NPIA
National Policing Improvement Agency

PRACTICE IMPROVEMENT

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NPIA

National Policing Improvement Agency

PRACTICE IMPROVEMENT

GUIDANCE ON

MULTI-AGENCY INTEROPERABILITY

2009

Produced on behalf of the Ambulance Chief Executive Group, Chief Fire Officers Association and Association of Chief Police Officers by the National Policing Improvement Agency

This guidance contains information to assist the Ambulance Service, Fire and Rescue Service and Police Service in England, Northern Ireland, Scotland and Wales.

It is not protectively marked under the Government Protective Marking Scheme.

GUIDANCE ON MULTI-AGENCY INTEROPERABILITY

This document has been produced by the National Policing Improvement Agency (NPIA) on behalf of the Ambulance Chief Executive Group, Chief Fire Officers Association (CFOA), the Association of Chief Police Officers (ACPO) and the Association of Chief Police Officers in Scotland (ACPOS). It will be updated according to legislative and policy changes and re-released as required.

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Scottish Resilience

NHS Ambulance
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Group

Chief
Fire
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FIRE OFFICERS
ASSOCIATION
The professional voice of the
UK fire and rescue service

Communities
and Local Government

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FOREWORD

This guidance provides the Ambulance, Fire and Rescue, and Police Services (also known as the 'blue light services') with a unified framework for working together that enhances established practices for communications and coordination across the command and control structures. It may also be used by the military and other partner responder agencies to build a framework for aligning their ways of working with the blue light services.

The guidance has been developed through partnership working across the blue light services around the UK. The approach included extensive consultation, multi-agency workshops, one-to-one sessions, online surveys, plus scrutiny of the debrief reports and recommendations from high impact events and incidents and multi-agency exercises.

This guidance does not replace the individual command and control structures but establishes fundamental principles which will enhance the effectiveness and professionalism of the current arrangements.

Contributions have been made by chief officers, frontline personnel, central government, emergency planners and others who all share a passion for improving public services and understand how important effective interoperability is to our collective response to major incidents. This guidance facilitates professional good practice to enhance communication and coordination; the two factors critical to the success of all inter-agency working.

The guidance is user led and represents current thinking at all levels on the means to practically cover some of the communication gaps which exist in the current operational response for all parties. The 'standard operating procedures' needed to underpin and implement the guidance will be developed separately at the local level, as required.

Covert communications used by any agency are not covered by this guidance.

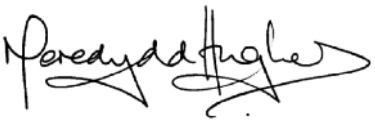
The guidance sets out when and how the principles of interoperability should be employed and at what level they should be used in organisations.

This guidance incorporates the advice of experienced practitioners and their recommendations as to where improvements are needed to enhance interoperability and to increase the safety of the public and personnel.

A number of interoperability protocols and procedures already exist. The purpose of this document is to encourage services and agencies to build on these local arrangements, standardise protocols and facilitate the implementation of a unified national response. Successful adoption will lead to formal arrangements that will need to be reviewed regularly. Developments and enhancements should be coordinated across all agencies and contribute to a constant process of updating local protocols and procedures, and this guidance.

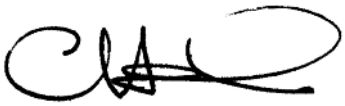
It is recommended that individuals, entrusted with the development of command policy, view this guidance more as a directive than general advice. Adoption of its principles, practices and procedures will help to increase the safety of the public and our personnel.

Signed:



on behalf of ACPO

on behalf of Ambulance CEOs



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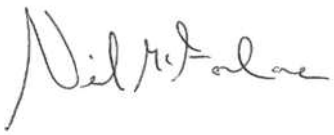
on behalf of ACPOS

on behalf of Ambulance Scotland



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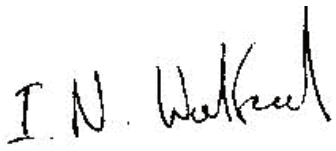


on behalf of Scottish Resilience

Section 1
INTRODUCTION

CONTENTS

1.1 BACKGROUND

Why do we need this guidance?

The ever growing complexity and demands of high-impact incidents and events add significantly to the risks faced by the public and frontline personnel. Events of 7 July 2005, and lessons learned from other man-made and natural disasters, reinforce the need for effective interoperability between the emergency services and partner responder agencies. This was one of the areas reviewed in the Office of Government Commerce's 2006 report on the government's key programmes to the Prime Minister and Chancellor of the Exchequer. That review identified, as a priority, the need to coordinate activity across the emergency services to provide a common framework to improve the overall response to incidents. In reply, the then Prime Minister emphasised the importance of addressing concerns raised about the interoperability of emergency services; this guidance provides the advice to achieve this. It is complementary to the other procedural manuals that support the PREPARE strand of CONTEST. It also helps with guidance that supports the building of generic capabilities necessary to meet the National Resilience Planning Assumptions.

Recent events have demonstrated that major incidents are likely to require a national response that will test the capability and interoperability of the response organisations. Public expectations are that agencies responding to emergencies or major incidents will interoperate effectively in a professional and coordinated manner within a unified framework that facilitates efficient consequence management and an appropriate return to normality. Helping to maintain public confidence in the emergency services is one of the drivers for this guidance.

Significant investment has been made by government departments and the emergency services in new technologies to mobilise information to improve efficiency and effectiveness, particularly for voice and data communication. This guidance adds value by providing the essential principles and approach to enable commanders and managers to use these capabilities and integrate them along with joint practices and procedures to create a Common Operating Picture (COP). This is critical to improving individual and collective situational awareness that, in turn, ensures that appropriate decisions are made that are consistent with the agreed common objectives.

What is driving interoperability?

A recurring theme from debriefs of events, incidents and exercises is the inefficiency of same-service and inter-agency communications. Conversely, on the occasions when it works well, participants speak highly of the benefit of being able to exchange information rapidly in such a way that it is timely and useful to the parties receiving it. Organisations and their executives have been held to account by the public and the media over inefficient communications at high-impact incidents and events. Public inquiries and the civil and criminal courts have held organisations to account for breaches of health and safety where ineffective communications and the absence of a common operating picture were considered to be contributing factors. If the way in which an organisation's activities are managed or structured cause a person's death and amount to a gross breach of a duty of care owed by the organisation to that person, it may commit an offence of corporate manslaughter under the Corporate Manslaughter and Corporate Homicide Act 2007.

Institutional failings, particularly those that do not demonstrate learning from past experiences, can significantly affect the reputation of an organisation and the confidence of its people in its leadership. Implementation of the principles and practices of interoperability, as set out in this guidance, will provide organisations, and individuals entrusted with command, with the capability to mitigate such risks and increase the safety of the public and their personnel.

1.2 INTEROPERABILITY CONTINUUM

Effective communication has proved time and again to be core to the success of joint operations involving multiple agencies. For this reason it features heavily in this guidance, but not to the exclusion of the wider principles. This guidance introduces the interoperability continuum (see **Figure 1**).

This continuum describes five capabilities from their minimum, unacceptable level through to a desirable future state. These capabilities are:

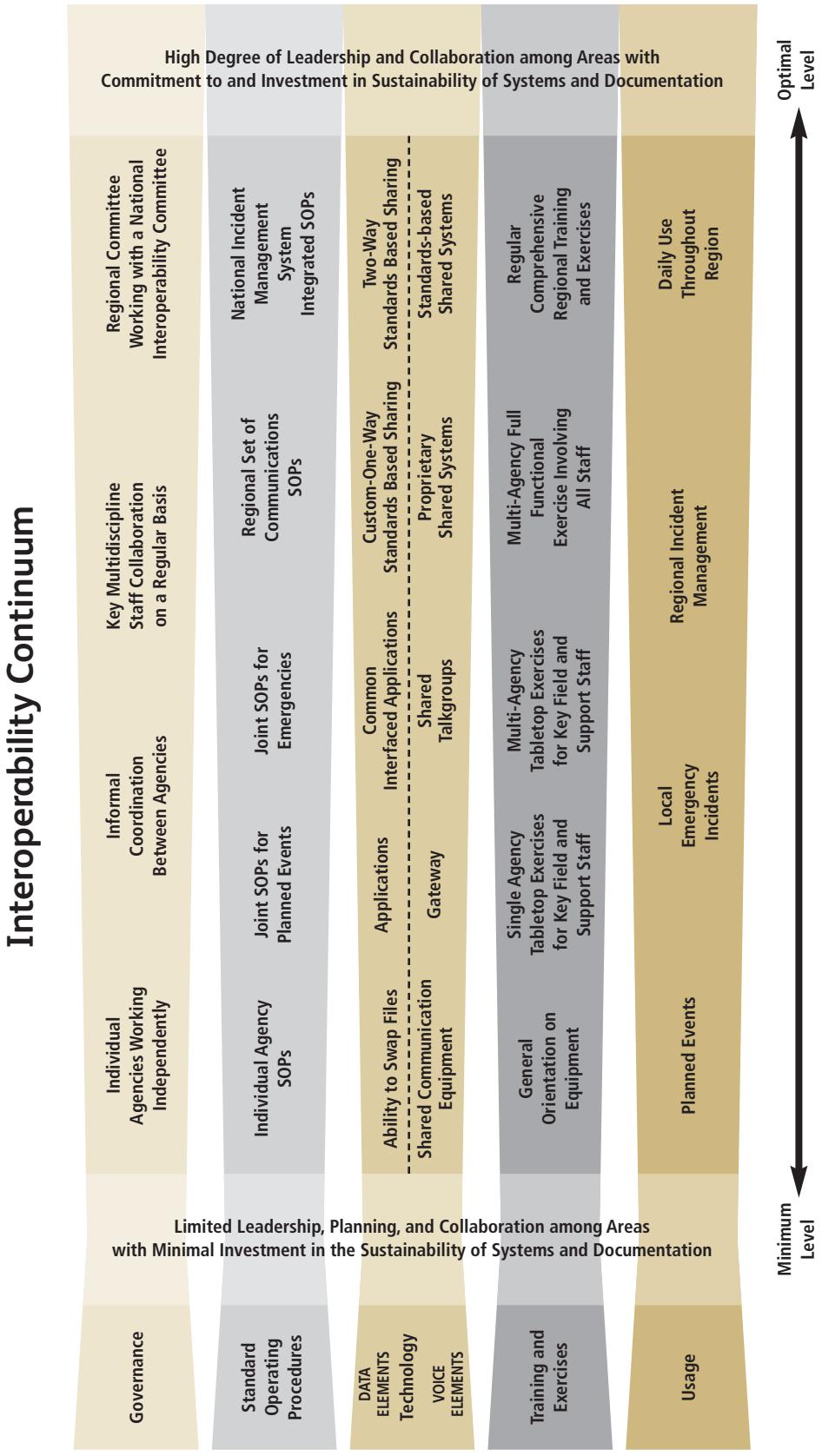
- Governance;
- Standard Operating Procedure;
- Technology;
- Training and Exercises;
- Usage.

This tool can be used to critically assess current capabilities and identify areas for improvement.

Understanding the capabilities of each organisation and their interdependencies when brought together, whether during day-to-day business, high impact events or major incidents, is critical knowledge that every supervisor, manager and commander must have. Planning, training and exercising together is essential to embed the required culture of interoperability so it can become an intuitive trait of those in command.

Similarly, common communication methods and protocols are needed to enable commanders and managers to exchange mission-critical and decision-critical information. The development of a COP is central to effective command and control. The guidance reinforces the importance of collecting and sharing information with decision makers, thereby enabling them to direct activity, monitor progress and coordinate their resources with consideration for the requirements of the other services and agencies.

Figure 1 Interoperability Continuum



1.3 VISION AND PRINCIPLES

The purpose of interoperability is to increase public and personnel safety through improved multi-agency communication and coordination. The principles for interoperability follow the acronym of **INTEROPS**:

- **I**ntegration;
- **N**ormal Business;
- **T**raining and exercising together;
- **E**ngagement;
- **R**esilient Communications;
- **O**perationally Acceptable;
- **P**lanning;
- **S**ubsidiarity.

Integration

The capacity to share information to build a common operating picture to assist command decision making, and the use of interfaces between common communication technologies to improve coordination.

Normal Business

HM Government (2005) Central Government Arrangements for Responding to an Emergency – Concept of Operations states:

> The response to emergencies should be grounded in the existing functions of organisations and familiar ways of working, albeit delivered at a greater tempo, on a larger scale and in more testing circumstances.

Where two or more services work together, interoperability should be embedded in business as usual, but should have the capacity and capability to then scale up to meet the demands of events and incidents when required.

Training and Exercising Together

A joint training syllabus builds on existing single-service activities to prepare individuals and organisations to coordinate the response to planned events and spontaneous incidents. This gives clarity to roles and responsibilities, allowing all personnel to understand the other's capacity and capabilities and how to work together more effectively.

Engagement

The success of interoperability depends on the willingness of the services and agencies to engage in partnership working. This is facilitated by systems and processes built on experience gained through training, exercising and operating together.

Resilient Communications

Dependable two-way communication is critical to an effective combined response. The capacity to exchange important information and achieve a common operating picture for the successful resolution of an incident, or for the management of an event, can be enhanced through the use of compatible technologies, common symbols and terminology.

Operationally Acceptable

The unified framework provided for interoperability is fit for all services, adheres to the principle of resilience and is one to which other agencies can be aligned. It acknowledges the value of work that services have already undertaken, draws in existing best practices from all of them, and contributes to a more effective and efficient approach to achieving a safe resolution than could be achieved by each organisation working in isolation.

Planning

Planning is essential to interoperability. Interoperability will not be intuitive unless staff have been trained and taken part in exercises beforehand, and the agreed standard operating procedures for inter-agency working correctly embedded into individual and multi-agency contingency plans.

Subsidiarity

Protocols should allow decisions to be taken at the lowest level appropriate while maintaining command and control at the highest level necessary. Interoperability provides the means to enable people, processes and technology to combine to create a common operating picture. This enhances decision making at the most appropriate level, which conforms with, and is visible to, the overarching structure for command.

In adopting the philosophy of this guidance, services and agencies will share information to identify their common objectives and their individual responsibilities, and to coordinate their activities.

When considering new technologies and working practices, the emergency services should consider the benefits of integration and interoperability with partners. Consultation at the design or planning phase will improve interoperability with regard to enhancing communication and coordination. Consideration should be given to:

- Command and control systems;
- Control rooms;
- Use of mobile voice and data technology (hand-held and vehicle mounted);
- Interface capacity;
- Major communications and information technology projects within each emergency service (locally and nationally) and in partner agencies;
- Compatibility with existing and emerging technologies, such as the National Resilience Extranet and High Integrity Telecoms System.

Section 2
INTEROPERABILITY

This section provides definitions of the key terms and identifies the scope of interoperability with regards to radio communications.

CONTENTS

2.1 DEFINITION OF INTEROPERABILITY

In the context of multi-agency cooperation, interoperability is,

> The capability of organisations or discrete parts of the same organisation to exchange operational information and to use it to inform their decision making.

Interoperability must be considered for incidents and events in the same service and across different services, where working to a common purpose within a unified framework with a common command culture is critical to success. This can be at the local, regional or national level.

2.2 OUTCOMES AND BENEFITS

A significant outcome from effective interoperability is the Common Operating Picture (COP). The COP is a single, identical understanding of current and relevant information which is shared between the emergency services and partner agencies. Achieving this facilitates collaborative planning of events and gives decision makers the most appropriate and up-to-date information.

By adopting the principles of this guidance, partner agencies will enhance their service delivery, including:

- **Improved safety for the public and responding personnel**
  Timely sharing of critical information about hazards and other dangers, and understanding each organisation's responsibilities and capabilities reduces the risk of harm to the public and personnel.

- **Increased operational resilience**
  The adoption of interoperable arrangements improves the emergency services' ability to be resilient in situations beyond normal business.

- **Increased confidence amongst emergency service personnel**
  Improved situational awareness enhances coordination across the emergency services and partner agencies and reduces the risk of harm to the public and responding personnel because they have access to consistent and accurate information.

- **Improved effectiveness of command and control**
  Establishing communication between commanders from the emergency services promotes coordination and collaboration. Interoperable voice and data exchange will improve maintenance of the COP where face-to-face meetings may be less frequent.

- **Planning and preparation**
  An assessment of threats and risks, and the formulation of risk management strategies and emergency plans are required by the Civil Contingencies Act 2004 (CCA). Joint training and interoperable communications provide emergency services' personnel with an improved understanding of the culture and capabilities of their counterparts in the other emergency services.

- **Information sharing**
  The CCA also requires category 1 and 2 responders to share information. The adoption of interoperable communications provides a means to share mission-critical and decision-critical information between the emergency services.

2.3 OPERATIONAL COMPATIBILITY

The compatibility of information exchange systems and procedures should be assessed and tested within and between each service. This should include regularly exercising and testing capabilities to exchange information across local and regional borders, as well as nationally. This will ensure consistency in approach and that necessary levels of preparedness and availability to respond and mobilise are being maintained. In crises, people in disciplined professions will usually fall back on their training and past experience. Procedures and protocols employed for interoperability during a major incident or event should, therefore, be developed from normal business so they are intuitive and immediately scalable when required. The same criteria should also apply to training personnel. Similarly, communications equipment carried for normal business should be compatible with systems deployed at large-scale events and incidents. This improves familiarity with its functions and capabilities, and avoids improvisation and untested arrangements.

2.4 COMMUNICATION

Information may take many forms, such as verbal, visual, graphical or textual. The following are the building blocks for effective communication:

- An identified need exists;
- The sender to format the message;
- A suitable medium to transfer it;
- The recipient(s) to receive;
- Confirmation of understanding.

Communication should only take place when it adds value. In the context of interoperability, this should be based on the following considerations:

- Minimising risks to the public and personnel;
- Alerting personnel to an immediate hazard;
- Supporting each other's decision-making;
- Contributing to a common understanding of the incident;
- Improving coordination and communication.

The sender should format the message in a way that is appropriate to the communication medium, such as face-to-face, radio, textual, or imagery.

Consideration should also be given to the needs of the recipient; plain speech should be used and jargon avoided where possible.

Communication is complete when the recipient not only receives the message but also demonstrates their correct understanding of it.

At complex incidents and events that involve multiple agencies, the volume and different types of information which need to be processed by those in command can be a significant challenge. It is essential, therefore, that commanders employ suitable filters to distil from all the communications (eg, voice, data, imagery) only those key elements needed to create and update the common operating picture. This can be achieved by personnel analysing and evaluating sources of information effectively.

In some circumstances it may appropriate for commanders to use a specialist operator to manage communications on their behalf.

All personnel are responsible for ensuring that they share information which enhances situational awareness and updates the common operating picture. Paramount to this is recognition of the need to create and maintain an audit trail of decisions and the information that influenced them. There are significant benefits from using common technologies that exchange information and provide a record of events.

2.5 INFORMATION EXCHANGE

When personnel from the blue light services and partner agencies are sharing the same communication system for voice and/or data exchange, each organisation must be aware of the potential risk of unwitting disclosure of information that might compromise a subsequent investigation, or otherwise jeopardise safety.

Some information may be sensitive; it may concern criminal activity or be of a personal nature and not, therefore, suitable for sharing in an open forum involving multiple agencies or relayed over common communication networks. Established information sharing agreements should be followed to enable broadcast or dissemination. This may be achieved by applying the National Intelligence Model for evaluation, handling and assessment of information.

It may be appropriate to divide meetings into open and closed sessions, with the closed sessions attended only by people with the appropriate security clearance. An assessment needs to be made of the risk of excluding certain people or agencies from having knowledge of potentially significant information, particularly where this might impact adversely on their decisions.

Those individuals performing strategic (Gold) and tactical (Silver) roles should not be excluded from knowing all aspects of an incident or event, such as the deployment of covert policing or military assets. Whether that information needs to be communicated to the operational (Bronze) level will be part of the risk and handling assessment process. Agencies with personnel who regularly perform an inter-agency liaison role should consider having their personnel security cleared as part of their induction into the role.

Consideration must be given to data protection arrangements in respect of interoperable communications. Information recorded in writing and exchanged between the emergency services should include a classification under the Freedom of Information Act 2000, ie, open or closed. The technologies used for communication must also be accredited to the appropriate standard for handling 'restricted' and/or 'confidential' information.

For further information see ***HM Government (2007) Data Protection and Sharing – Guidance for Emergency Planners and Responders [Non-statutory guidance to complement Emergency Preparedness and Emergency Response and Recovery], ACPO (2006) Guidance on the Management of Police Information*** and ***ACPO (2005) Guidance on the National Intelligence Model.***

2.6 RESILIENT COMMUNICATIONS

HM Government (2005) Central Government Arrangements for Responding to an Emergency – Concept of Operations states:

> Good two-way communication is critical to an effective response. Reliable and accurate information must be passed correctly and without delay between those who need to know, including the public.

Each Local Resilience Forum has a telecommunications subgroup that plans the local arrangements for resilient telecommunications. For further information see **http://www.cabinetoffice.gov.uk/ukresilience.aspx**

The key to achieving such resilience is to have diverse options for communication so that organisations can achieve graceful degradation (fallback) from their primary communications systems. This should be planned for and maximise the facilities and resources already available. These options will, however, offer no contingency if the intended fallback process and contact list is not shared with partner organisations, tested in exercises and updated within appropriate timescales.

To ensure resilient communications in the Response Process of an incident and through its subsequent stages, contingency plans must be made in advance. The following considerations should be included in inter-agency and multi-agency communications contingency plans:

- Common terminology;
- Consistent use of symbols between services and agencies;
- Call signs to identify relevant resources;
- Common understanding of the capabilities and vulnerabilities of the communications system in use;
- Common procedures for invocation and fall back.

2.7 INVOCATION OF ENHANCED ARRANGEMENTS

When interoperability requires operational and control room staff to step up beyond normal business, invocation of the necessary interoperable communication interfaces, such as using common radio talkgroups/channels and data exchange tools, will be at the discretion and authority of the Silver (Tactical) Commander from any one of the emergency services or a supervisor within their control rooms, whichever is appropriate. It is important that, as far as possible, the same systems used for business as usual should also be employed for interoperability.

Section 3
STRUCTURING OPERATIONS

This section details how interoperability works in multi-agency operations and the response to incidents should be dealt with in terms of interoperability.

CONTENTS

3.1 COMMAND AND CONTROL

This document reflects the current command and control policies and procedures adopted by each of the three emergency services party to this guidance. The three emergency services need to recognise and understand the separate roles and responsibilities that each has in respect of the response to events and incidents. Interoperability implies that these roles and responsibilities need to be focused towards the delivery of a common aim and objectives. This may mean, that while accepting the cultural differences between the three emergency services, individuals need to be prepared to compromise over cultural issues if they become barriers to achieving interoperability.

For further information on command and control arrangements within each emergency service, see ***Department of Health Emergency Preparedness Division (2005) The NHS Emergency Planning Guidance, HM Government (2008) Fire and Rescue Manual – Volume 2 Fire Service Operations Incident Command,*** **Third Edition** and ***NPIA (forthcoming) Guidance on Command and Control.***

3.2 INTEGRITY OF COMMAND

The principle of integrity of command is that each emergency service and responding agency at an incident retains command and control of its personnel, albeit they are all working towards the common aim and objectives agreed with partners. This will apply unless an agreement exists between Ambulance, Fire and Rescue, and Police Services for one emergency service to take effective command of personnel from another emergency service under specific circumstances. These may include the response to a Chemical, Biological, Radiological or Nuclear (CBRN) incident, or the deployment of an Urban Search and Rescue (USAR) team.

Whatever inter-service communication is used, the integrity of **intra-service** command still applies: each service retains responsibility for its own staff.

3.3 SPAN OF COMMAND

The term span of command relates to the hierarchy of the command and control structure within each service. With any planned event or spontaneous incident, all personnel must know to which commander they report, correspondingly, each commander needs to know which personnel they have responsibility for. Bronze (Operational) Commanders are required to know and understand their tasks so they do not overlap with tasks allocated to another Bronze (Operational) Commander. The same principle applies if there is a potential overlap of responsibilities between Silver (Tactical) Commanders at an event or incident.

The span of command relating to the ambulance, fire and rescue, and police command and control structures are to be communicated and understood prior to a planned event or early on in the response to a spontaneous incident. This allows each Silver (Tactical) Commander to establish an interoperable communications network for the emergency services and responding agencies.

3.4 SPAN OF CONTROL

Span of control describes the number of lines of relatively constant communication an individual has the ability to maintain. The actual number will vary depending on a range of factors, such as the:

- Capacity of the individual person;
- Availability and capacity of technology;
- Complexity of the information;
- Working environment.

3.4.1 COMMUNICATIONS OPERATOR'S CAPACITY

Consideration must be given when planning an event or when responding to an incident to the capabilities of the technologies available and the capacity of communications operators to manage the number of staff with whom they are likely to be required to communicate. Similar consideration should be given to whether it is appropriate for them to control more than one radio channel or talkgroup. When operators from different services are working with each other, cultural differences in communication style can be exacerbated by unfamiliarity with the varying approaches to radio discipline. It is essential, therefore, that common standards are adopted such as the use of plain English, the use of readily understood call signs, and common symbols for mapping.

3.4.2 CAPACITY OF OPERATIONAL STAFF

During any event or incident, personnel receive information from a number of sources, eg, radio, mobile telephone, face to face, textual or graphical. When planning an operation or event or responding to an incident, consideration must be given to the way in which individuals receive that information and their capacity to process it.

3.4.3 CAPACITY OF TECHNOLOGY

In planning a response to a forthcoming event or spontaneous incident, consideration must be given to the limitations of the technology used for interoperable communications. This planning process should include the capacity of control rooms and the potential impact of non-emergency service users. Communications systems have limitations in the number of users and amount of traffic that can be handled.

A communications adviser or an in-service team should be consulted when an unusually high volume of users or traffic is anticipated. Private communications service providers should be consulted, when appropriate, to offer tactical solutions to improve coverage and network capacity.

3.4.4 NATIONAL CALL-SIGN PLAN

There are significant benefits from the use of consistent call signs that can be recognised and understood by all the emergency services and partner responder agencies, especially when resources are mobilised for deployment outside their local area. The Fire and Rescue Service are introducing national call-sign plans that use a common alphanumeric code to define each asset and identify its attributes and capabilities. A similar approach may be adopted by others.

3.5 INTEROPERABILITY IN THE COMMAND AND CONTROL STRUCTURE

Where the scale or nature of the planned event or spontaneous incident requires the adoption of a formal command and control structure, the Gold (Strategic), Silver (Tactical) and Bronze (Operational) tiered structure should be implemented.

Where the Gold (Strategic), Silver (Tactical) and Bronze (Operational) command structure has been implemented, the commanders appointed by an emergency service at the three tiers must have the ability to communicate and coordinate with each other should the need arise, ie, interoperate. In the case of Bronze (Operational) Commanders this may be at the discretion of the Silver (Tactical) Commanders.

One of the key factors in determining the success of the emergency services interoperating effectively and efficiently is for personnel from each of the services to understand the capabilities, cultures and working practices of the other services. This must be underpinned through regular, joint training and exercising events.

3.5.1 INTEROPERABILITY AT THE GOLD (STRATEGIC) TIER

When the Gold (Strategic) tier of command is established in response to an emergency (as defined in the Civil Contingencies Act 2004), or to a major incident (as defined in ***ACPO (2009) Guidance on Emergency Procedures***) or in a planned response to an event, a Strategic Coordinating Group (SCG) should be formed. The SCG will usually be chaired by the police Gold Commander.

Representatives from the emergency services and other partner agencies should attend the SCG, and their rank should be commensurate with the scale and nature of the incident or event. The process of interoperability at the Gold tier of command takes place within the SCG to develop the COP. The Gold (Strategic) Commanders and representatives may require support functions to be established, which should include the opening of a Strategic Coordination Centre (SCC).

Police forces have contingency plans to open an SCC. These address issues of interoperability pertinent to the personnel deployed within the SCC, which include:

- Common terminology;
- Common processes for documentation and audit purposes;
- Common briefing formats
  - Information, Intention, Method, Administration, Risk Assessment, Communication, Human Rights Compliance (IIMARCH) used by the Police Service
  - Information, Risk, Intention, Method, Administration and Communication (IRIMAC) used by the Ambulance Service
  - Common Recognised Information Picture (CRIP) produced for the Cabinet Office Briefing Rooms
  - Common situation reporting format **C**asualty, **H**azards, **A**ccess/egress, **L**ocation, **E**mergency Services and other agencies present, **T**ype of Incident, **S**afety and Start the log (**CHALETS**) used by the Police Service (for further information, see ***ACPO (2009) Guidance on Emergency Procedures***)
  - **M**ajor incident declared and call sign, **E**xact location, **T**ype of incident, **H**azards, **A**ccess/egress, **N**umbers of casualties, **E**mergency services and other agencies present or needed (**METHANE**) used by the Ambulance Service;

- Communications structures by agreed methods to the Silver (Tactical) Commanders, and to regional and national coordination groups, eg, Regional Civil Contingencies Committee (RCCC) or Cabinet Office Briefing Rooms (COBR);
- Use of interoperable communications by Silver (Tactical) and Bronze (Operational) Commanders.

Gold (Strategic) Commanders must consider the overall strategic objectives, the contribution of each agency, overlaps, interdependencies and any conflicts.

3.5.2 INTEROPERABILITY AT THE SILVER (TACTICAL) TIER

At both spontaneous incidents and planned events where Silver (Tactical) Commanders are appointed by the Ambulance, Fire and Rescue, or Police Services, consideration must be given to how they and their personnel will communicate and coordinate with each other.

When a major incident is declared, a Tactical Coordinating Group (TCG) should be established. This is usually chaired by the police Silver (Tactical) Commander. The TCG is the forum at which the tactical plan is agreed and implemented, with an agreed common aim and objectives. The TCG may meet close to the scene at a forward command post (FCP) (known as a forward control point in Scotland), or at a designated Silver (Tactical) Control, and this is where the Silver (Tactical) Commanders should base themselves.

It is highly desirable that all three Silver (Tactical) Commanders are located at the same place, allowing face-to-face communication. If the Silver (Tactical) commanders are not collocated, they must determine the most effective manner by which they can communicate with each other and their respective Silver (Tactical) Controls.

Where a remote Silver (Tactical) Control is designated, it is highly likely that the Silver (Tactical) Commanders will be split between the incident and the control room. Each service should have an officer available to communicate on behalf of their service's Silver (Tactical) Commander at the other command position.

It is essential that each service's Silver (Tactical) Commander sets the parameters for their Bronze (Operational) Commanders' interoperability, following discussion with counterparts in the other services.

For further information on Silver (Tactical) Commanders, FCPs and Silver (Tactical) Controls, see ***ACPO (2009) Guidance on Emergency Procedures*** and ***HM Government (2008) Fire and Rescue Manual Volume 2 Fire Service Operations Incident Command,*** **Third Edition.**

3.5.3 INTEROPERABILITY AT THE BRONZE (OPERATIONAL) TIER

At spontaneous incidents or planned events, where a Silver (Tactical) Commander has been appointed, Bronze (Operational) Commanders may be appointed to deliver activity on a geographic or functional basis. Silver (Tactical) Commanders must ensure that their Bronze (Operational) Commanders are properly briefed. This includes, when appropriate:

- The span of command applicable to that role;
- The use of communications with
  - the Silver (Tactical) Commander or Silver (Tactical) Control
  - relevant Bronze (Operational) Commanders (both in service and inter service);
  - personnel under their command
- Use of available technologies that contribute to building the COP.

The nature, extent and autonomy of interoperability at a Bronze (Operational) tier will be based on the scale and nature of the incident or event and will be defined by parameters set by their Silver (Tactical) Commander. It will also depend on the role allocated to that Bronze (Operational) Commander. Where Bronze (Operational) Commanders work in conjunction with counterparts from other services, the most appropriate means of communication should be considered, whether it be face to face, by radio or by other technologies that share information in order to maintain the COP.

Section 4
ADOPTING THE PRINCIPLES

This section sets out the principles to adopt in order to achieve interoperability.

CONTENTS

4.1 ENGAGEMENT

Good practice demands regular, joint local training, exercising and meeting between individuals and organisations who will work together during major events. This is essential to engender trust, understanding and familiarity which support information sharing and aid the collective problem-solving process. Engagement is facilitated by systems and processes, but it is developed by the positive experiences gained from working, training and exercising together.

4.2 PLANNING

There are five considerations in respect of planning.

Plan in partnership

Multi-agency planning can only be of benefit if the emergency services and partner agencies work to a common aim and understand each other's capacity and capabilities. In addition, clarity of the roles and responsibilities of each service and agency, and the individuals within those organisations, will assist in ensuring the common aim and objectives are met.

Plan to scale up

Practices, processes and systems used daily by operational staff and communications operators to deliver interoperability can be simply scaled up when required. Processes and systems that are unfamiliar to staff can present an obstacle to effective working.

Set up systems

Organisations need to ensure that their systems are prepared for interoperability. When using Airwave radio, for example, there should be a profile available on an Integrated Command and Control System (ICCS) and Fully Integrated Command and Control System (FICCS) to reflect the range of talkgroups required during a major incident. This will enable communications operators to rapidly switch from their normal working profile to a major incident command and control profile with which they are familiar.

Train staff

Staff need to be trained to make best use of the plans and systems created. This is particularly true for communications operators. The skills they require in multi-agency command and control for communication and coordination during a major incident are often different from those used during normal business.

Exercise the plans and processes

Having ensured that appropriate staff are trained and skilled in understanding the systems and processes within their own organisation and the way in which they will interact with their partners, organisations must exercise the plans together to test knowledge of the plan and its operational validity.

4.3 BUSINESS AS USUAL INTEROPERABILITY

Interoperability during business as usual for each of the emergency services will be conducted in line with existing local protocols between the emergency services.

Incidents can be reported to the emergency services by a variety of means, including the 999 system, non-emergency telephone lines, text, email, Mini-Com, or direct to a member of an emergency service. The emergency service which receives the initial 999 call must immediately assess the need for other emergency services and partner agencies to be informed, and if it is necessary, it must be done as a matter of priority.

4.4 CROSS-BORDER ISSUES

Events and incidents often cross boundaries within or between organisations. If a planned event or spontaneous incident crosses the boundaries of ambulance NHS Trusts, fire and rescue services or police forces, then consultation with the neighbouring emergency service should take place and an agreement reached on the command and control structure to be adopted. A service level agreement or memorandum of understanding between adjacent organisations can be formulated to cover planned events and spontaneous incidents.

Managers should constantly assess the likelihood of an event or incident moving across boundaries or affecting neighbouring organisations, and make contingency plans.

A communications manager from each of the emergency services within a Local Resilience Forum (LRF) (Strategic Coordinating Group (SCG) in Scotland) or region should be responsible, on a multi-agency or partnership basis, for planning the arrangements for command and control of incidents across borders. This process should be managed through a subgroup of the LRF (or SCG) which incorporates all relevant stakeholders. Coordination across a region can be overseen by a regional resilience forum or a devolved administration. Individual emergency services should not be constrained by artificial boundaries but should develop a plan appropriate to their geographical circumstances.

4.5 TRAINING AND EXERCISING

True interoperability is built on mutual understanding, familiarity and trust between the emergency services and partner agencies. In addition, experience and expertise in relation to command and control involving multiple agencies is important, as is familiarity with the culture, structures, terminology and key individuals within other emergency services and partner agencies.

Effective interoperability is achieved by training and exercising together so that personnel from different organisations are equipped with the necessary skills and abilities to respond with professionalism at all levels.

LRFs and SCGs have a responsibility to test their emergency plans. It is appropriate for each LRF or an SCG to arrange and deliver a multi-agency training and exercise programme. This may include an assessment of training and exercising needs, based on the Community Risk Register, and a process to ensure delivery to all relevant personnel. An LRF or SCG should consider coordinating multi-agency training and exercising to balance the operational imperatives of each of the emergency services against the requirement to train and exercise. This coordination can also ensure that a range of capabilities and situations are tested, which should include interoperability at each of the Gold (Strategic), Silver (Tactical) and Bronze (Operational) tiers of command and control. It should also include interoperability during both the Response and Recovery Processes during an incident.

Section 5
AIRWAVE

This section describes the Airwave system and how it can enable interoperability. It provides an overview of the nature and use of Airwave, and the management of talkgroups by the emergency services. Although Airwave is available to each emergency service, it is not the only system in use.

CONTENTS

5.1 WHAT IS AIRWAVE?

Airwave is a digital radio service used by the emergency services in England, Scotland and Wales, provided by Airwave Solutions Limited. It uses **TETRA** (**TE**rrestrial **T**runked **RA**dio) technology, which is a standard of the European Telecommunications Standards Institute (ETSI). It is the common platform available to facilitate radio interoperability for voice communication and some data exchange.

Airwave offers various functions including:

- All informed talkgroups via trunked mode operation;
- Direct mode operation offering back-to-back communications;
- Point-to-point radio calls using the press to talk button;
- Emergency button giving pre-emptive, high priority access to a talkgroup;
- Telephone call to other Airwave terminals, land line or mobile phone;
- Text or short data messaging;
- Updating of personnel status.

The application of Airwave differs between the emergency services as appropriate to their needs. Not all functionality is enabled or permitted for use by all personnel. Users must be aware of the limitations of the equipment and not use functions that are not included in their service's policy for Airwave. Doing so may negatively impact on other users.

5.2 DEFINITION OF TYPES OF TALKGROUPS

There are four types of talkgroups available.

- Normal Working;
- Interoperability;
- Command;
- Operational.

It is essential that incident commanders understand Airwave protocols and how to best use the equipment to establish inter-agency communication suitable to their level of responsibility.

5.2.1 NORMAL WORKING TALKGROUPS

A normal working talkgroup is used by police control rooms to communicate with resources to deploy or control them in normal business. The Ambulance Service deploy their resources by mobile data terminal and point-to-point communication. The Fire and Rescue Service use their normal communications arrangements to deploy resources and communicate with operational personnel.

For those services that have already migrated to Airwave, normal working talkgroups are those used on a daily basis by control rooms, and are usually arranged by geographic areas, but they can also be defined by function.

5.2.2 COMMAND TALKGROUPS

A command talkgroup is used by police Silver (Tactical) or Bronze (Operational) Commanders or Controls to enable communication between the Silver (Tactical) and Bronze (Operational) tiers of command. The Ambulance Service use their normal communications arrangements for at-incident communications, and the Fire and Rescue Service use Fireground UHF radio in this situation.

Command talkgroups should not usually be used to communicate between the Gold (Strategic) and Silver (Tactical) tiers of command. This is to avoid the Gold tier becoming involved in controlling resources or the Gold commander becoming embroiled in tactical matters. Airwave can provide resilience in communications between Gold (Strategic) and Silver (Tactical) tiers of command if other systems fail.

5.2.3 OPERATIONAL TALKGROUPS

An operational talkgroup is used by police Silver (Tactical) or Bronze (Operational) Commanders or Controls to communicate with personnel deployed at an incident. It can be specific to a geographic area or particular functional role.

The Ambulance Service uses an all-informed channel for deployment and movement of resource. The Fire and Rescue Service use their Fireground UHF radio system in these circumstances.

5.2.4 INTEROPERABILITY TALKGROUPS

An interoperability talkgroup is used by Silver (Tactical) or Bronze (Operational) Commanders from an emergency service to communicate with commanders or controls of other emergency services.

At the discretion of the incident commanders, it may be appropriate to use an interoperability talkgroup as an operational talkgroup for more than one service; this will facilitate immediate exchange of critical information at the appropriate level.

There are numerous talkgroups designed to facilitate interoperability between same service and partner organisations. Reference must be made to the authoritative guidance published by each of the three emergency services for advice on which talkgroups to use. In situations where the capacity of the system is limited, interoperability talkgroups may also allow individuals to prioritise their own transmissions, thereby providing self regulation of traffic on a talkgroup.

5.3 IMPLEMENTATION OF INTEROPERABILITY TALKGROUPS

Interoperability talkgroups can be used on a day-to-day basis where a protocol exists within the Local Resilience Forum (LRF) in England (excluding London), Regional Resilience Forum (RRF) in London, Strategic Coordinating Group (SCG) in Scotland, or devolved administration area in Northern Ireland and Wales. Any such protocol should state clearly which talkgroups can be used, who can use them and under what circumstances. It should include escalation procedures to deal with major events, emergencies or major incidents.

If an incident occurs where the use of an interoperability talkgroup is required for effective command and control, the relevant talkgroup should be activated, monitored and recorded as appropriate.

Processes must be in place to ensure that all those who need to use the talkgroup are aware it is in use and that they know how to access it. Consideration should be given to recording the talkgroup and maintaining an audit trail of decisions and events.

If an Ambulance, Fire and Rescue or Police Service Silver (Tactical) Commander (for a spontaneous incident) or a Silver (Tactical) Commander (Designate) (for a planned operation) uses an interoperability talkgroup, they must follow the necessary protocol, which will include notifying the appropriate control room.

When expecting an individual to use an interoperability talkgroup, consideration must be given to the other lines of communication currently in use and the capacity of that individual to manage them.

5.4 AIRWAVE SPEAK

Airwave Speak is a nationally recognised form of words to be used at all times by personnel from all police services and some ambulance services using the voice function of an Airwave terminal. The purpose is to provide more efficient, disciplined communications between radio users. It is a national standard for radio communications which offers consistent and concise communications to ensure that there is no confusion during voice transmissions.

It was developed to improve standards of radio discipline and is based on the principles of:

- Accuracy;
- Brevity;
- Clarity;
- Discipline.

5.5 AIRWAVE TEAMS

Each emergency service has teams available to advise on Airwave and how it can be used tactically in any given situation. These may be an in-service Airwave team specific to an area or may be part of a external managed service. Airwave teams can be consulted on capability and coverage issues and the appropriate talkgroups for use in a particular event or incident.

5.6 AIRWAVE TACTICAL ADVISER

Airwave Tactical Advisers are personnel trained to advise control room supervisors, Gold (Strategic) and Silver (Tactical) commanders on how to make best use of talkgroups and identify capacity issues at planned operations or spontaneous incidents.

When planning for events, an Airwave Tactical Adviser or equivalent must be consulted to advise on the type and nature of talkgroups to be used. During a spontaneous incident, an Airwave Tactical Adviser can be requested to support the control room supervisor, Gold (Strategic) Commander or Silver (Tactical) Commander(s) to construct an appropriate communications plan for use by the Silver (Tactical) and Bronze (Operational) tiers of command and between their controls.

A communications plan should include all communications arrangements up to and including the Gold (Strategic) tier of command.

5.7 CAPACITY

At any planned event or spontaneous incident, the Airwave system has a finite amount of capacity. The Airwave Tactical Adviser or Airwave Team will be able to advise on the communications tactics that are appropriate in terms of Airwave capacity available at a specific location.

When personnel from multiple agencies are operating on Airwave, each must be aware of the presence of the others so that they can properly consider how their communications impact on capacity and thus the capability of others to also use the system.

Issues to consider when managing communications at either planned events or spontaneous incidents include:

- Extraneous talkgroups dragged into the vicinity of the incident by attending units will impact adversely on the network's capacity available to deal with the incident. The focus **must be** on the response to that incident or event. Staff must use the correct talkgroups, and not listen to other talkgroups that are inappropriate to their current role or location. This applies to Airwave terminals in vehicles as well as to personal terminals.

- The use of Airwave telephony and point-to-point calls have a significant impact on capacity and should be discouraged during major incidents or events. Telephone and point-to-point calls using Airwave are not recorded and so will not be available as a contemporaneous record of events.

- When travelling to another area on mutual aid, emergency service personnel using Airwave are encouraged to minimise the impact they have on the capacity of the areas through which they travel. This may involve using a travelling talkgroup where available or other solutions in accordance with their service protocol. Personnel must not listen to other talk-groups without having a clear operational need to do so as this will 'drag' additional capacity requirements from the area.

5.8 INTERIM BRONZE INTEROPERABILITY SOLUTION

Extra Airwave handsets (terminals) are available for use at incidents and pre-planned events by Silver (Tactical) and Bronze (Operational) commanders from the Ambulance and Fire and Rescue (FRS) Services, so that all three emergency services can communicate on the same radio network. Handsets can also be made available to managers in other agencies that need resilient communication with the emergency services. These are the Interim Bronze Interoperability Solution (IBIS) radios, which have been configured with the talkgroups needed for interoperable multi-agency communications. Local authorities and many partner agencies already have their own Airwave radios which can also communicate on some of these talkgroups.

Police commanders do not need IBIS radios; their own terminal has been loaded already with the required police-to-police and multi-agency interoperability talkgroups. All personnel need to familiarise themselves with the use of IBIS radios, particularly the capabilities and functions provided by the Airwave terminal. It may be necessary to involve other personnel to support Silver (Tactical) and Bronze (Operational) commanders in monitoring the other command and operational talkgroups in use.

IBIS provides an enhanced and resilient communications capability when other systems either fail or provide only limited service. They complement rather than replace standard communications equipment used by the Ambulance and Fire and Rescue Services at incidents. In addition to the interoperability talkgroups, IBIS provides back-to-back (Direct Mode Operation) and point-to-point communication, plus mobile telephony. However, unless specific circumstances necessitate the use of these, inter-agency communication should be restricted to the talkgroups, so as not to exceed network capacity. Guidance should always be sought from an Airwave Tactical Adviser or Airwave Team.

Each LRF, RRF, SCG or devolved administration should agree a protocol for use of the IBIS scheme. This should include when and how it can be activated, who should use the Airwave radios, the type of message that can be sent and the language to be used. IBIS Airwave radios may be issued by an Airwave Tactical Adviser, or other designated person, who is able to assist and advise the personnel to whom the radio is issued.

APPENDIX 1 ABBREVIATIONS AND ACRONYMS

ABBREVIATIONS AND ACRONYMS

ACPO ..... Association of Chief Police Officers
ACPOS ..... Association of Chief Police Officers Scotland
ASN ..... Ambulance Service Network
BTP ..... British Transport Police
CHALETS ..... Casualty, Hazards, Access/egress, Location, Emergency services, Type of incident, Safety and start the log
COP ..... Common Operating Picture
CRIP ..... Common Recognised Information Picture
DH ..... Department of Health
ETSI ..... European Telecommunications Standards Institute
FCP ..... Forward Command Post (England, Northern Ireland and Wales)
FCP ..... Forward Control Point (Scotland)
FICCS ..... Fully Integrated Command and Control System
FRS ..... Fire and Rescue Service
HO ..... Home Office
IBIS ..... Interim Bronze Interoperability Solution
ICCS ..... Integrated Command and Control System
ICP ..... Incident Command Post
IIMARCH ..... Information, Intention, Method, Administration, Risk Assessment, Communication, Human Rights Compliance
IRIMAC ..... Information, Risk, Intention, Method, Administration, Communication
IT ..... Information Technology
LRF ..... Local Resilience Forum (Strategic Coordinating Group in Scotland)
MDT ..... Mobile Data Terminal
METHANE ..... Major incident declared and call sign, Exact location, Type of incident, Hazards, Access/egress, Numbers of casualties, Emergency services
NPIA ..... National Policing Improvement Agency
NHS ..... National Health Service
PDA ..... Personal Digital Assistant
RRF ..... Regional Resilience Forum
SCC ..... Strategic Coordinating Centre
SCG ..... Strategic Coordinating Group
TCG ..... Tactical Coordinating Group
TETRA ..... TErrestrial Trunked RAdio

APPENDIX 2
GLOSSARY OF TERMS

BRONZE
Bronze is the tier of command at which operational delivery of tasks undertaken. Bronze is below Silver.

BRONZE COMMANDER
(known as an OPERATIONAL COMMANDER in Scotland)
A Bronze (Operational) Commander is an individual with responsibility for the delivery of operational tasks as determined by the Silver (Tactical) Commander. A Bronze (Operational) Commander is normally a supervisor from the Ambulance Service, Fire and Rescue Service, and Police Service. The tasks may be based on a geographic area or on a function. There can be several Bronze (Operational) Commanders appointed for large-scale planned events and spontaneous incidents.

FORWARD COMMAND POST (FCP)
(known as a FORWARD CONTROL POINT (FCP) in Scotland)
This is a location, near the scene, where the response by the emergency services to the scene of an emergency or major incident is managed. At emergencies or major incidents where there is a defined scene, the FCP is where the Fire and Rescue Service, and Ambulance Service Silver Commanders will be located. The police Silver Commander may be located at the FCP, or a Bronze Scene Manager will be appointed to operate at the FCP in conjunction with the other emergency services and responding agencies. Mobile command facilities can be used to establish an FCP.

FULLY INTEGRATED COMMAND AND CONTROL SYSTEM
This is a technical system that links the command and control computer systems used by the emergency services with telephony, radio and other digital information communications methods. A Fully Integrated Command and Control System (FICCS) incorporates all aspects of communications required for command and control.

GOLD
Gold refers to the strategic tier of command and control at which the aim, objectives, policies and the overall response framework are established and managed. Gold is a higher tier than Silver.

GOLD COMMANDER
(known as a STRATEGIC COMMANDER in Scotland)
This is an individual with responsibility for the overall command of an incident at the Gold tier. It can be an ambulance officer, fire officer or police officer of any managerial rank, but is normally a chief officer, principal officer or executive level manager.

GOLD SUPPORT
(also known as STRATEGIC SUPPORT)
A team of people constituted to provide the necessary administrative, strategic, scientific and technical support to the Gold (Strategic) Commander.

INTEGRATED COMMAND AND CONTROL SYSTEM
This is a technical system that links the command and control computer systems used by the emergency services with telephony, radio and other digital information communications methods. An Integrated Command and Control System (ICCS) incorporates some aspects of communications systems required for command and control, as opposed to a Fully Integrated Command and Control System, which incorporates all communications networks and systems.

INCIDENT COMMAND POST (ICP)
This term is obsolete in England, Northern Ireland and Wales; the term Silver Control is now used. In Scotland, however, the abbreviation ICP is still in use referring to an Incident Control Post.

INITIAL RESPONDER(S)
This generic term is used to describe the ambulance paramedics, technicians, firefighters, fire officers, police officers, police community support officers, special constables or police staff, of whatever rank or grade, who are the initial individuals to attend the scene of a sudden impact emergency or major incident. It replaces the term first officer at the scene.

SILVER
A tier of command and control at a tactical level, where the response to the incident is actually managed. Silver is a tier below Gold but above Bronze.

SILVER COMMANDER
(known as a TACTICAL COMMANDER in Scotland)
This is an individual with responsibility for the tactical command of the incident at the Silver tier. It can be an ambulance officer, fire and rescue officer or police officer of any supervisory rank. The Fire and Rescue Service use the term Incident Commander for the fire officer with tactical command of an incident. At spontaneous incidents, and depending on the duration, scale and nature of the incident, the initial Silver (Tactical) Commander may be replaced by another officer of higher rank or with greater experience or qualifications. The initial Silver (Tactical) Commander should continue to work alongside the current Silver (Tactical) Commander for continuity purposes.

SILVER COORDINATING GROUP
An alternative name for a Tactical Coordinating Group.

SILVER CONTROL
(also known as TACTICAL CONTROL)
This is a location where the functions can be based to direct and control the tactical operations within the span of command of the Silver Commander. A Silver (Tactical) Control is normally located away from the scene of a major event, an emergency or major incident. A Silver (Tactical) Control may be located at a suitable police station. A police Silver (Tactical) Commander may be located at the Silver (Tactical) Control, with Silver (Tactical) liaison officers deployed there from the Ambulance Service and Fire and Rescue Service. The Silver (Tactical) Control is normally where the Tactical (Silver) Coordinating Group meets.

SILVER CONTROL MANAGER
(also known as a TACTICAL CONTROL MANAGER)
A police officer responsible to the Silver (Tactical) Commander for the efficient running of Silver (Tactical) Control (may also act as deputy Silver (Tactical) Commander).

SILVER SUPPORT
(also known as TACTICAL SUPPORT)
A suitable location, normally a police station near to the scene of the incident, where the Silver (Tactical) Support functions (planning, information, resources, logistics, finance and legal) can be undertaken, and personnel working on these functions on behalf of the Silver (Tactical) Commander can be accommodated.

SILVER SUPPORT OFFICER
(also known as a TACTICAL SUPPORT OFFICER)
A police officer or member of police staff responsible to the Silver (Tactical) Commander for planning, information, resources, logistics, finance and legal arrangements in relation to the incident, and for managing the Silver (Tactical) Support functions.

TACTICAL COORDINATING GROUP
This is a group of tactical commanders who meet regularly to determine and deliver the tactical response to an emergency or major incident. The group is normally chaired by the police Silver (Tactical) Commander. This is also known as a Silver (Tactical) Coordinating Group.

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