



Service Standard 5.1.3 Communication Systems

Date of Issue 17 June 2013

Version Number 3.0

1. Purpose

- 1.1 Standardised communications systems and hardware provide a higher degree of reliability for users and provide a more efficient and effective systems support capability.
- 1.2 A standard approach to systems planning, development and implementation of radio and paging communication systems and/or devices will benefit the NSW Rural Fire Service (NSW RFS) by providing all members with reliable communication systems during emergency situations.

2. Policy

- 2.1 Communication systems standards reflect industry best practice and align with NSW Government Information and Communications Technology policy, guidelines and framework.
- 2.2 District Managers are to include in their annual budget, all expenses relating to radio and paging systems, which includes procurement, ongoing maintenance upgrades/replacements, as well as unscheduled emergency repairs.

Communications Hardware Procurement

- 2.3 All communications equipment intended for use on NSW RFS radio and paging networks is to conform to NSW RFS requirements.
- 2.4 All communications equipment intended for use on NSW RFS communications systems is to be purchased in accordance with NSW RFS and Government Procurement Policies.

Programming Profiles

- 2.5 All radio and paging communications will operate in the designated part of the radio frequency spectrum in accordance with legislative requirements on licensed frequencies.

- 2.6** All communications equipment intended for use on NSW RFS communications systems must be programmed with the Services' standard profiles to ensure standardisation of operating conditions across the NSW RFS. Profiles are available from the Communication Systems Section located at Headquarters.
- 2.7** The paging software used with the Post Office Code Standard Advisory Group (POCSAG) paging system will be specified by the Communication Systems section located at Headquarters.

Communications Systems Design and Engineering

- 2.8** All radio and paging communications systems will be engineered, designed and/or approved by Communication Systems. The system design, engineering and site selection is a collaborative effort between the District office and Communication Systems, however final approval rests with Communication Systems.
- 2.9** The installation of radio and paging communication systems will be coordinated by Communication Systems. This will be carried out in consultation with District management with the view to using local contractors listed under the appropriate NSW Government Procurement contracts. This does not include vehicle radio installation.
- Further information can be obtained from NSW RFS Communication Systems or Procurement sections.
- 2.10** All primary NSW RFS radio networks will be Ultra High Frequency (UHF) Private Mobile Radio (PMR) or Government Radio Network (GRN) broadcast systems, in analogue or digital technology, so that when activated, all base stations in the system operate simultaneously.
- 2.11** Where the GRN is used as the primary network by Districts this is the only GRN channel/talkgroup permanently allocated to a District.
- 2.12** The GRN network also provides for common channels used in joint operations with other Emergency Sector or Government Agencies. These are Emergency Service Organisation (ESO) or Government Liaison (GL) or GRN Operational Channels. Due to the shared nature, NSW RFS State Operations is to be advised when these are required for use.
- 2.13** NSW RFS paging systems will use the Very High Frequency (VHF) allocated to the NSW RFS and the protocol shall only be POCSAG.
- 2.14** Principally, all fire ground radio communications will occur on the licensed VHF frequencies using radios identified by Communication Systems. Where this is not yet achievable, the District Manager may waive this requirement, provided they are working to achieve compliance within a reasonable time and are satisfied that current operations can be conducted safely.

Communication Base Sites

- 2.15** All radio and paging communications sites will be licensed in accordance with legislative requirements for all equipment operating at the location.
- 2.16** A tenancy licence agreement will be in place for all radio sites utilised by the NSW RFS.
- 2.17** The District Manager is to ensure maintenance agreements are in place with approved contractors to provide regular system tests and maintenance. Maintenance and test records are to be retained for audit purposes.
- 2.18** In the absence of evidence to confirm regular system testing and maintenance has been performed, Communications Systems may engage an external party to carry out maintenance or testing. Any charges incurred shall be charged back to the District.
- 2.19** The District Manager is to ensure that all communications assets are advised to the local Council for inclusion in the Council's Total Asset Management (TAM) Plan and insurance requirements, in line with the Rural Fire District Service Agreement.

Guidelines and Security

- 2.20** Information regarding access to any agency's radio and paging communication system, such as dial-up phone numbers, pager codes, pin numbers and frequency lists, is confidential information and should not be divulged to any persons without authorisation from the District Manager, Operations Officer or Manager Communication Systems.

Unlawful Use of Communications Equipment

- 2.21** The use of any telecommunications systems to make or send fraudulent, unlawful, or abusive information, calls or messages is prohibited. All members of the NSW RFS have an obligation to report any threatening, intimidating or harassing telephone calls or electronic messages to an officer authorised under agency policy to receive such reports, or to their manager.
- 2.22** Any member identified as the initiator of fraudulent, unlawful, or abusive calls or messages is subject to disciplinary action under Service Standard 1.1.2 Discipline and possible criminal prosecution.

3. Links

- Policy P5.1.3 Information, Communications and Technology (ICT) Security
- Policy P5.1.6 Records Management
- Policy 1.1.5 Purchasing
- Service Standard 1.1.7 Code of Conduct and Ethics
- Service Standard 1.1.2 Discipline

- Service Standard 1.1.14 Personal Information and Privacy
- Government Information and Communications Technology Policy
- *Telecommunications Act, 1997 (Cth)*
- *Radiocommunications Act, 1992 (Cth)*
- *Telecommunications (Interception & Access) Act 1979 (Cth)*
- *Telecommunications (Interception) Amendment Act 2006 (Cth)*
- *Telecommunications (Interception and Access) (New South Wales) Act 1987*
- NSW RFS/SES Memorandum Of Understanding
- Radio Communication Equipment - Standard Operating Environment
- Preferred Supplier Agreement
- Site License Agreement
- SOP 5.1.3-1 Mobile Radio Equipment
- SOP 5.1.3-2 Entering into Site Agreements
- SOP 5.1.3-3 System Planning and Engineering
- SOP 5.1.3-4 Maintenance of Radio and Paging Sites
- SOP 5.1.3-5 Recording Systems
- SOP 5.1.3-6 Paging Networks and other agencies
- SOP 5.1.3-7 Issuance of RFS Profiles by third parties
- SOP 5.1.3-8 Installation of Mobile Radio Equipment
- SOP 5.1.3-9 Paging Systems – User Procedures
- SOP 5.1.3-10 Paging Systems – CAPCODE Administration
- SOP 5.1.3-11 Command Vehicles Standard Equipment

4. Who is responsible for implementing the Service Standard?

- Director Infrastructure Services

5. Amendments

- Inclusion of SOP 5.1.3-9 Paging Systems – User Procedures
- Inclusion of SOP 5.1.3-10 Paging Systems – CAPCODE Administration
- SOPs updated to reflect current practice
- SOE, Preferred Supplier Agreement and Site License Agreement removed and published as separate documents

17 June 2013



SOP 5.1.3-1

Mobile Radio Equipment

This SOP forms part of	SS 5.1.3 Communication Systems
Related Form(s)	<ul style="list-style-type: none">▪ Preferred Supplier Agreement▪ NSW RFS Radio Communication Equipment SOE

1. Purpose

1.1 The purpose of this Standard Operating Procedure (SOP) is to list the equipment that has been evaluated as the standard equipment capable of meeting the needs of the NSW RFS operationally, and in line with Government Information and Communications Technology Policy, guidelines and framework.

2. Procedures

2.1 Although certain specific equipment makes and models are specified in this SOP and the associated Standard Operating Environment (SOE), from time to time new models and makes of radio equipment appear in the market place. The use of any new equipment must be approved by Communication Systems to ensure its suitability before it is installed.

Radio Repeater Equipment

2.2 Specifications of current approved radio repeater equipment manufacturers and models are listed in the Radio Communications Equipment SOE.

PMR/GRN UHF Mobile/Portable Radio Equipment

2.3 All NSW RFS operational vehicles will be fitted with a Motorola P25 conventional and trunk mobile radio as the primary radio, which will be GRN ID enabled and activated. This radio will be known as the tier 1 or primary radio.

PMR UHF (400 – 480MHz) Mobile/Portable Radio Equipment

2.4 The tier 2 or secondary PMR/GRN UHF radio may be selected from the following list of manufacturers and will be P25 conventional and trunk capable. These radios will be enabled with GRN ID:

- (a) Tait;
- (b) Simoco; or
- (c) Motorola.

If Simoco radios are used, the controller microphone/handsets will be coloured red.

VHF High Band (136-174 MHz) Mobile/Portable Radio Equipment

- 2.5** Tait or Simoco VHF 136-174MHz mobile radio will be used for NSW RFS fire ground use and communication with other agencies as per the standard profile available only from Communications Systems. If Simoco radios are used, the controller microphone/handsets will be coloured blue.
- 2.6** Benelec BL500 VHF 136-174 MHz portable radios will be used for handheld NSW RFS fire ground communications.

VHF Mid Band (66-88 MHz) Mobile Radio Equipment

- 2.7** Tait or Simoco VHF 66-88MHz mobile radio will be used for communication with other agencies as per the standard profile. If Simoco radios are used, the controller/microphone handsets will be coloured yellow.

Aviation Band Mobile/Portable Radio Equipment

- 2.8** Icom aviation band radios will be used for communicating with aircraft in both mobile and portable/handheld applications.

Vehicle Radios

Red Fleet

- 2.9** Group Officers vehicles will be fitted with a:-
- (a)** A tier 1 PMR/GRN as the primary radio;
 - (b)** A tier 2 UHF radio; and,
 - (c)** A fire ground radio.
- 2.10** Tankers will be fitted with a tier 1 radio for PMR/GRN use and a Tait fireground radio prior to delivery to the District.

White Fleet

- 2.11** All White Fleet vehicles will be equipped with one tier 1 PMR/GRN primary radio as well as a tier 2 UHF radio.

Operational Command Vehicles (OCVs)

- 2.12** The radios to be fitted in Operational Command Vehicles are specified in SOP 5.1.3-11 Operational Command Vehicles Standard Equipment.

Note: Where the need for products outside of Clauses 2.3 to 2.9 are identified, application for exemption is to be made to Manager Communication Systems.



SOP 5.1.3-2

Entering into Site Agreements

This SOP form part of SS 5.1.3 Communication Systems

- Related Form(s)**
- NSW Rural Fire Service Site Licence/Occupation Agreement Head User
 - NSW Rural Fire Service Site Licence/Occupation Agreement Co-User

1. Purpose

- 1.1** The NSW RFS requires multiple communications tower/sites in various locations so as to provide the communications infrastructure necessary to support operational responses and activities. As such, a Site Agreement for each site is required to be in place between the NSW RFS and the operator of the site.
- 1.2** This Standard Operating Procedure (SOP) sets out the processes necessary to meet these responsibilities in occupying space on a communications site which is not owned or managed by the NSW RFS.

2. Procedures

- 2.1** Following identification of a communications site, the District must have a formal site agreement in place prior to any site works being commenced.
- 2.2** The following site details are required in order to facilitate occupation of the preferred site. These details must include:
- (a)** land owners name details (ABN required);
 - (b)** lot and DP numbers;
 - (c)** copy of formal council Development Application approval (if applicable); and
 - (d)** other site occupier details.
- 2.3** The District Manager will then negotiate on behalf of the local Council/s a legal licence/occupation agreement with the site owner. This agreement shall be in accordance with any Service Level Agreement between the NSW RFS and other parties, that may be in place.
- 2.4** Once the licence/occupation agreement has been finalised and signed off by all parties, a signed copy is to be retained by the District Office and a copy provided to the Regional Infrastructure Manager and the Communication Systems section at Headquarters.

- 2.5** Communication Systems will then grant approval for the site works to commence.
- 2.6** Once the site is operational, a maintenance contract is to be negotiated with an approved supplier and managed by the District Manager in conjunction with Communications Systems.



SOP 5.1.3-3

System Planning and Engineering

This SOP forms part of SS 5.1.3 Communication Systems

Related Form(s) ▪ NSW RFS Radio Communication Equipment SOE

1. Purpose

- 1.1 The NSW RFS has a responsibility to provide and maintain communications infrastructure necessary to support operational responses and activities. As such, the NSW RFS needs to have multiple communications sites in various locations to meet this responsibility.
- 1.2 This Standard Operating Procedure (SOP) sets out the processes necessary to plan and engineer a communications site in accordance with relevant government legislation and operational requirements.

2. Procedures

System Planning

- 2.1 The District Manager is to notify Communication Systems located at Headquarters if there is a need to upgrade, relocate or decommission any communications sites.
- 2.2 The District will initially identify potential locations for any new communication tower sites based on need and local knowledge. Communication Systems personnel will be made available to assist in this determination if required.
- 2.3 Information on possible site locations is to be provided to Communication Systems so that preliminary network planning and site propagation diagrams can be completed in an attempt to avoid frequency re-use and coverage issues.
- 2.4 Communications Systems will obtain suitable frequency assignments for any proposed radio systems and will obtain frequency allocations from an accredited external provider and licence the frequencies allocated through the Australian Communications and Media Authority (ACMA).
- 2.5 Communication Systems in conjunction with a nominated District delegate, will liaise with site owners/managers regarding proposed

location of antenna equipment and site requirements for equipment storage.

- 2.6** Quotations will be sought for the supply and installation of required equipment to commission the communications site from approved Government contract suppliers.

System Engineering

- 2.7** Consideration must be given to the structural integrity of any towers or other infra-structure being used for the communications site.
- 2.8** Communication Systems is responsible for preparing engineering diagrams to identify the location of equipment: both antennas on towers/structures, as well as the technical equipment located in huts for the new site location.
- 2.9** Technical specifications will be supplied by Communication Systems for cabling, antenna and power supply requirements, based on the equipment to be installed, to ensure it operates at maximum efficiency.
- 2.10** All communications sites must have back-up power contingency plans in place, including battery banks set up with charging regulators to maintain power, in the event of a mains failure.
- 2.11** Construction standards for communications equipment huts will be supplied by Communication Systems, including but not limited to:
- (a)** maximum and minimum operating temperatures for electronic equipment;
 - (b)** ventilation;
 - (c)** optimum storage space required for equipment to be located in the hut;
 - (d)** site fencing; and,
 - (e)** site access.

Installation of Equipment

- 2.12** Prior to any installation works commencing, a site licence agreement must be in place and a copy provided to Communication Systems.
- 2.13** All NSW RFS equipment installations will be carried out by NSW Government contract approved suppliers. Quotes will be sourced by Communication Systems from the approved contract suppliers in the area for construction/installation of the site.
- 2.14** All contractors are to install the equipment in accordance with ACMA, Work Health and Safety legislation and the NSW RFS Radio Communication Equipment Standard Operating Environment (SOE).

Commissioning

- 2.15** A NSW RFS Communication Systems Audit and Compliance Officer will attend the completed site and check/audit all construction works to ensure all equipment is working to maximum potential and within legal guidelines. The Audit and Compliance Officer will participate in field testing by the local District to ensure the system is working correctly.



SOP 5.1.3-4

Maintenance of Radio and Paging Sites

This SOP forms part of SS 5.1.3 Communication Systems

Related Form(s) ▪ Preferred Supplier Agreement

1. Purpose

1.1 The NSW RFS has communications infrastructure all over NSW for radio and paging communications. This Standard Operating Procedure (SOP) outlines the requirements for maintaining this infrastructure by suitably qualified and approved technicians in order to maintain optimum operational ability.

2. Procedures

2.1 All NSW RFS PMR and paging radio sites are to be checked, tested and re-aligned annually as a minimum, and in accordance with the Preferred Supplier Agreement.

2.2 A Preferred Supplier Agreement must be in place for all communications sites to ensure a standardised approach to equipment maintenance, record keeping and fault/incident reporting, and that maintenance is carried out in accordance with approved standards at a set time.

2.3 All Districts are responsible for ensuring maintenance checks are completed at the due times and must notify Communication Systems if the checks are not carried out at as scheduled, in accordance with the Preferred Supplier Agreement.

2.4 In accordance with the Preferred Supplier Agreement, completed copies of all site inspection documentation must be forwarded to Communication Systems within 21 days of completion of the site check.

2.5 Districts must budget for the annual maintenance checks in their local estimates/budget process.



SOP 5.1.3-5

Recording Systems

This SOP forms part of	SS 5.1.3 Communication Systems
Related Form(s)	<ul style="list-style-type: none">▪ Emergency Service Facility Signage▪ List of Approved Emergency Service Facilities

1. Purpose

- 1.1 The NSW RFS has a need to record emergency related messages, which must be undertaken in accordance with legislative requirements.
- 1.2 This Standard Operating Procedure (SOP) sets out the process for purchasing appropriate voice recording devices, and the procedures for managing the information captured during the recording process.

2. Procedures

Legislative Requirements

- 2.1 Under the *Telecommunications (Interception and Access) Act 1979*, all NSW RFS sites where recording of telecommunications occurs must be declared an Emergency Service Facility (ESF) by the Federal Attorney-General.
- 2.2 District Managers are responsible for ensuring that the location at which they propose to carry out recording has been declared an ESF.
- 2.3 Once a facility has been declared an ESF by the Federal Attorney-General, appropriate signage must be posted at each entrance stating that communications to and from the facility may be monitored and recorded.
- 2.4 Communications Systems is the conduit between the District Office and the Attorney-General.

Recording System Planning and Installation – New product purchases

- 2.5 All new voice recorders must be ordered in consultation with Communication Systems to ensure local and Headquarters server compatibility needs are met.
- 2.6 The following information must be supplied to Communication Systems to assist in selecting the appropriate voice recording equipment:

- (a) Details of any current recording equipment in place;
 - (b) Make, model and specifications of the current PABX in use at the ESF; and,
 - (c) Details of the communications circuits/channels to be recorded.
- 2.7 Communication Systems will evaluate the ESF needs based on the information provided, to select the most appropriate system available through State Government contract.
- 2.8 Communication Systems will verify whether the fire control centre is a declared ESF.
- 2.9 Communication Systems will obtain quotations from Government contract suppliers and forward these to the District Manager.
- 2.10 The District Manager will raise the order through the approved NSW RFS purchasing system, and include the details shown on the quote.
- 2.11 The equipment supplier will build the system and arrange to install and commission the equipment at the ESF.
- 2.12 Following installation, a Communication Systems Audit and Compliance Officer will attend the site to ensure the equipment has been set up and is operating correctly and in accordance with NSW RFS and legislative requirements.
- 2.13 Communication Systems will manage the recording system remotely from Headquarters, setting up users in the system and access permissions.
- 2.14 The District Manager will ensure an ongoing annual maintenance agreement is in place with the supplier or an appropriate contractor.

Recording System Business Rules – All Devices

- 2.15 District Managers must ensure that all recording systems are operated in accordance with the *Telecommunications (Interception & Access) Act 1979*, the *Radiocommunications Act 1992* and any other requirements.
- 2.16 The use of electronic recording systems does not replace the need to keep handwritten logs of events.

What Should be Recorded

- 2.17 As a minimum, a District office is to maintain an audio recording of the:
- (a) “000” (fire line);
 - (b) main operational telephone line(s); and
 - (c) main working radio channel.
- 2.18 District Managers should assess the need for additional recording lines in order to provide an optimum record of District operations.

- 2.19 The Rapid Recall function available on some systems should only be used for clarification of details passed in a recent conversation.
- 2.20 All ESF locations must provide the option of one non-recorded telephone line as personal privacy considerations need to be taken into account.

Device Location and Access

- 2.21 All recording devices shall be situated in a secure area, with restricted physical access (for example a lockable rack). Access to the system software will be restricted by means of a password, known only to the District Manager or designated staff members.
- 2.22 The District Manager will maintain a current register of people with password access to the system.

Storage Media and Access

- 2.23 The ongoing management of the recorded data is the responsibility of the District Manager in conjunction with Communication Systems.
- 2.24 Once the storage medium is fully utilised it shall be forwarded to the Records Unit at Headquarters where it will be catalogued and securely stored in accordance with standard record keeping procedures.
- 2.25 If access to a recording is required and the criteria set out in Service Standard 1.1.14 Personal Information and Privacy is met, it can be retrieved as per the standard records process.



SOP 5.1.3-6

Paging Networks and Other Agencies

This SOP forms part of SS 5.1.3 Communication Systems
Related Form(s) ▪ None

1. Purpose

- 1.1 The NSW RFS is responsible for a paging network in NSW which, in some areas of the state, is utilised by other emergency service organisations. This Standard Operating Procedure (SOP) sets out the process for the development of formal agreements which must be in place to ensure the system usage is monitored and recorded legally.
- 1.2 This paging network may be utilised by other bodies including emergency service organisations, provided a Memorandum of Understanding (MOU) or other agreement is in place.

2. Procedures

- 2.1 Those bodies requiring access to NSW RFS District paging networks should initially contact Communication Systems at Headquarters or the District Manager, stating their need for access to the paging network and an outline of their requirements from the system.
- 2.2 If the system is capable of providing the service required by the requesting emergency service, the District Manager and Communication Systems will provide details of the agency requesting the service so formal agreements can be put in place.
- 2.3 Communication Systems will then develop a MOU with the requesting agency which is to be signed by the Manager Communication Systems and an equivalent representative from the requesting organisation.
- 2.4 The MOU will remain in force for 3 years from date of signing, with an annual review between the agencies at a local level.
- 2.5 CAPCODES for use on the paging network will be supplied by Communication Systems from the state CAPCODE database in accordance with SOP 5.1.3-10 Paging Systems - CAPCODE Administration.



SOP 5.1.3-7

Issuance of NSW RFS Radio Profiles to Third Parties

This SOP forms part of SS 5.1.3 Communication Systems

Related Form(s) ▪ Non-Disclosure Agreement

1. Purpose

- 1.1 All radios supplied by the NSW RFS have standard radio profiles programmed into them upon supply. These profiles are necessary to ensure a standard operating environment is maintained across the communications fleet throughout rural fire brigades.
- 1.2 This Standard Operating Procedure (SOP) provides guidance for the release of secure information pertaining to the use of NSW RFS radio profiles.

2. Procedures

- 2.1 Communication Systems has profiles written for the radio equipment listed in SOP 5.1.3-1 which can be made available for programming of communications equipment for NSW RFS Districts by authorised suppliers.
- 2.2 Profiles supplied by Communication Systems are for exclusive use in NSW RFS vehicles and handheld radio equipment and must not be supplied for use in private or personal radios.
- 2.3 Profiles supplied from Communication Systems must not be modified in any way, prior to programming of radio equipment by suppliers.
- 2.4 Profiles are available through secure internet access for approved suppliers, subject to completion of a Non-Disclosure Agreement or by contacting Communication Systems.
- 2.5 Breaches of this SOP will be subject to disciplinary action.



SOP 5.1.3-8 Installation of Mobile Radio Equipment

This SOP forms part of SS 5.1.3 Communication Systems

Related Form(s) ▪ NSW RFS Vehicle Risk Assessment Worksheets

1. Purpose

- 1.1 The NSW RFS has a responsibility to provide and maintain communications infrastructure necessary to support operational responses and activities.
- 1.2 This Standard Operating Procedure (SOP) sets out technical considerations for installation of radio equipment into vehicles operated or utilised by NSW RFS personnel.

2. Procedures

Mobile Radio Supply

- 2.1 Mobile radio sets shall be supplied in accordance with accepted trade and manufacturers practice, and be certified as approved for operation within the frequency spectrum intended by the Australian Communications & Media Authority (ACMA).

Mobile Radio Installation

- 2.2 Mobile radio sets shall be installed into vehicles in accordance with the following procedures:

Fixing

- (a) Where any radio mobile equipment is installed in the cabin passenger or driver area of a vehicle, then it shall be attached or fixed so as not to present a danger to the occupants of that vehicle either during normal travel or in the event of an accident;
- (b) The radio should be installed in such a way that the controls are readily accessible to the vehicle occupants; and
- (c) Local installations or those not undertaken by the NSW RFS contract vehicle commissioning provider will be subject to the NSW RFS Vehicle Risk Assessment process, then endorsed and agreed by the nominated parties.

Wiring

- (a) All wiring associated with the installation of mobile radios shall be securely fixed and/or concealed where possible in a professional and protective manner;
- (b) All power wiring to mobile radios shall be 4mm² automotive grade as a minimum and be clearly identified as to polarity; and
- (c) Wiring should be kept as short as possible.

Fusing

Fusing or an appropriate circuit breaker of the correct type and current rating shall be applied to each circuit of the power wiring and as close to the battery as is practicable.

Note: Please refer to Australian/New Zealand Standard AS/NZ 4346:1995 (Guide to the installation in vehicles of mobile communication equipment intended for connection to a cellular mobile telecommunication service (CMTS)) for Cellular telephone devices, and as a more detailed guide to antenna placement and other installation procedures for mobile equipment.



SOP 5.1.3-9

Paging Systems

User Procedures

This SOP forms part of SS 5.1.3 Communication Systems

Related form(s) ▪ None

1. Purpose

- 1.1 The NSW RFS operates a purpose dedicated radio paging network in most areas of New South Wales. This paging service is primarily intended for time critical alerting of brigade members and NSW RFS staff to emergency incidents.
- 1.2 NSW RFS Paging services use a specialised software platform, formerly known as BASEPage®, recently updated and now known as Commtech Messenger®. Both versions are similar in operation. For the purposes of this document, both will be referred to as BASEPage®, and this Standard Operating Procedure (SOP) applies to both versions.
- 1.3 BASEPage® software is installed on a dedicated server. This server may be connected to the NSW RFS wide area network (WAN) thus allowing compatible external “client” versions of BASEPage® to connect from remote locations where the WAN is available. More recent versions of the BASEPage® server can also be accessed using a web browser from any internet connected PC. It is also possible to send SMS messages using BASEPage® if the server is enabled with a SMS Gateway.
- 1.4 Pager messages are sent to multiple radio transmitters in the area surrounding the initiating District Office where the server is located. These paging transmitters are connected to the initiating office server via separate radio links.
- 1.5 Efficient and disciplined use of a paging system will maximise benefit by conserving transmitter power requirements, reducing transmitter and link radio usage, reducing message delivery times and ensuring that congestion does not occur on network radio links and paging transmitters.
- 1.6 This SOP is intended to ensure that the NSW RFS paging system is secure and effective, and that time critical messages are sent and delivered to pagers in the most efficient manner.
- 1.7 This SOP does not address the technical aspects of system design, specification and implementation.

2. Procedures

Server Location

- 2.1 Where possible, the paging server should be located in a secure communications/server room.

System Login and Access

- 2.2 BASEPage® has several levels of login access known as Permissions. Permissions are defined by settings within the software and are generally set up at system commissioning time in consultation with the District Manager. Paging operators who do not need the ability to change settings in the higher levels of system administration may login with the user name "Guest". This method of login prevents changes being made to system configuration/operation, but allows users to readily send page messages as and when required.
- 2.3 The District Manager should nominate appropriate staff to be trained and given Administrator access to BASEPage®. Administrator access logins should only be allocated to NSW RFS staff and should always be kept secure.
- 2.4 Changes within the Administrator fields of the system setup should only be made by personnel who are trained and/or fully familiar with system operation. Advice may be obtained from Communication Systems or the system supplier.
- 2.5 System training and operating instructions are made available when the system is installed or may be obtained from the supplier. "Guest" user access is intuitive, however further training and familiarisation should be provided by District Operations staff for new operators.

Paging Messages

- 2.6 Pager messages sent via the system should be concise and contain only information needed to convey the object of the paging activation. Salutations and personal greetings etc, are unnecessary and should not be used. Unnecessary information should not be sent. Depending on the District and the types of pagers in use, messages longer than the pre-configured number of characters will be automatically split and transmitted as multiple pages.
- 2.7 General information messages to groups of personnel are acceptable (i.e. weather warnings, meeting reminders etc). However paging messages to individuals is to be avoided if a more appropriate method of communication exists (i.e. mobile phone, SMS or PMR radio as circumstances permit).
- 2.8 Paging messages should be prefixed with a time and date stamp, selectable from the operating page of the BASEPage® user software.
- 2.9 Each BASEPage® system is set up with "All Call" activation. This single contact, or recipient as defined on the BASEPage® screen, will

send a pager message to all pagers on a local network, using only a single activation of system transmitters and radio links. This facility should be used wherever possible, thus avoiding multiple repeats of the same message to many different recipients (pager contacts) and consequent delays. This is particularly important in the case of repeats of general messages intended for multiple recipients.

- 2.10** SMS is suitable for administrative, non-time critical messaging applications, but must not be used for brigade response purposes as there is no guarantee of message response times. Congestion and delays will occur when using SMS during periods of peak activity.



SOP 5.1.3-10

Paging Systems

CAPCODE Administration

This SOP forms part of SS 5.1.3 Communication Systems

Related form(s) ▪ None

1. Purpose

- 1.1 The NSW RFS operates a purpose dedicated radio paging network in most areas of New South Wales. This paging service is primarily intended for time critical alerting of brigade members and NSW RFS staff to emergency incidents.
- 1.2 NSW RFS Paging services use a specialised software platform, formerly known as BASEPage®, recently updated and now known as Commtech Messenger®. Both versions are similar in operation. For the purposes of this document both will be referred to as BASEPage®. This Standard Operating Procedure (SOP) applies to both versions.
- 1.3 This SOP concerns the programming of pagers and the Recipient database within BASEPage® software. This SOP assumes some knowledge of pager programming methods, database creation and changes within BASEPage®.
- 1.4 A pager contains a radio receiver that constantly monitors a specific radio frequency. The pager will remain silent until it receives a specific number as a string of data which tells it to alert and display a message. This number string is known as a CAPCODE.
- 1.5 A pager may contain four or more CAPCODES in its memory, and will respond to any of these codes by alerting and displaying. The CAPCODE is represented by a seven digit number programmed into pagers with a corresponding number allocated in the BASEPage® database.
- 1.6 Efficient and disciplined use of a paging system will maximise benefit by conserving transmitter power requirements, reducing transmitter and link radio usage, reducing message delivery times and ensuring that congestion does not occur on network radio links and paging transmitters.
- 1.7 This SOP is intended to ensure that the NSW RFS paging system is operated in an efficient manner such that time critical messages are sent and delivered to pagers in the most reliable and fastest way possible.
- 1.8 This SOP is intended to cover all important aspects of pager and server setup. There are many other features such as Rostering, Call Escalation,

and Departments etc. Further information on the use of these features may be obtained from the supplier or from Communication Systems.

2. Procedures

- 2.1 The programming and configuration of pagers is the responsibility of the District Manager, however Communication Systems can assist with advice or information regarding the programming of pagers.

Pagers

- 2.2 CAPCODES are strictly controlled by Communications Systems and allocated to Districts in accordance with a specific numbering plan, based on the Local Government Area (LGA) boundaries. The leading numbers in the codes are used to delineate Districts in which the pager users normally reside (staff, brigades etc). This numbering convention is available from Communications Systems. Districts must use this numbering plan when programming pagers and the BASEPage® database of contacts.
- 2.3 The remaining digits of the CAPCODE number are for allocation by the District to brigades and individuals within that District (LGA). A CAPCODE may be programmed into a single pager or may be programmed into many pagers (groups of pagers).
- 2.4 An example of a District pager CAPCODE programming plan is shown at Appendix 1. This plan uses up to four CAPCODES in each pager.
- 2.5 Pagers must be programmed:
- (a) With a District "All Call" CAPCODE. This code must be programmed into every pager used on the local District paging network;
 - (b) With the NSW RFS paging channel frequency i.e., 148.5875 MHz;
 - (c) To a data rate of 512 baud which is common to all NSW RFS pagers; and
 - (d) With the additional CAPCODES relevant to the individual pager.
- 2.6 There are many types of pager programs and programming hardware. Each type has differing features and settings. If any difficulty is experienced in using pager programming devices or software, users should consider having their pagers programmed by the supplier or their local approved contractor. Assistance in programming may also be obtained from Communication Systems or from the supplier.

BASEPage®

- 2.7 BASEPage® servers provided as part of a District's paging system installation must have no other applications apart from BASEPage® paging software installed. This equipment is for the dedicated use of BASEPage® only.
- 2.8 A recipient in BASEPage® is defined as the name of the individual or group of individuals to whom a page message is intended. Recipients

may be allocated a Pager Number known as a Local ID. This ID should have four digits, and is not related to a CAPCODE.

- 2.9** The BASEPage® Contacts name field should always contain individual staff positions, staff and administration groups, senior member positions, Captains by brigade and brigades by brigade name etc. Personal names of brigade members should not be used. A single page to a brigade may contain a discrete message to an individual who is required to be contacted, (e.g., “John Smith call Fire Control”).
- 2.10** Grouping of recipients using the Group facility of BASEPage® results in the same pager message repeated for each Group member. This is a particularly inefficient method of sending pager messages and should be avoided wherever possible. Grouping pager recipients should never exceed three members per group. If the group is considered to be a permanent necessity, consideration should be given to grouping by adding a CAPCODE and re-programming the pagers concerned.

Pager Activation by Telephone (“Man-in-the Box”)

- 2.11** BASEPage® has the capability of allowing users to send selected messages remotely via a telephone keypad if the BASEPage® server has been installed with a PBX interface. This method, known as “man in the box”, will send a message selected from a numbered list of pre-determined messages to a recipient ID.
- 2.12** Where joint District paging networks are used, i.e. the network uses more than one server, District Operations staff must ensure that the PBX Message list is common to both servers. If changes are made to the PBX Message list, these must be agreed and implemented at both servers. The District Managers are responsible for ensuring that the databases on their respective servers are kept synchronised.

Appendix 1

District Pager CAPCODE Plan - Example Only

Notes

1. In this example prefix 049 indicates the LGA as indicated in clause 2.4 above
2. Column #1 code is for Individuals and Brigades
3. Column #2 code is a repeat of the Brigade code to Captains pagers.
4. Column #3 code is a group call programmed into All Staff and Captains Pagers
5. Column #4 code is the District All Call programmed into all pagers
6. Note that CAPCODES are incremented by 8 digits

Pager Name	1 Brigades and Individual	2 Brigade Captains	3 Group Call/ All Captains	4 All Call
Dumeresq FCO	0490104		0490016	0490000
Dumeresq DFCO	0490112		0490016	0490000
Admin/ All HQ Staff	0490120		0490016	0490000
HQ Captain	0491000	0490200	0490008	0490000
HQ Brigade	0490200			0490000
Devils Pinch Captain	0491008	0490208	0490008	0490000
Devils Pinch Brigade	0490208			0490000
Herbert Pk Captain	0491016	0490216	0490008	0490000
Herbert Pk Brigade	0490216			0490000
Commiss'ner Captain	0491024	0490224	0490008	0490000
Commiss'ner Brigade	0490224			0490000
Dumaresq Captain	0491032	0490232	0490008	0490000
Dumaresq Brigade	0490232			0490000
Dangarsliegh Captain	0491040	0490240	0490008	0490000
Dangarsliegh Brigade	0490240			0490000
Hillgrove Captain	0491048	0490248	0490008	0490000
Hillgrove Brigade	0490248			0490000
Boorolong Captain	0491056	0490256	0490008	0490000
Boorolong Brigade	0490256			0490000
Warrane Captain	0491064	0490264	0490008	0490000
Warrane Brigade	0490264			0490000
Lyndhurst Captain	0491072	0490272	0490008	0490000
Lyndhurst Brigade	0490272			0490000
Ebor Captain	0491080	0490280	0490008	0490000
Ebor Brigade	0490280			0490000
Enmore Captain	0491088	0490288	0490008	0490000
Enmore Brigade	0490288			0490000
Gara Captain	0491096	0490296	0490008	0490000
Gara Brigade	0490296			0490000
Puddledock Captain	0491104	0490304	0490008	0490000
Puddledock Brigade	0490304			0490000
Captain Brigade	0491112	0490312	0490008	0490000
Jeogla Brigade	0490312			0490000
Lower Creek Captain	0491120	0490320	0490008	0490000
Lower Creek Brigade	0490320			0490000
Pt Lookout Captain	0491128	0490328	0490008	0490000
Pt Lookout Brigade	0490328			0490000
Wollombi Captain	0491136	0490336	0490008	0490000
Wollombi Brigade	0490336			0490000
Yooroonah Captain	0491144	0490344	0490008	0490000
Yooroonah Brigade	0490344			0490000
Striker Captain	0491152	0490352	0490008	0490000
Striker Brigade	0490352			0490000



SOP 5.1.3-11

Operational Command Vehicles

Standard Equipment

This SOP forms part of SS 5.1.3 Communication Systems

Related Form(s) ▪ NSW RFS Vehicle Risk Assessment Worksheets

1. Purpose

- 1.1 This Standard Operating Procedure (SOP) outlines the minimum standard communications equipment to be installed in a dedicated operational command vehicle. This ensures appropriate communication can be maintained with both the NSW RFS and other agency appliances and commanders whilst conducting operational activities.

2. Procedures

- 2.1 All operational command vehicles should be fitted with the following radios as a minimum:
- (a) Three (3) Motorola P25 conventional and trunked tier 1 PMR/GRN mobile radio as the primary radio, which will be GRN ID enabled and activated. These radios should be programmed with an approved NSW RFS PMR/GRN profile. One of these radios must be mounted in a position accessible from the driver's seat;
 - (b) A secondary or tier 2 PMR radio with P25 conventional and trunk capability. These radios will be enabled and activated with GRN ID. These radios may be selected from the following list of manufacturers:
 - i. Tait ;
 - ii. Simoco ; or
 - iii. Motorola
 - (c) Two (2) Tait or Simoco high band VHF 136-174 MHz mobile radios. One of which is for NSW RFS fireground use and the other for communication with other agencies (where required);
 - (d) One Tait or Simoco mid band VHF 66-88 MHz mobile radio for communication with other agencies (where required);
 - (e) One Icom aviation band mobile radio;
 - (f) One Next G[®] device for voice and data; and
 - (g) One UHF and one VHF repeater

All of these radios should be programmed with the appropriate approved Communication Systems profile.

Additional radios may be installed as per local requirements.

- 2.2** All operational command vehicles should be fitted with at least one dedicated mobile telephone for use during operations as well as a separate car kit and external antenna for the driver's mobile phone.