



Australian Government

Department of Communications and the Arts

# Migration of monitored fire alarm and lift phone services good practice guide

February 2019

Developed in conjunction with

Fire Protection Association Australia and the Australian Elevator Association



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## Foreword

Australia's fixed line telecommunications infrastructure is being progressively transformed as the National Broadband Network (NBN) is rolled out across the country and providing all Australian premises with access to high speed broadband and telephony services. This upgrade from a copper-based public switched telephone network (PSTN) to a digital network which uses internet protocol is revolutionising the telecommunications landscape and associated service offerings for Australian consumers and businesses. A key part of this transition involves migrating services to the new infrastructure, or where appropriate, an alternative network. This is because the existing fixed line networks are being progressively disconnected and replaced by the NBN.

When referring to the migration of services, the services that generally first come to mind are fixed-line telephone and internet services. However, some voice lines also have services running over the top of them, and these will also need to be migrated from the copper-based PSTN to an alternative telecommunications network (such as mobile or the NBN). Some of these over the top services—in particular, monitored fire alarms and lift communication devices (referred to in this document as lift phones)—are safety critical services whose non-operation in an emergency situation would pose a serious risk to public safety.

Industry feedback during the July–October 2015 consultations on the Australian Government's draft Migration Assurance Policy highlighted that more time was needed to determine the most appropriate migration solutions for monitored fire alarm and lift phone services, and to develop associated products. A migration model that responds to these concerns was subsequently initiated by the Department of Communications and the Arts, comprising of:

- A deferral, until 30 June 2017, on the disconnection of identified and registered monitored fire alarm and lift phone services was instituted. To be eligible for the disconnection deferral, registration of the correct service phone number on NBN Co Limited's (nbn's) Fire and Lift Register (the Register) was required.
- A Fire Alarm and Lift Phone Migration Roundtable and associated Working Groups (one each for monitored fire alarms and lift phones) operating for the duration of the deferral period, charged with undertaking the important work needed to determine migration solutions, develop suitable products, and drive industry transition planning.

The Roundtable and Working Groups bring together expertise across key stakeholder sectors, including the telecommunications industry, fire alarm monitoring and lift service providers, equipment providers, building owners and body corporate/strata managers, as well as relevant Commonwealth and state/territory agencies. A list of the organisations who participated in the Roundtable and Working Groups is at [Appendix D](#).

A key element of a smooth and successful migration process is role clarity for all involved parties. To this end, the Roundtable and its Working Groups have developed this Good Practice Guide which outlines the roles and responsibilities of relevant parties, what they need to do in this complex and multi-faceted process, and considerations for continued provision of services in the post-migration environment.

The Guide is designed to facilitate the migration of monitored fire alarm and lift phone services as smoothly and successfully as possible, and to support service continuity for the community.



The Guide features an overarching public policy framework, supported by technical migration solutions specific to each of the fire protection and lift maintenance industries. It is the result of extensive and detailed collaboration across industry, government, monitored fire alarm and lift service providers, equipment providers, and building owners, building managers, and bodies corporate. The Guide will be updated as necessary in the future to include new technologies and migration solutions developed by industry.

As Chair of the Fire Alarm and Lift Phone Migration Roundtable, the Department of Communications and the Arts, on behalf of the Australian Government, notes its thanks to all stakeholders—in particular the Working Group Chairs, Mr Matthew Wright of Fire Protection Association Australia and Mr Noel Smith of the Australian Elevator Association—who have generously volunteered their time and expertise for this substantial undertaking. Their efforts and contributions in bringing this important body of work together are commended.

Sylvia Spaseski  
Chair, Fire Alarm and Lift Phone Migration Roundtable  
Department of Communications and the Arts

## Introduction

Migrating monitored fire alarm and lift phone services from the existing fixed line networks over which they currently operate to a new telecommunications network is not simply a matter of moving a service over ‘from A to B’. Rather, it is a complex process involving technical, regulatory and policy considerations, as well as multiple parties.

Monitored fire alarm and lift phone services are safety critical services and it is crucial that service continuity be supported for them during their transition from the existing networks. A key challenge was identifying which existing phone lines have a monitored fire alarm or lift phone service running over the top of them, so that these services did not get caught up in the business-as-usual disconnection process, prior to 30 June 2017.

The NBN remains a suitable platform over which to deliver a wide range of telecommunications services; however the decision as to which telecommunications network to migrate to is influenced by factors specific to users’ needs and the availability of relevant products to support the transition. The most appropriate migration solution for monitored fire alarm and lift phone services—whether it be a single telecommunications network, or a combination of networks—needs to be determined by the end user of the service, in conjunction with the provider of the service.

Issues and challenges for migrating monitored fire alarm and lift phone services will also differ depending on the state or territory in which services are located. For example, some jurisdictions will be less affected by the need to migrate their monitored fire alarm and lift phone services, subject to the degree to which they have already implemented alternative migration solutions for these services.

This Good Practice Guide sets out the roles and responsibilities of each party involved in the migration process, the actions required to identify and successfully migrate services, and associated migration solutions to support these migration processes. The Guide is intended as a handbook for use by the fire protection and lift industries, building owners, building managers, and bodies corporate, application service providers (ASPs), telecommunications retail service providers (RSPs), equipment providers, and regulators and government agencies, to assist them in carrying out their roles and responsibilities in the process.





## How to Migrate a Monitored Fire Alarm or Lift Phone Service

Figure 1—Flowchart of the steps that building managers/owners need to follow to migrate a monitored fire alarm or lift phone. Detailed information about each step can be found on the next page.

WHAT DO BUILDING OWNERS, MANAGERS, AND BODIES CORPORATE NEED TO DO?	WHO ELSE IS INVOLVED?
<p><b>Step 1</b> Talk to your lift service and/or fire alarm monitoring provider about migrating your monitored fire alarm and/or lift phone service.</p> <p><b>Step 2</b> Identify the phone number of each service.</p> <p><b>Step 3</b> Register each service on nbn's Fire and Lift Register.</p>	<p>→</p> <ul style="list-style-type: none"> <li>• Lift service and/or fire alarm monitoring provider</li> <li>• nbn</li> </ul>
<p><b>Step 4</b> Your lift service and/or fire alarm monitoring provider will give you information about the possible ways to migrate your monitored fire alarm and/or lift phone service. You will need to decide which migration solution you want to install.</p> <p><b>Step 5</b> If additional cabling is required to migrate your service, organise a registered cabler.</p>	<p>→</p> <ul style="list-style-type: none"> <li>• Lift service and/or fire alarm monitoring provider</li> <li>• Registered cabler (if required)</li> </ul>
<p><b>Step 6</b> Once the migration solution is installed, work with your providers to make sure everything is working properly.</p> <p><b>Step 7</b> Once the lift phone has been migrated successfully, ask your lift service and/or fire alarm monitoring provider to notify nbn that the service has been migrated.</p>	<p>→</p> <ul style="list-style-type: none"> <li>• Lift service and/or fire alarm monitoring provider</li> <li>• Telecommunications retail service provider</li> <li>• nbn</li> </ul>

This section outlines the *actions* required by building owners, building managers and bodies corporate to identify and migrate monitored fire alarms and lift phones. The next section outlines the *roles and responsibilities* of these and additional parties in detail. Additional information can be found under the [Migration Solutions section](#) (see page 17) and in the [Frequently Asked Questions \(Appendix A\)](#).

## Actions required by building owners/managers

### Step 1

Talk to your monitored fire alarm and/or lift service provider about available migration options. This Guide identifies technical migration options only at a generic level. You will need to discuss with your service provider the most appropriate solution(s) for your building's specific circumstances.

### Step 2

Identify monitored fire alarm and lift phone services within your building(s), including identifying the correct service phone number(s).

Your monitored fire alarm and/or lift service provider may be able to assist with identifying the correct service phone number. See Frequently Asked Questions at [Appendix A](#) for other ways of identifying the phone number.

### Step 3

Register all monitored fire alarm and lift phone services on the Register either online ([www.nbn.com.au/fireandlift](http://www.nbn.com.au/fireandlift)) or by calling nbn on 1800 687 626. The following information is required:

- Full National Number (FNN) (ten digits including area code) of the monitored fire alarm or lift phone service—this should be provided as a matter of priority, as a service cannot be identified without the correct service information
- physical address where the service is located
- contact details of the party responsible for management of the telephone line associated with this service (usually the building owner or manager, or body corporate).

### Step 4

Once a migration solution has been identified, you will need to work with your monitored fire alarm and/or lift service provider and telecommunications retail service provider to migrate your service onto an alternative telecommunications network. Depending on the location of the premises, this may require formal approval from the relevant regulatory authority.

### Step 5

Cabling work may be required to migrate your service. Check with your monitored fire alarm, lift, or telecommunications retail service provider to see if they are able to arrange this cabling work. If not, you may need to arrange for a registered cabler (a person who holds a current cabling registration) to undertake this work. The [Registered Cablers website](#) has details of registered cablers.

### Step 6

When you have been advised that your service has been migrated, you should contact your monitored fire alarm and/or lift service provider to check everything is working correctly.



## Step 7

Once a successful migration has been confirmed, you should request that your monitored fire alarm and/or lift service provider notify nbn that the service has been migrated.

## Roles and Responsibilities of each party

Effective migration requires ongoing cooperation, commitment, and support from all stakeholders. The following section identifies the roles and responsibilities of stakeholders in migrating monitored fire alarm and lift phone services. All parties need to play their part to support service continuity, and have a shared responsibility to ensure the timely and successful migration of services.



Figure 2—Infographic showing the roles that different parties play in migrating monitored fire alarms and lift phones



## Role of building owners, managers and bodies corporate

Building owners, managers and bodies corporate have responsibilities before, during and after migration of their respective buildings' monitored fire alarms and lift phones, both in the context of their general responsibilities for the building and also as the party purchasing the service(s) and the voice line(s) over which these services operate.

## General responsibilities

Ensuring obligations are met for the operation of monitored fire alarms and lift phones under the relevant building codes and standards.

### Specific migration responsibilities

#### Initiating and taking action to migrate

Taking action to migrate their building's monitored fire alarm and lift phone services to an alternative telecommunications network.

Working with their ASP and their RSP to obtain a suitable alternative telecommunications pathway for monitored fire alarm or lift phone services well in advance of disconnection of the existing network.

Migrating and promoting the continuity of service for their monitored fire alarm or lift phone during and after the migration window.

This includes obtaining the assistance of any relevant party (such as a registered cabler, fire alarm monitoring or lift service provider, or an RSP) required to ensure a safe and successful migration of the service.

Arranging and covering costs associated with any additional upgrade of wiring or equipment that may be required to migrate their monitored fire alarm or lift phone service.

#### Registration of services and provision of associated data

Registering their monitored fire alarm or lift phone services on the Register (which includes providing the correct FNN (ten digits including area code) of the relevant services).

The correct FNN was essential prior to 30 June 2017—without it, Telstra was not able to identify services that are eligible for deferral of disconnection to 30 June 2017, and nbn may not be able to provide migration assistance.

It cannot be assumed that ASPs will register services, so it is essential for building owners and managers to register all services they are responsible for.

Assisting nbn, if requested, to refine or confirm data on the Register.

#### Post-migration

After monitored fire alarm and lift phone services have been migrated, informing their ASP of the fact and requesting a test be carried out to ensure successful migration to the alternative service.

Requesting that their service provider notify nbn that the service has been migrated.

In circumstances where the customer of the telecommunications service is not the building owner or manager (e.g. a business with a long-term lease for a premises), working with the customer of the telecommunications service over which the monitored fire alarm or lift phone is provided to ensure the above takes place.



## Role of application service providers (ASPs)

Monitored fire alarm service providers and lift service providers (ASPs) are a key and crucial interconnection point in the migration equation, in that they link together the end user and the service needing to be migrated.

ASPs are responsible for:

### Service data

- Where possible, registering on the Register accurate details of all monitored fire alarm and lift phone services they provide. This includes:
  - providing the FNN for the service
  - providing the service location
  - providing the building owner/manager contact details for the service
  - keeping registered information up to date and providing nbn with data refreshes periodically or as required
  - providing confirmation to nbn when the service has been successfully migrated.
- Working with nbn to refine data on the Register on a regular basis and providing nbn with regular data refreshes as agreed between the ASP and nbn.
- Working with their respective customers to manage the migration of those customers' services in a way that supports service continuity.
  - This is particularly important in circumstances where an ASP decides not to provide data for the Register or to participate in the framework provided under the Fire Alarm and Lift Phone Migration Roundtable and its associated Working Groups.

### Transition planning

- Developing migration pathways for the ongoing operation of monitored fire alarm and lift phone services.
- Working closely with equipment providers to ensure that suitable products are developed and implemented into migration solutions, including ensuring that all relevant products are compliant with Australian Communications and Media Authority (ACMA) regulatory requirements.
- Developing and implementing transition plans for migrating their customers' services to support service continuity (see high level Industry Transition Plan at [Appendix B](#)).
- Where they have been advised that a service has migrated, performing tests to ensure that the monitored fire alarm or lift phone service continues to work after migration takes place. This includes:
  - developing adequate contingency plans in case of device or service failure
  - helping their customers to ensure that migrated services are maintained and continue to operate in accordance with relevant standards (in particular for monitored fire alarms, the network reliability required by Australian Standard 1670.3).

### Customer awareness and management

- Proactively advising their customers who are in an area where the NBN has become, or is about to become, available, of the need to take action early in the migration window.
- Developing processes and communications for managing customer enquiries about migrating services.



- Proactively providing clear information to customers about what alternative, workable migration solutions are available for migrating their service and what is required for each option, including upgraded equipment, installation processes, and any associated costs.

## Role of telecommunications retail service providers (RSPs)

As providers of telecommunications services, RSPs have responsibility for:

- Advising end users about the impact migration may have on any monitored fire alarm or lift phone service they may have, including:
  - that failure to migrate will result in the service being disconnected when the existing line over which it operates is disconnected
  - informing end users (in this case building owners, managers and bodies corporate) to register their monitored fire alarm and lift phone service on the Register as early as possible
  - informing the end user to contact their ASP to ensure the monitored fire alarm or lift phone service will continue to operate post-migration.
- If requested, assisting end users to migrate their monitored fire alarm and lift phone services before the Disconnection Date.
- Having their retail products available in nbn's Industry Self Test Facility for ASPs to test their products.
- Ensuring that services are installed in a timeframe that enables other parties to migrate monitored fire alarm and lift phone services with minimal service disruption.
- RSPs may work with ASPs to determine the appropriate migration solution for monitored fire alarm and lift phone services.
- RSPs are also encouraged to enquire with end users about whether they have a monitored fire alarm or lift phone service, and advise them of the steps required to migrate the service as expressed in this Good Practice Guide.

## Role of nbn

As infrastructure provider, nbn is responsible for:

- Publishing network and service readiness information.
- Promoting awareness of the impact of migration and disconnection on the end users' monitored fire alarm and lift phone services, including the action that needs to be taken to migrate those services to suitable alternative telecommunications networks early in the migration window.
- Developing ways to provide information to building owners/managers, bodies corporate, lift service providers, fire alarm monitoring providers and end users about the likely impact of migration and disconnection on their services, and the need to migrate early.
- Developing and managing the Register, including encouraging the registration of the FNN and developing a process for RSPs to advise nbn of the Unconditioned Local Loop Service 161 number (where relevant) over which the service operates and its associated building address.



- Prior to 30 June 2017, providing Telstra with regular data feeds from the Register that contain the relevant FNN/ Unconditioned Local Loop Service 161 number of the fire alarm and/or lift phone service, including notifying Telstra of matters such as:
  - new services added to the Register
  - updates to the services on the Register where nbn has been informed that the service has been successfully migrated to an alternative telecommunications network so that Telstra can remove the flags in its system, noting that Telstra will commence removing all flags in its systems progressively after the end of the disconnection deferral period for these services (30 June 2017), irrespective of whether the service has been successfully migrated.
- Encourage ASPs to refine data on the Register.
- Where relevant, ensuring that NBN services are installed in a timeframe that enables other parties to migrate monitored fire alarm and lift phone services without unreasonable service disruption (where the migration includes an NBN-based service).
- Making available and managing the Industry Self-Test Facility (known informally as the NBN plug-bench) for ASPs to test their products for interoperability with RSP retail offerings.

## Role of Telstra

As disconnecting network provider, Telstra is responsible for:

- Flagging in its systems and data interfaces the premises that correspond to the FNN or Unconditioned Local Loop Service 161 numbers that nbn has notified to Telstra so that they can be subject to deferred disconnection until after 30 June 2017.
- Updating flagged information in accordance with updated information provided by nbn (e.g. by removing the flag to align with flagged records provided by nbn) until the deferred Disconnection Date of 30 June 2017.
- Prior to the deferred Disconnection Date of 30 June 2017, using the information provided by nbn to advise, from six months before the premises Disconnection Date, its wholesale customers and retail business units of the premises that are flagged as having monitored fire alarm or lift phone services, so that they can manage migration of those services well before the Disconnection Date.
- Disconnecting its local access network services after the Disconnection Date in accordance with its Migration Plan obligations, noting that a temporary extension applies to monitored fire alarm and lift phone services that are notified to Telstra by nbn as being registered with nbn on the Register with the relevant service details (including the FNN or Unconditioned Local Loop Service 161 number, as applicable) and therefore exempt from managed disconnection until 30 June 2017.
- Before processing a business-as-usual disconnection request during the migration window (and prior to the deferred Disconnection Date of 30 June 2017), in relation to any registered monitored fire alarm or lift phone service notified by nbn, using reasonable endeavours to check with a wholesale customer submitting that disconnection request that disconnection of the service should occur.





## Role of cablers

The role of a cabler is to:

- Comply with cabling regulatory requirements set out by the ACMA, including the technical rules in AS/CA S009 (the Wiring Rules).
- Adhering to Communications Alliance technical guidelines relating to NBN cabling, as updated from time to time.
- When a cabling job is completed and all services are working properly, providing a cabling work compliance form (telecommunications customer cabling TCA1 form) informing the party responsible for the service (building owner/manager) and the relevant RSP that the required cabling work has been completed.
- Maintaining cabling registration.

## Role of building occupants or tenants

Building occupants and tenants are responsible for:

- Notifying their building owner, manager or body corporate of any monitored fire alarm or lift phone services.
- Providing access to leased premises where needed for equipment and wiring upgrades related to the migration of monitored fire alarms or lift phones.
- Advising the building owner or manager of any building work arranged by the tenant or occupant that may impact on the operation of monitored fire alarms or lift phones.

## Role of state and territory agencies and local government

Many public buildings for which local governments and some state and territory government agencies may have planning or development approval responsibility are likely to have lifts and/or monitored fire alarms installed within those facilities—for example, local stadiums, swimming pools, sport centres, halls, child care/aged care/retirement facilities, libraries, art galleries and museums, hospitals, office buildings, shopping centres, prisons schools/universities/colleges, theatres, hotels, resorts, clubs, airports and aerodromes, ports and marinas, and parking facilities.

### State and territory agencies

The active engagement of state and territory agencies in facilitating the continued operation of monitored fire alarm and lift phone services contributes significantly to positive outcomes and benefits in terms of protecting the health, safety and welfare of the community. State and territory agencies are responsible for:

- In the case of regulatory and planning agencies
  - assisting in the distribution of information on the need to register and migrate services (including this Good Practice Guide)
  - encouraging building owners, managers and bodies corporate to meet relevant obligations to maintain monitored fire alarm and lift phone services.
- In the case of fire brigades
  - responding to fire alarms received from monitored premises in accordance with agreed procedures
  - working closely with fire alarm monitoring providers to support service continuity for monitored fire alarms



- providing service data to nbn for the Register, where available
- supporting migration pathways outlined in the Good Practice Guide, where applicable, in order to maintain reliability targets.

In addition to the above responsibilities, some state and territory fire brigades are responsible for monitoring fire alarms in their jurisdictions. The following table indicates those brigades which have an active role in fire alarm monitoring:

#### State and territory fire brigades' roles in fire alarm monitoring

Jurisdiction	Relevant fire brigade	Active role in fire alarm monitoring
Australian Capital Territory	ACT Fire and Rescue Service	No
New South Wales	NSW Fire and Rescue Service NSW Rural Fire Service	No
Northern Territory	NT Fire and Rescue Service	Yes
Queensland	Queensland Fire and Emergency Services	Yes
South Australia	SA Metropolitan Fire Service Country Fire Service	Yes
Tasmania	Tasmanian Fire Service	Yes
Victoria	Metropolitan Fire Brigade Country Fire Authority	No
Western Australia	Department of Fire and Emergency Services	Yes

#### Local government

Similar to state and territory agencies, active engagement is needed by local government to facilitate the continued operation of monitored fire alarm and lift phone services. Depending on jurisdiction, matters for which local governments and councils have a role in relation to migration may include:

- Assisting in the distribution of information to relevant premises, regarding the need to register services on the Register (for example, inclusion of information in regularly mailed-out communications such as rates notices).
- Enforcing obligations with respect to infrastructure and property services, including inspections, licensing and/or certification of buildings.



## Migration solutions

### Operation of NBN-based services in a power outage

Phone and internet services connected to the NBN will not work during a power outage.

It is recommended that RSPs and ASPs clearly communicate this message to their customers to reduce the risk of confusion.

RSPs and ASPs should also prepare for enquiries from their customers regarding the operation of services using the NBN in a power outage. Network reliability is impacted by power outages, and so parties will need to make their own decisions on how best to be prepared in the event of a power outage. This may include having a secondary telecommunications pathway available to support the continued operation of monitored fire alarms and/or lift phones.

Where RSPs or ASPs offer additional capabilities to their customers to ensure their services do continue to operate in the event of a mains power outage, they should advise their customers of those options.

nbn's public message is that *services over the NBN will not work during a power outage*.

nbn operates a mix of network technologies, each with different power requirements, and, as with any telecommunications service, service continuity cannot be guaranteed at all times. While there are some limited circumstances in which NBN services may work, the amount of time a service will continue during a power failure will be equally dependent on the presence of battery backup in the end user's premises and the availability of the NBN itself during a power outage.

#### Operation of NBN technologies in a power outage

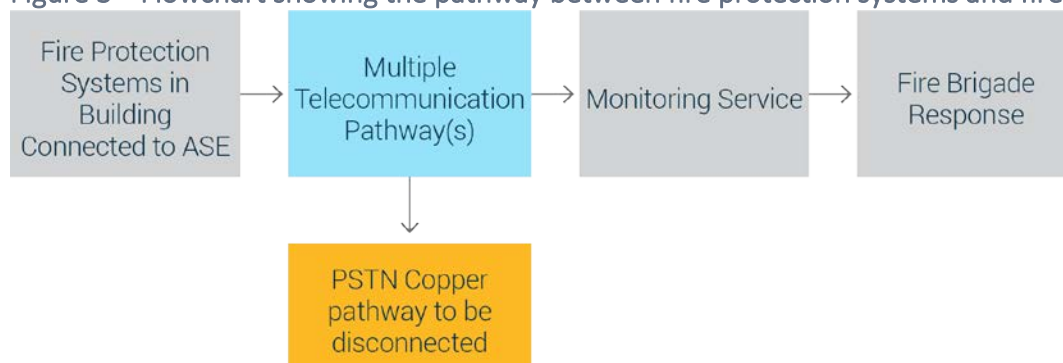
Network type	Will it work during a power outage?
FTTP—with optional battery backup unit	Limited
FTTP—without optional battery backup unit	No
FTTN	No
FTTB	No
FTTC	No
HFC	No

### Monitored fire alarms

Smoke detection and alarm systems and fire sprinkler systems are two types of fire protection systems installed in buildings that are typically monitored via Alarm Signalling Equipment (ASE) using multiple telecommunication pathways, to automatically report system activation to the responsible fire authority via a monitoring service (see Figure 3). This assists with fire brigade response times to fires and supports life safety outcomes.



Figure 3—Flowchart showing the pathway between fire protection systems and fire brigades.



State and territory regulations, the National Construction Code and Australian Standards contain requirements for installation and maintenance of fire alarm monitoring systems relating to monitoring and the required network reliability of such monitoring.

The rollout of the NBN and subsequent disconnection of Telstra’s local access networks will remove one of the traditional telecommunications networks (PSTN copper) that has supported the monitoring of many fire protection systems throughout the country. Accordingly, if the monitoring function of these systems is not migrated to an alternative telecommunications network, they will not automatically call the fire brigade to respond as required, reducing response time and potentially jeopardising life safety.

**Please note**—There are some jurisdictions within which fire alarm monitoring systems do not operate over the copper PSTN network. Further details are provided in the following table:

#### Jurisdictions within which fire alarm monitoring systems do not operate over the copper network

Jurisdiction	Advice
Northern Territory	<p>The Northern Territory Fire and Rescue Service’s in-house fire alarm monitoring system (NTFAST) is a radio based system with no reliance on the copper PSTN network. The Northern Territory Fire and Rescue Service has advised that monitored fire alarms within this system will not be affected by the NBN rollout and thus are not required to be migrated.</p> <p>However, there are a number Commonwealth premises within the Northern Territory that use fire alarm monitoring systems that partly rely on copper PSTN or fibre networks. Building managers/owners of such premises will need to contact their fire alarm monitoring provider to ensure that these services are migrated.</p>
Tasmania	<p>Fire alarms in Tasmania were transferred from copper PSTN connections in 2010 to a cellular/radio network. The Tasmanian Department of Policy, Fire and Emergency Management has advised that no action in relation to migrating monitored fire alarms is required on the part of building owners/managers in Tasmania whose buildings have fire alarms connected to the Tasmania Fire Service, when connecting or transferring their buildings’ other services to the NBN.</p>



## Requirements for fire alarm monitoring

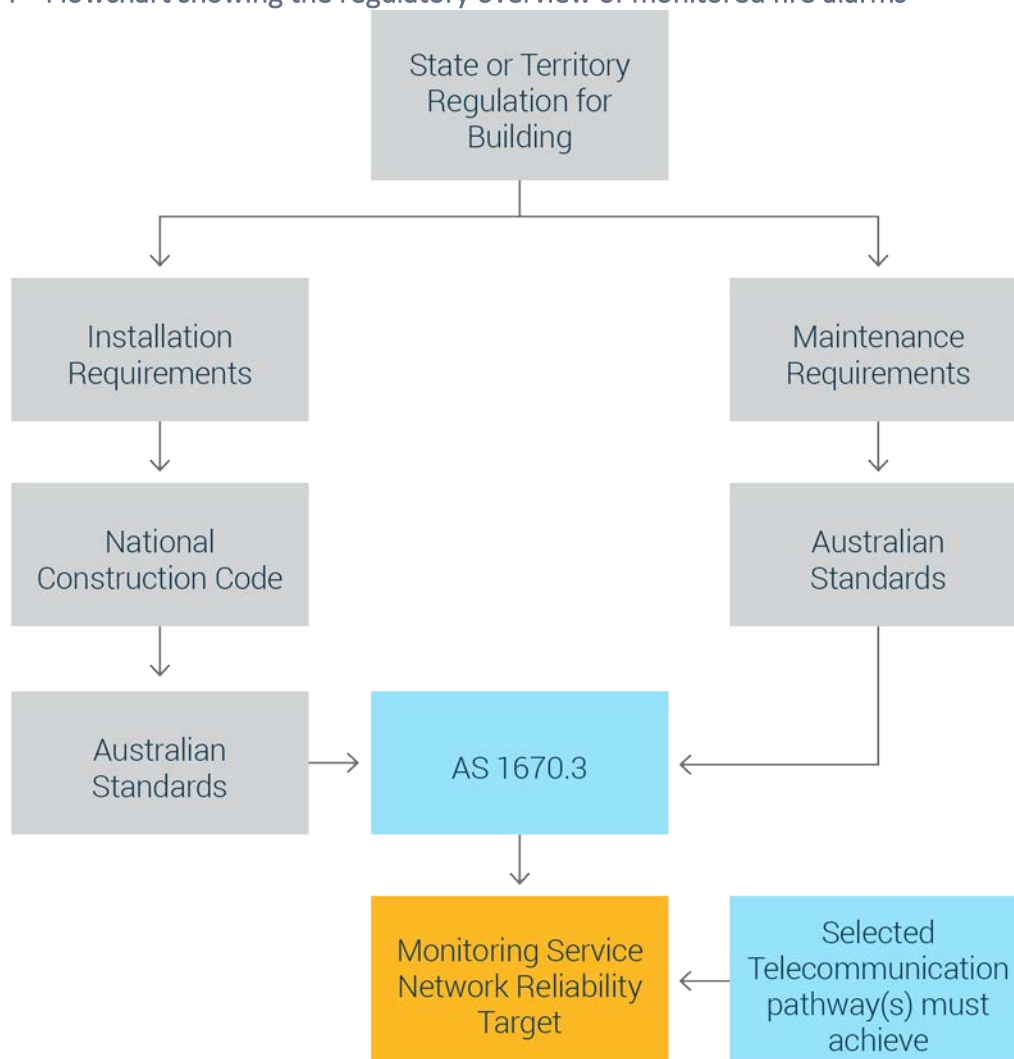
State and territory regulations for building work are the primary source of requirements to monitor fire protection systems. In most instances these state and territory regulations reference aspects of the National Construction Code and relevant Australian Standards regarding the requirements to install and monitor fire protection systems. State and territory regulations also include requirements to maintain the performance of required fire protection systems (see Figure 4).

Where fire protection systems are required to be installed and monitored, Australian Standard (AS) 1670.3 (*Fire detection, warning, control and intercom systems—System design, installation and commissioning—Fire alarm monitoring*) details the expectations for the connection and monitoring of the system by fire brigades or fire alarm monitoring providers. AS 1670.3 allows for multiple telecommunications networks to be used for the connection of the ASE, but requires network reliability to be achieved taking into account the telecommunications networks connected. Connection via the copper PSTN network is the most common and primary connection type. Therefore where the copper PSTN connection is disconnected, it is important to ensure that the network reliability targets of AS 1670.3 are still met by other means.

In addition to meeting network reliability, it is also important to ensure that any NBN connection proposed will be compatible with the ASE on an individual site.



Figure 4—Flowchart showing the regulatory overview of monitored fire alarms



### Reconciling local building or planning regulations

All Australian states and territories have local building or planning regulations that establish requirements for independent approval (permit or certification) of certain activities associated with buildings. Typically such approval is required for building work, and/or alterations to essential safety equipment, but not for routine servicing, or like for like replacement of equipment.

The migration solution options outlined in this Good Practice Guide represent telecommunication pathways that allow for compatibility of existing ASE with the NBN in order to retain network reliability required by AS 1670.3. The extent of this work is commensurate with routine service or like for like equipment replacement. Furthermore, the fire alarm monitoring requirements established by AS 1670.3 require any disconnection to be reported automatically, which provides appropriate safeguards for identifying any works that could jeopardise safety objectives and contingencies where telecommunication pathways are not available would therefore be enacted and connections be re-established without further delay.



Accordingly, the following state and territory regulators have advised that implementing migration solutions outlined in this Good Practice Guide may not require independent approval under their local building or planning regulations:

- Northern Territory
- Queensland
- South Australia
- Tasmania
- Victoria
- Western Australia.

Building owners/managers should still check with the relevant regulatory body to confirm any specific requirements or approvals that may be required to migrate a monitored fire alarm. Building owners/managers of premises located in New South Wales or the Australian Capital Territory must contact the relevant regulatory body to ascertain requirements or approvals applicable to their specific circumstances. Details of regulatory bodies in each state and territory are outlined in the table below:

#### Regulatory bodies in each state and territory

Jurisdiction	Approval required
Australian Capital Territory	Yes
New South Wales	Yes
Northern Territory	No
Queensland	No
South Australia	May be required, subject to the type of works undertaken
Tasmania	No
Victoria	May be required, subject to the type of works undertaken
Western Australia	No

#### Fire brigades

Some fire brigades continue to monitor fire protection systems themselves, whilst other fire brigades rely on private fire alarm monitoring providers to undertake monitoring and notify them automatically of a fire protection system activation (see table on page 15 for further detail).

Fire brigades who have participated in the Monitored Fire Alarm Migration Working Group and contributed to the development of this Good Practice Guide are listed at [Appendix D](#). Building owners/managers should check with the relevant fire brigade/s within their state or territory for any specific advice about migrating monitored fire alarms.

## Monitored fire alarms—technical information

### Determining network reliability

AS 1670.3 is a primary reference standard in the National Construction Code and also a secondary reference standard of installation standards regarding fire protection systems.

This standard establishes the requirements for connections between the monitored site and the fire alarm monitoring service provider, in particular in relation to network reliability.

It is required that the connection consists of one or more telecommunications pathways and that a loss of any connection is indicated at the monitored site and the monitoring service provider within 90 seconds.

Furthermore AS 1670.3 prescribes that connections between the monitored site and the monitoring service provider shall have an average network reliability of not less than 0.9995 (99.95 per cent) and provides a method for calculating network reliability in [Appendix A](#) of the standard.

AS 1670.3 allows for the combination of the individual availability of independent telecommunication pathways to be combined to calculate the total network reliability for a site.

Where migration of monitored fire alarms involves changes to telecommunication pathways, network reliability of the proposed telecommunication pathway/s must be assessed and demonstrated by the building owner meeting AS 1670.3, in order to continue to satisfy regulations regarding the installation and maintenance of fire protection systems required to be monitored. The building owner may seek advice from the RSP and monitoring service provider in undertaking this.

### Telecommunications pathway options for migrating

The Monitored Fire Alarm Migration Working Group has identified a number of telecommunications pathways available to migrate from the traditional PSTN copper network. These pathways are based on the types of NBN service that may be provided to individual buildings and the extent to which these options retain existing copper connections to an NBN node. Telecommunications pathway options for migrating include:

- ASE to a combination of 3G or 4G wireless connections directly via an RSP cellular network
- ASE to NBN fibre to the premises (FTTP) with battery backup
- ASE to copper connected to NBN fibre to the node (FTTN)
- ASE to copper connected to NBN fibre to the building (FTTB)
- ASE to copper connected to NBN fibre to the curb (FTTC)
- ASE to NBN hybrid fibre-coaxial (HFC).





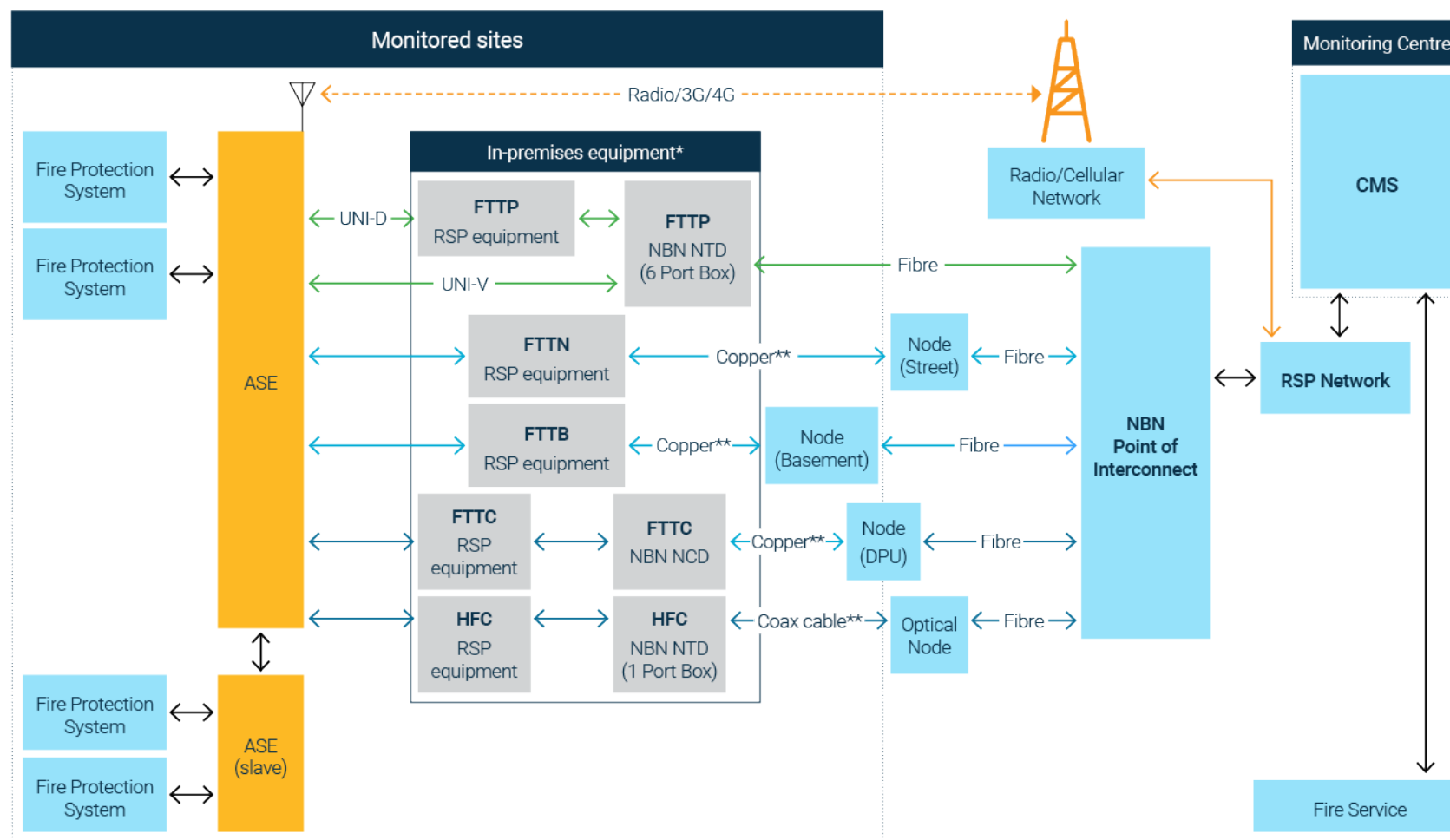
## Diagrams for monitored fire alarm telecommunications pathways

Figure 5 below illustrates all the telecommunications pathway options identified by the Monitored Fire Alarm Migration Working Group. It includes:

- Equipment installed at a monitored site for different telecommunications pathway options
  - Fire Protection System(s) required to be monitored
  - ASE
  - In-premises equipment for monitoring via different telecommunications pathway options, noting equipment provided by nbn versus equipment provided by an RSP.
- Offsite equipment for different telecommunications pathway options
  - Radio/cellular network
  - NBN fibre pathways (including those that will partially retain existing copper)
  - Interconnection to RSP network
  - RSP network connection to monitoring centre
  - Monitoring centre connection to fire brigade.



Figure 5—Diagram showing all telecommunications pathways available for migrating monitored fire alarms which have been identified by the Monitored Fire Alarm Migration Working Group



\* In-premises equipment refers to any equipment inside the premises supplied by either nbn (NTD) or an RSP (modem/gateway) to which an ASE is connected. Over FTTP only an NTD is required if the connection is via the UNI-V port, otherwise an NTD and RSP equipment is required (for a data/VOIP connection via the UNI-D port). Over FTTN and FTTB, only RSP equipment is required. Over HFC an NTD is required, and RSP equipment may be required.

\*\* The existing infrastructure that is used to make up the final part of the NBN connection, between the node and premises.



All of the telecommunications pathway options identified in Figure 5 have been developed and determined to be viable options following testing for compatibility with existing ASE involving ASE and monitoring service providers as well as RSP network providers and nbn. However, the telecommunications pathways available at an individual site are subject to the availability and reliability of:

- NBN service (i.e. FTTP, FTTN, FTTB, FTTC, HFC)
- the RSP network.

As outlined above, it is likely that more than one telecommunications pathway will be required to achieve the network reliability required by AS 1670.3. It is recommended that building owners consult with their monitoring service provider to determine the available and most efficient option for them to achieve the required network reliability.

The following diagrams (Figures 6–9) illustrate each individual telecommunications pathway, followed by information regarding their implementation.

#### Acronyms referenced in monitored fire alarm telecommunications pathway diagrams (Figures 5–9)

Acronym	Definition	Figure/s
ASE	Alarm Signalling Equipment	Figures 5–9
CMS	Central Monitoring Site	Figures 5–9
DPU	Distribution Point Unit. nbn equipment, installed in a pit or on a pole, used to deliver an FTTC service to customer premises. The DPU connects upstream to the nbn fibre network, and downstream to the customer copper lead-in.	Figure 8
FTTB	Fibre to the building. From the basement or other common area the telecommunications signal travels on the existing in-building copper wire to the premises.	Figures 5 & 8
FTTC	Fibre to the curb. From the node (DPU) outside the premises the telecommunications signal travels on the existing copper wire outside the premises into the premises.	Figures 5 & 8
FTTN	Fibre to the node. From the node the telecommunications signal travels on the existing copper wire in the street and in the building to the premises.	Figures 5 & 8
FTTP	Fibre to the premises	Figures 5 & 7
HFC	Hybrid fibre coaxial (also called the cable network). Fibre is run to a network hub in the street and then telecommunications signals including voice, broadband and subscription TV travel to the premises over coaxial cables.	Figures 5 & 9
NBN NCD	Network Connection Device also known as the nbn Connection Device, is a device located inside a premises serviced by FTTC. The NCD is owned, controlled, or operated by, or on behalf of nbn. It connects a premises to the nbn FTTC network via a reverse power feed to power the DPU.	Figure 8

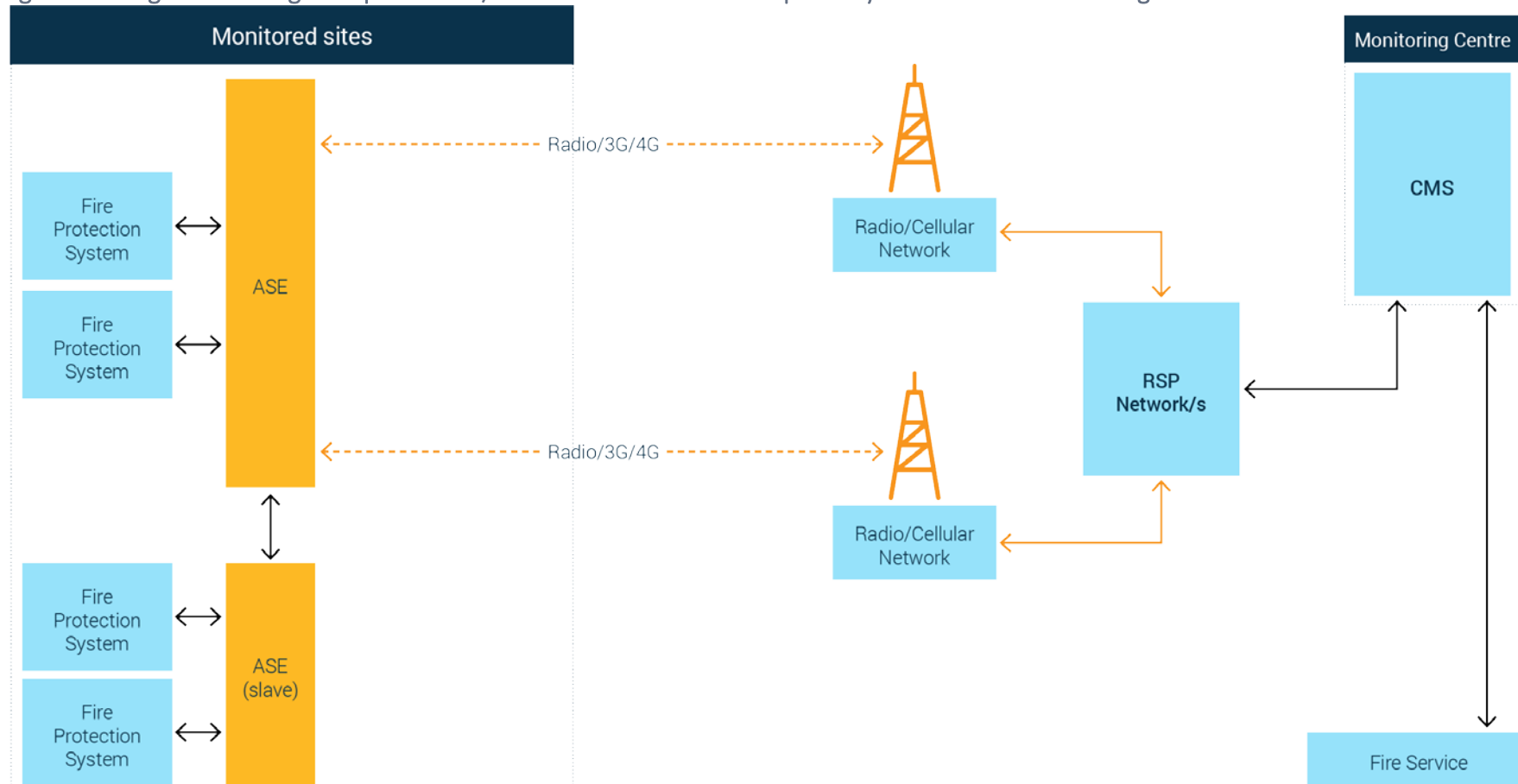
Acronym	Definition	Figure/s
NBN NTD	Network Termination Device. The NTD is an active device that terminates the signal from the NBN and then provides one or more User Network Interfaces (UNIs).	Figures 5, 7 & 9
RSP	Telecommunications Retail Service Provider	Figures 5–9
RSP equipment	A modem or gateway provided by an RSP which allows an end user to connect to the NBN	Figures 5–9
UNI-D	User Network Interface-Data. Ethernet based data interface.	Figures 5 & 7
UNI-V	User Network Interface-Voice. Analogue voice interface.	Figure 5 & 7

### Cellular/Radio Network (Figure 6)

This telecommunications pathway relies purely on a wireless radio or 3G/4G connection from the ASE over the RSP's network to the monitoring service provider. The reliability of this connection is subject to the RSP network reliability and coverage.

Some sites have chosen multiple radio/cellular network telecommunications pathway/s to achieve network reliability required by AS 1670.3.

Figure 6—Diagram showing multiple cellular/radio telecommunications pathways that can be used to migrate a monitored fire alarm service.



### NBN fibre to the premises (FTTP) with battery backup (Figure 7)

This telecommunications pathway is available where NBN is provided directly into the premises. It relies on the RSP providing a modem/gateway to connect the ASE to the NBN Network Termination Device (NTD) provided.

The reliability of this telecommunications pathway is subject to the power supply to the NBN service. Unlike the traditional PSTN copper connection, NBN service is subject to power supply. Where the FTTP pathway is provided this service may be supported with a backup power supply of 3–5 hours.

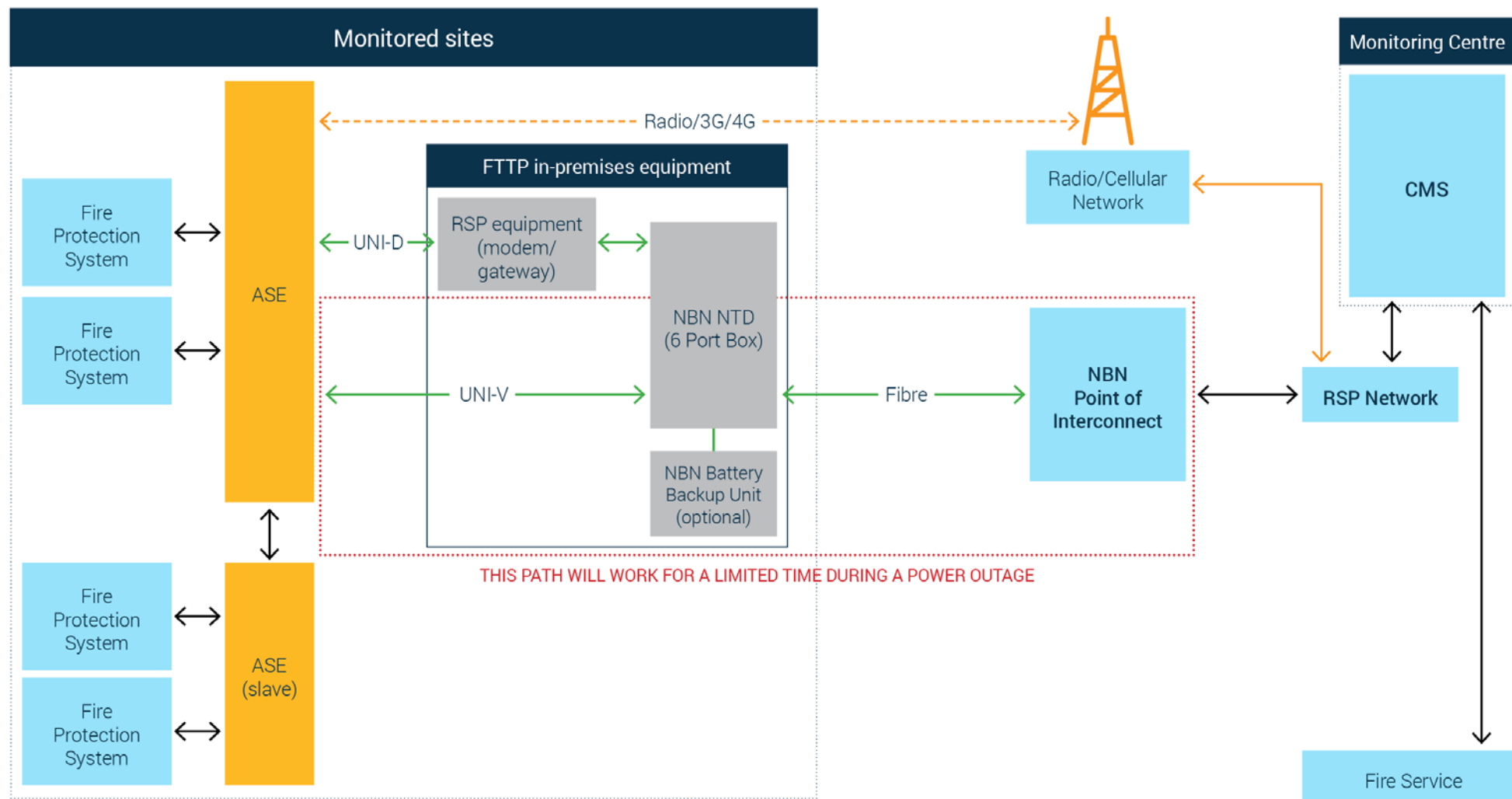
Where a battery backup unit is provided:

- It is the responsibility of the building owner/manager to maintain the battery backup unit. The unit will audibly and visually alert the customer when the battery needs replacement. Battery replacement requires the end user to purchase a new battery (the same type and rating as the battery installed).
- The battery back-up unit supplied by nbn will only power the NBN NTD inside the premises in an outage and will not supply power to in-premises equipment (such as modems/gateways) or ASEs. These devices will need their own separate backup power supply to operate in a power outage.

Accordingly, to achieve network reliability required by AS 1670.3, sites using a FTTP communication pathway are likely to require an additional telecommunications pathway such as radio/cellular.

Many sites on the current PSTN copper network already have an additional telecommunications pathway via a radio/cellular network.

Figure 7—Diagram showing FFTP with battery backup pathway that can be used to migrate a monitored fire alarm service. The diagram also includes radio/cellular as an example of a secondary pathway.



**NBN fibre to the node (FTTN) or fibre to the building (FTTB) or fibre to the curb (FTTC) (Figure 8)**

These telecommunications pathways are available where NBN is provided either to a node in the street (FTTN) or to a node in the building's basement (FTTB) or to a node (DPU) in the street outside the premises.

The FTTN service provided by nbn consists of NBN fibre installed to the node, typically at a junction of existing PSTN copper connections in a street. In this configuration, although the PSTN copper service will no longer provide connection to the RSP network, elements of the copper infrastructure will be retained for connection between the ASE and the node.

The FTTB service provided by nbn consists of NBN fibre installed to a node provided in a building's basement, typically at an existing junction of existing PSTN copper connections from within the building (note: this junction may not always be in the basement). In this configuration, although the PSTN copper service will no longer provide connection to the RSP network, elements of the copper infrastructure will be retained for connection between the ASE and the node.

The FTTC service provided by nbn consists of NBN fibre installed to a node (DPU) outside the premises, typically at an existing junction of existing PSTN copper connections outside the premises. In this configuration, although the PSTN copper service will no longer provide connection to the RSP network, elements of the copper infrastructure will be retained for connection between the ASE and the node (DPU).

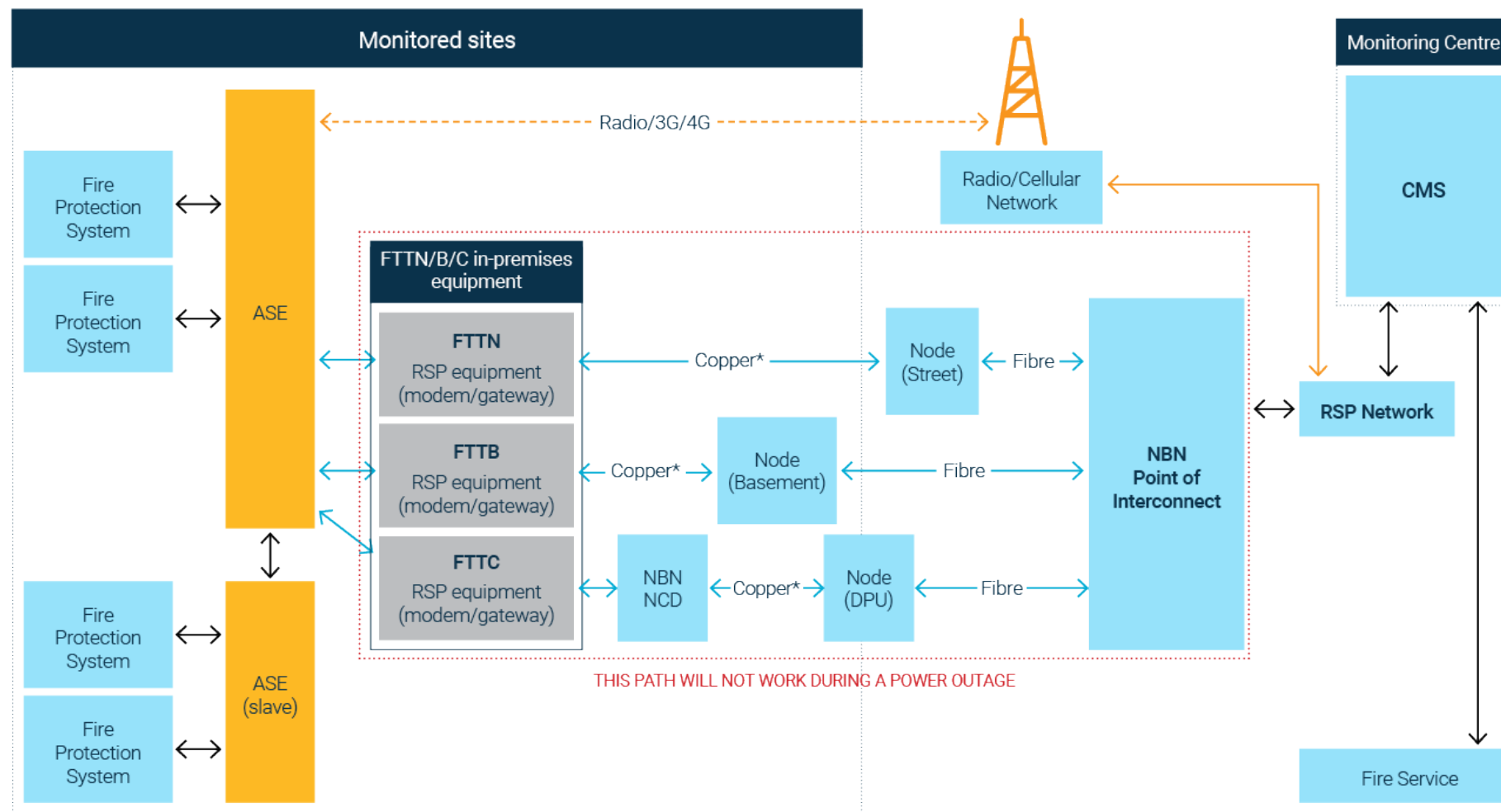
Connection to the NBN via FTTN, FTTB or FTTC requires the installation of a compatible modem/gateway by the RSP in the premises between the ASE and the NBN NCD provided and the nbn node (DPU).

There is no battery backup option for NBN services over FTTN, FTTB or FTTC, and the services will not work during a power outage. Accordingly, to achieve the network reliability required by AS 1670.3, sites using an NBN FTTN, FTTB or FTTC telecommunications pathway are likely to require an additional communications pathway such as radio/cellular.

Many sites on the current PSTN copper network already have an additional telecommunications pathway via a radio/cellular network.



Figure 8—Diagram showing FTTN, FTTB and FTTC pathways that can be used to migrate a monitored fire alarm service. The diagram also includes radio/cellular as an example of a secondary pathway.



\* The existing copper infrastructure that is used to make up the final part of the NBN connection, between the node and the premises.



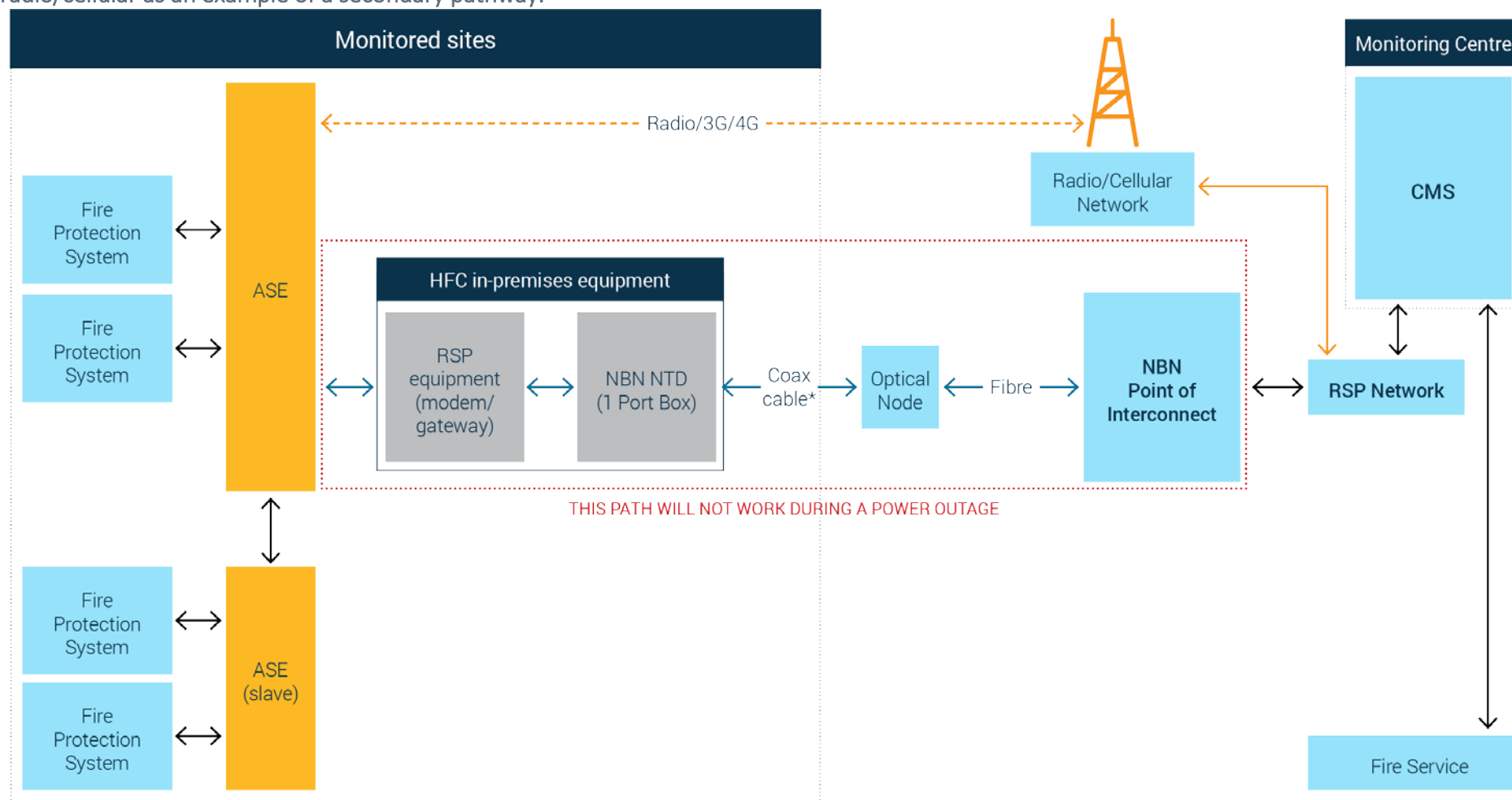
**NBN Hybrid-Fibre Coaxial (HFC) (Figure 9)**

This telecommunications pathway is available where NBN is provided via existing HFC infrastructure to an optical node. It relies on the RSP providing a modem/gateway to connect the ASE to the NBN NTD provided, and an existing HFC connection from the NBN NTD to the optical node.

There is no battery backup option for NBN services over HFC, and the services will not work during a power outage. Accordingly to achieve the network reliability required by AS 1670.3, sites using an NBN HFC communication pathway are likely to require an additional telecommunications pathway such as radio/cellular.

Note that many sites on the current PSTN copper network already have an additional telecommunications pathway via a radio/cellular network.

Figure 9—Diagram showing a HFC pathway that can be used to migrate a monitored fire alarm service. The diagram also includes radio/cellular as an example of a secondary pathway.



\* The existing HFC infrastructure that is used to make up the final part of the NBN connection, between the node and the premises.



## Lift phones

### Recommended requirements for lift phone operation

#### Operation

The lift phone communication device shall be a two-way voice type, which are initiated from the lift by the user and which directly connects the lift car to a permanently attended location. After initiation of the communication device, the user shall not be able to interrupt the two-way communication. However, the user shall always be able to re-initiate the communication device. Whenever the lift is available for passenger use, the communication facilities shall be operational.

#### Emergency Electrical Power Supply

The communication device and the communication medium shall not be impeded or lost even in cases of electrical power supply switching or power supply failure. Where rechargeable emergency electrical power supply(s) is used, they shall be capable of maintaining the communication device and the communication medium for a minimum of two hours. Means shall be provided to automatically inform the permanently manned location and/or remove the lift from service when the capacity of the rechargeable emergency electrical power supply is lower than is needed to provide one hour of functionality of the communication facility.

#### Secondary communication path(s)

Should the primary communication system path be unable to reliably operate during a power outage for the required period, then a secondary communication path is to be provided which is capable of operating during a power outage for the required period of time. In essence—for communication paths that do not work in a power outage, a secondary path should be adopted that will operate during a power failure for the required period of time. Examples of possible primary and secondary communication paths can be found below under [Lift phones—technical information](#).

#### Remote identification and connection

Means shall be provided to allow the permanently attended location referenced to remotely initiate a connection to the communication device in the lift.

#### Communication Reset

The resetting of the communication device, once activated, shall only be initiated from the building in which the communication device is located. The means of resetting the communication device shall only be accessible to authorised persons; however a means for remote resetting from the permanently attended location may be provided.

#### Regulatory considerations

Some regulatory considerations are broadly consistent across most jurisdictions, however building owners/managers should still check with their state or territory Work Health and Safety regulator to confirm specific requirements.

Upon migrating their lift phone service, building managers should confirm with their application service provider that any new devices being installed as part of the migration solution for their lift phone service is compliant with Australian Communications and Media Authority (ACMA) regulatory requirements.

Further, technicians installing GSM units into a lift must be a registered licenced cabler, in line with requirements by the ACMA.

*For new installations*—validation that the lift phone is installed and critical safety functions are operational. Validation may be conducted during site inspection or auditing (where relevant); prior item of plant registration (where applicable) may also be required.

*For ongoing operations*—periodic renewal under relevant Work Health and Safety legislation. Where a lift phone has a critical safety functionality, certification by competent person that the lift is safe to use and operate may be required.

Regulatory compliance and enforcement may also be undertaken as part of random site inspections, including site attendance on other workplace safety matters.

The Work Health and Safety bodies noted at [Appendix D](#) participate in the Lift Phone Migration Working Group and through their participation have contributed to the development of this Good Practice Guide.

## Lift phones—technical information

### Telecommunications pathway options for migrating

The Lift Phone Migration Working Group has identified a number of telecommunications pathways available to migrate from the traditional PSTN copper network. These pathways are based on the types of NBN service that may be provided to individual buildings and the extent to which these options retain existing copper connections to an NBN node. Telecommunications pathway options for migrating lift phones include:

- Lift phone to a single or dual path 3G or 4G cellular connection directly via an RSP cellular network.
- Lift phone to copper connected to NBN FTTN/B/C—analogue/internet protocol (IP)
  - this pathway will not work during a power outage so a secondary telecommunications pathway will be necessary.
- Lift phone to NBN HFC
  - this pathway will not work during a power outage so a secondary telecommunications pathway will be necessary.
- Lift phone to NBN FTTP
  - this pathway will require a secondary telecommunications pathway even if a battery backup unit is supplied (while nbn supplied battery backup units can be monitored by RSPs, they cannot be directly monitored by lift service providers and therefore do not meet regulatory requirements).

The telecommunications pathways available at an individual site are subject to the NBN rollout technology and availability of RSP networks.

As outlined above, it is likely that more than one telecommunications pathway will be required to support the operation of a lift phone during a power outage for the required period of time (two hours). **It is recommended that building owners and managers consult with their lift service provider to determine the available and most efficient options for achieving this.**

### Diagrams for lift phone telecommunications pathways

The following diagrams (Figures 10–15) show a number of available migration solutions for migrating lift phone communication architecture to an alternative telecommunications network. These migration solutions can be used to achieve the recommended requirements for lift phone operation outlined above.

### Acronyms referenced in lift phone telecommunications pathway diagrams (Figures 10–15)

Acronym	Definition	Figure/s
DPU	Distribution Point Unit. nbn equipment, installed in a pit or on a pole, used to deliver an FTTC service to customer premises. The DPU connects upstream to the nbn fibre network, and downstream to the customer copper lead-in.	Figure 13
FTTB	Fibre to the building. From the basement or other common area the telecommunications signal travels on the existing in-building copper wire to the premises.	Figure 13
FTTC	Fibre to the curb. From the node (DPU) outside the premises the telecommunications signal travels on the existing copper wire outside the premises into the premises.	Figure 13
FTTN	Fibre to the node. From the node the telecommunications signal travels on the existing copper wire in the street and in the building to the premises.	Figure 13
FTTP	Fibre to the premises.	Figures 15, 16
FXS	Foreign Exchange Subscriber. A port that delivers dial tone, battery current and ring voltage (equivalent to PSTN lines)	Figures 12, 15
HFC	Hybrid Fibre Coaxial (also called the cable network). Fibre is run to a network hub in the street and then telecommunications signals including voice, broadband and subscription TV travel to the premises over coaxial cables.	Figure 14
MDF	Main Distribution Frame. A wiring rack that connects outside lines with internal lines.	Figures 12–16
NBN NCD	Network Connection Device. also known as the nbn Connection Device, is a device located inside a premises serviced by FTTC. The NCD is owned, controlled, or operated by, or on behalf of nbn. It connects a premises to the nbn FTTC network via a reverse power feed to power the DPU.	Figure 13
NBN NTD	Network Termination Device. The NTD is an active device that terminates the signal from the NBN and then provides one or more User Network Interfaces.	Figures 15, 16
RSP	Telecommunications Retail Service Provider	Figures 10–16
UNI-V	User Network Interface-Voice. Analogue voice interface.	Figures 15, 16

**Mobile network or similar (Figures 10, 11 and 12)**

Connect a mobile network or equivalent to a device that provides an analogue 2-Wire Plain Old Telephone Service (POTS) interface intended to emulate the functionality of the original PSTN line.

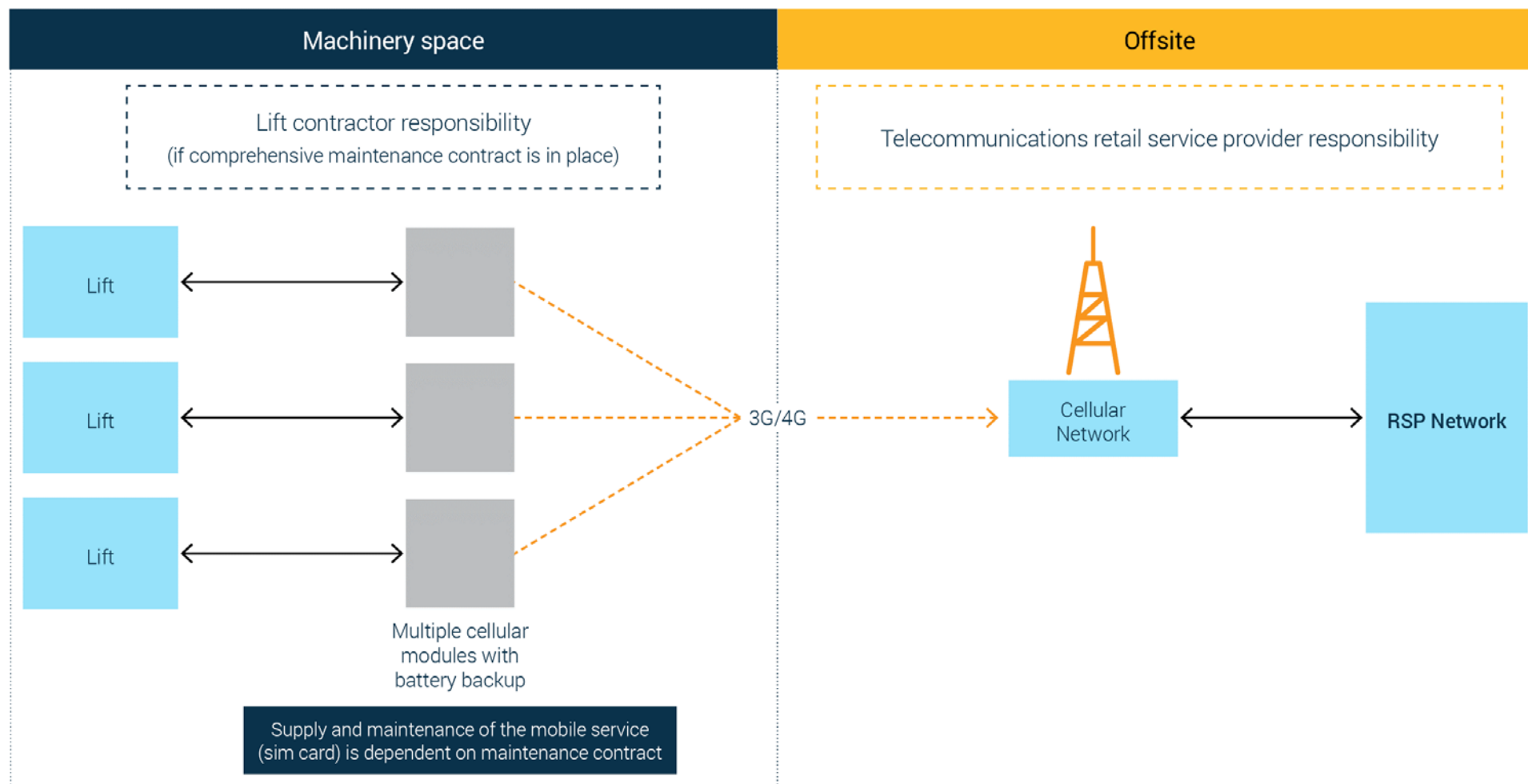
**Notes**

- A monitored battery backup power supply is required.
- The mobile network device selected needs to have an output distance capability to operate the existing Loud Speaking Autodialling Telephone if required.

The call 'progress tones' must comply to the existing PSTN lines otherwise the existing lift phone will not hang up.

## Multiple cellular modules located in building machinery space

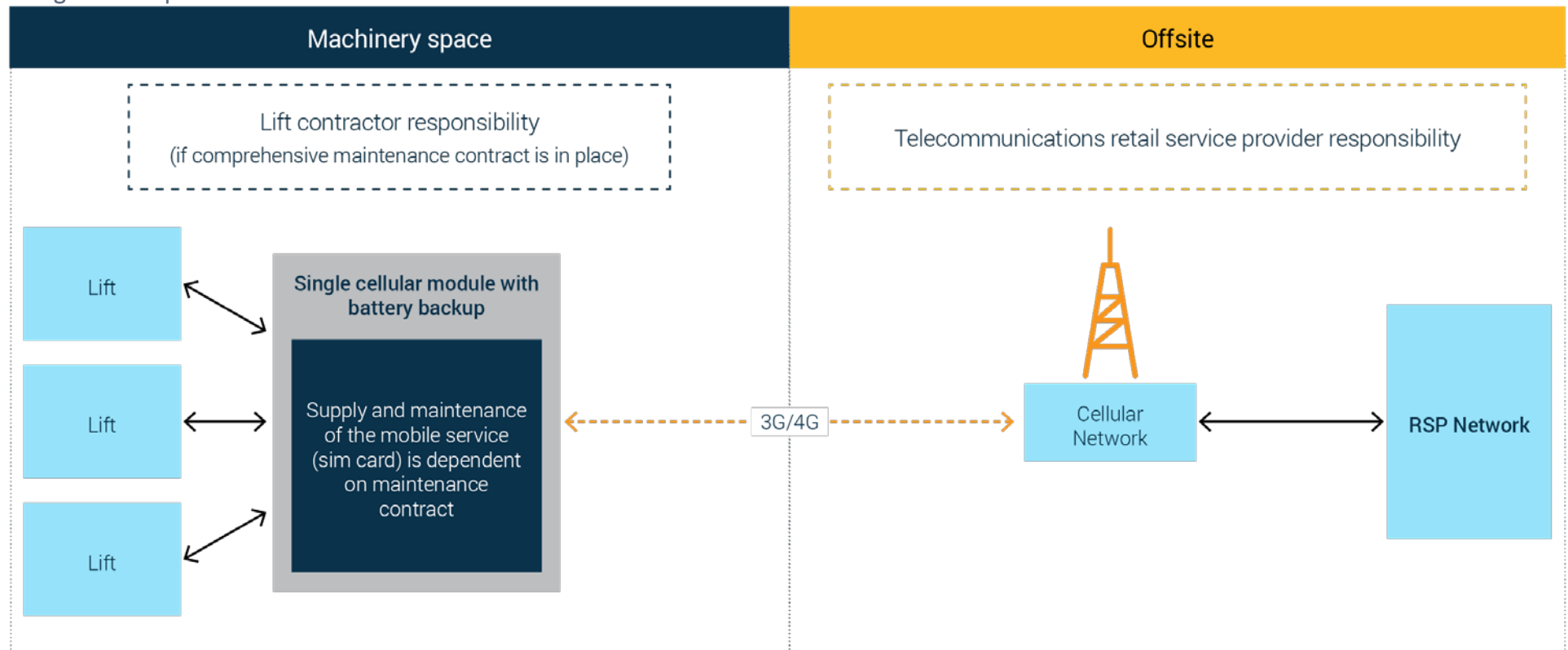
Figure 10—Diagram showing mobile network pathway (with multiple cellular modules located in the building machinery space) that can be used to migrate a lift phone service.





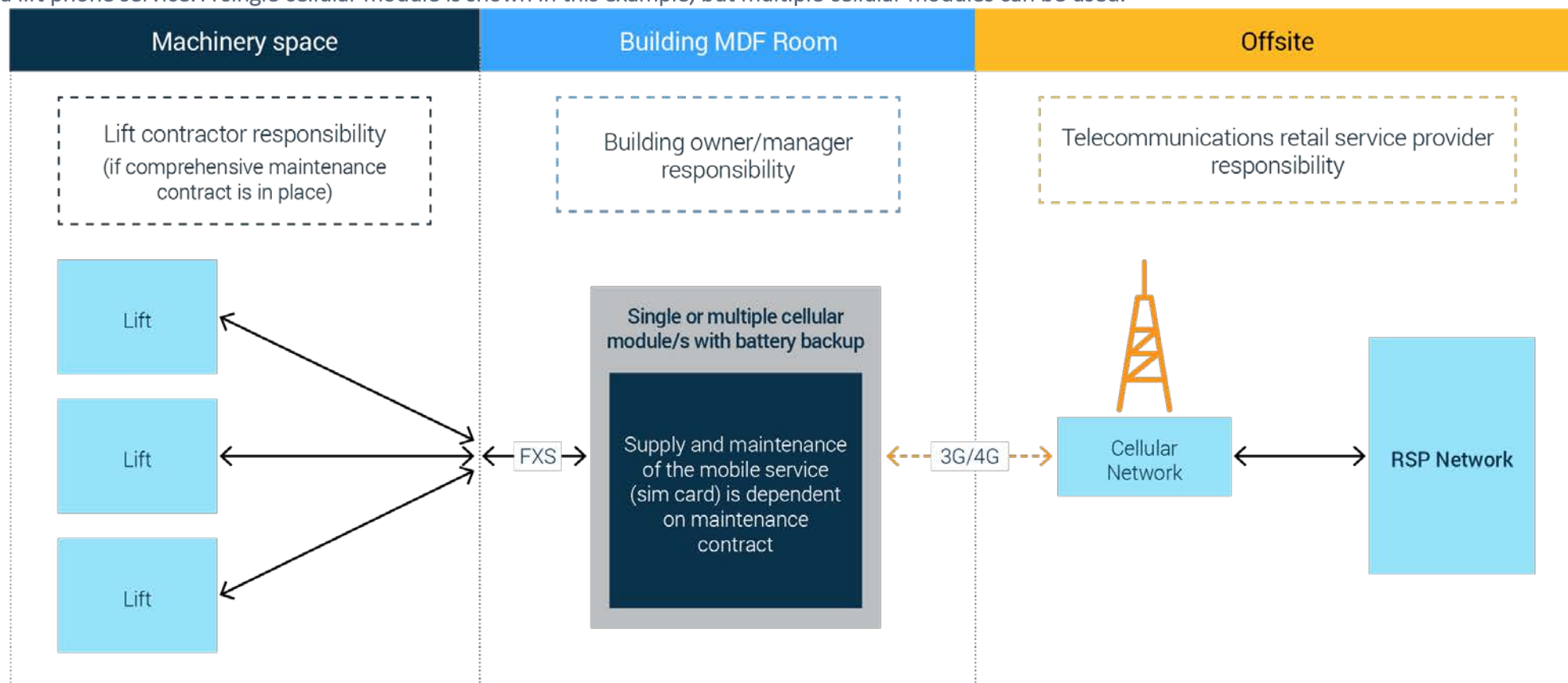
Single cellular module located in building machinery space

Figure 11—Diagram showing mobile network pathway (with single cellular module located in the building machinery space) that can be used to migrate a lift phone service.



## Cellular module located in MDF room

Figure 12—Diagram showing mobile network pathway (with cellular module/s located in the building MDF room) that can be used to migrate a lift phone service. A single cellular module is shown in this example, but multiple cellular modules can be used.



**NBN fibre to the node/building (FTTN/B/C) (Figure 13)**

Connect to either:

1. An NBN FTTN/B/C analogue equivalent service via an RSP. The RSP should provide a suitable modem with an analogue 2-wire (POTS) interface intended to provide similar performance to the original PSTN line.
2. An NBN FTTN/B/C IP service via an RSP. The RSP should provide a suitable IP telephone connection for the IP telephony based lift phone.

**Notes**

- There is no battery backup option for NBN services over FTTN, FTTB or FTTC, and the services will not work during a power outage.
- A secondary telecommunications pathway is required to maintain services during power outages.
- The call 'progress tones' must comply to the existing PSTN lines otherwise the existing lift phone will not hang up.

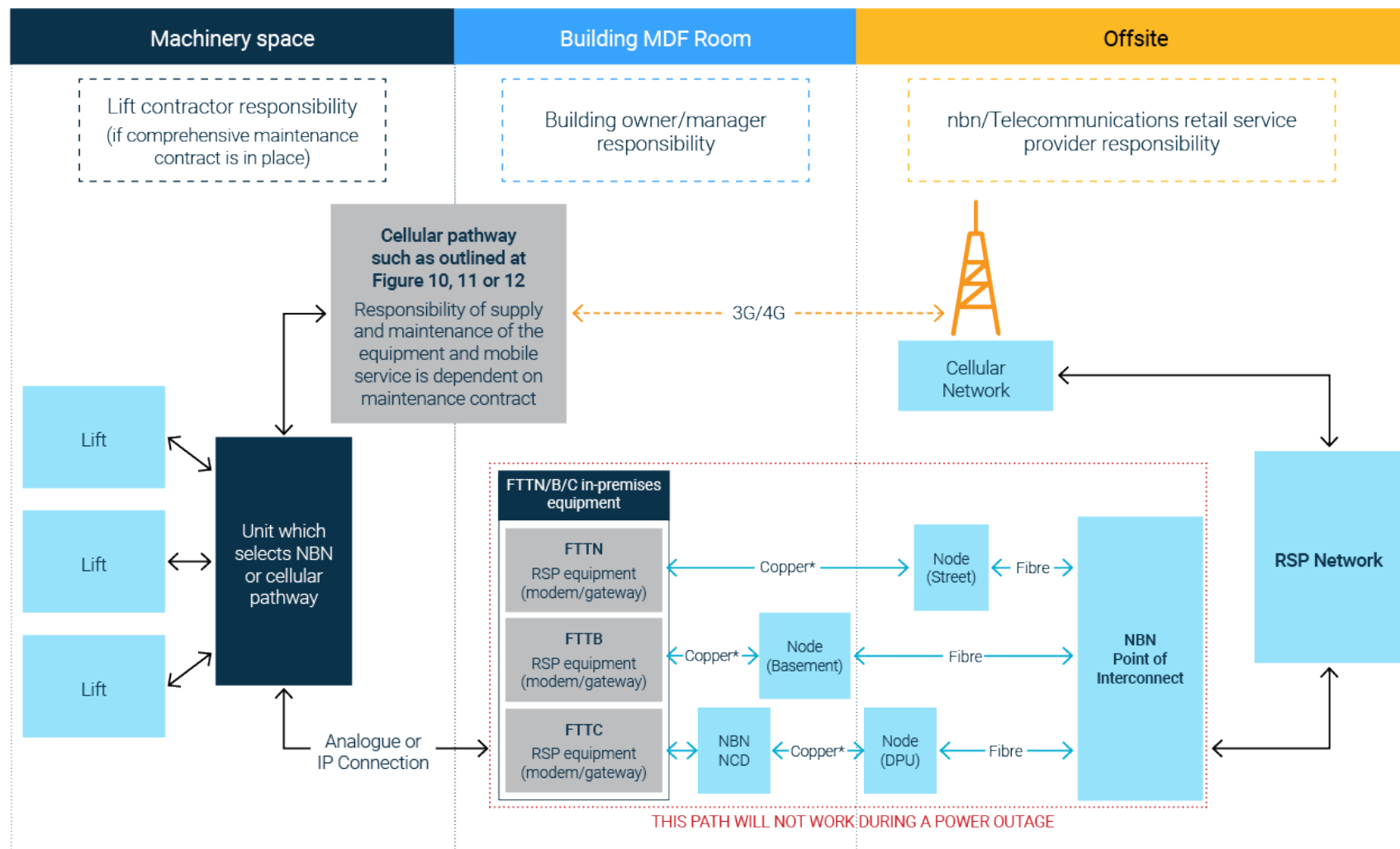
**NBN Hybrid-Fibre Coaxial (HFC) (Figure 14)**

Connect to an NBN HFC service via an RSP.

**Notes**

- There is no battery backup option for NBN services over HFC, and the services will not work during a power outage.
- A secondary telecommunications pathway is required to maintain services during power outages.
- The call 'progress tones' must comply to the existing PSTN lines otherwise the existing lift phone will not hang up.

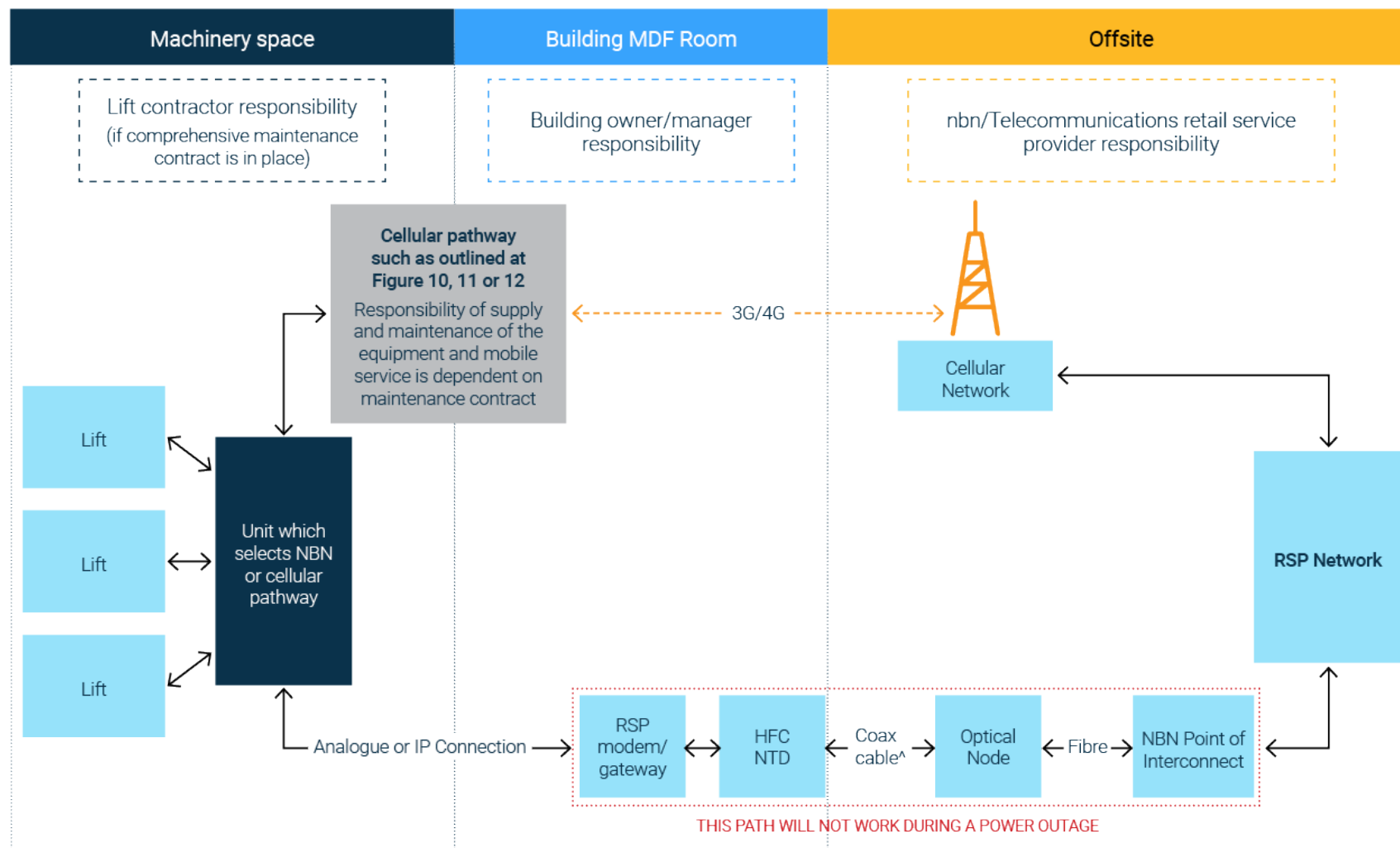
Figure 13—Diagram showing FTTN, FTTB and FTTC pathways that can be used to migrate a lift phone service. The diagram also includes cellular as an example of a secondary pathway



^ The existing copper infrastructure that is used to make up the final part of the NBN connection, between the node and the premises.



Figure 14—Diagram showing a HFC pathway that can be used to migrate a lift phone service. The diagram also includes cellular as an example of a secondary pathway



<sup>^</sup> The existing HFC infrastructure that is used to make up the final part of the NBN connection, between the node and the premises.



**NBN fibre to the premises (FTTP) (Figures 15)**

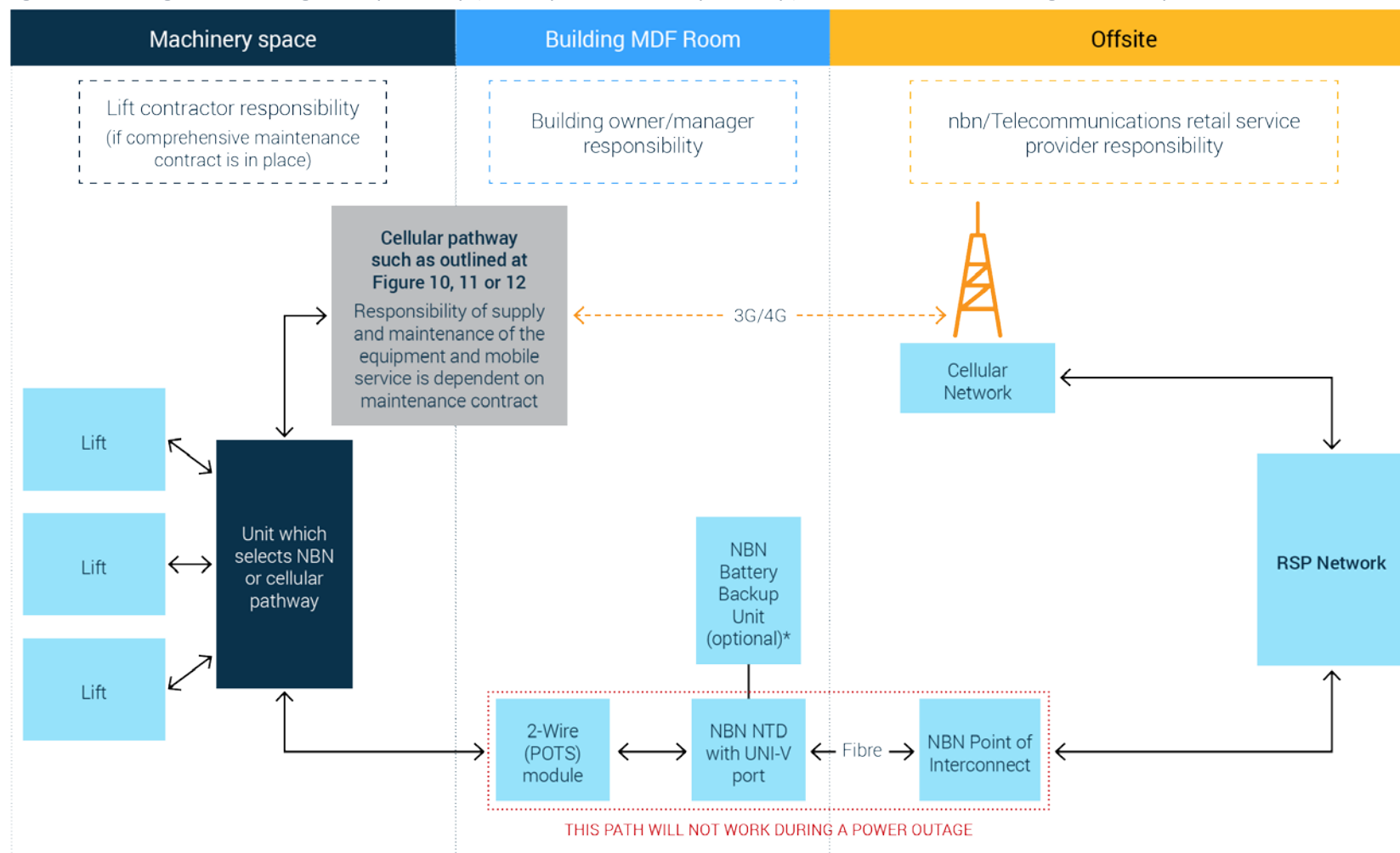
Connect to an NBN FTTP UNI-V port via an RSP. This provides an analogue 2-wire (POTS) interface intended to emulate the functionality of the original PSTN line.

**Notes**

- A secondary telecommunications pathway is required to maintain services during power outages regardless of the installation of a battery backup unit (battery backup units cannot be monitored by the lift service provider, and therefore the connection will not meet the minimum monitoring requirements).
- If a battery backup unit is provided:
  - It will only power the NBN NTD inside the premises in an outage and will not supply power to in-premises equipment (such as modems/gateways) or lift phones. These devices will need their own separate backup power supply to operate in a power outage.
  - It is the responsibility of the building owner/manager to maintain the battery backup unit. The unit will audibly and visually alert the customer when the battery needs replacement. Battery replacement requires the end user to purchase a new battery (the same type and rating as the battery installed).
- A maximum distance from the UNI-V port of 2 wire (POTS) interface to the existing telephone handset is 100 metres for a 0.4mm CAT 3 or above cable.
- An NBN UNI-V port or 2 wires (POTS) interface power output may be suitable for a line powered Loud Speaking Autodialling Telephone.
- The call 'progress tones' must comply to the existing PSTN lines otherwise the existing lift phone will not hang up.

## Fibre to the premises with optional battery backup unit (FTTP)

Figure 15—Diagram showing FTTP pathway (with optional battery backup) that can be used to migrate a lift phone service.



\* If there is a battery backup unit installed, this path will work for a limited time during a power outage.



## Cabling requirements

Migrating a monitored fire alarm or lift phone may require changes to existing telecommunications cabling. The ACMA is responsible for regulating and monitoring telecommunications cabling in Australia.

The ACMA has customer cabling and equipment requirements relating to the installation of monitored fire alarms and lift phones. These requirements apply both in respect of the equipment supplied and installed, and the installation of customer cabling to connect the equipment to the telecommunications network.

### Monitored fire alarms

- Installation of a monitored fire alarm connecting back to a main distribution frame (MDF) requires the services of an open registered cabling provider.
- Installation of customer cabling beyond the monitored fire alarm, connecting to fire detectors etc. can generally be undertaken by a cabling provider with a restricted registration.
- Where specialised cabling (i.e. optical fibre, data or coaxial) is involved in the monitored fire alarm installation, the registered cabler must hold the applicable endorsements/competencies.
- A cabling registration is not required to change fire detectors etc. where the cabling work does not include undertaking any work on the fixed or concealed customer cabling.

### Lift phones

There are individual state and territory regulatory requirements related to lift phones, as outlined above. Where a lift phone is installed:

- The customer cabling and telecommunications customer equipment used must comply with the ACMA's compliance and labelling requirements.
- The installation must be undertaken by a registered cabling provider in accordance with AS/CA S009:2013.
- Only a lift registered cabling provider can undertake cabling work in the lift itself and between the lift and the lift motor room.
- Only an open registered cabling provider can undertake cabling work between the lift motor room and the buildings MDF.
- Where specialised cabling (i.e. optical fibre, data or coaxial) is involved in the lift installation, the registered cabler must hold the applicable endorsements/competencies.

Further information on cabling requirements and cablers can be found on the [ACMA website](#) and the [Registered Cablers website](#).



## Appendix A—Frequently Asked Questions

### How will the NBN impact my monitored fire alarm and/or lift phone service?

As the NBN rolls out across Australia, it is progressively replacing most of the existing landline networks used for fixed line phone and internet services. Monitored fire alarms and lift phones operating solely over these landline networks will no longer work once the network is disconnected.

You will need to migrate these services to the NBN or an alternative operating platform before the fixed line Disconnection Date for your building.

Migration does not happen automatically. Action needs to be taken:

- Identify each phone service over which a monitored fire alarm and/or lift phone operates (tips for how to do this can be found [here](#)).
- Register the relevant phone service(s) on the Register or call 1800 687 626.
- Talk to your service provider about migration options.

### I have migrated my phone and/or internet services to the NBN—is that enough?

No. Migrating regular phone and internet services **does not mean** that services operating over the top of phone lines, such as monitored fire alarms and/or lift phones, will be automatically migrated—you will still need to take action to migrate these services and ensure they are working normally after the migration.

### Will my monitored fire alarm and/or lift phone work over the NBN?

The rollout of the NBN will involve new technologies and some existing devices may not be compatible at all times.

Your monitored fire alarm and/or lift service provider can advise whether your device will work when connected to the NBN and, if necessary, what alternative migration solutions are available.

### Will devices connected over the NBN work during a power outage?

Services provided over the NBN will not work during a power outage. If you are planning to migrate your monitored fire alarm and/or lift phone service to the NBN, you will need to ensure that you have an alternative communication pathway available. Your monitored fire alarm and/or lift service provider can advise on the most appropriate solution to keep your service working in the event of a power outage.

You can find more information on [nbn's Emergencies and Outages page](#).

### Who is responsible for registering/migrating monitored fire alarm and lift phone services?

The building owner or manager who is responsible for purchasing the phone line over which the service operates is also responsible for registering the service with nbn and for taking action to migrate the service.



## What support is there for the migration of monitored fire alarm and lift phone services?

Monitored fire alarms and lift phones are safety critical services. There are serious risks to public safety, personal injury and property damage if these services fail to operate in an emergency situation.

In recognition of this, the Government, nbn, Telstra and the monitored fire alarm and lift phone industries have developed a framework to support the migration and continued operation of monitored fire alarm and lift phone services.

Under the framework, the Disconnection Date for identified and **registered monitored fire alarm and lift phone services** (in areas that reached the Disconnection Date *prior to* 30 June 2017 or have already reached the Disconnection Date) was deferred until 30 June 2017.

A service was protected by this disconnection temporary deferral arrangement if it was:

1. Registered on the Register including the service phone number;
2. The phone number was subsequently notified to Telstra by nbn, which allowed Telstra to identify the phone service in its systems as a monitored fire alarm or lift phone service.

Other monitored fire alarm and lift phone services in areas that are not yet Ready For Service or do not reach the Disconnection Date until *after* 30 June 2017 will be disconnected under business-as-usual arrangements.

The monitored fire alarm and lift service industries, the telecommunications industry, and peak bodies representing the building owner and strata communities are working together to develop migration solutions and communicate the need to migrate these services.

You can register your service's details online on the Register ([www.nbn.com.au/fireandlift](http://www.nbn.com.au/fireandlift)) or by calling nbn on 1800 687 626.

## How do I migrate my monitored fire alarm and/or lift phone?

Migration does not happen automatically, so it is important that you take action early to migrate your monitored fire alarm and/or lift phone service.

The steps below outline the process for migrating these services:

1. Talk to your monitored fire alarm and/or lift service provider about what migration options are available.
  - Your telecommunications retail service provider may also be able to explain any alternative services available.
2. nbn may be able to provide additional migration assistance. Register your monitored fire alarm and lift phone service on the Register or by calling nbn on 1800 687 626.
  - You will need to provide the FNN (ten digit area code and phone number) associated with the service in order to register it. Information on how to identify the phone number can be found at the next Frequently Asked Question.
3. Once a migration solution has been identified, you will need to work with your monitored fire alarm and/or lift service provider and telecommunications retail service provider to migrate your service onto the NBN, or an alternative operating platform if your provider advises this is more appropriate.
3. Cabling work may be required to migrate your service. Check with your monitored fire alarm, lift, or telecommunications retail service provider to see if they are able to arrange this cabling



- work. If not, you may need to arrange for a registered cabler to undertake this work. The Registered Cablers website has details of registered cablers.
4. When you have been advised that your service has been migrated, you should contact your monitored fire alarm and/or lift service provider to check everything is working correctly.
  5. Once a successful migration has been confirmed, you should request that your service provider notify nbn that the service has been migrated.

### How do I find my monitored fire alarm or lift phone number?

There are a number of methods you can follow to try and identify the phone number (10 digits including area code) of your monitored fire alarm and/or lift phone.

Your fire alarm monitoring and/or lift service provider may be able to assist with some of these methods.

- Check your **bill or invoice** from your telecommunications retail service provider to identify the phone number
  - If there are multiple phone services listed on the phone bill, you may need to dial each phone number to identify the correct number for each lift phone and/or fire alarm.
- Refer to **building owner records** to identify the phone number
  - If there are multiple phone services listed in the records, you may need to dial each phone number to identify the correct number for each lift phone and/or fire alarm.
- Lift phone with keypad
  - Use the keypad to call a mobile device or local phone with a call number display to identify the phone number —please note, this option may not be available if mobile calling has been blocked and/or for silent numbers.
  - Depending on the telecommunications retail service provider, it may be possible to dial a number and have the phone number read back (excluding silent numbers):
    - For Telstra dial 12722 123
    - For Optus dial 1800 652 456.

If you are unable to identify the phone number using the above methods, then you should contact your telecommunications retail service provider, who may be able to assist you.

### When do I need to register my monitored fire alarm and/or lift phone service?

nbn may be able to provide additional migration assistance for end user that have services registered on the Fire and Lift Register.

### Why do I have to register my monitored fire alarm and/or lift phone?

The Register is designed to help support the safe migration of monitored fire alarms and lift phones from certain existing fixed line networks.

The Register will enable nbn to access important information about these services and contact you about migrating your services, if you have not already taken action to do so.

Remember, it is the building owners' responsibility to migrate building services.



## What if I choose not to register my monitored fire alarm and/or lift phone service on nbn's Fire and Lift Register?

Any service that is not registered will be included in the standard business-as-usual disconnection process. This means the service may stop working after the fixed line Disconnection Date for its rollout area, if it has not been migrated.

## What will happen if I do not migrate my monitored fire alarm and/or lift phone service?

Monitored fire alarm and/or lift phone services that are not migrated to the NBN or an alternative communications platform, such as mobile, may stop working after the fixed line Disconnection Date for its rollout area.

There are serious risks to public safety, personal injury and property damage if one or more of these services fails to operate in an emergency situation.

There may also be other considerations for building owners/managers if a monitored fire alarm and/or lift phone is inoperable. For example, failure to maintain monitored fire alarm and lift phone services may be a serious breach of obligations under relevant federal, state or territory regulations, building codes, and/or Australian Standards.

Some monitored fire alarms or lift phones currently have two telecommunications paths to meet requirements in relevant standards. If a telecommunications path that runs over existing fixed line networks is not migrated, it will stop working after the fixed line Disconnection Date for its rollout area, leaving only one working telecommunications path. This may mean that the fire alarm and or lift phone will continue to work, but it may not be compliant with relevant standards or regulations.

## What information is captured on the Fire and Lift Register?

nbn will only collect information that is necessary to help you successfully migrate these services.

This information includes the:

- phone number(s) of the monitored fire alarm and/or lift phone
- address of these services
- contact details of the submitter
- contact details of the building owner/manager.

The Register has been carefully designed to comply with Australian privacy law. nbn's Privacy Policy is available on its [privacy page](#).

## How much will it cost to register my monitored fire alarm and/or lift phone service?

Registering services on the Register is free of charge.

## Who is responsible for any additional wiring or equipment that is required to migrate a monitored fire alarm or lift phone service?

Building owners/managers who are responsible for migrating a service are also responsible for arranging for and covering the costs associated with any additional upgrading of wiring or equipment that may be required to migrate the service(s).



### **My monitored fire alarm and/or lift phone is mobile/3G/4G. Do I still need to register?**

Yes, you should still register your monitored fire alarm and/or lift phone numbers with nbn as there may be two telecommunications paths—one with a mobile number and one with a landline phone number.

### **I have a private lift in my home—do I still have to register and migrate the lift phone?**

Yes, any lift phone that uses a phone line will need to be migrated.

You should also contact your lift service provider and your telecommunications retail service provider to discuss the options for migrating your lift phone.

### **Why do I need to contact my monitored fire alarm provider or lift service provider?**

The rollout of the NBN will involve new technologies and some existing devices may not be compatible.

Your monitored fire alarm provider or lift service provider can advise whether your monitored fire alarm or lift phone will work when connected to the NBN and/or, if necessary, what alternative migration solutions are available.

### **Is registering my building's monitored fire alarm and/or lift phone different from registering my building for other purposes concerning the NBN?**

Yes, the Register is a separate process from any other registration of your building with nbn. This is because it captures data specific to the phone services supporting your building's monitored fire alarms and lift phones.

### **I live/work in a building which has a monitored fire alarm and/or lift phone installed—how do I make sure it is successfully migrated?**

The building owner/manager or body corporate is generally responsible for purchasing the phone line(s) over which these services operate and for organising their migration. They are best placed to provide you with updates about the migration of these services in your building.

If you live/work in a building with a monitored fire alarm and/or lift phone service, you are encouraged to contact your building owner or manager to ensure that the services are migrated and registered on the Register.

### **How do I check if the NBN has been rolled out in my area?**

You can check if the NBN is available in your area by visiting [nbn's website \(www.nbn.com.au\)](http://www.nbn.com.au) and entering your address in the 'check your address' box on the main landing page.

## What is the normal process for migrating to the NBN?

Homes and businesses in the NBN fixed line footprint have a 'migration window' of 18 months to move to the new network. The migration window starts when nbn declares an area to be Ready For Service. The managed disconnection of the existing landline networks (copper and HFC networks) will commence at the end of the migration window. The date at which managed disconnection starts is known as the Disconnection Date.

To reduce the risk of disruption to your services, you should contact your preferred internet or phone service provider to order an NBN service as early as possible in the migration window.

After a fixed line area passes its Disconnection Date, the existing landline networks will be switched off. Any fixed line phone and internet services that you do not migrate before this date will stop working, unless they are subject to a specific exemption (such as the temporary deferral of eligible monitored fire alarms and lift phones to June 2017).

If you choose not to connect to the NBN you will need to consider using an alternative communications platform, such as a mobile network.

More information about migrating services can be found on the [main migration page](#).

## Where can I find out more information?

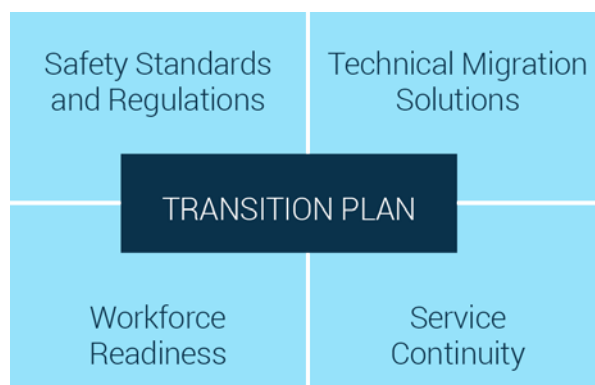
If you have a query that isn't answered on this page, you can contact the Department of Communications and the Arts' [NBN Migration team](#) ([migration@communications.gov.au](mailto:migration@communications.gov.au)).

## Appendix B—Industry Transition Plan

As the NBN rolls out across Australia, monitored fire alarms and lift phone services operating over the existing PSTN networks may cease to operate if they are not migrated to an alternative platform prior to the disconnection of the PSTN network. This Transition Plan sets out, at a high level, the considerations and milestones that industry players (fire alarm monitoring and lift service providers) need to take into account in developing their own transition plans for migrating their customers' services.

### Key factors and considerations

In developing individual transition plans, industry players will need to take into consideration matters such as: compliance with relevant safety standards and regulations; how to ensure service continuity for their customers; workforce readiness to meet customer demand; and appropriate technical migration pathways for their services. There are important interdependencies among these considerations, and they will need to be integrated into individual transition plans in order to support the successful migration of services.



#### Safety standards and regulations

There are serious risks to public safety, personal injury and property damage should a safety critical service, such as a lift phone or monitored fire alarm, fail to operate in an emergency situation. Building owners and body corporates are responsible for ensuring that their services are compliant with safety standards and regulations. **Failure to migrate and maintain services may mean that a service is in serious breach of obligations under relevant federal, state or territory regulations, building codes, and/or Australian standards.** Fire alarm and/or lift service providers should proactively work with their customers to assist them in ensuring that services within their buildings meet the requirements of relevant safety standards and regulations. Parties should also consult with the relevant regulatory bodies within their state or territory.

#### Service continuity

Industry should plan for a smooth and timely transition to new technologies, with minimal interruption to the operation of services. Most existing local access networks will be disconnected 18 months after an area is declared by nbn to be Ready For Service (RFS).

Monitored fire alarm and lift phone services registered on nbn's Fire and Lift Register may be eligible for additional migration assistance. Services can be registered at [www.nbnco.com.au/fireandlift](http://www.nbnco.com.au/fireandlift) or by telephoning 1800 687 626.





## Workforce readiness

In preparation for being commissioned by their customers to migrate their monitored fire alarm and lift phone services, industry should ensure it has a sufficient and qualified workforce to meet these demands. Transition plans should consider the training needs of the workforce as it adapts to working with new technologies. Industry will also need to plan for the availability of technicians in areas where the NBN is being rolled out. This will require proactive engagement with nbn on upcoming milestones such as: when an area is likely to be declared RFS, its associated Disconnection Date, and what kind of NBN rollout technology is applicable in that area. Industry players will also need to consider how many services they will need to transition, and plan accordingly.

At a high level, industry has estimated that there are around 60,000 monitored fire alarms and around 120,000–150,000 lift phones across Australia. While these numbers are only high level estimates, they do provide some guidance on the estimated number of services that will need to be migrated.

### Estimated number of monitored fire alarm and lift phone services

Service type	Estimated total volume (Australia wide)	Estimated volume of registered services due to be disconnected by 30 June 2017
Monitored fire alarms	~60,000	2,751
Lift phones	~120,000–150,000	2,543

## Technical migration solutions

Industry players will need to advise their customers on options for the migration of their services. To this end, industry should work with equipment providers to source technical migration solutions so that customers are able to select appropriate products and pathways for which they can commission migration activity. While the building owner/manager will have the final decision on which technical migration solution they wish to pay for, service providers will need to be ready to fulfil these orders. Early and ongoing communication between the building owner/managers and industry to select the appropriate migration solution is therefore crucial.

## Timeline

### Activity/milestone timetable

Activity/milestone	Timing
Technical migration solutions developed by Working Groups	By September 2016
Products available from equipment providers for migration	30 November 2016
Industry players should have individual transition plans in place	December 2016
Good Practice Guide released	January 2017
Industry players implement transition plans for those services due for disconnection from 1 July 2017	December 2016–June 2017
Completion of migration of services under the protection of the disconnection deferral period	Prior to 30 June 2017
Disconnection deferral period ends	30 June 2017
Business-as-usual migration commences	1 July 2017 onwards
Full service migration completed	30 June 2021





## Appendix C—Regulatory bodies

### Monitored fire alarms

The state and territory regulatory bodies with jurisdiction over the installation, monitoring and maintenance of monitored fire alarms are:

Jurisdiction	Relevant regulatory body	Relevant fire brigade
Australian Capital Territory	Planning and Land Authority	ACT Fire and Rescue Service
New South Wales	Department of Planning and Environment	NSW Fire and Rescue Service NSW Rural Fire Service
Northern Territory	Department of Lands, Planning and the Environment	NT Fire and Rescue Service
Queensland	Department of Housing and Public Works—Building Codes Queensland	Queensland Fire and Emergency Services
South Australia	Department of Planning, Transport and Infrastructure	SA Metropolitan Fire Service Country Fire Service
Tasmania	Department of Justice—Workplace Standards	Tasmanian Fire Service
Victoria	Victorian Building Authority	Metropolitan Fire Brigade Country Fire Authority
Western Australia	Department of Commerce—Building Commission	Department of Fire and Emergency Services

### Lift phones

The state and territory regulatory bodies responsible for Work Health and Safety regulation in their respective jurisdictions are:

Jurisdiction	Relevant regulatory body
Australian Capital Territory	WorkSafe ACT
New South Wales	SafeWork NSW
Northern Territory	NT WorkSafe
Queensland	Workplace Health and Safety Queensland
South Australia	SafeWork SA
Tasmania	WorkSafe Tasmania
Victoria	WorkSafe Victoria
Western Australia	WorkSafe WA

## Appendix D—Fire Alarm and Lift Phone Migration Roundtable and Working Group Members

### Fire Alarm and Lift Phone Migration Roundtable Chair

- Department of Communications and the Arts

### Monitored Fire Alarm Migration Working Group Chair

- Fire Protection Association Australia (Mr Matthew Wright)

### Lift Phone Migration Working Group Chair

- The Australian Elevator Association (Mr Noel Smith)

### Fire alarm monitoring providers

- Tyco Fire and Security Australia
- Chubb Fire Safety
- Romteck Grid
- Blueforce

### Lift maintenance providers

- Otis
- Schindler
- Kone
- Access Elevators Australia
- Elevator Services Group
- Platform Lift Company
- Easy Living Home Elevators
- Electra Lift Company
- Liftronic
- Brilliant Lifts

### State and territory agencies—fire services

- Queensland Fire and Emergency Services
- ACT Fire and Rescue
- Fire and Rescue NSW
- NSW Rural Fire Service
- Country Fire Authority Victoria
- SA Metropolitan Fire Service
- SA Country Fire Service
- WA Department of Fire and Emergency Services
- Tasmanian Fire Service

### FPA Australia Committee representatives

- Standards Australia Committee FP002
- Fire Protection Australia Technical Advisory Committee (TAC/2)

## State and territory agencies—work health and safety authorities

- Worksafe WA
- Safework NSW
- Worksafe Health and Safety Queensland
- Safework SA
- Worksafe Victoria
- Worksafe ACT

## Equipment providers

- NetComm Wireless
- Romteck Australia
- Avire
- Pixel Technologies
- Stentofon Communications Australia

## Telecommunications retail service providers

- Telstra
- Optus
- M2

## Industry bodies

- Australasian Fire and Emergency Service Authorities Council
- Lift Engineering Society of Australia—Victorian Division
- Lift Engineering Society of Australia—NSW Division
- Communications Alliance
- Strata Community Australia
- Property Council of Australia
- Owners Corporation Network of Australia

## State and territory agencies—other

- NSW Department of Finance, Services and Innovation
- NSW Fair Trading
- Tasmanian Department of Premier and Cabinet
- Tasmanian Department of Police and Emergency Services
- WA Department of Housing
- SA Department of State Development
- Queensland Office of Fair Trading

## Other

- Australian Communications and Media Authority
- Australian Competition and Consumer Commission
- NBN Co Limited



## Appendix E—Glossary

**Alarm Signalling Equipment (ASE)** is the part of control and indicating equipment (CIE) designed to communicate alarm and fault signals and other information between a fire detection and alarm system and a monitoring service provider.

**Application service provider (ASP)** means a supplier or provider of any over the top services or applications supplied over a telecommunications network or using a carriage service, such as:

- medical alarms
- emergency alarms (e.g. fire alarms)
- payment services (ATMs, EFTPOS, HICAPS)
- lift phones
- disability services and equipment
- remote infrastructure.

For the purposes of this Good Practice Guide, the term *application service provider* is used to refer to monitored fire alarm service providers and lift service providers.

**Business-as-usual** refers to the normal conduct of business irrespective of a different working environment.

**Central Monitoring Station (CMS)** is a location where alarm signals are monitored 24/7.

**Communication facility** refers to a lift communication device which is connected to a communication medium.

**Disconnection Date** refers to, for a rollout region, the date that is generally 18 months after the region was declared Ready For Service by nbn and specified as the Disconnection Date for that region in the nbn Rollout Schedule published by Telstra from time to time at [www.telstrawholesale.com.au/download/document/rollout-list.pdf](http://www.telstrawholesale.com.au/download/document/rollout-list.pdf).

**Distribution Point Unit (DPU)** is nbn equipment, installed in a pit or on a pole, used to deliver an FTTC service to customer premises. The DPU connects upstream to the nbn fibre network, and downstream to the customer copper lead-in. **End users** are the final downstream customers of RSPs.

**Fibre to the building (FTTB)** refers to the delivery of internet services via a fibre optic cable from where nbn installs active equipment in the basement of an apartment block or complex. The final connection will be delivered from this point to each apartment via existing copper cables using xDSL technology.

**Fibre to the curb (FTTC)** refers to an access technology involving the delivery of telecommunications services via a fibre optic cable from where nbn installs a DPU in a pit, or on a pole. The final connection will be delivered from this point to each premises via existing copper cables using copper xDSL technology.

**Fibre to the node (FTTN)** refers to the delivery of internet services via a fibre optic cable that will run from the exchange to the nodes (also called cabinets) in a local area. The final connection will be delivered via existing copper cables using vectored xDSL technology.



**Fibre to the premises (FTTP)** refers to the delivery of internet services via a fibre optic cable from the exchange to an end user's premises. End users in this footprint will have an NBN utility box (or PCD) and an NBN connection box (or NTD) installed at the premises to access the network.

**Full National Number** is an Australian fixed or mobile number in its 10 digit format.

**Hybrid Fibre Coaxial (HFC)** is one of many technologies in the multi-technology mix that nbn will utilise. Under this technology, fibre will enter a distribution area where nbn installs an NBN optical node to deliver the final over cable TV/coaxial network.

**Loud speaking auto-dialling telephone** is an electronic device with software that automatically dials telephone numbers on the activation of a call button. Once the call has been answered, the auto dialler plays a recorded message and connects the call to a live person.

**Main Distribution Frame** refers to a signal distribution frame for connecting equipment (inside plant) to cables and subscriber carrier equipment (outside plant).

**Migration solution/pathway** refers collectively to the necessary equipment (such as alarm signalling equipment or lift communication device), telecommunications service (such as voice or internet), and telecommunications network/s (such as the NBN, other fibre networks, wireless, radio) which can be used to migrate a monitored fire alarm or lift phone from the existing fixed line network.

**Migration window** for a rollout region, means the period commencing on the Ready For Service date and ending on the Disconnection Date for that rollout region, generally 18 months long.

**NBN Network Termination Device (NTD)** is an active device that terminates the signal from the NBN and then provides one or more User Network Interfaces.

**Over the top services** are operated by ASPs over the top of voice services on Telstra's local access networks. Examples can include medical alarms, security alarms, monitored fire alarms, lift phones and payment services (EFTPOS and ATMs).

**Plain Old Telephone Service (POTS)** refers to a standard telephone service.

**Premises** means each of the following, a:

- location at an address currently used on an on-going basis for residential, business (whether for profit or not), government, health or educational purposes
- location within a new development at an address for which nbn is the wholesale provider of last resort
- location at an address for a Standard Telephone Service which is activated in compliance with the Universal Service Obligation
- payphone at a location at which Telstra is required to install or maintain a payphone in accordance with an instrument made under section 12EF of the *Consumer Protection Act*
- location which nbn is directed by the Minister to connect to nbn's fibre network
- multi dwelling unit common area where, and for so long as, it is notified by nbn to Telstra as being included in the Fixed Line Footprint in a rollout region.

**Public Switched Telephone Network (PSTN)** refers to the standard home telephone service, delivered over underground copper wires.



**Retail Service Provider (RSPs)** are those service providers that provide telecommunications services and have a direct customer relationship with end users.

**Retail Service Provider Equipment (RSP equipment)** is a modem or gateway provided by a Retail Service Provider which allows an end user to connect to the NBN.

**Rollout region** refers to an area (which may be a service area module) that nbn intends to serve using the nbn Fixed Line Network.

**Service** refers to either:

- a telecommunications service (such as a voice or internet service) which is provided by an RSP over a telecommunications network
- an over the top service (such as a monitored fire alarm or lift phone) that is provided by an ASP over the top of a telecommunications service.

**Service continuity** refers to an end user's ability to access substitute telecommunications services in a seamless manner during the migration to the NBN during the 18 month migration window, and after the Disconnection Date.

**Telecommunications network** refers to a network (such as the NBN, other fibre networks, mobile, radio etc) over which telecommunications services are provided by one or more RSPs.

**Telecommunication pathway** refers collectively to a telecommunications service provided over a telecommunications network, to enable the operation of an over the top service (such as a monitored fire alarm or lift phone).

**Telstra's local access networks** refer generally to Telstra's copper and hybrid fibre-coaxial cable networks.

**Unconditioned Local Loop Service** is when a third party RSP rents a copper line from Telstra and provides phone and internet services over the line to its customers.

**UNI-D** refers to the port on an NBN Connection Box (also known as the NTD) where internet can be connected.

**UNI-V** refers to the port on an NBN Connection Box (also known as the NTD), where home phones can be connected.

