Digital Strategy
2018-2021

Working together for a safer Scotland

Safety. Teamwork. Respect. Innovation.

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1. FOREWORD

The SFRS Digital Strategy 2018-21 looks forward to further development of use of technology within SFRS to build on the successes delivered by the previous digital strategy in delivering change supported by technology in the Service.

It aims to address the challenges of the Fire Framework and objectives of the Strategic plan including a more outward looking approach to enhance partnership working as well as working within guidelines on digital development and cyber resilience from UK and Scottish Government.

The new Strategy will continue to support the ongoing development of the Service as we continue to address our objectives and challenges.

Sarah O'Donnell
Director of Finance and Contractual Services

2. REVIEW OF 2013-2017 DIGITAL STRATEGY

The vision of the 2013-17 Digital Strategy was

'We want our people to have access to the right information on the right device at the right time'

which was to be delivered through a range of projects aligning to a set of four principles. Progress on the delivery of the Strategy has been significant and in terms of the four principles could be assessed as follows:

- **Access from anywhere with any device** – we have achieved partial success in this area with wider access from SFRS premises to corporate and some legacy solutions eg a user can sit in any SFRS location and log in to their account giving access to email, file systems and corporate solutions such as iTrent (HR/ Payroll) and TechOne (Finance). Most of the new applications which have been developed, or are currently in development, are cloud based so can be accessed from anywhere with an Internet connection as well as SFRS locations eg Community Safety, Operational Intelligence, Community Asset Register and many more.

  There is still further progress to be made to allow full access from anywhere with any device and projects in the new Digital Strategy will address the increased provision of these services.

- **Innovation and responsiveness built in to everything we do** – the solutions which have been delivered have made use of the most appropriate and innovative technologies to meet business requirements. Responsive design allows our solutions to be used easily on different devices such as PC, tablet and smart phone and the use of cloud based solutions provides access from anywhere with an Internet connection and highly resilient and robust off site infrastructure simplifying business continuity provision.

- **User centred design – people will be at the heart of everything we do** – the systems and solutions which have been delivered and are in development are based entirely on business user requirements. ICT work closely with business representatives using Agile development techniques to understand their requirements and deliver solutions to meet their current and future needs. All solutions and products have been delivered in line with strict accessible design standards and use Plain English as far as possible.

- **We will align all of our work with government strategies** – both UK and Scottish Government digital strategies and guidelines have been referenced in the development of ICT projects and technical strategies particularly in terms of the move to cloud computing. 'digital first' or 'digital by default' has been adopted to not only improve our systems but also our business processes eg selfservice access to HR/Payroll.

The Digital Strategy Vision was supported by three annual plans covering the period of the Digital Strategy and progress on those is detailed below:

We said we would 2014/15:

- 🟩 Work to consolidate all our different data streams and business systems as we continue to integrate the Service's digital provision

- 🟧 Deliver projects that rationalise our business applications such as HR/Payroll, Command & Control and Operational Intelligence systems

- 🟩 Make sure that ICT provision is ready to enable the Service's property strategic intent plans

- 🟩 Ensure that our systems are secure and that we have licences for everything we use

- 🟧 Develop robust policies and procedures for using ICT in the Service

- 🟧 Further develop our infrastructure and enhance our core services like telephony, our wide and local area networks (WAN and LAN) and take up services provided by the Scottish Wide Area Network (SWAN)

We said we would 2015/16:

- 🟩 Further develop our infrastructure and enhance our core services like telephony, our wide and local area networks (WAN and LAN)

- 🟧 Continue to develop on-going projects that further rationalise our business systems such as Business Intelligence, and applications such as crewing and availability, and asset management in line with the Service's priorities

- 🟩 Make sure that ICT provision is ready to enable the Service's property strategic intent plans

- 🟥 Develop a print strategy to ensure that the Service is achieving best value and delivering savings in terms of how much printing of materials takes place

- 🟥 Develop a range of enhanced user mechanisms, including self-service and training provision to suit user needs and to ensure consistent customer service standards

We said we would 2016/17:

Further develop our infrastructure and enhance our core services. Consider and commence an asset replacement programme, and prepare for the Firelink replacement programme

- 🟧 Continue to develop projects that enhance and renew our business applications such as prevention and protection applications, training provision/elearning, facilities management

- 🟩 Make sure that ICT provision enables the Service's strategic intent plans

- 🟥 Provide fully accessible teamsites to allow collaboration with colleagues and external partners

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- 🟩 *denotes where activities have been completed on time and to budget*

- 🟧 *denotes where activities have been partially completed or completed outwith timescale*

- 🟥 *denotes where activities have not been completed*

Summary of Progress

Whilst generally delivering on the Strategy principles and achieving the majority of the projects outlined in annual plans laid out there have been a number of other successful initiatives and activities which have enhanced the delivery of the Strategy. These include:

- The establishment of the Digital Strategy Steering Group and Annual Workplan process to ensure resources are focused on key priorities of the Service and are monitored on a regular basis.

- The establishment of robust, quality assured project methodology within ICT to deliver projects on time and within budget.

- The successful delivery of capital programmes for 3 years in support of the Digital Strategy.

- The implementation of new technologies in support of the Strategy in general and specific business projects. For example: the move to cloud computing to provide flexible, robust and secure bases for SFRS solutions; implementation of video conferencing and Lync/Skype to enhance communications and reduce travel time and costs; implementation of Direct Access to allow laptop users to use SFRS network resources securely through any internet connection; implementation of Nintex workflow to create electronic forms and workflows to automate processes.

- Development and implementation of a wide range of major projects, including the corporate Wide Area Network and telephony service; rationalisation of SFRS Control Rooms and the procurement process for a replacement command and control/

mobilisation solution, development of a service-wide Operational Intelligence system, development of an online Community Asset Register; development and implementation of a corporate Geographic Information System (GIS) and Gazetteer used by a number of software solutions; utilisation of the Scottish Government Data Centre in Edinburgh as our backup Data Centre; implementation of a single HR/Payroll system for the Service; implementation of a service-wide solution to support the Common Duty System; significant development and implementation of Community Safety applications such as CSET and PPED in support of the prevention agenda; standardisations and replacement of local equipment including PCs and laptops, stations mobilisation equipment, fire-ground radios and pagers.

- Design and implementation of ICT infrastructure for new builds and relocations for the Property Strategic Intent Programme including the East ARC and HQ at Newbridge, North East ARC in Dundee, North SDA HQ and LSO refurbishments at Aberdeen Central and Dyce stations, and decommissioning of buildings at Thornton, Maddiston, Lauriston Place, North Anderson Drive, Mounthooley and Gullane.

- Development and implementation of improved ICT internal processes including change management, security processes, Service Level Agreements, performance management and contract management with key suppliers.

- Achievement of 7 national ICT awards.

3. SFRS CHALLENGES AND OPPORTUNITIES

The new SFRS Digital Strategy has been developed to continue to deliver the success of the original strategy but also takes into consideration internal and external influences and requirements including the need to enhance the Service's ability to meet the requirements of the Fire Framework, the SFRS Strategic Plan, the Scottish and UK Governments' Digital and Resilience Strategies.

The other influencing factor in the Strategy is new technological developments and trends that can deliver potential benefit to SFRS and fit with the requirements and objectives the Service needs to meet.

Scottish Government Fire Framework:
The Fire & Rescue Framework for Scotland 2016 sets out the strategic priorities for SFRS representing the ambition Scottish Government wants from a modern, skilled and dynamic fire and rescue service. The Framework makes it clear that SFRS should pursue its purpose by adopting new ways of working and embracing new technologies that help keep firefighters and communities safe. The Framework makes reference to the need for digital solutions in a number of key areas including the provision of robust IT systems to accurately determine the availability of its appliances, retained and wholetime workforce and other resources. The Framework stresses the need for accurate and up to date information to be available to both Operations Control to enable effective use of resources and also for crews at incidents to ensure operational intelligence aids decision making and approach to incidents.

The Framework outlines the need to collect and analyse appropriate, consistent and quality assured data to identify and assess risk to allow the Service to make evidence based decisions at every level. The Framework emphasises the importance of effective information sharing with partner organisations to reduce any obstruction to collaborative working. The Framework also highlights the need for the service to collect and analyse data and intelligence to promote the safety and wellbeing of communities and through performance management data drive improvement across the organisation.

The Framework outlines the need for the Service to modernise its response with an emphasis on the

importance of maintaining existing critical communications provided by Firelink and stresses the need for SFRS to be fully engaged in the work necessary to implement the ESN to best effect when it is ready to replace Firelink.

The Framework identifies the role of digital technology as a key enabler of improved, user–centric public services and encourages the Service to consider the Scottish Government's national digital public service strategy when taking forward any digital transformation plans.

SFRS Strategic Plan:
The SFRS Strategic Plan 2016 – 2019 has been developed in response to the expectations set out by the Scottish Government in the Fire Framework and builds in the views of SFRS people, partners and the communities we serve.

The Plan identifies 6 key strategic objectives for the Service going forward and described below is the potential contribution the Digital Strategy can make to the successful achievement of those priorities:

• Improved Local Outcomes: improved data sharing with partner organisations, using new technologies in the prevention arena through the continuing development of CSET, PPED and FSEIS;

• National and Community Resilience: making improved data available to assess and make informed decisions on allocation of resources and approaches to incidents eg the development of the CAR system;

• Modernising Response: ensuring up to date and consistent information is available on the incident ground to enhance decision making through the implementation of the new national OI solution and exploring the use of video to deliver remote support;

• Workforce Development: ensuring our staff are confident and capable in the use of the technologies used in their day to day activity and making learning materials and approaches available from wherever they need it;

- Governance and Social Responsibility: ensuring our decision making is robust and evidence led through provision of reliable data and analysis tools and a comprehensive integration solution and corporate search engine; underpinning all aspects of our digital provision is the need to ensure appropriate levels of security and cyber resilience;

- Transformation: in delivering transformation of the Service we will continue to invest in our digital infrastructure and capability to meet the growing demand for communication and interoperability internally and externally, continuing to take advantage of technological developments such as the Cloud and automation and in time the benefits of ESN.

A Digital Strategy for Scotland:

The Scottish Government published their new Digital Strategy for Scotland in 2016 setting out plans for how we put digital at the heart of everything we do in delivering inclusive economic growth, reform our public services and prepare our children for the workplace of the future. It stresses the creation of a culture and environment of partnership and collective action to ensure we all reap the benefits of the digital age.

The relevant points in the Digital Strategy vision that are most relevant to SFRS are:

- We design and deliver digital public services around the needs of their users

- We share and open up non-personal data as a source of innovation and efficiency

- We have a public sector that operates on contemporary, digital platform-based business models

- We are secure and resilient to cyber threat and risk **Scottish Government Cyber Resilience Strategy and Action Plan 2018/19**

SFRS have committed to the required activity in the recently published Cyber Resilience Strategy and Action Plan for 2018/19 building these activities into the ICT annual plan for 2018/19.

The key actions from the Action Plan are:

- Development of a common approach to cyber resilience in Scottish public bodies

- Initial baseline cyber resilience requirements for Scottish public bodies

- Cyber security of supply chain and grant recipients

- Ensuring Scottish public bodies can access cyber security expertise and support

- Leadership and knowledge sharing – Public Sector Cyber Catalyst

- Monitoring and Evaluation Framework

The Scottish Fire and Rescue Service has not only committed to the requirements of the Action Plan but has signed up to be part of the Public Sector Cyber Catalyst Programme.

Developing Technologies:

Technology continues to advance at an ever quicker pace and many features, functions and capabilities that were available to only those organisations with the largest budgets are now mainstream and consumer level products. The evolution of cloud computing and artificial intelligence is one such area with digital assistants like Siri, Cortana and Alexa becoming everyday tools that are used to free people from the keyboard and carry out ever more complicated instruction sets.

Coupled with this is the constant evolution of natural language interfaces and tools such as chatbots and software robotics which are language neutral and enable organisations to reach out to audiences and communities that otherwise would be difficult to engage.

Sensor technology, wearable technology and smart devices have seen exponential growth and drastic falls in pricing such that there are now more devices connected to the internet than there are people (known as Internet of Things). This has resulted in an explosion of data volumes as sensors upload their data to vast online databases. This has coined the term - big data, these online datastores when supported by appropriate analytics tools can give insight, information and real time status of almost anything, anywhere on the planet, or beyond.

Advances in Artificial intelligence have led to selflearning machines and software now becoming mainstream, many organisations are now harnessing the opportunities this presents to improve, monitor and automate many business activities that have until now been the preserve of human employees. Amongst the seemingly never ending consumer technology changes occurring, it is easy to overlook advances currently being made in ICT infrastructure and operations but Software is now becoming the heart of the machine and the controller of everything. The entire operating environment—servers, data storage, and networks—can now be virtualized and automated.

The Datacentre of the future represents the potential for not only lowering costs, but also dramatically improving speeds and reducing the complexity of provisioning, deploying, and maintaining technology. This new approach is referred to as 'Software-defined everything' and is set to transform infrastructure investments, from costly plumbing to competitive differentiators for all business sectors.

SFRS needs to maintain awareness of developing technologies and how they might be applied to benefit our business and improve our service delivery.

Our new digital strategy responds to all of these influences through its vision, themes and action plans for the next three years as described below. This will show how the work we've done to date and are planning in the period covered by this Strategy meet the strategic objectives of the Service from Fire Framework and Strategic Plan with guidance from UK and Scottish Government strategies and taking advantage of new emerging technologies and approaches.

Vision:

'to put SFRS people at the heart of a digital community delivering a safer Scotland'

Themes:

Digital Information – 'the information we need at the touch of a button'

Access/availability of corporate information
- delivered by a corporate search model 'Google for SFRS' and is facilitated in part by the Modern Desktop project and fully through the development of a corporate search solution with rules to protect sources of information and a new integration tool to pull data together

- ability to discover and access data in all digital formats including video, images etc, as well as structured and non-structured data through a range of access portals and channels

- establishment of definitive internal data sets eg stations list/ fleet numbers/ locations/ staffing eg station managers, retrieved from multiple sources and owners

- access to commonly used external data eg SIMD

Systems of record – main and single corporate data sources
- these include our HR, Finance, Payroll, Command & Control, fleet/property, Geographic Information systems which will be the single sources of key data eg. HR/Payroll for people data, which will be updated and modernised

- these systems are long term investments whose functionality and capabilities we will maximise to avoid further investment in peripheral solutions

Systems of differentiation – Specific Fire and Rescue Solutions
- these will use data from systems of record and not duplicate information

- these currently include solutions like Gartan, Operational Intelligence, Prevention & Protection Enforcement Database (PPED), hydrants system etc

- these systems will generally be shorter term investments, typically with a 3-5 year lifespan and which will be developed in-house or with a partner

Universal integration
- an effective integration solution is key to enable access and availability and must be cross/multi environment/technology, integrating data from systems which are both on premise, in the Cloud and in our partners' technical environments

- we will purchase a solution for this by the end of 2017/18 and implement it in 2018/19

Automation
- making our business more efficient and effective through the development of smart business processes automated by workflows, electronic forms, analytics and chatbots

- reduction of human intervention, reducing duplication and allowing managers only to deal with exceptions

Digital Communities – 'we share our information with partners seamlessly, but securely'

Data and infrastructure sharing with partners
- to maximise SFRS input to better outcomes for the people of Scotland we must be able to share data with partners securely and efficiently through application interfaces or direct access rather than 'data dumps'

- requirement for robust protocol and security standards on both sides

- infrastructure sharing is potentially beneficial to all partners, achieving shared premises and economies of scale but similarly needs SFRS to drive the standards and protocols required, delivering digital leadership

Borderless network
- our network will become more fluid and easily accessible through continued use of products like Direct Access, Skype and Office 365

Digital Resilience – 'we are confident and secure in our digital environment'

- our shared workspaces will not generally be on premises but cloud based and therefore accessible via the Internet

- access to our network resources and workspaces will be provided through a network account rather than a physical location or piece of equipment

Unified communications
- bringing all communications channels/technologies together into a common user experience across all device types eg Skype and our video conferencing facilities

- this will include collaboration with partners using common technical standards and collaboration agreements

Digital People – 'we should all expect a good quality of digital life'

Empower users
- we will provide toolsets to allow users to automate individual or team processes whilst maintaining corporate standards and security disciplines

- we will enable users to share their solutions with colleagues and teams and maintain currency of their solutions

Smart processes
- we will provide automated tools to analyse workflows and deal with exceptions, designed by users

Identity management
- identity management is critical to delivery of the strategy with our authentication mechanisms ensuring our users, systems and data are protected whilst still being easily accessible to authorised users

Self Service

- users will be able to use self and auto provisioning such as automatic change of permissions when a user is promoted or moved to another area

- users will be able to carry out password resets themselves and give themselves access to teamsites and Yammer groups

ITIL best practice
- the Information Technology Infrastructure Library (ITIL) is a framework of best practice guidelines for the delivery of robust and resilient ICT services and is made up of a series of process which in combination provides value through the delivery of technology services to users and organisations

- SFRS ICT has implemented many of these processes and will continue to work towards improving out capability rating in this area

Skills for the Digital Age (all staff)
- provision of appropriate training and awareness to all of our users making them aware not only of the

opportunities afforded by the tools available but critically how they can protect themselves and the Service from any abuse of these tools

Cyber Security
- ISO27001 is an international standard for ICT security which the Service through ICT will work towards but it is important that in doing so we achieve a flexible balance between security and usability of our solutions

- ICT will ensure that we follow best practice and deliver the activities required from Scottish Government Cyber Resilience Action Plan

- ICT will continue to design and implement all of our solutions with resilience and security in line with industry best practice

- SFRS will undertake the role of Cyber Catalyst in the Scottish Government Cyber Resilience Strategy providing leadership and authority to the Scottish Public Sector

5. PLANS FOR 2018/19, 2019/20, 2020/21

2018/19
- Command & Control Futures Implementation
- Operational Intelligence rollout across Service
- Modern Desktop completion
- Corporate Training Solutions replacement options
- Business Process Review change implementation
- Achievement of Cyber Essentials security standard
- Data Integration tool implementation
- ITIL process implementation in ICT
- Property Strategic Intent projects
- Preparatory work for ESN
- Review of HR/Payroll system inc tender

2019/20
- Corporate Training Solutions replacement implementation
- Implementation of HR/Payroll system
- Planning for ESN
- Cyber Security further development
- Infrastructure review and enhancement
- Workforce Management / Crewing systems review
- Business Process Review continuing change implementation
- Implementation of user self service solutions

2020/21
- Implementation of ESN
- Infrastructure review and enhancement
- Workforce Management / Crewing systems review
- Finance Systems Review

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