure data and communications are secure and resilient

f) To link with national and regional developments in ICT systems where these assist in delivering our other ICT objectives

g) To make discriminating choices about which new technologies to embrace, based on a long term view of need and understanding of developments in the marketplace

4. Overview of system requirements

4.1 In order to deliver the objectives set out above, the following are considered to be the requirements of the organisation. The specific technologies and equipment used to deliver these functions is described in detail in the Asset Management Plan.

a) To provide applications and devices which support effective service delivery.

- Devices to access ICT services (PCs, laptops, tablets, mobile data terminals etc) appropriate to all roles, locations and modes of working eg remote access
- Intranet to provide easy access to services and information
- Web based communication channels to enhance community safety (eg website, email, social media)
- Effective, secure and reliable telecommunications between Control, stations, appliances and officers to support mobilising, command and control (including fireground and mainscheme radios (Airwave), pagers and alerters and ICCS)
- Effective, integrated systems for sharing live risk and performance data across the organisation and beyond
- Ability to capture, report and performance manage incident information.
- Effective systems for workforce planning, staff management and deployment, and maintenance of training records
- Effective systems for tracking, managing and testing vehicles and equipment
- Systems to support incident assurance and investigation
- Systems to manage the carbon output of buildings
- Budget planning and financial management systems
- Systems to support electronic procurement and requisitioning
- Geographic Information Systems (GIS) and Gazetteer systems
- Asset tracking system
- Provision of ICT based learning and development packages
- Closed Circuit Television (CCTV)
- Targeting systems to support community safety work

b) To maintain resilient network and communication infrastructure

- Telephone and data networks
- Servers including virtual servers
- Data storage eg Storage Area Network (SAN)
- Network management systems
- System integration hardware/software

c) To provide support to all users of ICT systems

- Provision of technical advice, assistance and basic training to end users s
- Repair, maintenance and upgrade of desktop hardware, networks, fixed and mobile telephony
- Administrative support of file servers, mail servers and application servers (including Financial, Payroll, Mobilising, Management Information System, Document Management, Protection and Technical, Corporate Planning etc)
- Provision of training in the effective use of ICT in delivering individual roles

d) To facilitate efficiency across the organisation by supporting data integration, process improvement and reduced duplication

- Provision of middleware to reduce multiple systems and data sources
- Support for process improvement work to minimise multiple keying in/analysis of data
- Support for electronic data capture and reduction in paper based systems

e) To ensure data is secure and resilient

- Access to hardware, applications and information based on requirements of the role
- Unique logons and two factor authentication (e.g. Smartcards) to access sensitive data.
- Protection of data through backups and firewalls
- Appropriate information security policies
- Business continuity/backup arrangements for failure of key systems

f) To link with national and regional developments in ICT systems where these assist in delivering our other ICT objectives
- Systems to support the requirements of Firelink and interoperability between emergency responders
- Systems to support integrated provision of Mobilising functions as required at the regional level

g) To make discriminating choices about which new technologies to embrace, based on a long term view and understanding of developments in the marketplace
- Maintenance of understanding of developments in ICT whether fire specific or generic
- Application of strategic principles and priorities in developing/procuring new solutions (see below)

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5.   Strategic priorities

5.1   In providing the ICT systems required to deliver organisational priorities, strategic choices must be made about which priorities are the most important, and how ICT should be used in delivering them.

5.2   In terms of deciding priorities for the use of ICT, TWFRA will use the following criteria:

a) Systems essential to maintain command, control and operational delivery. This includes development of new systems, or provision of replacement systems linked to contract lifespan, recognised capacity problems or need for greater functionality

b) Systems essential to the achievement of IRMP actions

c) Systems which facilitate efficiency but are not linked to IRMP actions

5.3   Priority projects will be determined using these criteria, which should be explicitly considered as part of the process of submitting Capital Appraisal forms (CAFs) for ICT related projects (see Delivery, section 6).

5.4   The following strategic decisions have been made which shape the priorities for ICT for 2012-15.

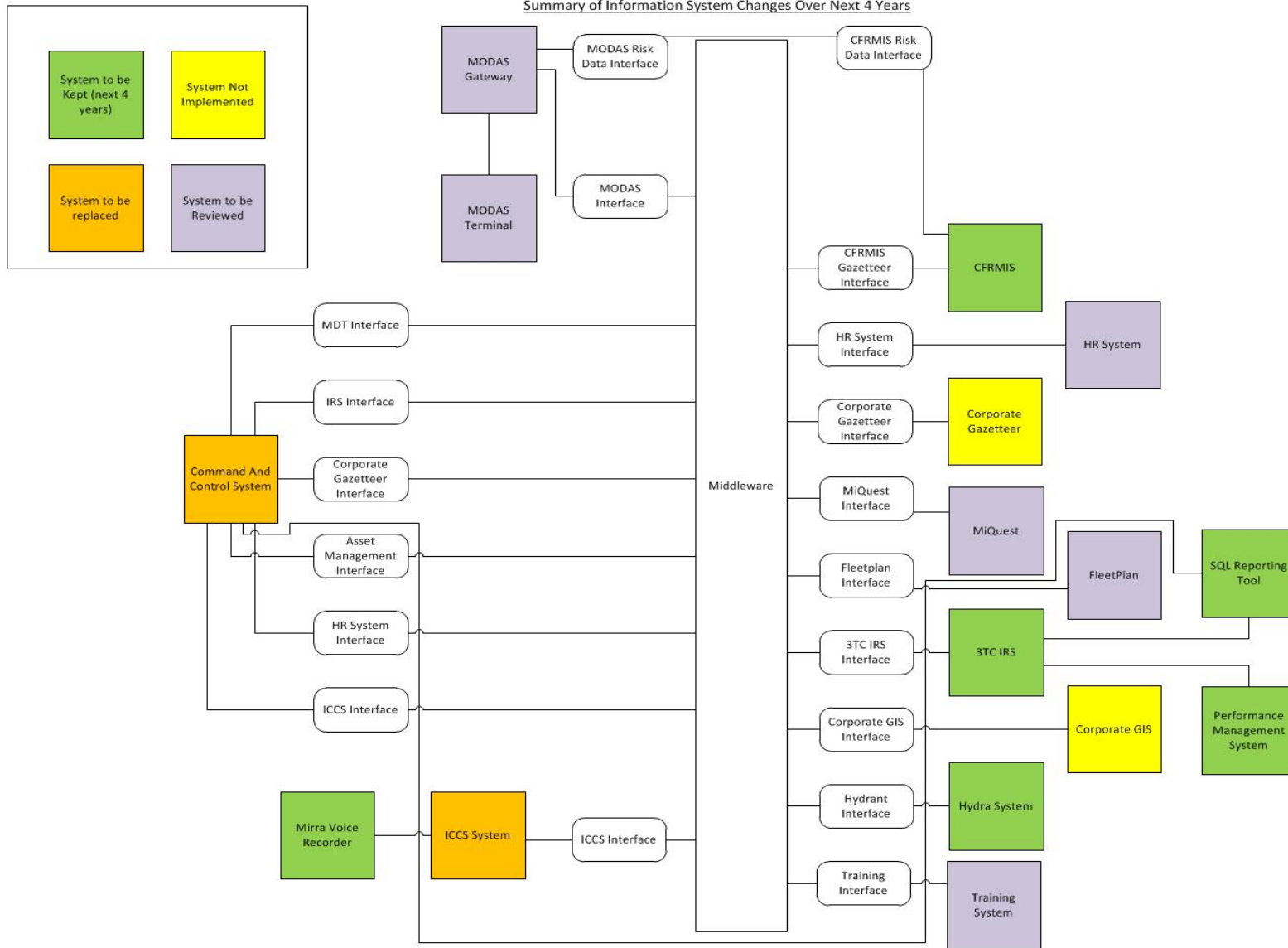## 5.5 Mobilising and Control are the primary development priority for ICT

5.5.1 The replacement of the existing Mobilising system, including enhancements to the command and control function and the embedding of new/modified processes are the key strategic priority for ICT over the life of this Strategy. This level of priority is determined by the fact that:

- An effective and resilient mobilising system is required to support all operational priorities
- This is an IRMP priority for 2012-14, influenced by the demise of RCC and the resulting need to replace our systems by 2014 based on their projected lifespan
- The project is essential but high cost and resource intensive; it needs a high level of investment, project management and staff input across the organisation to ensure it is delivered effectively and efficiently
- A wide range of ICT systems are required to integrate in order to provide effective mobilisation, and this project provides the opportunity to achieve greater systems integration which will support future efficiency beyond the project

5.5.2 The diagrams overleaf illustrate the areas where ICT development is required as an enabler of the new command and control system. These assume that:

a) The project is based on the retention of some systems and the replacement or review of others as shown in Diagram 1

b) Middleware is used to provide integration of systems. The interfaces required to allow the command and control system to link through BizTalk should be included in the technical specification and procurement process for the command and control system

c) Interfaces provided through middleware are prioritised based on whether they are top priority *(essential* to delivering the Command and Control Project), or second priority (*desirable* from a Mobilising or efficiency perspective)- shown in Diagram 2

d) The priority interfaces for the use of middleware are those shown in orange on Diagram 2, ie the MODAS interface, MDT interface, ICCS interface, MIS interface (those elements concerned with mobilising as opposed to record keeping), IRS interface/3TC IRS interface. Other interfaces shown in the diagram will be built into the work programme only after the essential systems have been put in place

e) A gazetteer should be built into the technical specification to enable the command and control system; the rationalisation of existing GIS systems and gazetteers is desirable but of lower priority than the above

f) Creation of a single Asset Management interface (ie rationalisation of Miquest/Fleetplan) is desirable but not essential to the Command and Control Project because asset based mobilising is not part of the objectives of the project. As such it is lower priority and ICT developer time should not focus upon this until work on the command and control technical specification is complete.
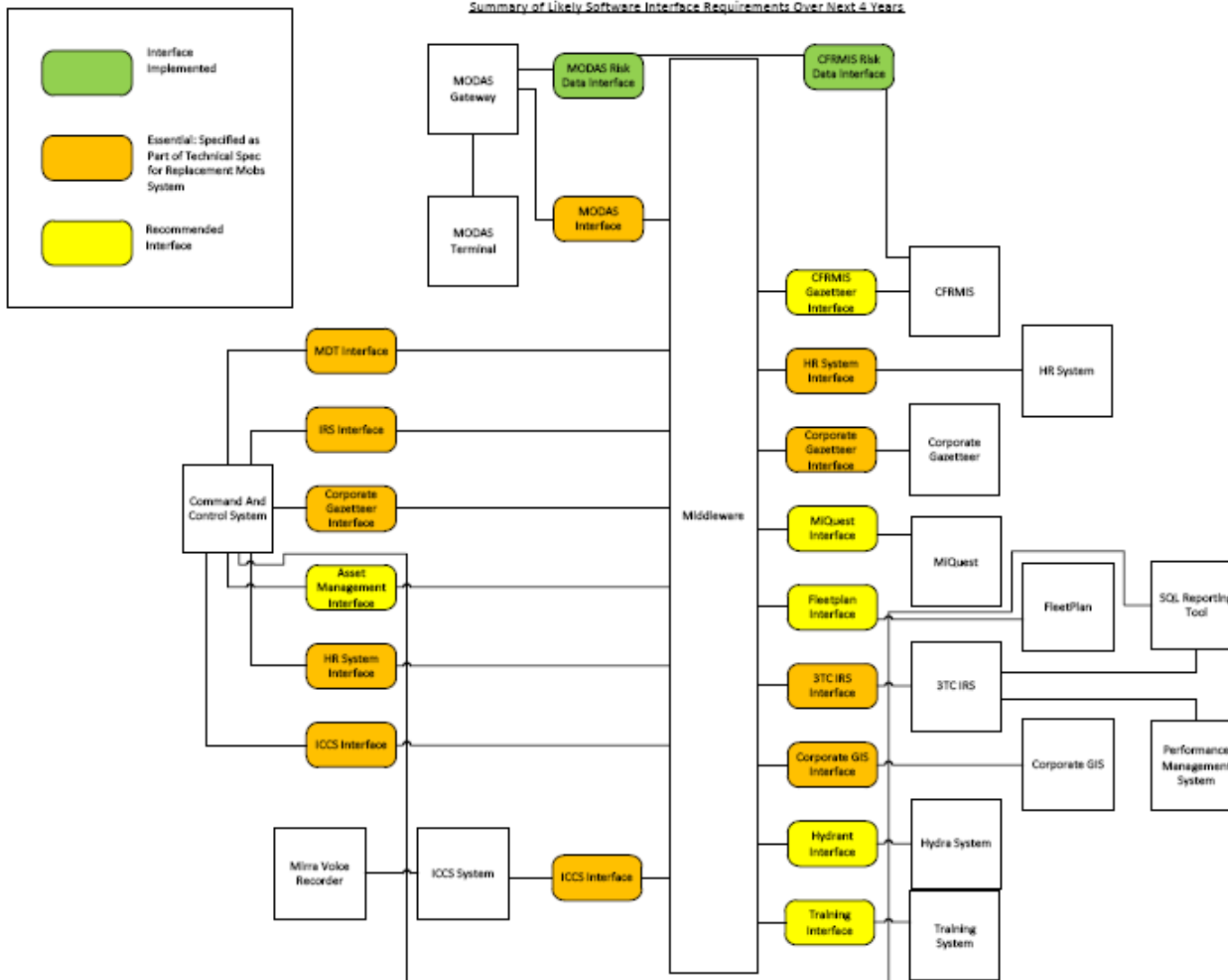
5.5.3 This project will require input from staff across the organisation and specifically across the ICT function whether in development, communications systems or infrastructure/support.

Summary of Information System Changes Over Next 4 Years

Summary of Likely Software Interface Requirements Over Next 4 Years

Legend:
- Interface Implemented (green)
- Essential: Specified as Part of Technical Spec for Replacement Mobs System (orange)
- Recommended Interface (yellow)

5.6 HR Management Information System (HRMIS) upgrades are the second ICT development priority, linked to the Command and Control Project

5.6.1 TWFRA has a range of systems in place which contain staff data used for a variety of purposes. These include:

- HR Management Information System (MIS) providing rostering, HR, training course management and incident management functions
- Occupational Health database
- Recruitment database
- SAP payroll system (Sunderland Council)
- Contacts list
- RedKite
- Mobilising system
- Intranet
- Miquest asset tracking system
- Security system
- CFRMIS

5.6.2 The rationalisation and integration of these systems is *desirable* because multiple systems cause inefficiency through multiple data entry. This has been identified as an issue through the review of back office services 2010/11

5.6.3 However, the integration of the functionality of key elements of the MIS is *essential* because:

- The top priority Command and Control Project has dependencies on some elements of this (need to integrate staffing, training and location details of staff in order to mobilise effectively)
- The core MIS, supplied by 3TC in 2001, is likely to become unviable in the near future due to the inability of the company to support and develop the present product
- Though it has a web interface, the current MIS has a back end containing over 700 tables with no relationships defined between them in the database

5.6.4 It is considered that a single off the shelf system meeting all the requirements of MIS is unlikely to be available, so the presumption is that a number of smaller systems will be used to replace the functionality of the MIS and Middleware will be used to as a platform to marry systems into a cohesive HR solution. A decision on whether a COTS (Commercial of the Shelf) system or a bespoke development will need to be considered for each MIS element e.g Training.

5.6.5 Priority will be given to those elements of MIS essential to support command and control (rostering, training course management, incident management). Elements of MIS/other applications which support other key HR business systems (eg HR, recruitment, occupational health, flexi) are of lower priority

and will only be progressed when there is capacity after the priority elements are complete.

5.6.6 A further strategic requirement of any replacement system is that it be "self service" via a web portal.

5.7 Fireground radios will be upgraded to Digital

5.7.1 Fireground radios are one of the most risk critical items of equipment used by operational firefighters to maintain command and control of incidents. Effective communications are essential to support operations and provide an integral part of the incident ground safety framework. It is considered that radio provision is an area where TWFRA should seek to continue to develop the functionality of radio communications as new technology develops.

5.7.2 TWFRS therefore intends to upgrade fireground radios to digital in the light of:

- Significant recent developments in radio provision in recent years particulary in relation to digital technology
- Issues identified through testing of the current handsets and potential Intrinsically Safe models. Work with suppliers of the latter, and extensive inhouse testing, showed differences in audibility levels and signal strength in environments with high levels of background noise, and where firefighters are working within structures comprising of high concentrations of concrete or steelwork

5.8 Improvements will be sought to communications infrastructure in specific locations

5.8.1 TWFRS intends to work with partners to improve ability to communicate in emergency situations in specific locations including Eldon Square, NEXUS/Metro and the Tyne Tunnel. These locations present specific challenges in terms of infrastructure and signals.

5.8.2 The service will engage with partners and seek collaborative approaches to improving communication in these situations, to the benefit of both ourselves, partners and the wider community in terms of enhanced community safety.

5.9 SAP is retained as the financial management system of the organisation

5.9.1 TWFRA's budgetary control and payroll activities are supported by the SAP system which is provided through a service level agreement with Sunderland City Council covering a range of financial services.

5.9.2 Although there are alternatives to the use of SAP, changing systems would incur considerable cost and effort without providing significant additional functionality, as well as impacting on the viability of our wider collaborative arrangements for financial services with Sunderland City Council (which have been shown through the back office review to deliver high quality).

5.9.3   SAP is therefore assumed to be a fixed point in TWFRA's ICT strategy.

5.9.4   Consideration may be given to SAP in terms of systems integration, and should be included in future proposals for system integration through middleware, but as a lower priority which will only be progressed when there is capacity after the priority elements are complete.

5.10   Work will continue to maximise the efficiency and effectiveness of networks, servers, PC's and end user devices.

5.10.1 During 2009-11, the Authority invested in a refresh of the Wide Area Network which significantly increased bandwidth whilst reducing network costs by £27,000. This in turn enabled work to virtualise servers and manage equipment remotely, reducing hardware support costs.

5.10.2 Whilst it is not envisaged that further investment in the network will be required during the life of this Strategy, the end of the current network support contract in 2012 provides the opportunity to explore the best mode of delivery of network support (outsourced, insourced etc) and TWFRA will work to determine whether efficiency can be increased at this time.

5.10.3 PC's and other devices used to access information will continue to be replaced as part of an ongoing rolling programme as detailed in the ICT Asset Management plan. Where efficiency can be demonstrated through the implementation or adoption of new devices, that are fit for purpose, then new devices may be adopted.

5.11 Further development of Business Intelligence (BI) tools will continue.

5.11.1 Following work to upgrade the Incident Recoding System (IRS) work has begun to embed business intelligence tools into the intranet with many reports now being delivered through a web interface.

5.11.2 Performance reporting tools and management tools have been delivered via the intranet with regular enhancements made by the ICT Development Team.

5.11.3 It is proposed that any further development of business intelligence tools will be developed using Microsoft technologies to ensure best value in products already purchased by the organisation and a consistent look and feel for end users.

5.11.4 Given the expected change of key information systems and the ever changing information reporting requirements the use of business intelligence tools will evolve over a number of years and is not expected to have an 'end date'.

5.12 Maintenance and support of FireLink

5.12.1 The maintenance and support of FireLink equipment will continue. The transition of FireLink related activity from the FireLink implementation project team to other functions will be managed.
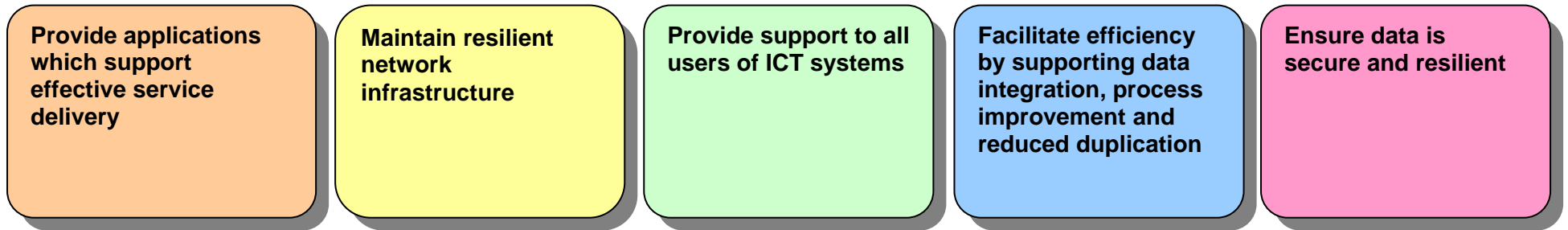
5.12.2 As part of the Command and Control Project work to improve the utilisation of traffic units on the airwave network will be undertaken with the expectation in reducing the traffic unit usage by utilising data messages in preference to voice messages.

5.12.3 Work to support CLG on the 'Emergency Services Mobile Communications Programme (ESMCP)' will be undertaken as and when required.
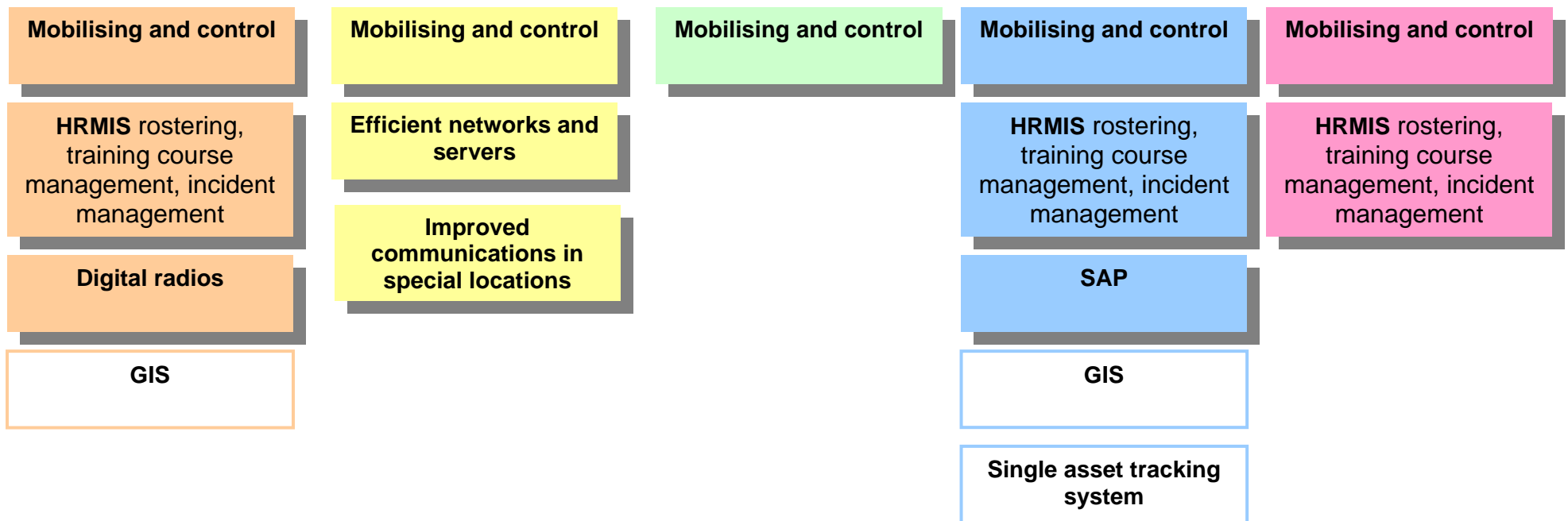
5.13 Summary of strategic priorities

5.11.1 The diagram overleaf summarises the strategic priorities linked to the ICT objectives.

Provide applications which support effective service delivery	Maintain resilient network infrastructure	Provide support to all users of ICT systems	Facilitate efficiency by supporting data integration, process improvement and reduced duplication	Ensure data is secure and resilient

Link with national and regional developments in ICT systems where these assist in delivering our other ICT objectives

Make discriminating choices about which new technologies to embrace

Mobilising and control	Mobilising and control	Mobilising and control	Mobilising and control	Mobilising and control
HRMIS rostering, training course management, incident management	Efficient networks and servers		**HRMIS** rostering, training course management, incident management	**HRMIS** rostering, training course management, incident management
Digital radios	Improved communications in special locations		SAP	
GIS			GIS	
			Single asset tracking system	

6.   Delivery

6.1   The strategic priorities outlined above translate into a number of detailed programmes of work against which resources will be allocated and progress managed. This section gives a high level account of the planned work programmes and the outcomes that are sought. Lower priority activities are shown in italics.

6.2   The delivery of these programmes will be carried out through the Authority's processes for planning, resource allocation, project management, performance management and evaluation. Service Management Team (SMT) will ensure that such actions are included in high level strategies; that resources are allocated to these as appropriate; and that targets are set and progress reported and managed.

6.3   In terms of resource allocation, ICT projects are subject to the same process as all others in terms of acceptance or otherwise as part of the Capital Programme. This means that Capital Appraisal forms will be completed for all relevant projects and the ICT Steering Group will ensure that these are robust and in line with the ICT Strategy before they go forward to the Asset Management Group.

6.4   This process is intended to ensure that ICT priorities are identified through consideration of wider organisational priorities, and are properly planned and resourced, realistically considering all resource requirements including officer time and the wider implications of implementing the proposed project on the whole organisation (roll out times, training requirements etc).

6.5   Where detailed scoping work cannot be completed or requires significant input from the ICT Team to arrive at a realistic assessment of resources required (ie feasibility work), a separate business case should be produced to allow staff resources (and any consultancy costs) to be allocated to this work before proceeding to a full project.   The CAF form can be used for this purpose.

6.6   All ICT projects will be managed in accordance with the Authority's project management framework as set out in Admin Procedures 08.02 to 08.04. This includes the identification a register of live projects will be maintained by the ICT Steering Group, which will also monitor delivery of the projects in terms of adherence to timescale and cost.

6.7   The cross cutting ICT Steering Group will support and monitor the delivery of the ICT programme, chaired by the Area Manager: Strategic Planning and Communications. The terms of reference of the group are set out in Appendix 1.

6.8   Relevant actions will be incorporated into the annual Level 3 plans of specific service teams; and managed through the corporate performance management process.

Programme	Deliverables	Lead/ involvement
Mobilising and control	Deliver a replacement solution for mobilising and control processes to be operational by 2014 • Procure replacement command and control and ICCS systems • Provide integration of replacement systems with the MODAS, CFRMIS risk data, IRS and HRMIS systems via development of system interfaces and use of Middleware • Provide hardware, infrastructure and telecommunications to support decision re location and processes for Control • Build in capacity for collaboration where this is shown to be desirable/feasible	**Lead: Command and Control Project Manager** SMT ICT Procurement Estates Performance Response Support
HRMIS	Replace those elements of MIS which are essential to the delivery of the Command and Control Project • Rostering • Training course management • Incident management	**Lead: AM:HR** HR ICT Command and Control Project Manager
CFRMIS	The CFRMIS System will be further enhanced to: • Have a web interface • Better integrate with email (supporting workflow) • Link with the new command and control system	**Lead: AM: Community Safety**
Further systems integration	• Determine a preferred single asset tracking system *(currently using Miquest and Fleetplan)* and migrate all relevant data to the chosen system • Review requirements for GIS and determine a preferred GIS system. Consolidate current systems and develop interface between solution and other relevant data systems through Middleware	**Lead: AM: Corporate Support** ICT Corporate Support (Procurement/ TSC) Command and Control Project Manager **Lead: AM: Strategy and Performance** FSEC Performance and Stats ICT Response Support

Programme	Deliverables	Lead/ involvement
		Service Delivery Command and Control Project Manager
Performance Management systems	• Maintenance of existing Performance Indicators • Implementation of HR Performance Indicators • Implementation of Carbon Monitoring Indicators	**Lead: AM: Strategy and Performance** ICT Perf & Stats
Support for business process improvement/ back office reviews	• Occupational Health e booking system • E enabled Recruitment and Selection	ICT HR/L&D
Incident ground communication	• Upgrade fireground radios to Digital • Work with partners to improve and harmonise repeater infrastructure at Nexus/Metro, Eldon Square, Tyne Tunnel, and any transportable provision.; identify and survey additional locations • Reprogramme fireground radios in light of above • Procure replacement for Transcomm data bearer ensuring compatibility with existing systems	**Lead: AM: Strategy and Performance** ICT Response Support
Networks and servers	• Develop business case for future approach to network support (continued outsourcing, insourcing etc) after expiry of current contract in 2012. Implement to achieve best value solution. • Further reduce the server estate and carbon footprint of the organisation by utilising virtualisation technologies. Maintain present levels of availability for Servers and Network. • Achieve network and server availability of 99.9% • Develop a robust mobilisation network to support the new command and control system.	**Lead: AM: Strategy and Performance** ICT
Business continuity and data security	• Revised policies and procedures in line with ISO27001 and BS25999 standards. • Assist with the implementation of a protective security marking strategy	**Lead: AM: Strategy and Performance** ICT
Improved access	• Further deployment of smartphones and remote access to information (away from service sites).	**Lead: AM: Strategy and Performance**

Programme	Deliverables	Lead/ involvement
		ICT

6.9   Resources will be allocated to ICT projects through the strategic planning and budget setting processes.

6.10   A high level project plan for delivery over the 4 years will be set, updated and agreed by the ICT Steering Group and ICT Telecomms Group. Note that ICT projects will be broken down into specialty areas of Infrastructure, Telecommunications, Development and Helpdesk.

7.   Making discriminating choices: principles for selecting or developing new ICT solutions

7.1   When a new ICT solution is required, the following principles will apply.

Prepare a technical specification

7.2   Once the business case for an ICT development is proven and a decision made to proceed, a technical specification should be prepared setting out what the system is required to deliver and the standards the system is required to meet.

7.3   The presumption in setting standards should be fitness for purpose rather than cutting edge/best in class, unless a compelling business case has been clearly established for the latter.

Where possible, use applications already available in the organisation

7.4   If existing systems can produce an application which meets the business and technical requirements at reasonable cost, it should be used. The reasoning behind this is that it gives better value for the money already invested in that system; it minimises proliferation of new systems; it reduces change for the organisation; and it can allow ICT development staff to focus on developing or procuring new systems where these are needed due to no existing capacity.

When procuring new applications, ensure they are capable of integrating with existing systems, eg via Middleware

7.5   Middleware has been introduced into the organisation as a means of promoting systems integration and, over time, reducing the number of systems we are using. Applications should not be bought which do not follow this principle of integration.

Work towards single applications which can be used in different contexts

7.6   TWFRS has a legacy of disparate systems which do similar but not identical things. Examples include a number of Geographical Information (GIS)

systems, and two different systems for asset tracking (Miquest and Fleetplan). In the interests of efficiency, we should not procure any new systems which add to this complexity, and should seek to select and move towards single applications which can be used by different parts of the organisation.

Use standard, off the shelf packages rather than developing our own or commissioning one off products

7.7 This has the potential to reduce cost and developer time, and also to reduce dependency on a supplier who may have developed a tailored product.

Use proven suppliers and technology

7.8 Tenderers should be required to demonstrate a track record of reliably delivering similar solutions either in FRS or related services, to avoid problems of implementation or long term inadequacy to our needs.

Seek to avoid a proliferation of suppliers

7.9 Integration of systems is more difficult if there are issues relating to the connectivity and contractual arrangements between different suppliers. TWFRA will seek to work with a smaller number of suppliers whilst adhering to good procurement practice and the TWFRA Procurement Strategy whilst being aware of the risks of dependency on particular suppliers.

Appendix 1

ICT strategy: roles and terms of reference

Authority

Role in relation to ICT Strategy:

- Approve the ICT Strategy
- Approve and monitor relevant capital expenditure as part of the Capital Strategy

SMT

Role in relation to ICT Strategy:

- Ensure that a clear ICT strategy is produced which is consistent with, and supports the Authority's strategic priorities and IRMP
- Assume lead roles on specific projects as required in the ICT programme

Asset Management Group (AMG)

Role in relation to ICT Strategy:

- Produce and maintain the Asset Management Plan which includes a section on the management and development of ICT assets
- Plan, manage and monitor the ICT elements of the capital programme
- Investigate slippage of estimated expenditure and funding against the approved
- capital programme and take action as appropriate

ICT Steering Group

Membership
Area Manager: Strategy and Performance (Chair)
ICT Manager
Procurement Manager
Relevant level representative from:
Corporate Support
HR
Service Delivery
Community safety (Response Support)
Representatives from other Departments as/when required.

ICT Steering Group

Terms of Reference:

- Facilitate the development of the ICT Strategy by fostering understanding of the ICT implications of wider priority tasks
- Ensure that CAFs submitted for ICT projects are robust and in line with the ICT Strategy
- Maintain a register of current ICT projects agreed under the ICT Strategy, and ensure adherence to these as priorities
- Act as a project board for ICT projects, ensuring that they are completed to time and budget