

**COMMUNICATIONS
ALLIANCE LTD**



INDUSTRY GUIDELINE

G649.2:2017

Cabling existing telecommunications services in
the customer's premises for the nbn™ –
Part 2: Installation cabling diagrams (Rewiring
Guide)



G649.2:2017 Cabling existing telecommunications services in the customer's premises for the nbn™ – Part 2: Installation cabling diagrams Industry Guideline (Rewiring Guide)

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Second edition G649.2:2017

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HOW TO USE THIS GUIDELINE

This document forms a part of the G649 **Cabling existing telecommunications services in the customer's premises for the nbn** Guideline. It is intended to be used by registered cabling providers (cablers) while they are on-site in a customer's premises.

Typical cabling scenarios have been developed to assist the cabler in rewiring the customer's cabling to migrate the existing services supplied by the Telstra or Optus access network technology to the nbn access network technologies.

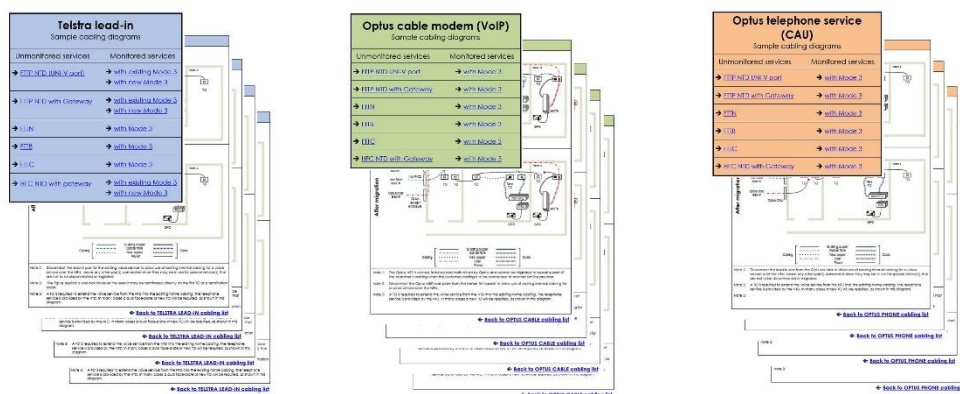
Please read Part 1 of this Guideline which provides a checklist of the steps to be taken in the migration progress, including what should be done prior to arriving on-site, while on-site and verifying that the changes to the cabling have been performed correctly.

Using with an electronic tablet

This document has been developed with electronic tablet use in mind. It can also be printed as a traditional PDF document.

Steps:

1. Start at the Contents page and select the access technology connecting to your customer's site: **Telstra lead-in**, **Optus cable modem** or **Optus phone**.
2. Once you have navigated to one of the three access technologies listings (see below), select the appropriate nbn access technology that the customer is being migrated to, as listed in the left-hand column.



3. If the site has a monitored service that uses a Mode 3 connection, use the right-hand column instead.
4. At any time the hyperlinks at the bottom of any page will take you back to the preceding menu.

Acknowledgments: Communications Alliance wishes to acknowledge the work of Glenn Walker (Telstra) and Haydn Dale (nbn) for developing the figures and Mike Johns (Communications Alliance) for the concept and design of this publication.

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|---|---|
| Unmonitored services | Monitored services |
| → FTTP NTD (UNI-V port) | → with existing Mode 3 → with new Mode 3 |
| → FTTP NTD with Gateway | → with existing Mode 3 → with new Mode 3 |
| → FTTN | → with Mode 3 |
| → FTTB | → with Mode 3 |
| → FTTC | → with Mode 3 |
| → HFC NTD with gateway | → with existing Mode 3 → with new Mode 3 |

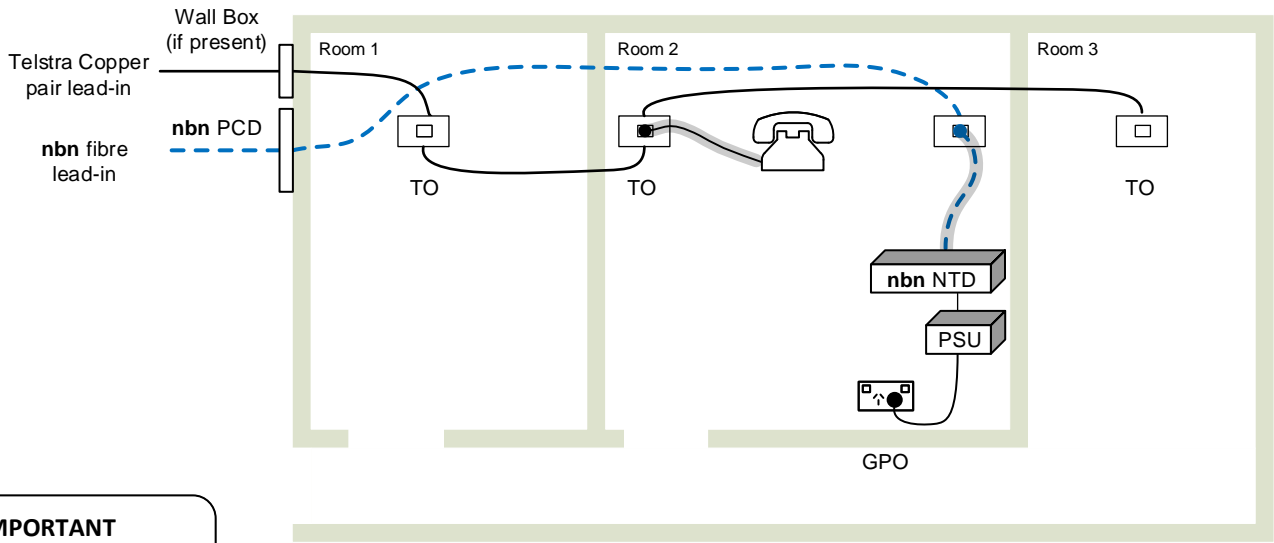
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FIGURE 1

Telstra lead-in

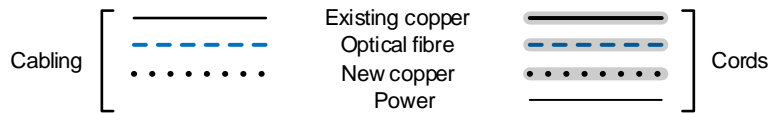
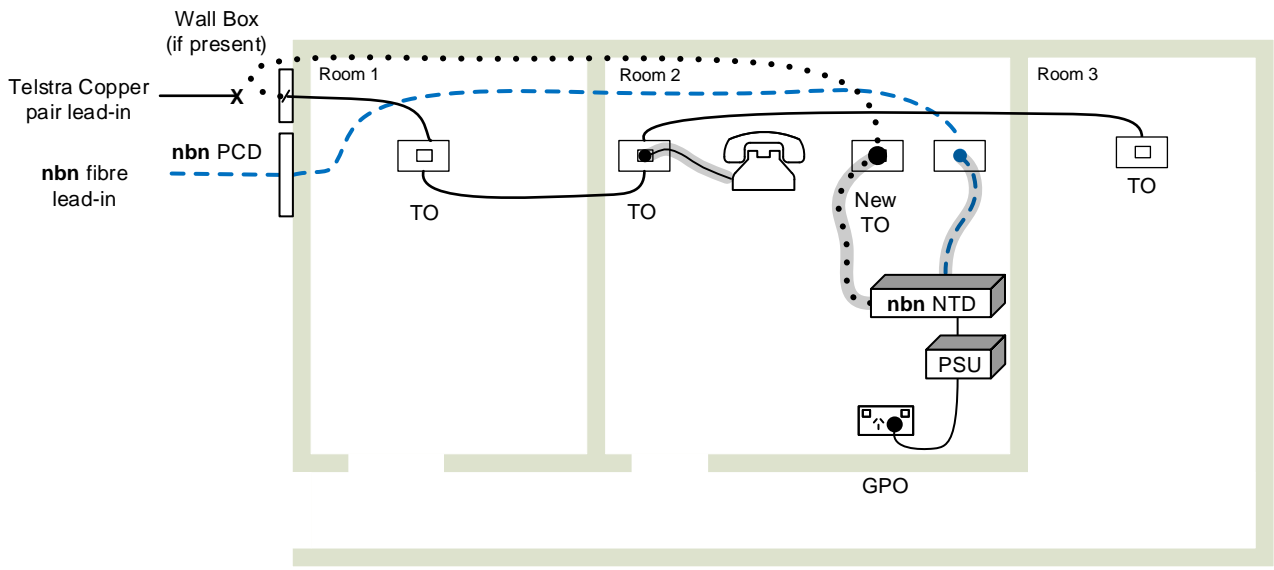
FTTP NTD (UNI-V port)

Existing installation



IMPORTANT
Read in conjunction
with G649.1

After migration

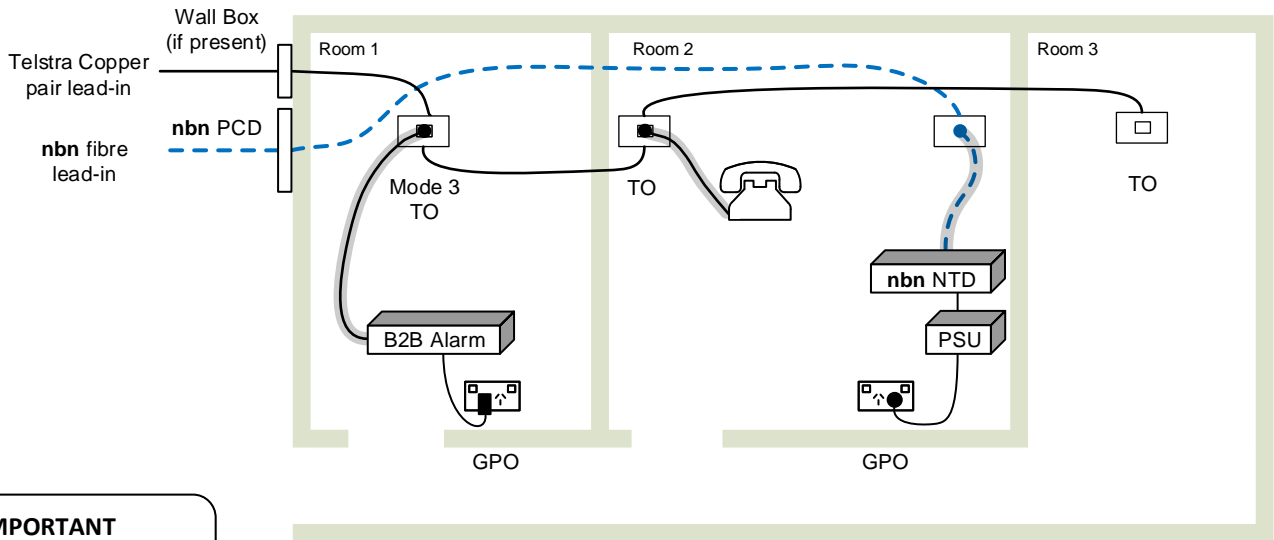


- Note 1: Disconnect the lead-in pair for the existing voice service to allow use of existing internal cabling for a voice service over the NBN. Leave any other pair(s) connected since they may be in use for special service(s) that are not to be disconnected or migrated.
- Note 2: The figure depicts a wall box however the lead-in may be terminated directly on the first TO or a termination block.
- Note 3: A TO is required to extend the voice service from the NTD into the existing home cabling. The telephone service is provided by the NTD. In many cases a dual face-plate or new TO will be required, as shown in this diagram.

[← Back to TELSTRA LEAD-IN cabling list](#)

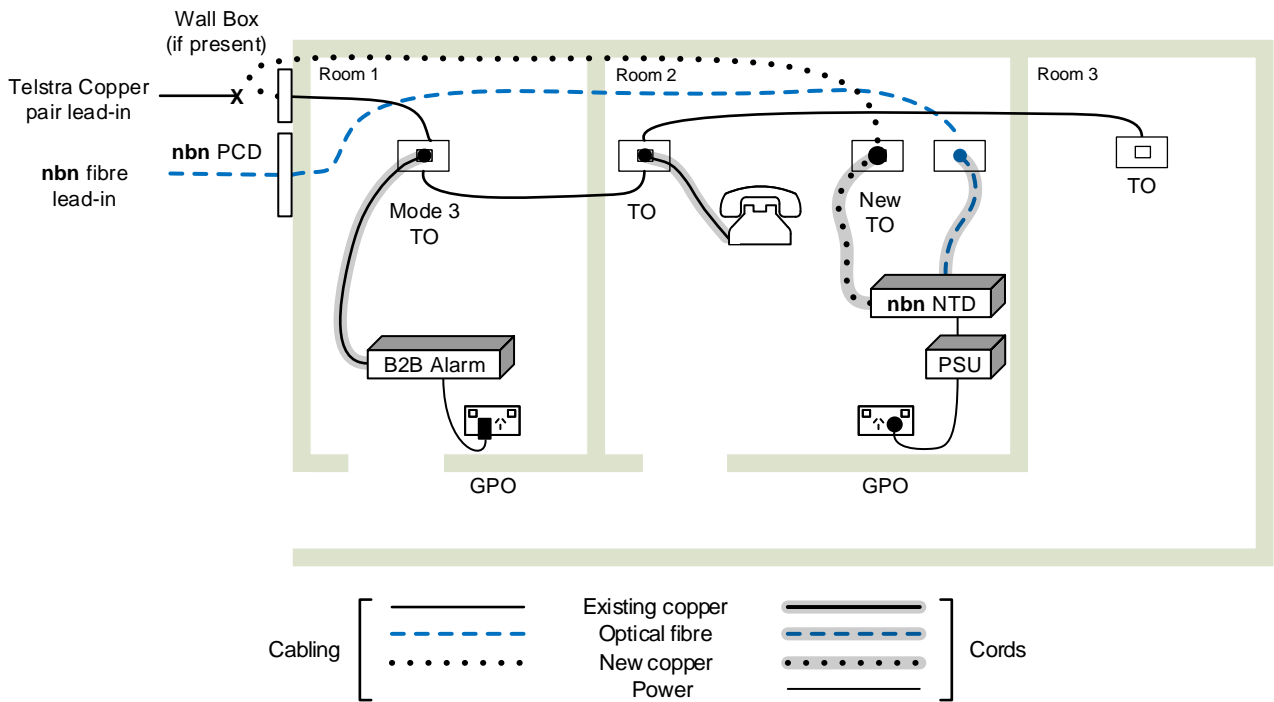
FIGURE 2 Telstra lead-in FTTP NTD (UNI-V port) Existing Mode 3 location

Existing installation



IMPORTANT
Read in conjunction with G649.1

After migration

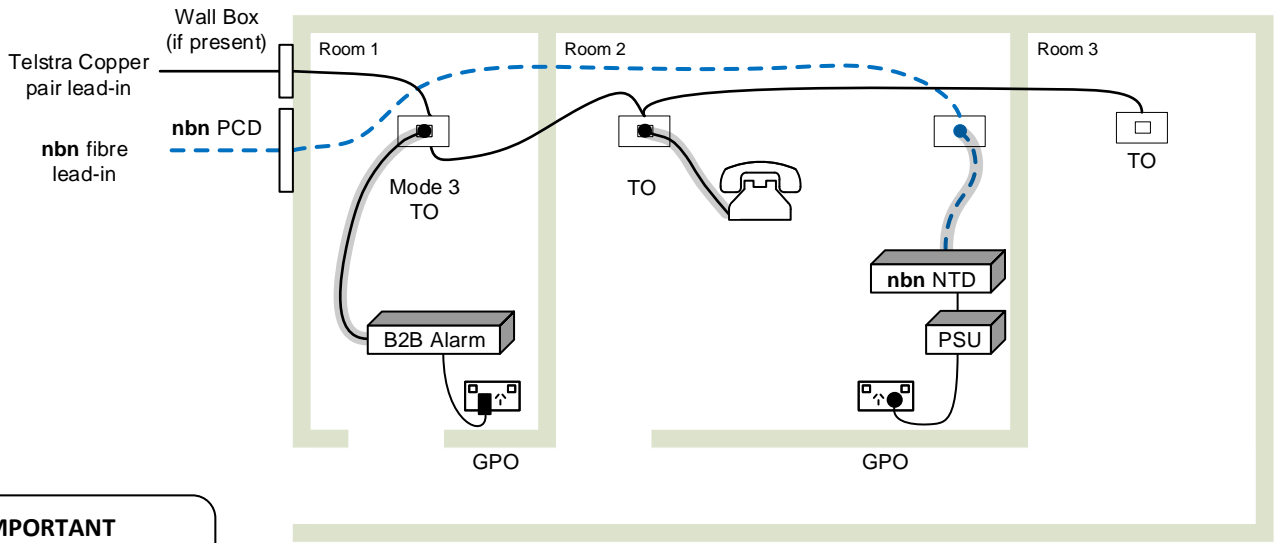


- Note 1: Disconnect the lead-in pair for the existing voice service to allow use of existing internal cabling for a voice service over the NBN. Leave any other pair(s) connected since they may be in use for special service(s) that are not to be disconnected or migrated.
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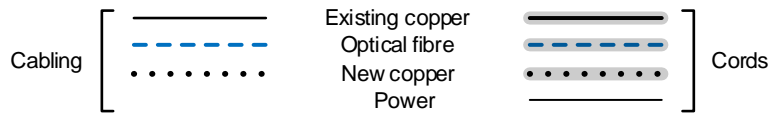
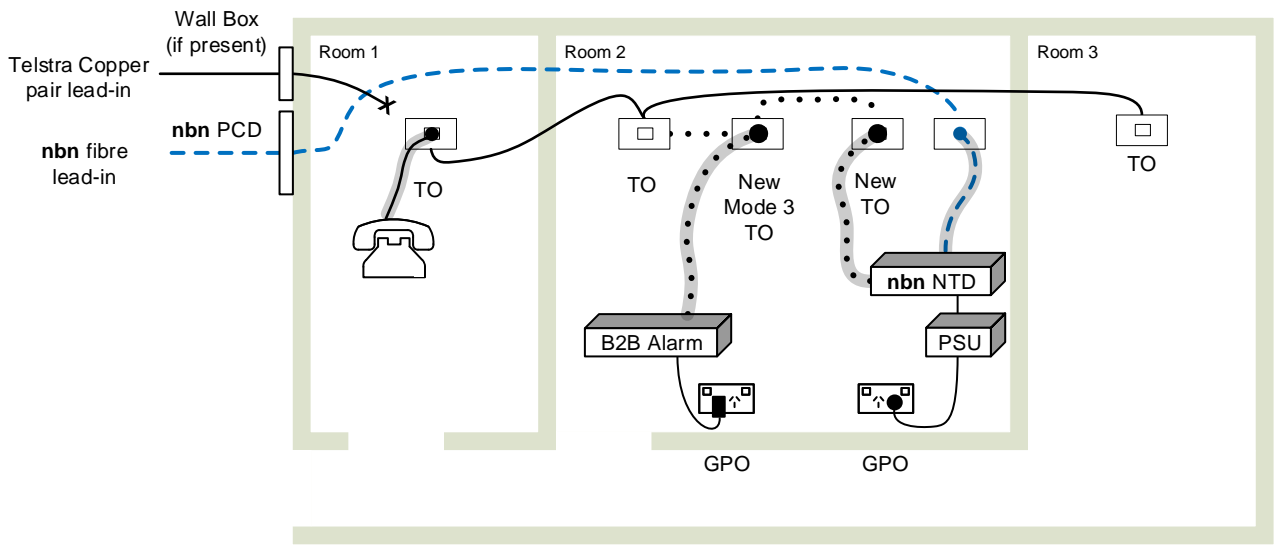
FIGURE 3 **Telstra lead-in** **FTTP NTD (UNI-V port)** **New Mode 3 location**

Existing installation



IMPORTANT
Read in conjunction with G649.1

After migration



- Note 1: Disconnect the lead-in pair for the existing voice service to allow use of existing internal cabling for a voice service over the NBN. Leave any other pair(s) connected since they may be in use for special service(s) that are not to be disconnected or migrated.
- Note 2: The figure depicts a wall box however the lead-in may be terminated directly on the first TO or a termination block.
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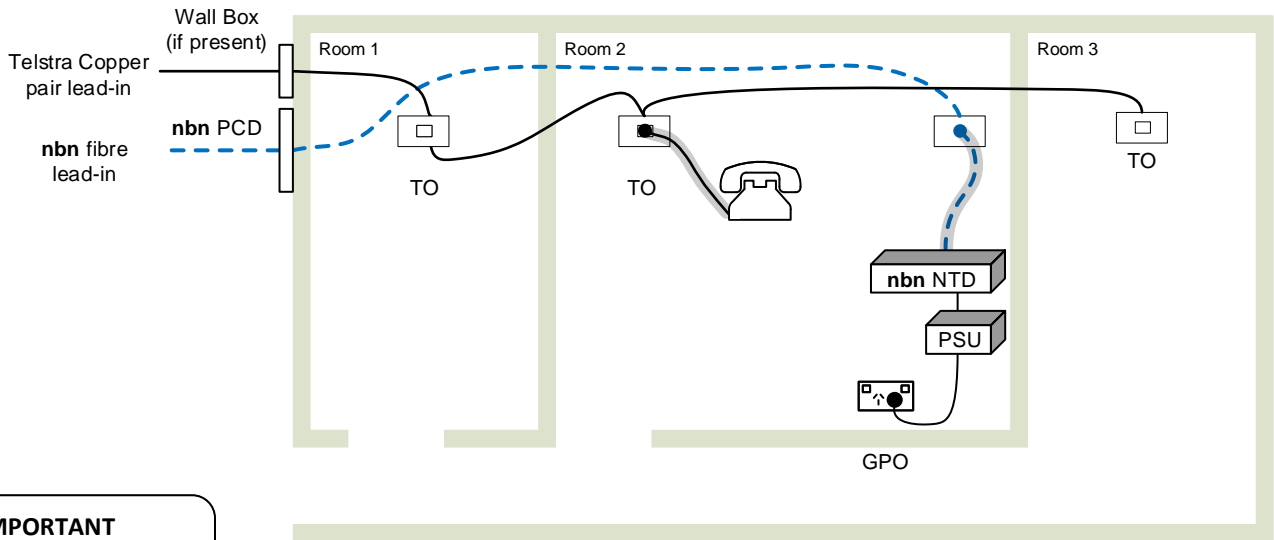
[← Back to TELSTRA LEAD-IN cabling list](#)

FIGURE 4

Telstra lead-in

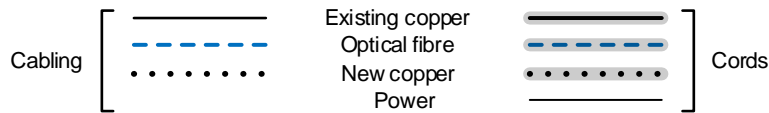
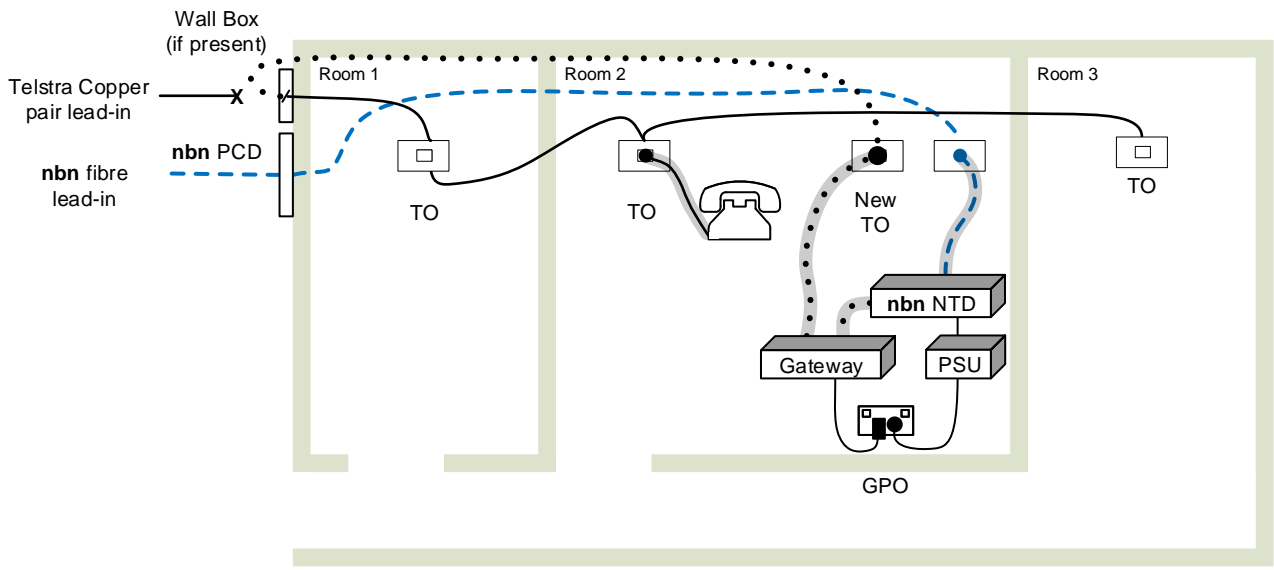
FTTP NTD + Gateway

Existing installation



IMPORTANT
Read in conjunction with G649.1

After migration

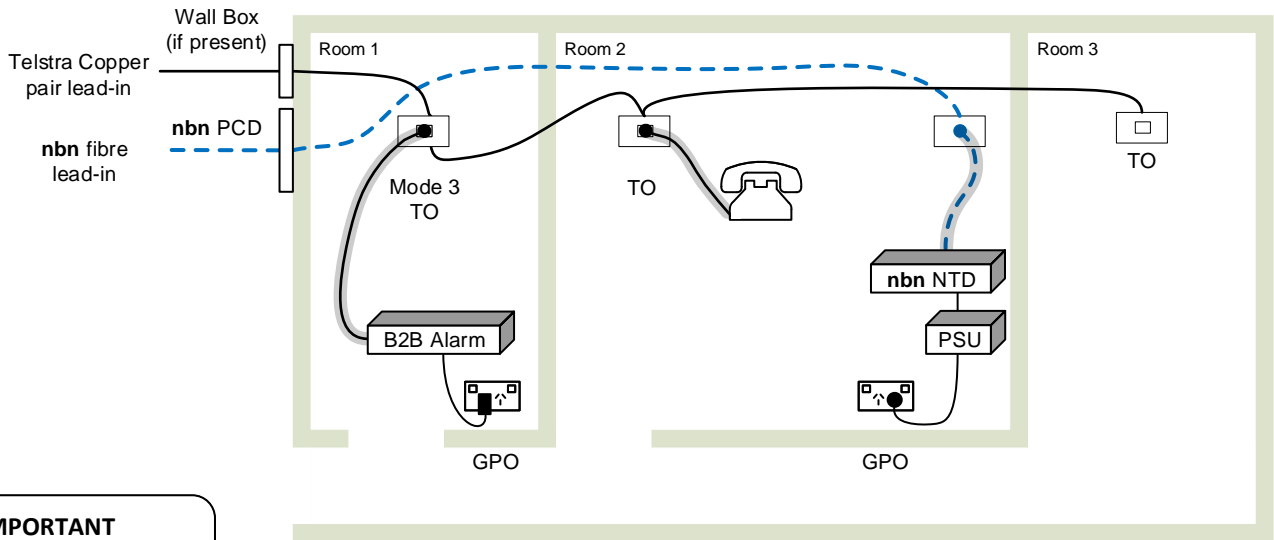


- Note 1: Disconnect the lead-in pair for the existing voice service to allow use of existing internal cabling for a voice service over the NBN. Leave any other pair(s) connected since they may be in use for special service(s) that are not to be disconnected or migrated.
- Note 2: The figure depicts a wall box however the lead-in may be terminated directly on the first TO or a termination block.
- Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram.

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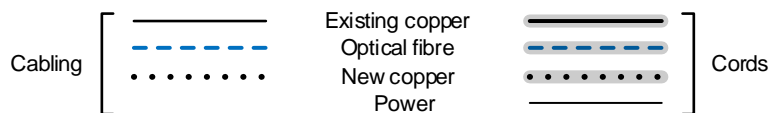
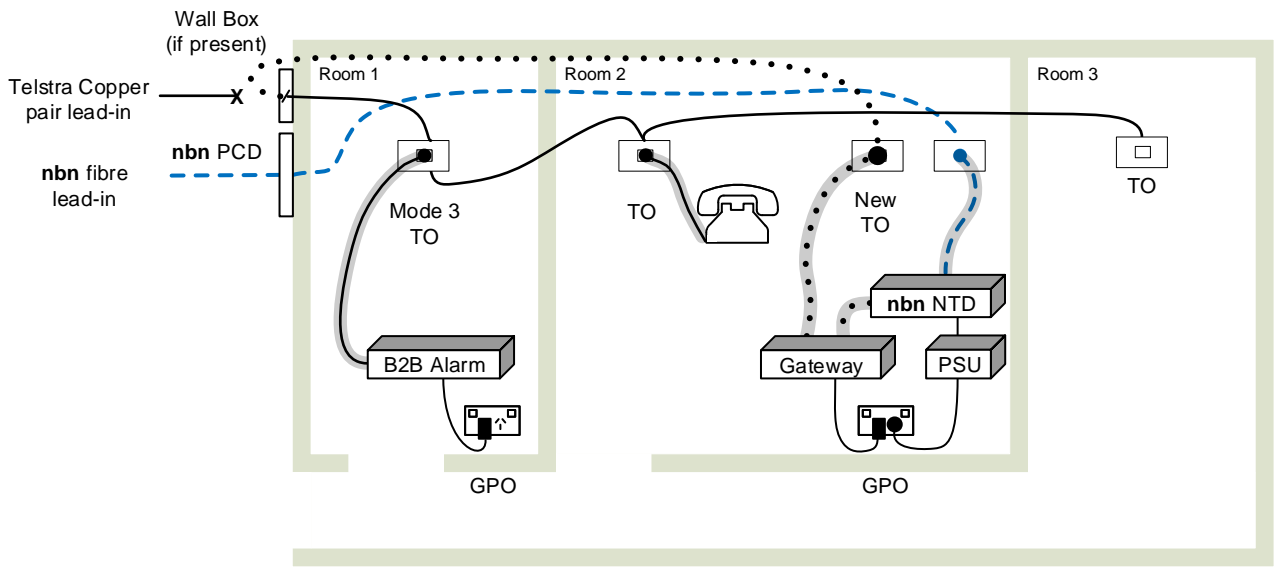
FIGURE 5 Telstra lead-in FTP NTD + Gateway Existing Mode 3 location

Existing installation



IMPORTANT
Read in conjunction with G649.1

After migration

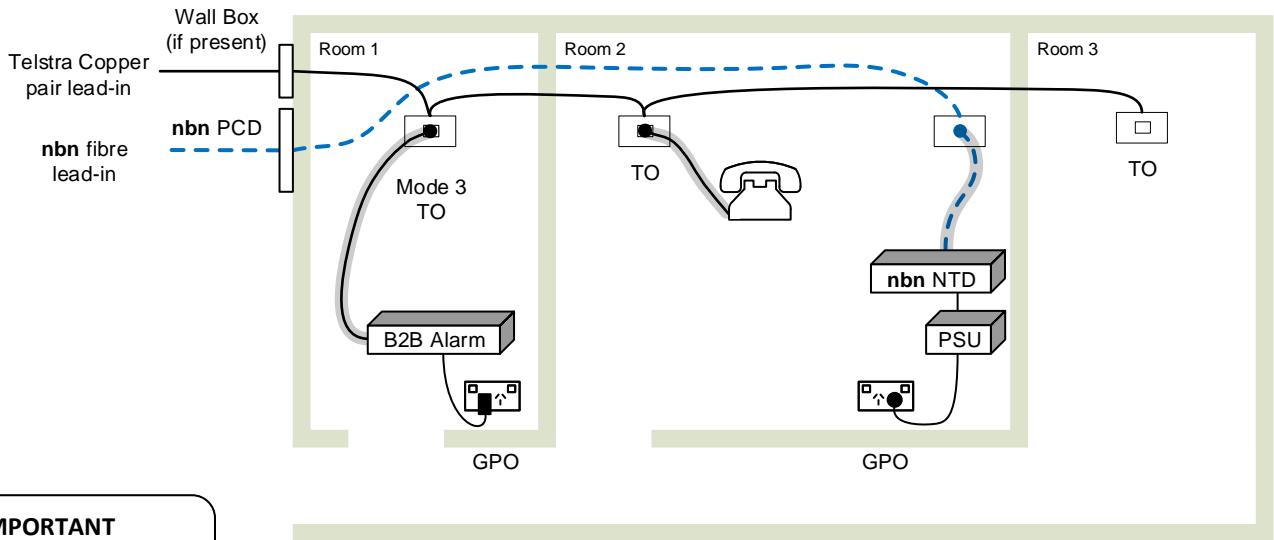


- Note 1: Disconnect the lead-in pair for the existing voice service to allow use of existing internal cabling for a voice service over the NBN. Leave any other pair(s) connected since they may be in use for special service(s) that are not to be disconnected or migrated.
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- Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram. Cabling needs to run directly from the new TO to the Mode 3 TO before connecting to other TOs.

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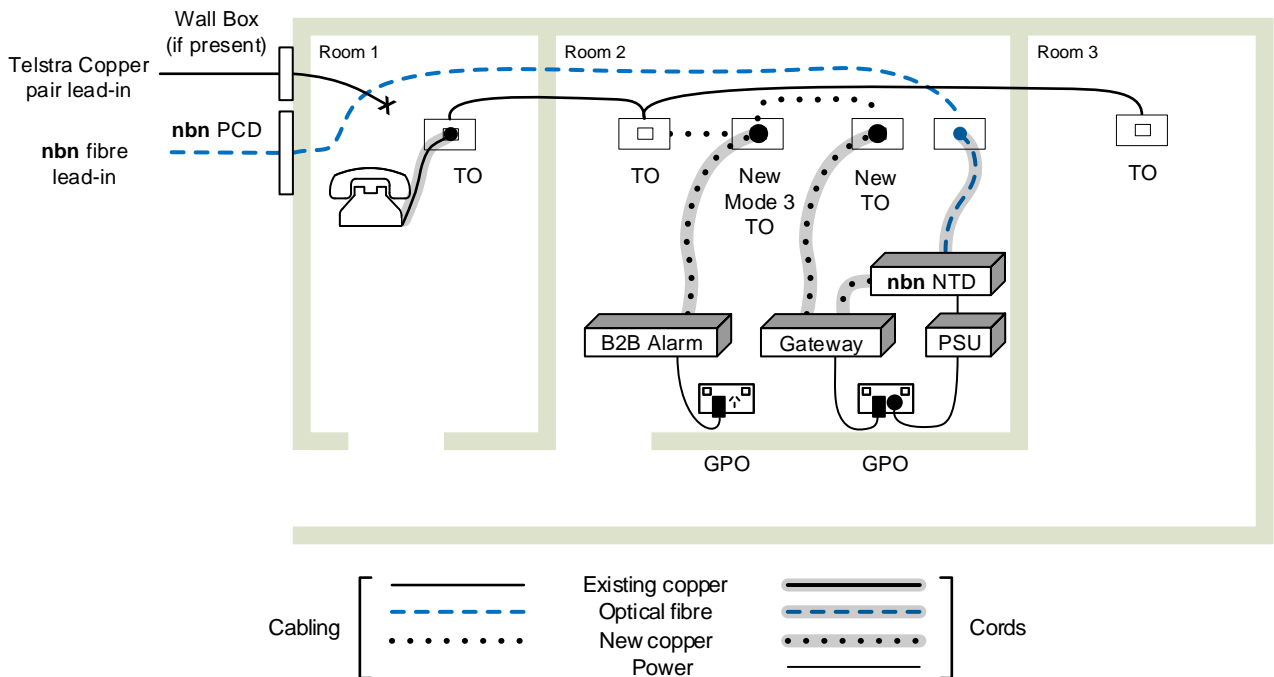
FIGURE 6 Telstra lead-in FTP NTD + Gateway New Mode 3 location

Existing installation



IMPORTANT
Read in conjunction with G649.1

After migration



- Note 1: Disconnect the lead-in pair for the existing voice service to allow use of existing internal cabling for a voice service over the NBN. Leave any other pair(s) connected since they may be in use for special service(s) that are not to be disconnected or migrated.
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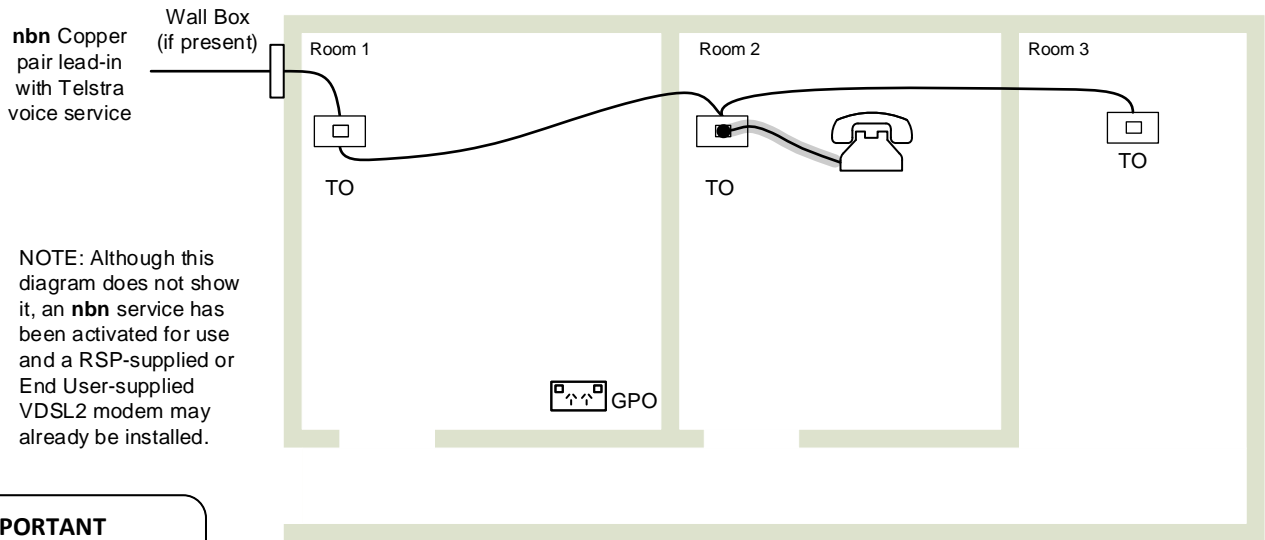
[← Back to TELSTRA LEAD-IN cabling list](#)

FIGURE 7

Telstra lead-in

FTTN

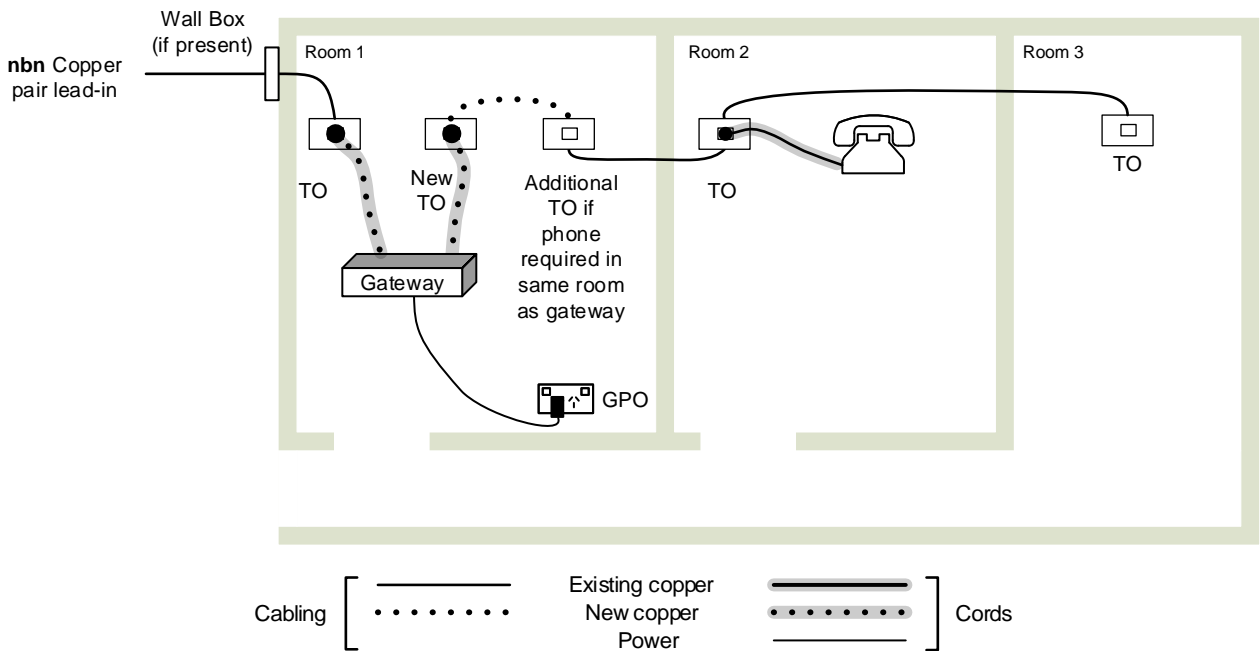
Existing installation



IMPORTANT

Read in conjunction with G649.1

After migration



- Note 1: Remove all star wiring from first TO. Connect the lead-in pair for the existing voice service to the first TO only. A multiple faceplate can be used to connect the existing internal cabling to a new TO, allowing for a voice service inside the premises. Leave any other pair(s) connected since they may be in use for special service(s) that are not to be disconnected or migrated.
- Note 2: The figure depicts a wall box however the lead-in may be terminated directly on the first TO or a termination block.
- Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram.

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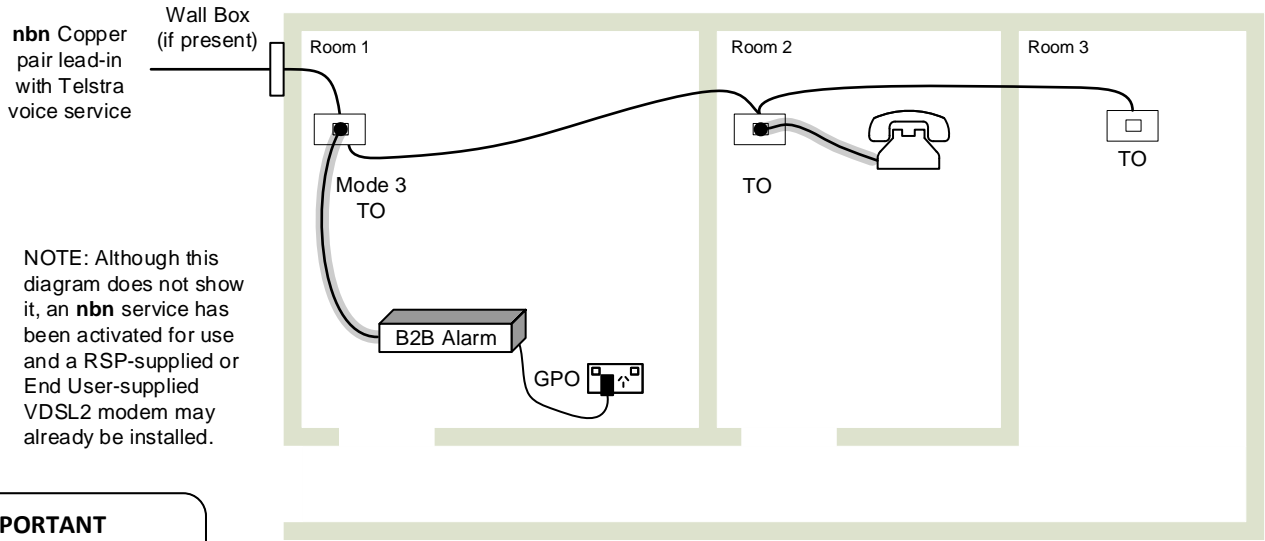
FIGURE 8

Telstra lead-in

FTTN

Mode 3

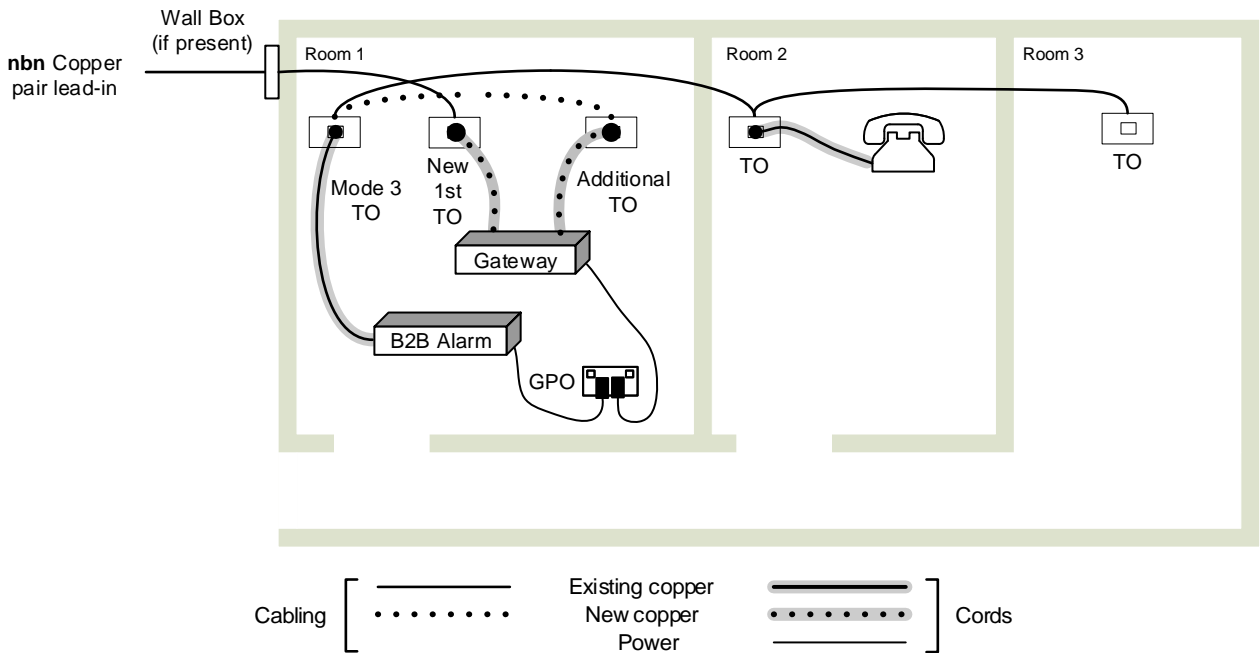
Existing installation



IMPORTANT

Read in conjunction with G649.1

After migration



- Note 1: Remove all star wiring from first TO. Connect the lead-in pair for the existing voice service to the first TO only. A multiple faceplate can be used to connect the existing internal cabling to a new TO, allowing for a voice service inside the premises. Leave any other pair(s) connected since they may be in use for special service(s) that are not to be disconnected or migrated.
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- Note 3: The New First Socket is required to connect the lead-in to the gateway. A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram. Cabling needs to run directly from the new TO to the Mode 3 TO before connecting to other TOs.

[← Back to TELSTRA LEAD-IN cabling list](#)

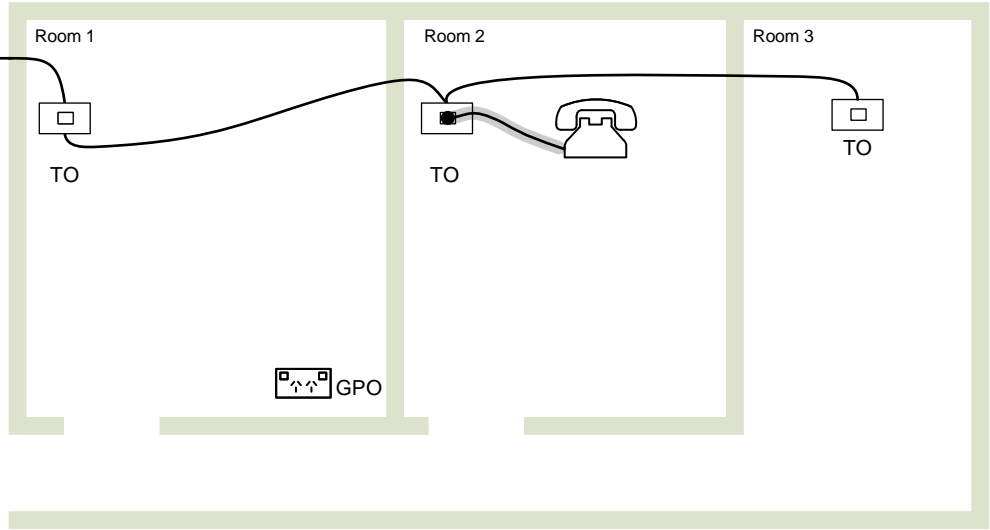
FIGURE 9

Telstra lead-in

FTTB

Existing installation

Copper pair from MDF or floor distributor (IDF) With **nbn** DSL and Telstra voice



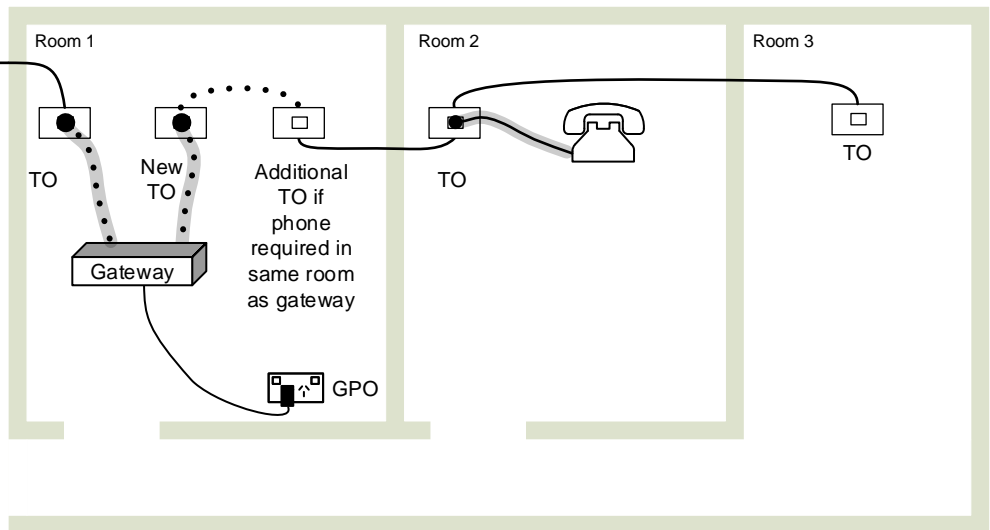
NOTE: Although this diagram does not show it, an **nbn** service has been activated for use and a RSP-supplied or End User-supplied VDSL2 modem may already be installed.

IMPORTANT

Read in conjunction with G649.1

After migration

Copper pair from MDF or floor distributor (IDF) with **nbn** DSL



Note 1: Remove all star wiring from first TO. Connect the lead-in pair for the existing voice service to the first TO only. A multiple faceplate can be used to connect the existing internal cabling to a new TO, allowing for a voice service inside the premises. Leave any other pair(s) connected since they may be in use for special service(s) that are not to be disconnected or migrated.

Note 2: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram.

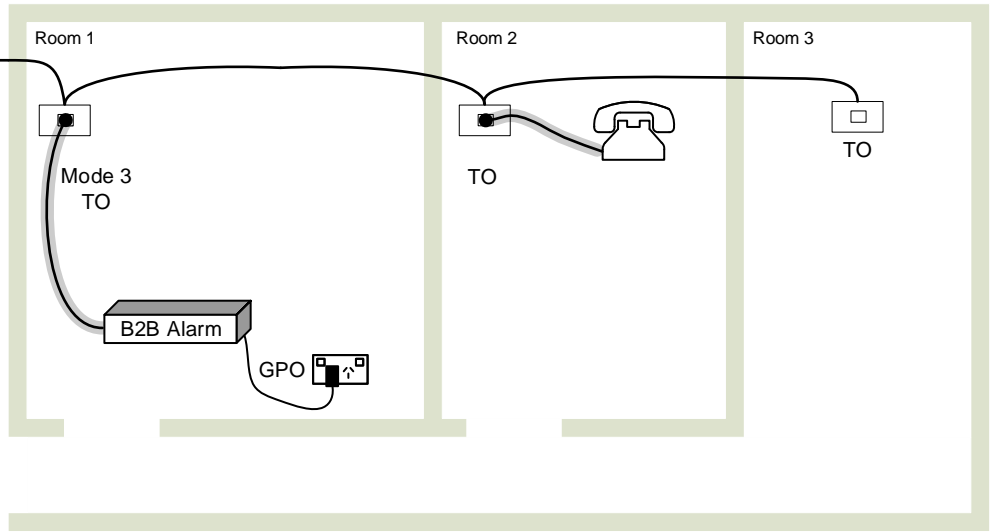
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FIGURE 10 **Telstra lead-in** **FTTB** **Mode 3**

Existing installation

Copper pair from MDF or floor distributor (IDF) With **nbn** DSL and Telstra voice

NOTE: Although this diagram does not show it, an **nbn** service has been activated for use and a RSP-supplied or End User-supplied VDSL2 modem may already be installed.

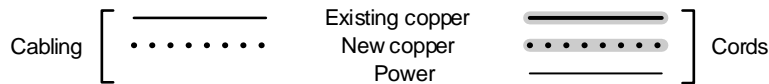
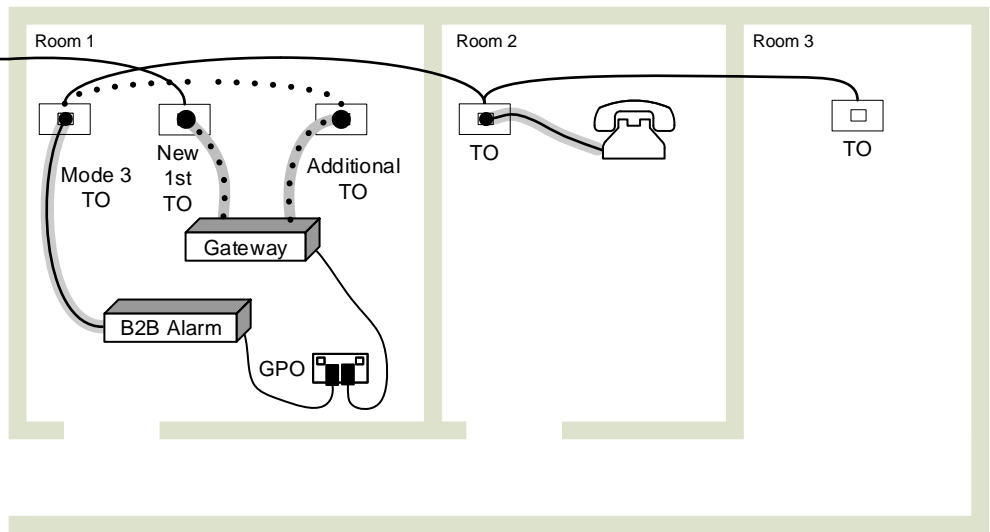


IMPORTANT

Read in conjunction with G649.1

After migration

Copper pair from MDF or floor distributor (IDF) With **nbn** DSL



Note 1: Disconnect the lead-in pair for the existing voice service to allow use of existing internal cabling for a voice service over the NBN. Leave any other pair(s) connected since they may be in use for special service(s) that are not to be disconnected or migrated.

Note 2: The New First TO is required to connect the lead-in to the gateway. A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram. Cabling needs to run directly from the new TO to the Mode 3 TO before connecting to other TOs.

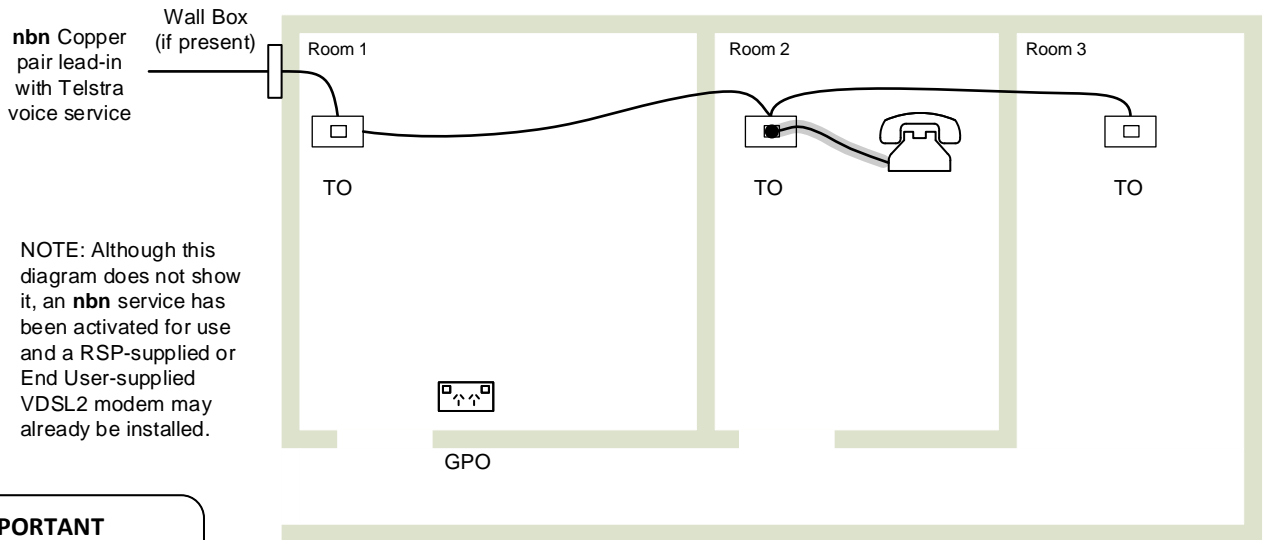
[← Back to TELSTRA LEAD-IN cabling list](#)

FIGURE 11

Telstra lead-in

FTTC

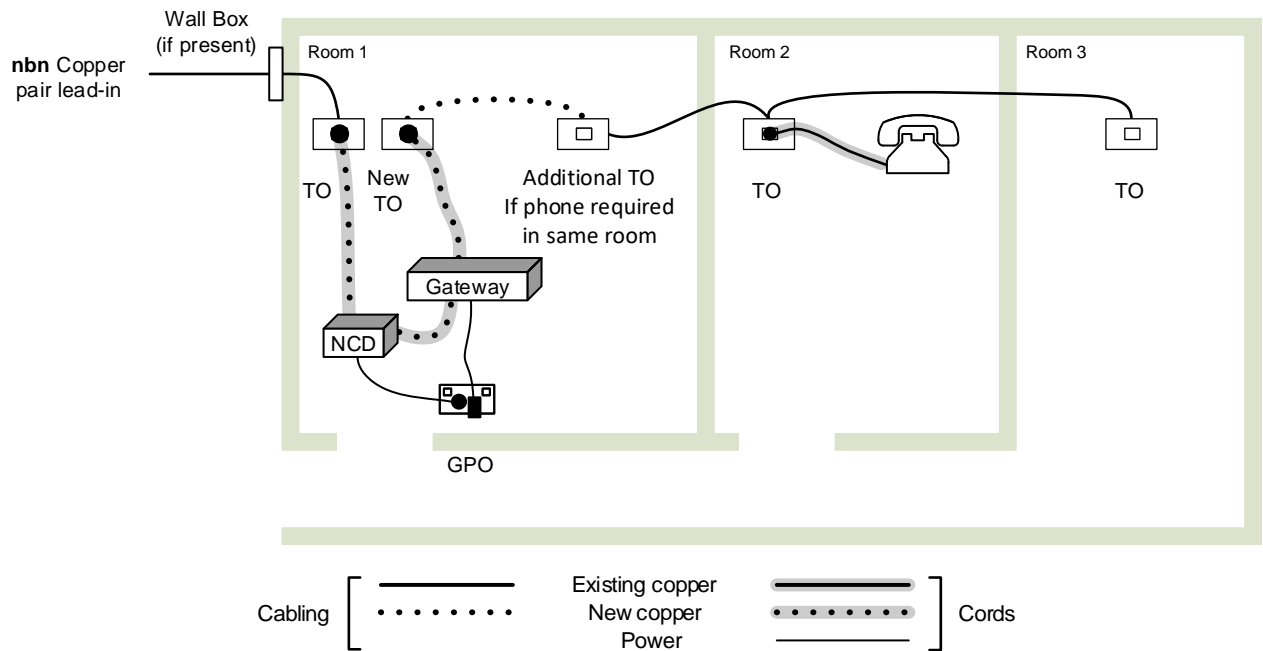
Existing installation



IMPORTANT

Read in conjunction with G649.1

After migration

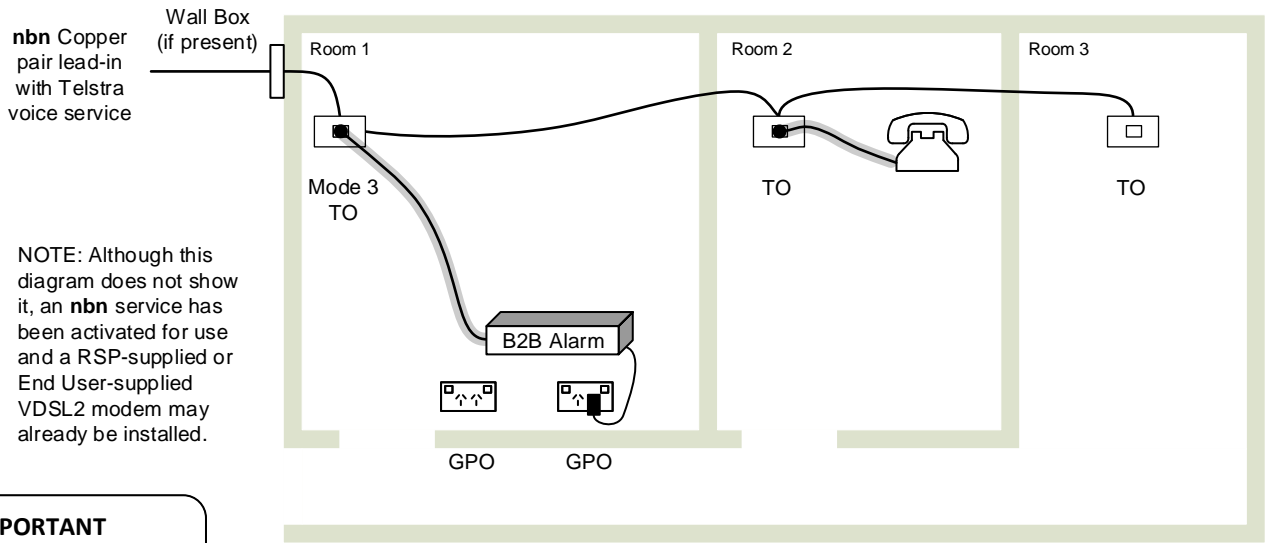


- Note 1: Remove all star wiring from first TO. Connect the lead-in pair for the existing voice service to the first TO only. A multiple faceplate can be used to connect the existing internal cabling to a new TO, allowing for a voice service inside the premises. Leave any other pair(s) connected since they may be in use for special service(s) that are not to be disconnected or migrated.
- Note 2: The figure depicts a wall box however the lead-in may be terminated directly on the first TO or a termination block.
- Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram.

[← Back to TELSTRA LEAD-IN cabling list](#)

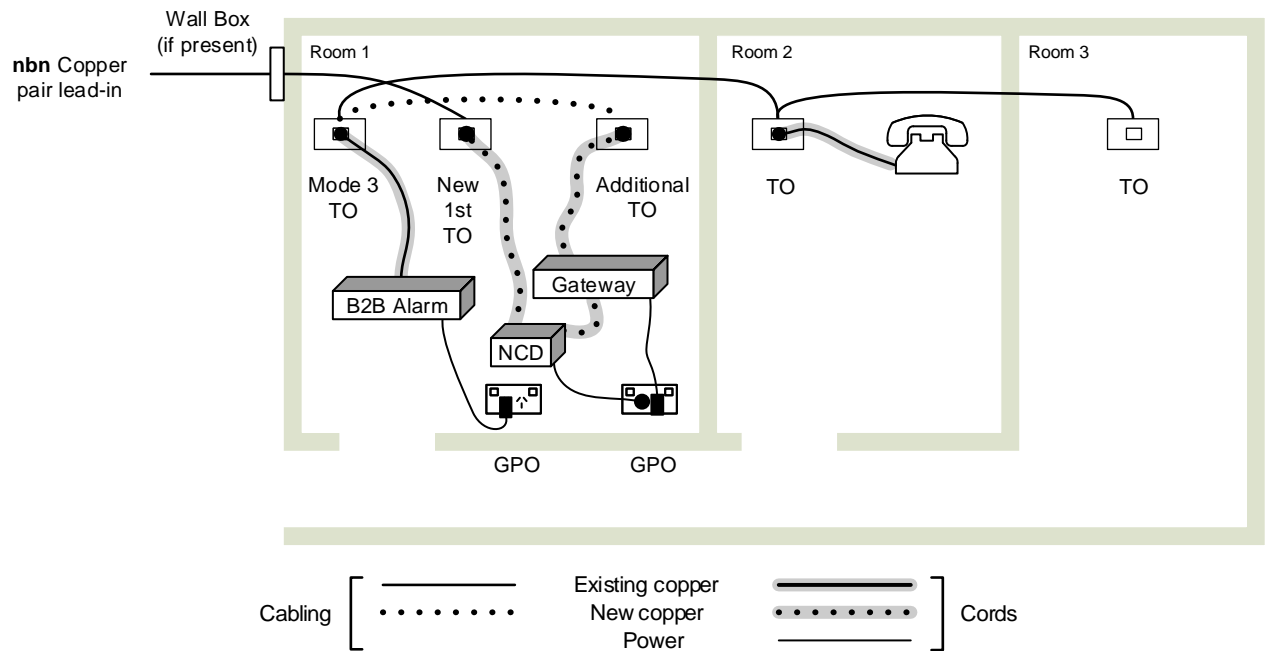
FIGURE 12 **Telstra lead-in** **FTTC** **Mode 3**

Existing installation



IMPORTANT
Read in conjunction with G649.1

After migration



- Note 1: Remove all star wiring from first TO. Connect the lead-in pair for the existing voice service to the first TO only. A multiple faceplate can be used to connect the existing internal cabling to a new TO, allowing for a voice service inside the premises. Leave any other pair(s) connected since they may be in use for special service(s) that are not to be disconnected or migrated.
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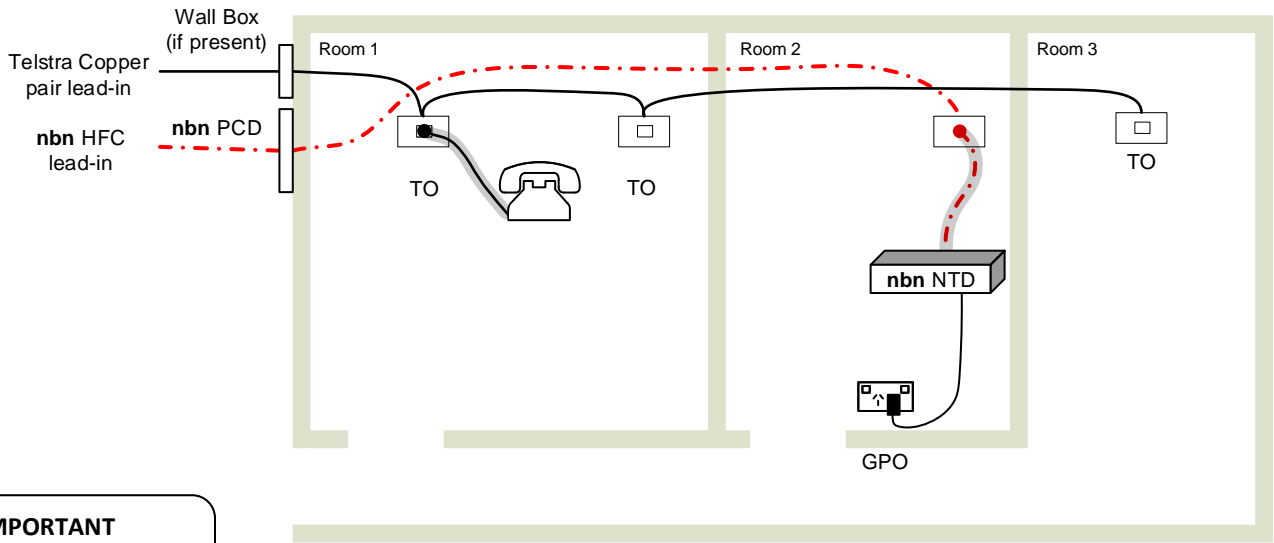
[← Back to TELSTRA LEAD-IN cabling list](#)

FIGURE 13

Telstra lead-in

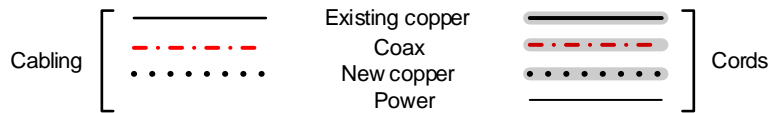
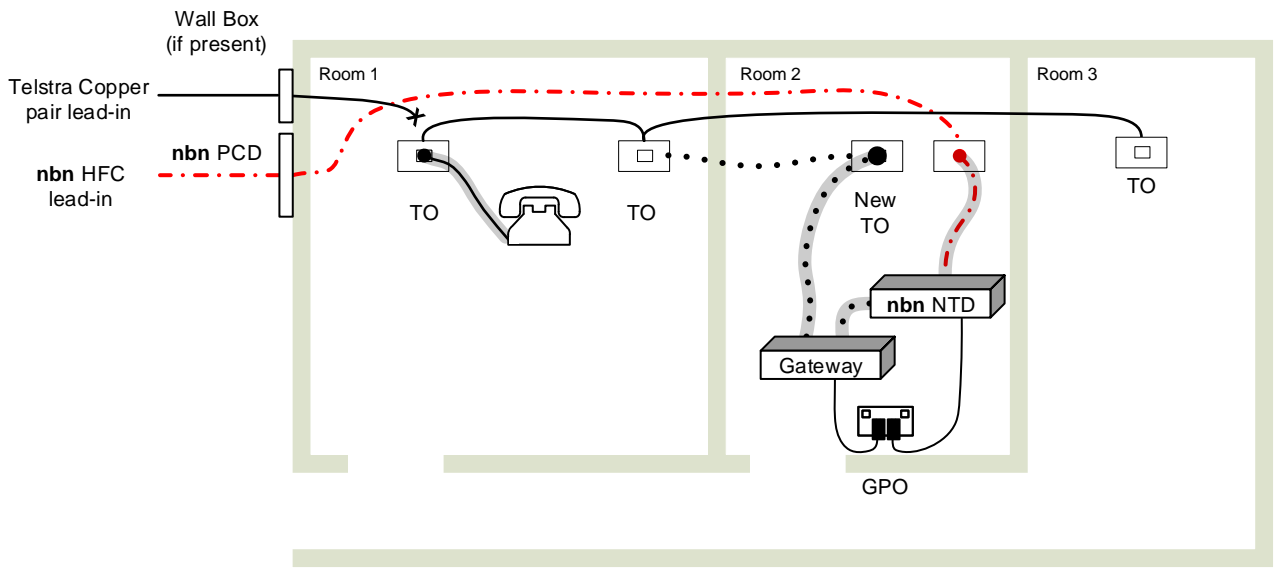
HFC NTD + Gateway

Existing installation



IMPORTANT
Read in conjunction with G649.1

After migration



- Note 1: Disconnect the lead-in pair for the existing voice service to allow use of existing internal cabling for a voice service over the NBN. Leave any other pair(s) connected since they may be in use for special service(s) that are not to be disconnected or migrated.
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[← Back to TELSTRA LEAD-IN cabling list](#)

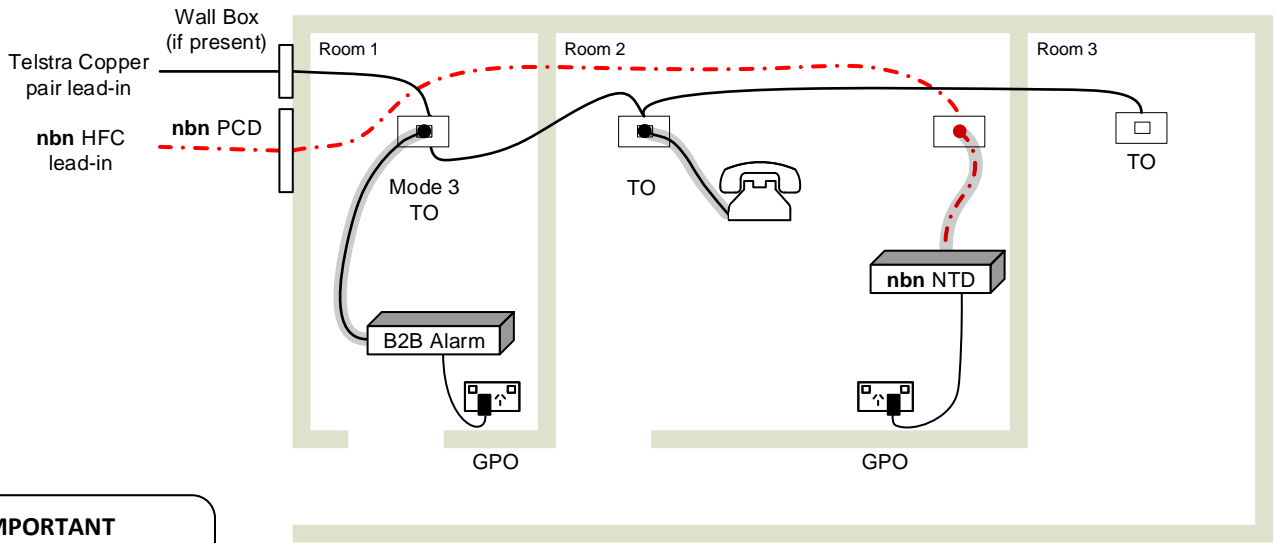
FIGURE 14

Telstra lead-in

HFC NTD + Gateway

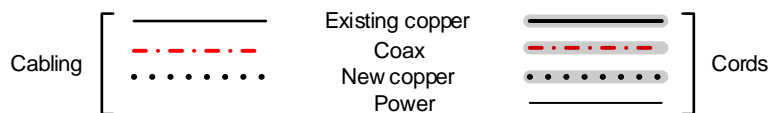
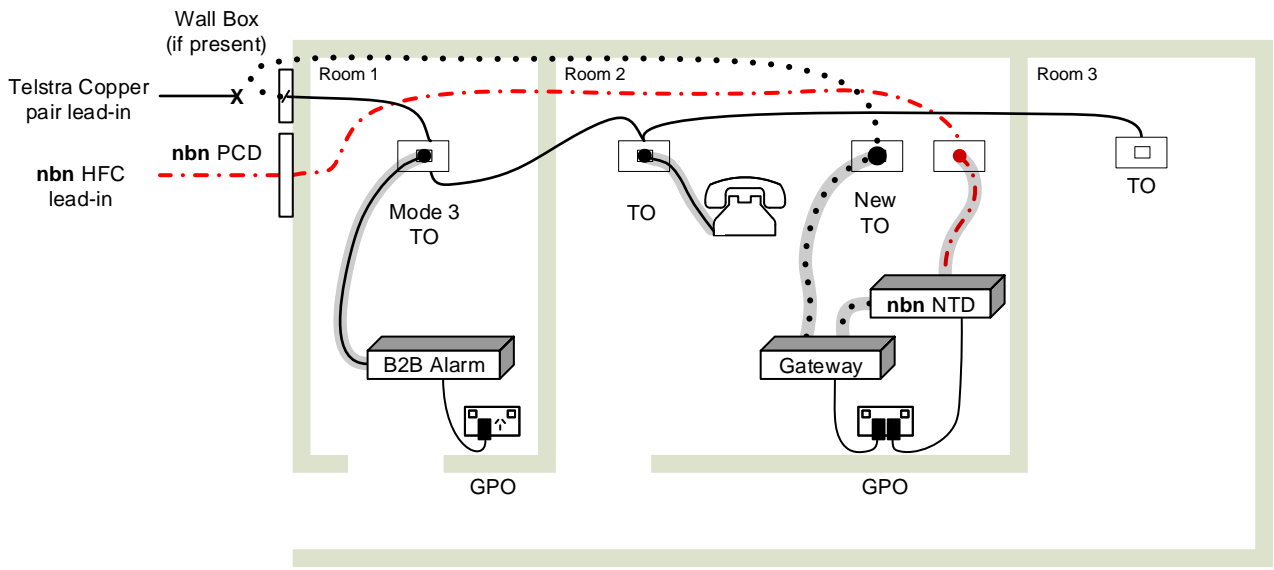
Existing Mode 3 location

Existing installation



IMPORTANT
Read in conjunction with G649.1

After migration

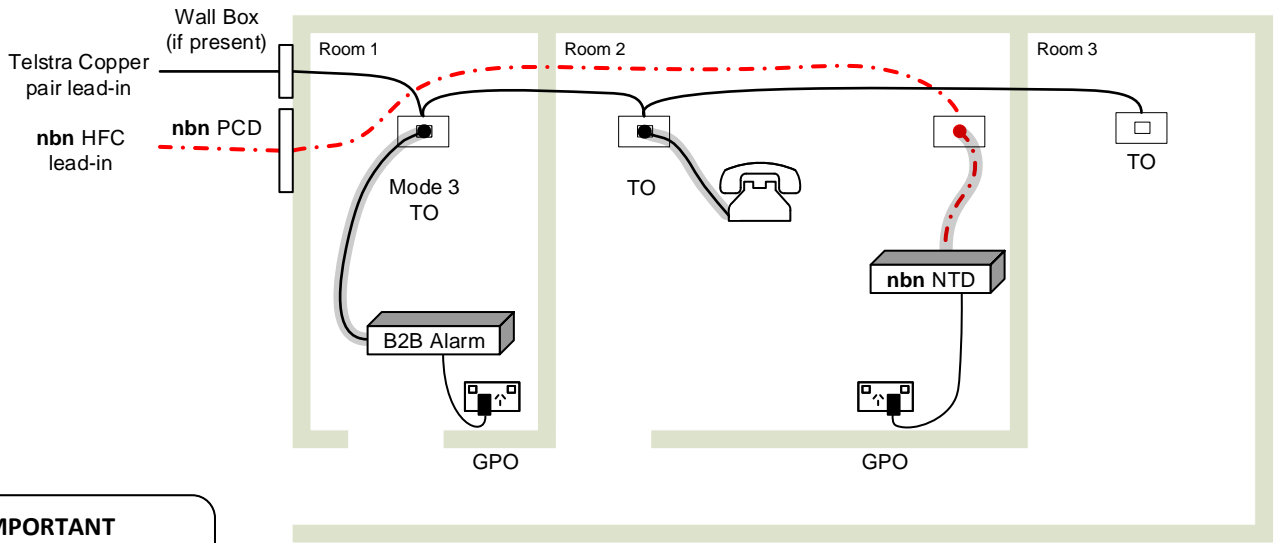


- Note 1: Disconnect the lead-in pair for the existing voice service to allow use of existing internal cabling for a voice service over the NBN. Leave any other pair(s) connected since they may be in use for special service(s) that are not to be disconnected or migrated.
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[← Back to TELSTRA LEAD-IN cabling list](#)

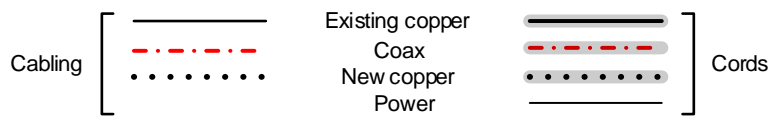
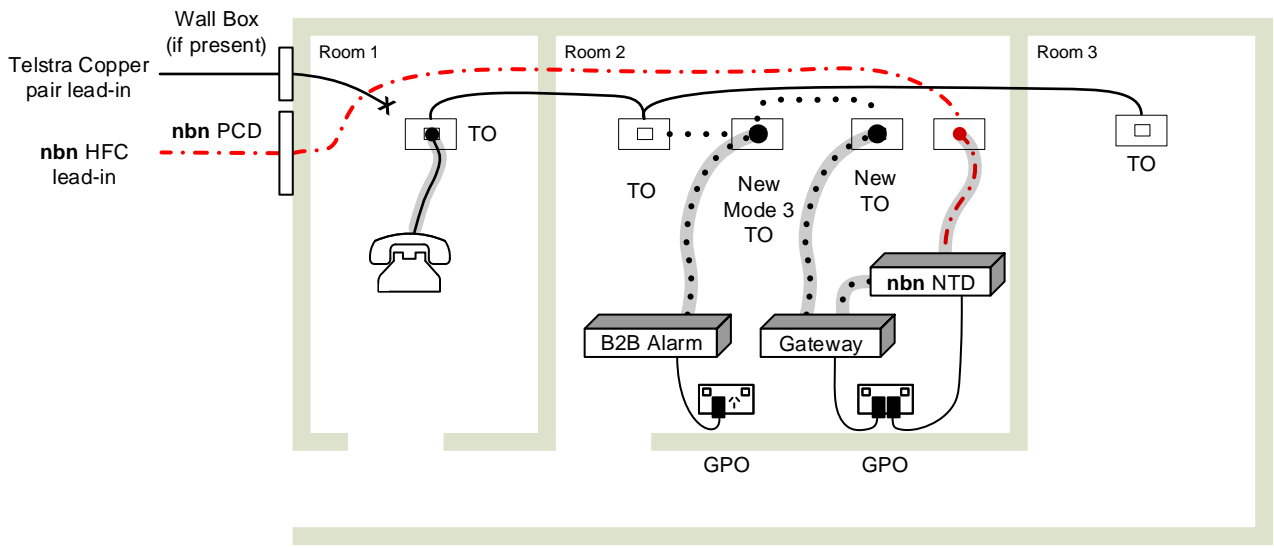
FIGURE 15 Telstra lead-in HFC NTD + Gateway New Mode 3 location

Existing installation



IMPORTANT
Read in conjunction with G649.1

After migration



- Note 1: Disconnect the lead-in pair for the existing voice service to allow use of existing internal cabling for a voice service over the NBN. Leave any other pair(s) connected since they may be in use for special service(s) that are not to be disconnected or migrated.
- Note 2: The figure depicts a wall box however the lead-in may be terminated directly on the first TO or a termination block.
- Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram. Cabling needs to run directly from the new TO to the Mode 3 TO before connecting to other TOs.

[← Back to TELSTRA LEAD-IN cabling list](#)

Optus cable modem (VoIP)

Sample cabling diagrams

| Unmonitored services | Monitored services |
|---|-------------------------------|
| → FTTP NTD UNI-V port | → with Mode 3 |
| → FTTP NTD with Gateway | → with Mode 3 |
| → FTTN | → with Mode 3 |
| → FTTB | → with Mode 3 |
| → FTTC | → with Mode 3 |
| → HFC NTD with Gateway | → with Mode 3 |

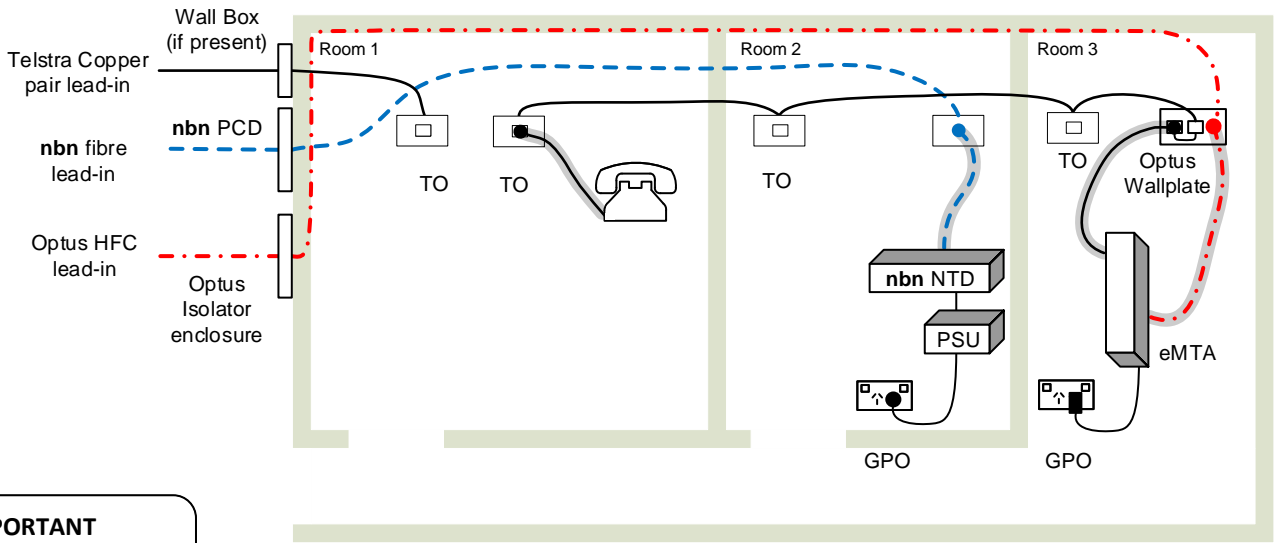
← [Back to CONTENTS](#)

FIGURE 16

Optus cable

FTTP NTD (UNI-V port)

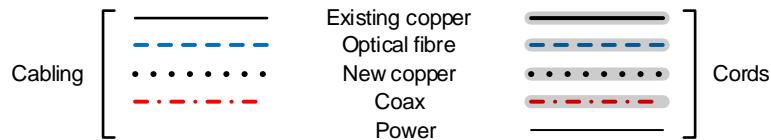
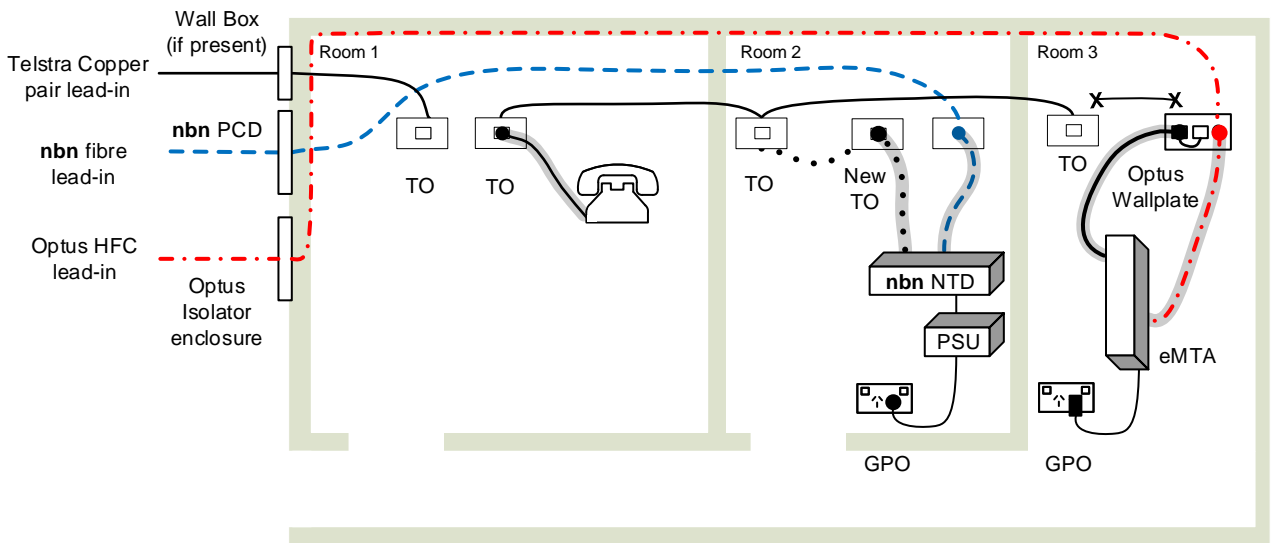
Existing installation



IMPORTANT

Read in conjunction with G649.1

After migration

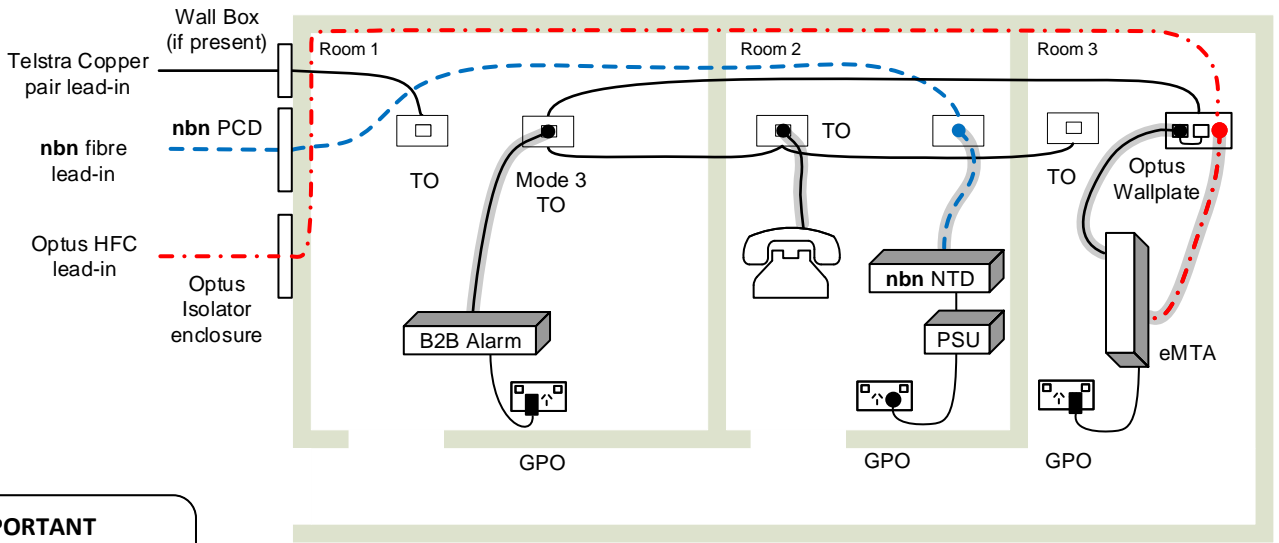


- Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider.
- Note 2: Disconnect the Optus NBP/wall plate from the former first socket to allow use of existing internal cabling for a voice service over the NBN.
- Note 3: A TO is required to extend the voice service from the NTD into the existing home cabling. The telephone service is provided by the NTD. In many cases a new TO will be required, as shown in this diagram.

[← Back to OPTUS CABLE cabling list](#)

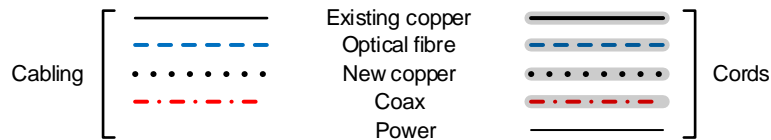
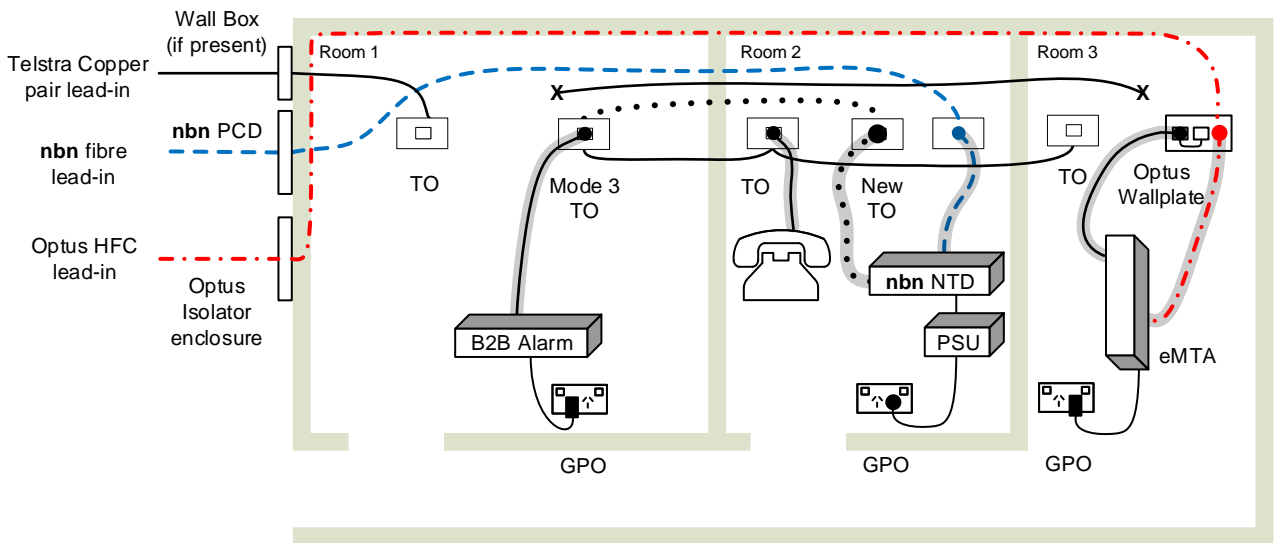
FIGURE 17 **Optus cable** **FTTP NTD (UNI-V port)** **Mode 3**

Existing installation



IMPORTANT
Read in conjunction
with G649.1

After migration



- Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider.
- Note 2: Disconnect the Optus NBP/wall plate from the former first socket to allow use of existing internal cabling for a voice service over the NBN.
- Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram. Cabling needs to run directly from the new TO to the Mode 3 TO before connecting to other TOs.

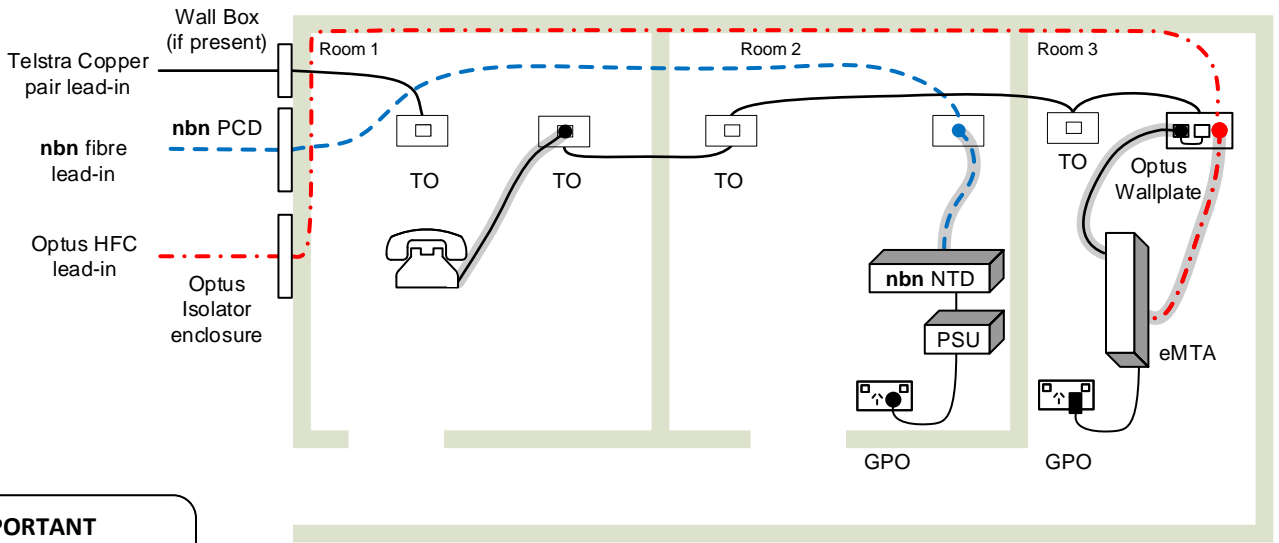
[← Back to OPTUS CABLE cabling list](#)

FIGURE 18

Optus cable

FTTP NTD + Gateway

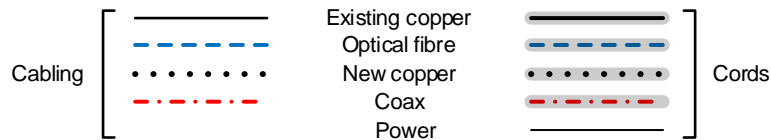
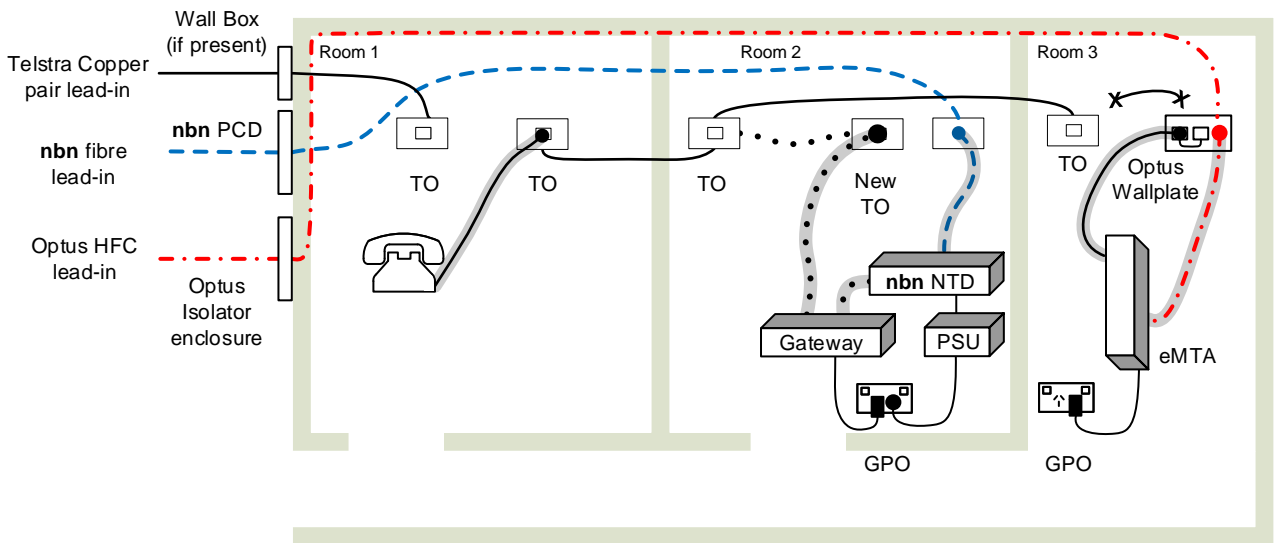
Existing installation



IMPORTANT

Read in conjunction with G649.1

After migration



- Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider.
- Note 2: Disconnect the Optus NBP/wall plate from the former first socket to allow use of existing internal cabling for a voice service over the NBN.
- Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram.

[← Back to OPTUS CABLE cabling list](#)

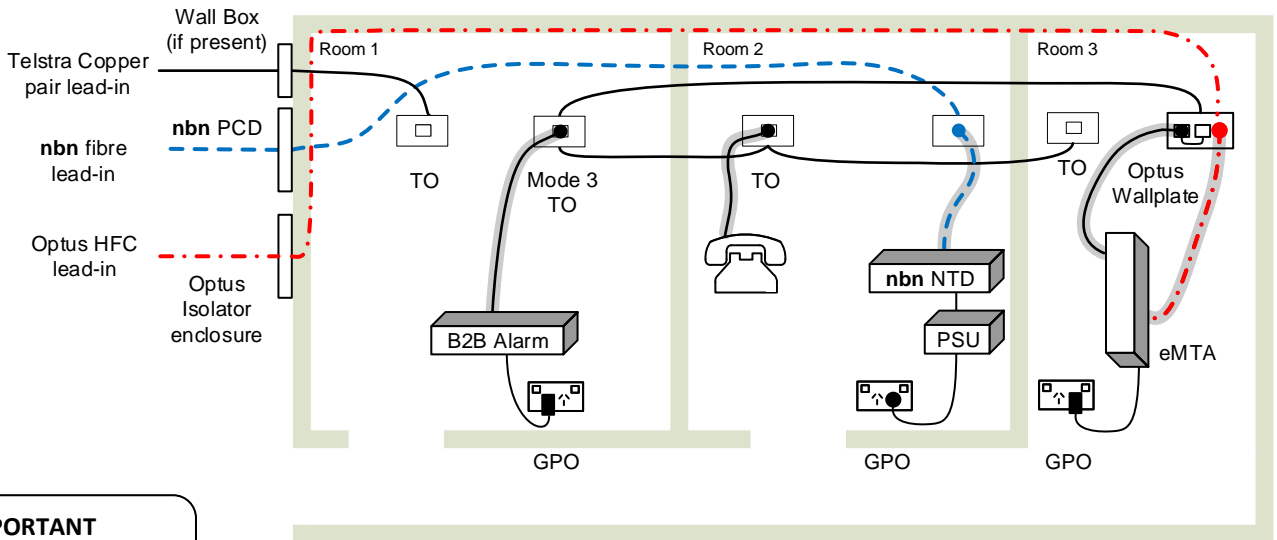
FIGURE 19

Optus cable

FTTP NTD + Gateway

Mode 3

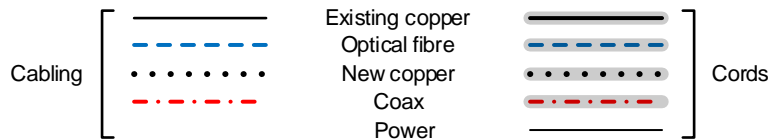
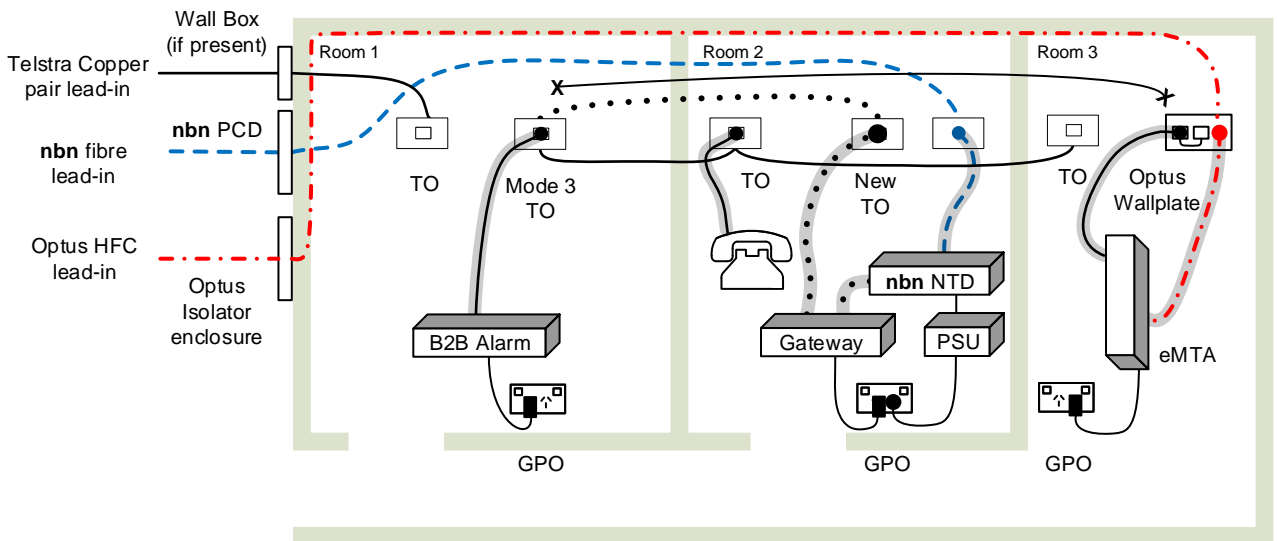
Existing installation



IMPORTANT

Read in conjunction with G649.1

After migration



Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider.

Note 2: Disconnect the Optus NBP/wall plate from the former first socket to allow use of existing internal cabling for a voice service over the NBN.

Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram. Cabling needs to run directly from the new TO to the Mode 3 TO before connecting to other TOs.

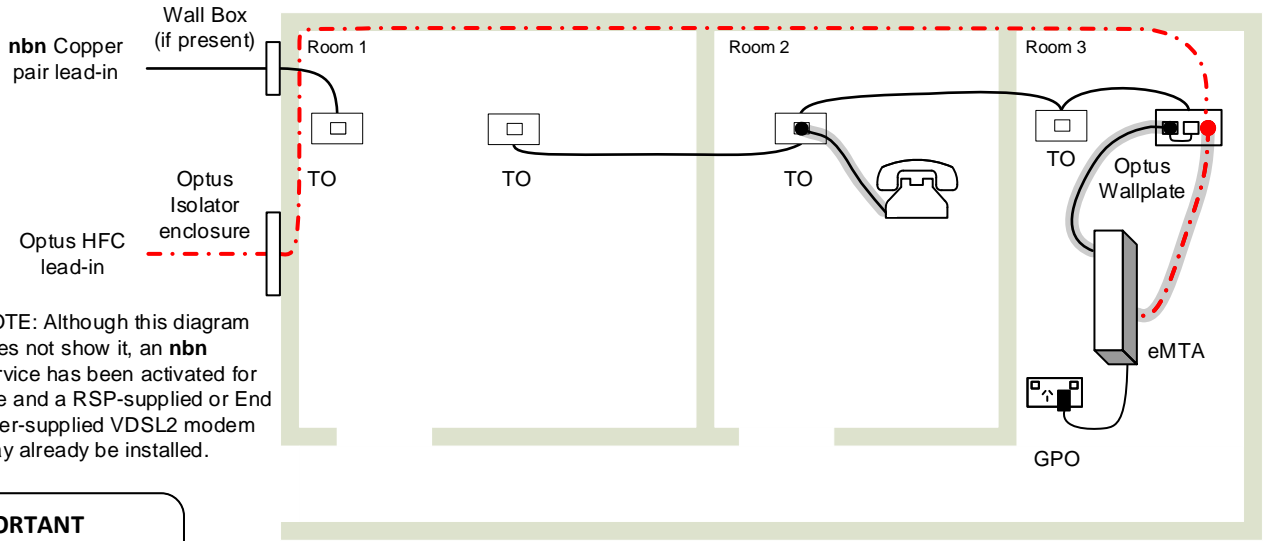
[← Back to OPTUS CABLE cabling list](#)

FIGURE 20

Optus cable

FTTN

Existing installation

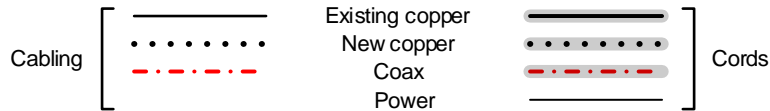
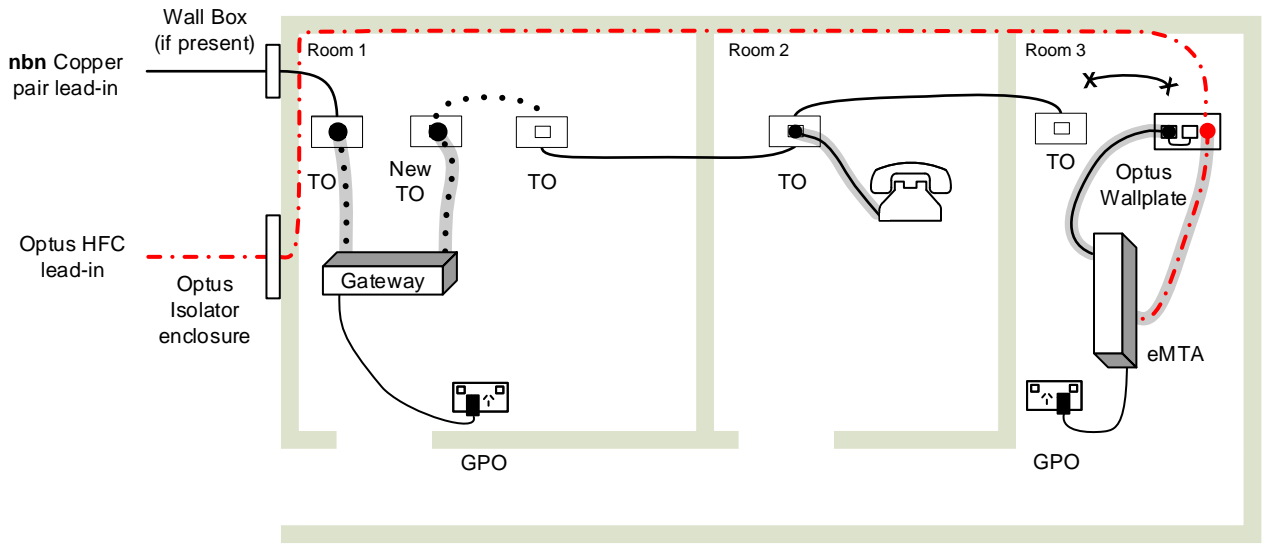


NOTE: Although this diagram does not show it, an **nbn** service has been activated for use and a RSP-supplied or End User-supplied VDSL2 modem may already be installed.

IMPORTANT

Read in conjunction with G649.1

After migration



- Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider.
- Note 2: Disconnect the Optus NBP/wall plate from the former first socket to allow use of existing internal cabling for a voice service over the NBN.
- Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a new TO will be required, as shown in this diagram.

[← Back to OPTUS CABLE cabling list](#)

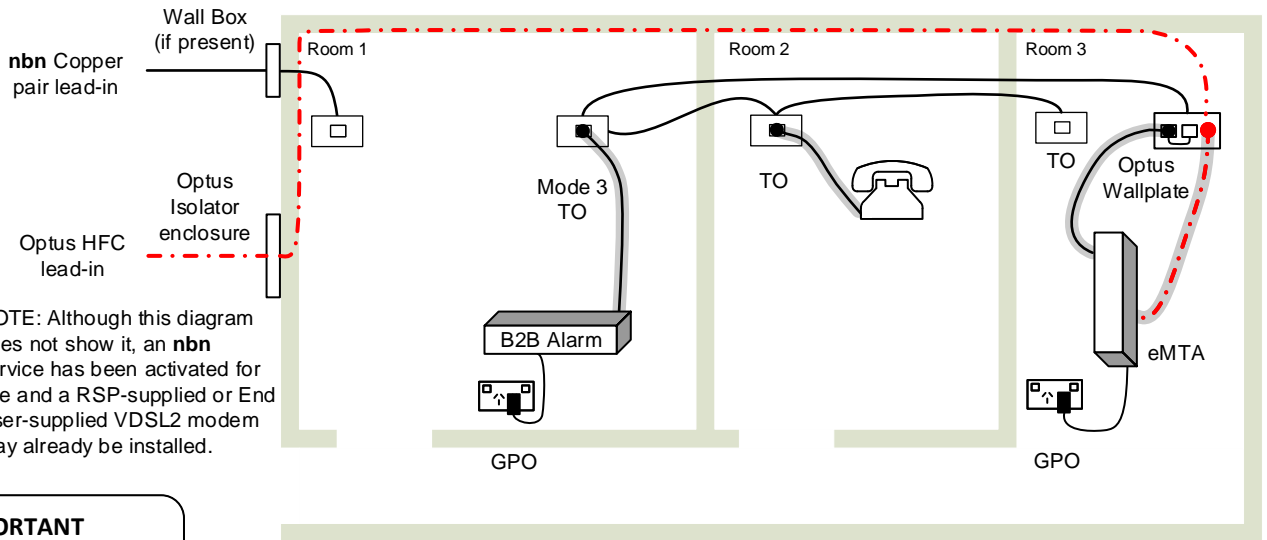
FIGURE 21

Optus cable

FTTN

Mode 3

Existing installation

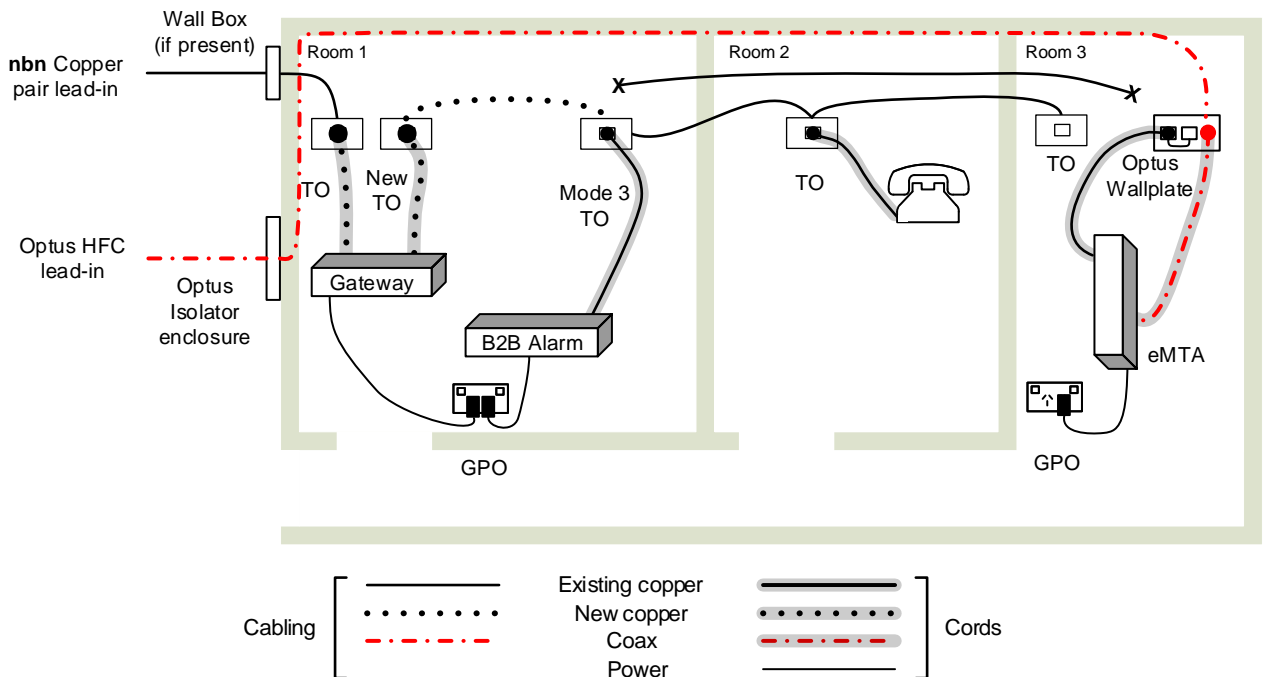


NOTE: Although this diagram does not show it, an **nbn** service has been activated for use and a RSP-supplied or End User-supplied VDSL2 modem may already be installed.

IMPORTANT

Read in conjunction with G649.1

After migration



- Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider.
- Note 2: Disconnect the Optus NBP/wall plate from the former first socket to allow use of existing internal cabling for a voice service over the NBN.
- Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram. Cabling needs to run directly from the new TO to the Mode 3 TO before connecting to other TOs.

[← Back to OPTUS CABLE cabling list](#)

FIGURE 22

Optus cable

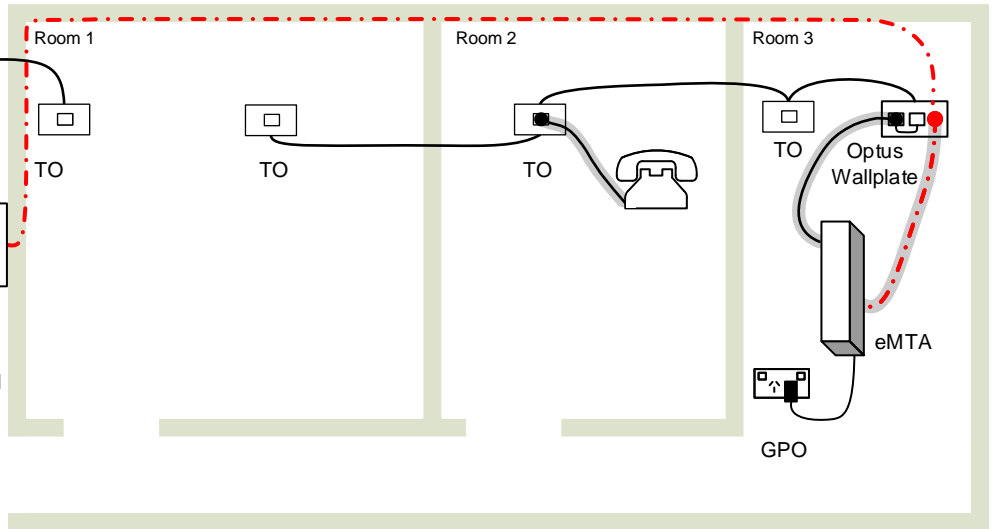
FTTB

Existing installation

Copper pair from MDF or floor distributor (IDF) with **nbn** DSL

Optus HFC lead-in
Optus Isolator enclosure

NOTE: Although this diagram does not show it, an **nbn** service has been activated for use and a RSP-supplied or End User-supplied VDSL2 modem may already be installed.



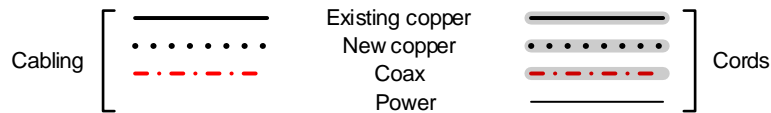
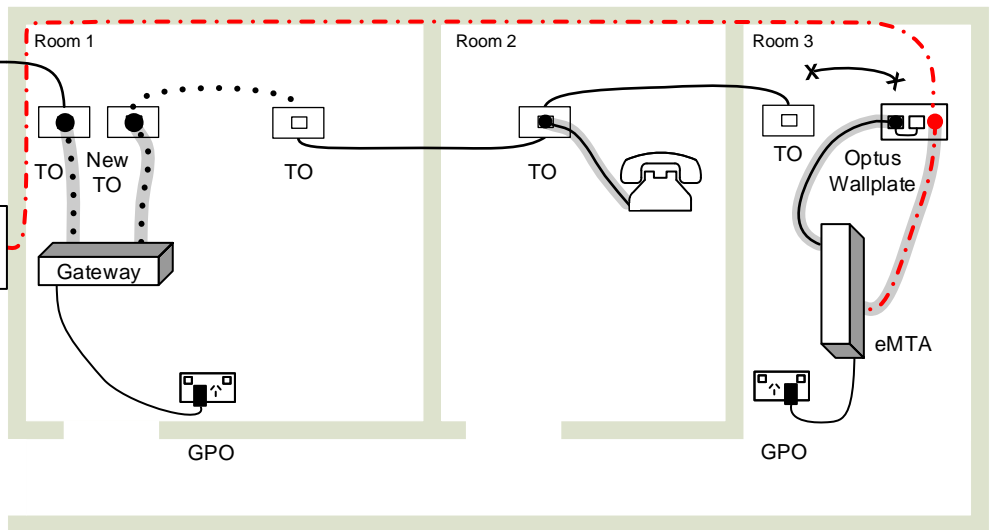
IMPORTANT

Read in conjunction with G649.1

After migration

Copper pair from MDF or floor distributor (IDF) With **nbn** DSL

Optus HFC lead-in
Optus Isolator enclosure



- Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider.
- Note 2: Disconnect the Optus NBP/wall plate from the former first socket to allow use of existing internal cabling for a voice service over the NBN.
- Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a new TO will be required, as shown in this diagram.

[← Back to OPTUS CABLE cabling list](#)

FIGURE 23

Optus cable

FTTB

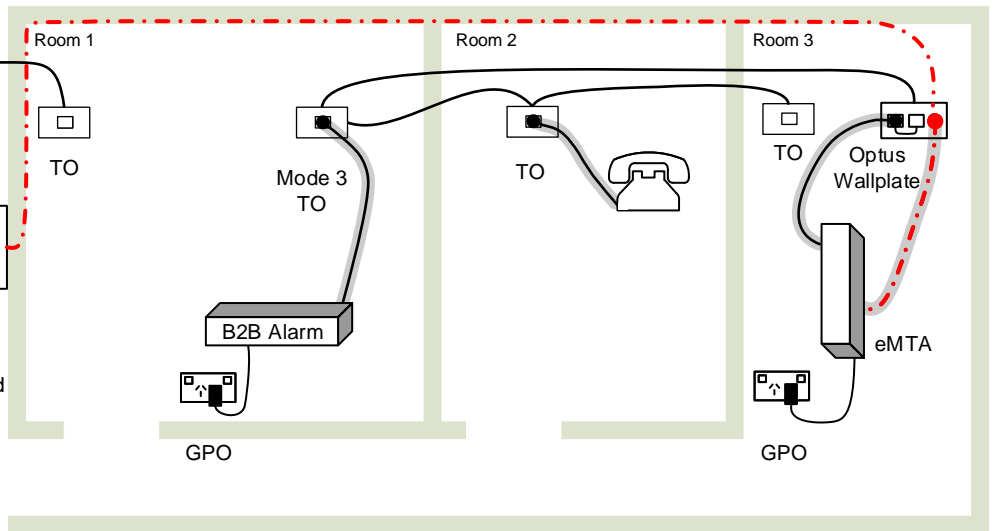
Mode 3

Existing installation

Copper pair from MDF or floor distributor (IDF) with **nbm** DSL

Optus HFC lead-in
Optus Isolator enclosure

NOTE: Although this diagram does not show it, an **nbm** service has been activated for use and a RSP-supplied or End User-supplied VDSL2 modem may already be installed.



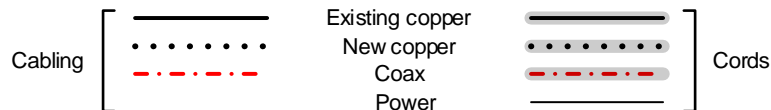
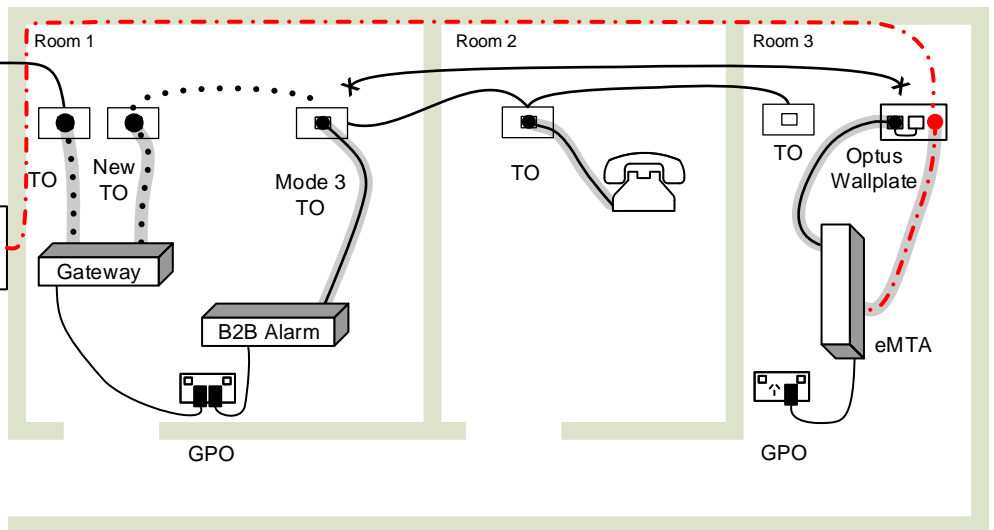
IMPORTANT

Read in conjunction with G649.1

After migration

Copper pair from MDF or floor distributor (IDF) With **nbm** DSL

Optus HFC lead-in
Optus Isolator enclosure



- Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider.
- Note 2: Disconnect the Optus NBP/wall plate from the former first socket to allow use of existing internal cabling for a voice service over the NBN.
- Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram. Cabling needs to run directly from the new TO to the Mode 3 TO before connecting to other TOs.

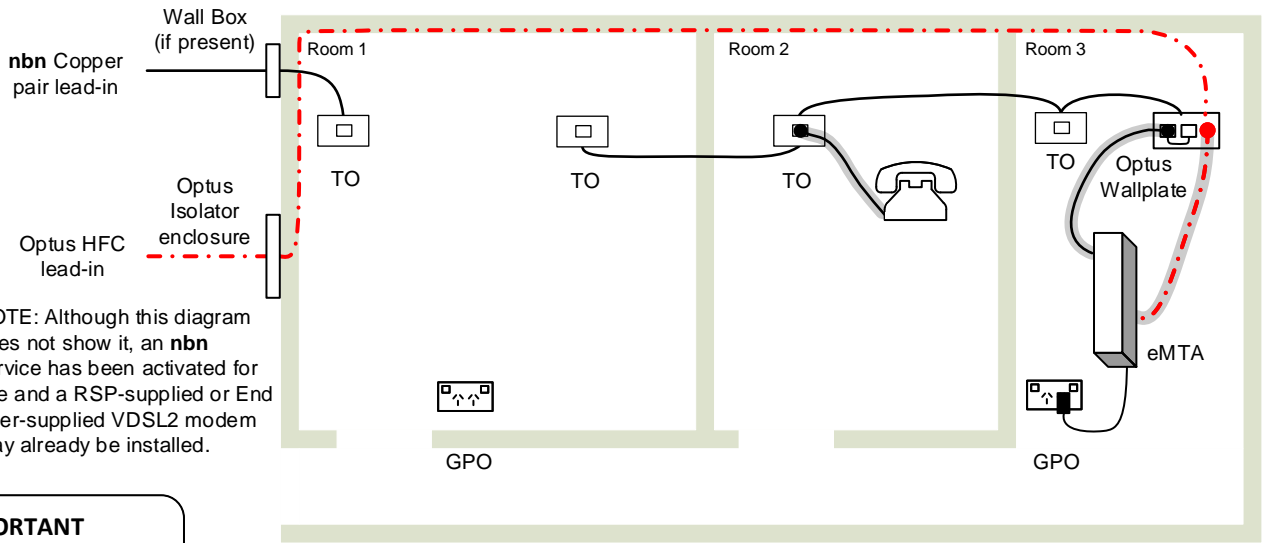
[← Back to OPTUS CABLE cabling list](#)

FIGURE 24

Optus cable

FTTC

Existing installation

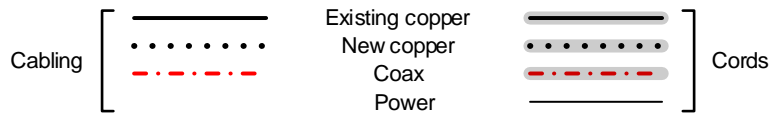
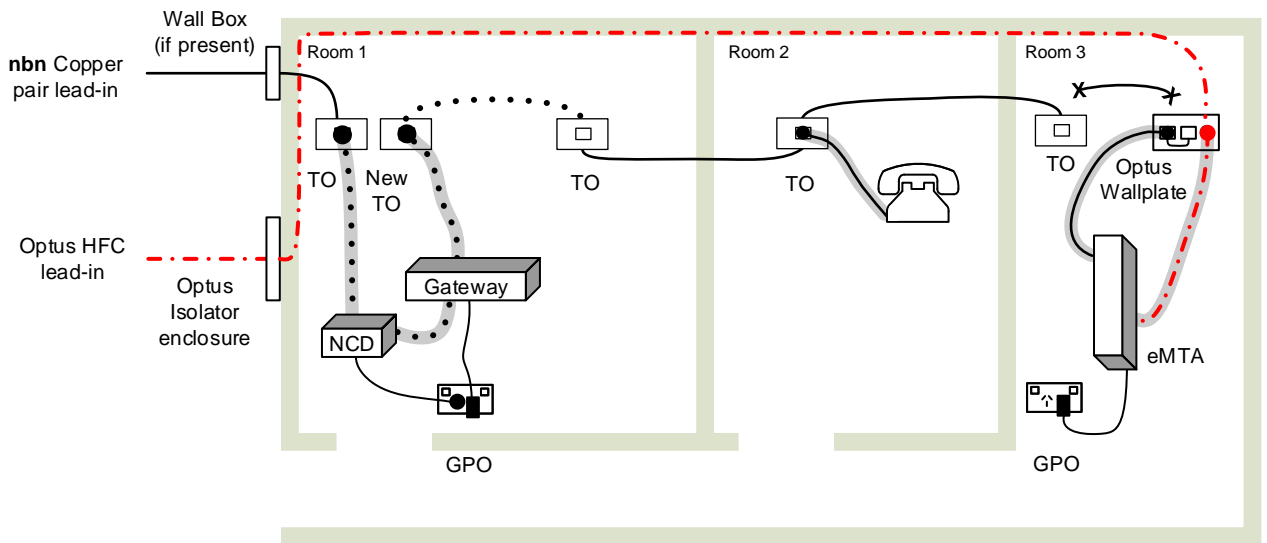


NOTE: Although this diagram does not show it, an **nbn** service has been activated for use and a RSP-supplied or End User-supplied VDSL2 modem may already be installed.

IMPORTANT

Read in conjunction with G649.1

After migration

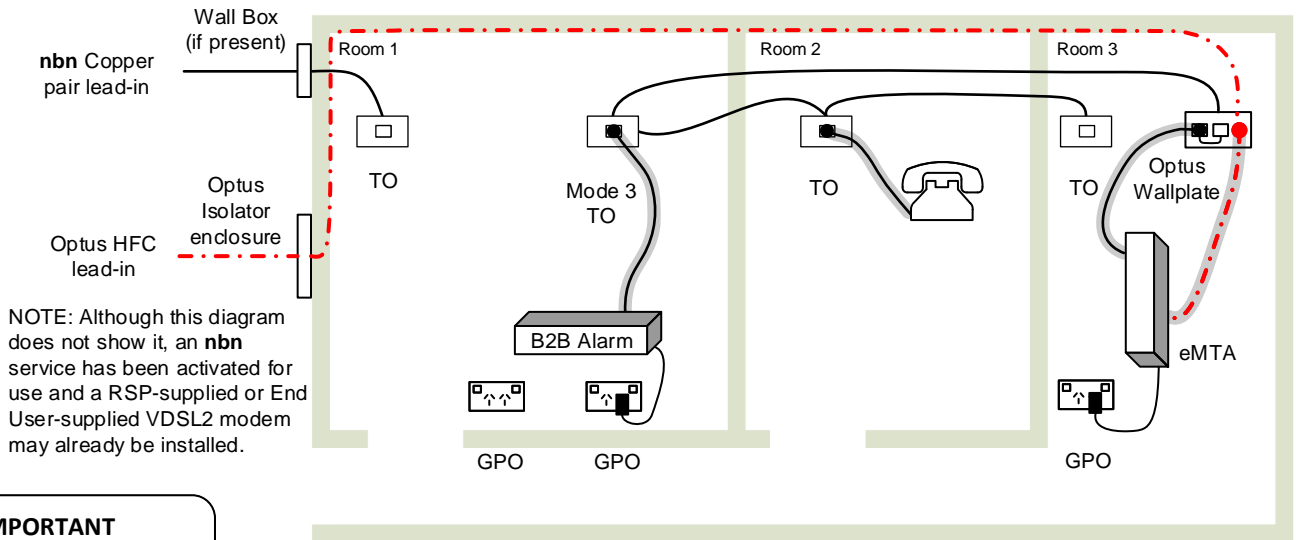


- Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider.
- Note 2: Disconnect the Optus NBP/wall plate from the former first socket to allow use of existing internal cabling for a voice service over the NBN.
- Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a new TO will be required, as shown in this diagram.

[← Back to OPTUS CABLE cabling list](#)

FIGURE 25 **Optus cable** **FTTC** **Mode 3**

Existing installation

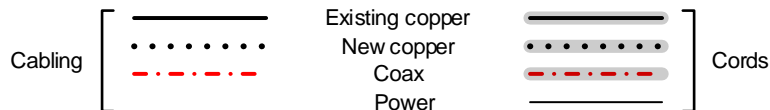
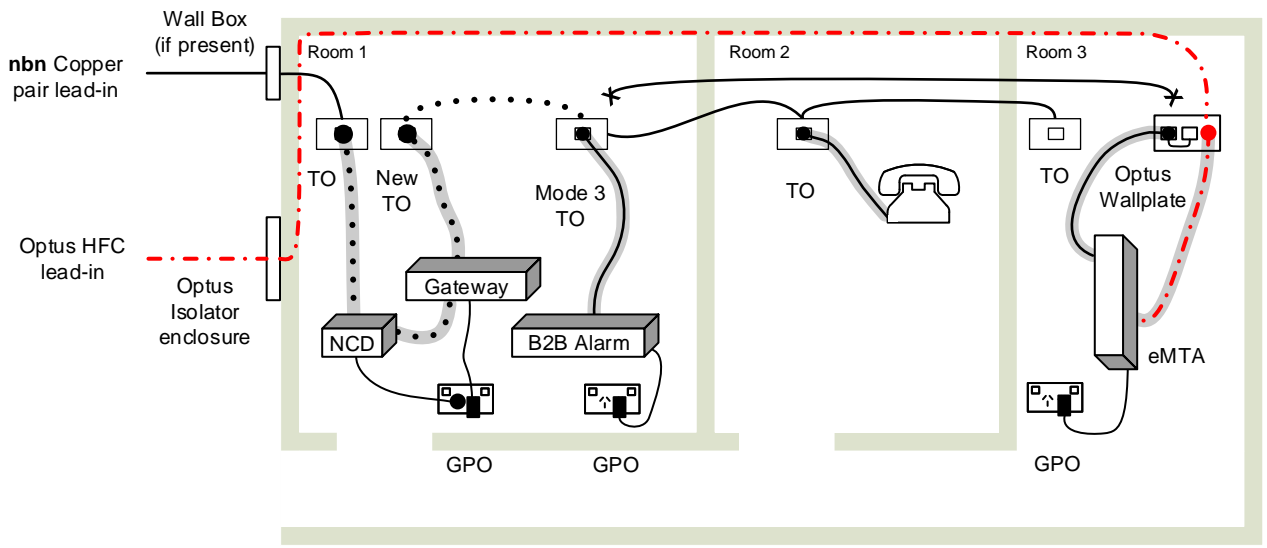


NOTE: Although this diagram does not show it, an **nbn** service has been activated for use and a RSP-supplied or End User-supplied VDSL2 modem may already be installed.

IMPORTANT

Read in conjunction with G649.1

After migration



- Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider.
- Note 2: Disconnect the Optus NBP/wall plate from the former first socket to allow use of existing internal cabling for a voice service over the NBN.
- Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram. Cabling needs to run directly from the new TO to the Mode 3 TO before connecting to other TOs.

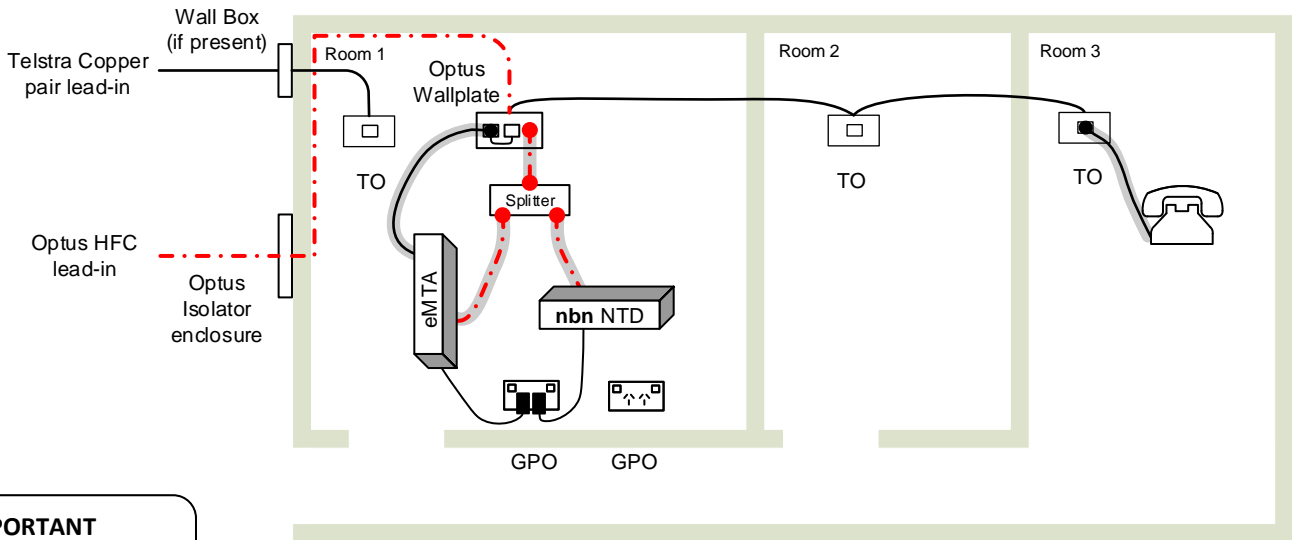
[← Back to OPTUS CABLE cabling list](#)

FIGURE 26

Optus cable

HFC NTD + Gateway

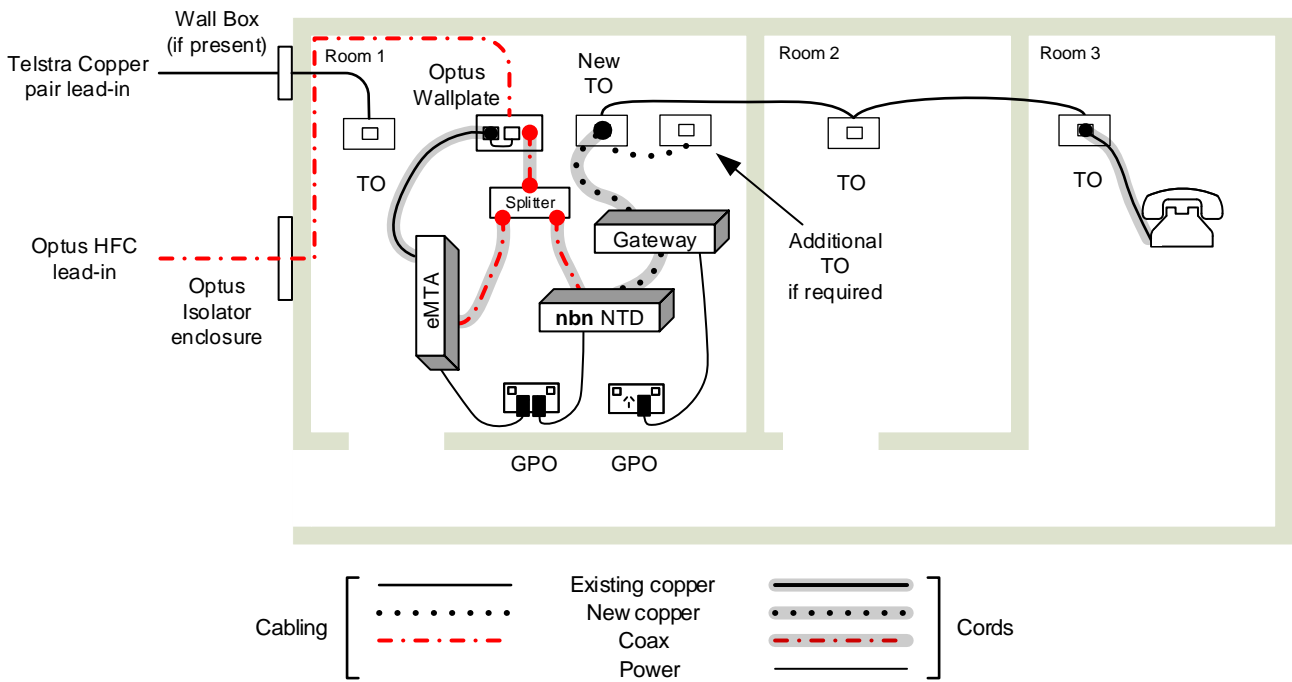
Existing installation



IMPORTANT

Read in conjunction with G649.1

After migration

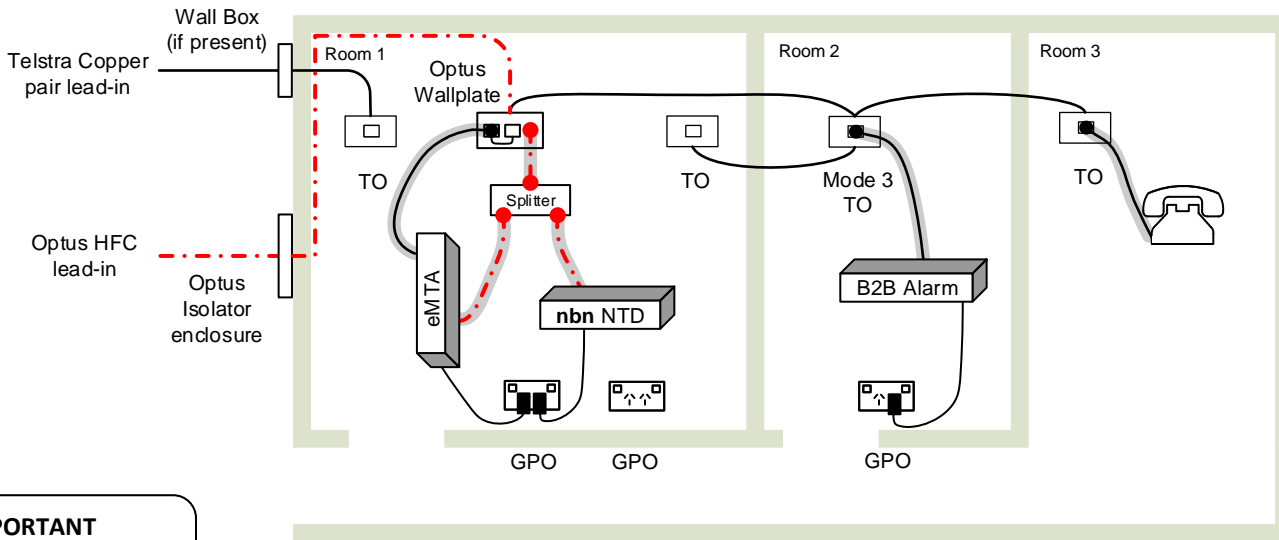


- Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider.
- Note 2: Disconnect the Optus NBP/wall plate from the former first socket to allow use of existing internal cabling for a voice service over the NBN.
- Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a new TO will be required, as shown in this diagram.

[← Back to OPTUS CABLE cabling list](#)

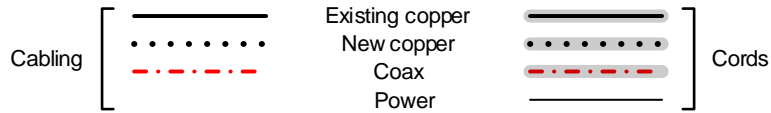
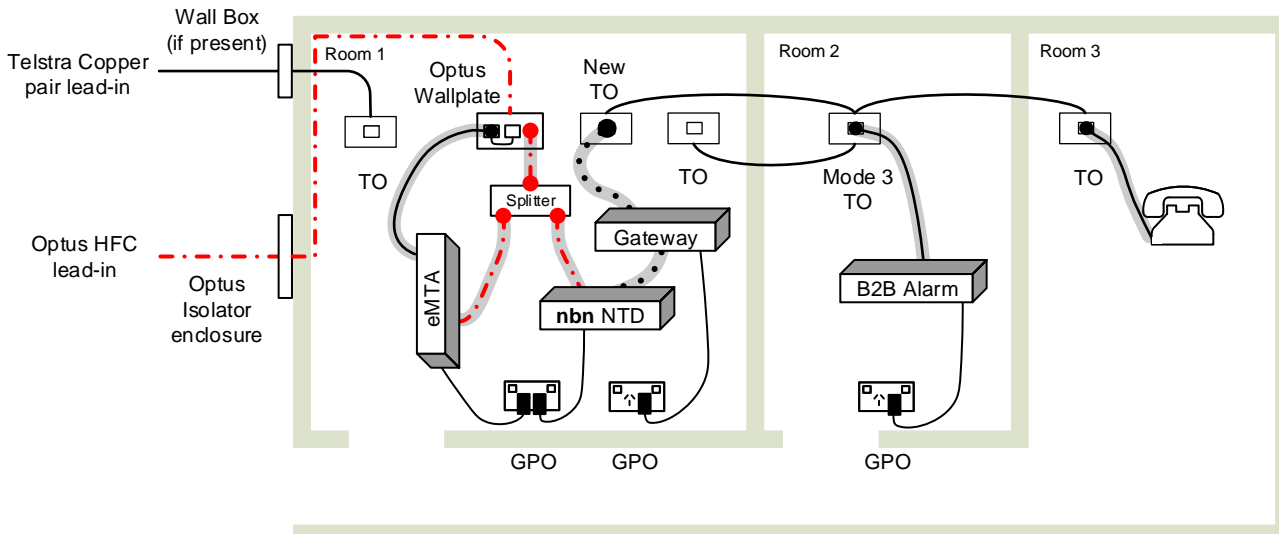
FIGURE 27 **Optus cable** **HFC NTD + Gateway** **Mode 3**

Existing installation



IMPORTANT
Read in conjunction
with G649.1

After migration



- Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider.
- Note 2: Disconnect the Optus NBP/wall plate from the former first socket to allow use of existing internal cabling for a voice service over the NBN.
- Note 3: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram. Cabling needs to run directly from the new TO to the Mode 3 TO before connecting to other TOs.

[← Back to OPTUS CABLE cabling list](#)

Optus telephone service (CAU)

Sample cabling diagrams

| Unmonitored services | Monitored services |
|---|-------------------------------|
| → FTTP NTD UNI-V port | → with Mode 3 |
| → FTTP NTD with Gateway | → with Mode 3 |
| → FTTN | → with Mode 3 |
| → FTTB | → with Mode 3 |
| → FTTC | → with Mode 3 |
| → HFC NTD with Gateway | → with Mode 3 |
| → HFC NTD with Gateway | → with Mode 3 |

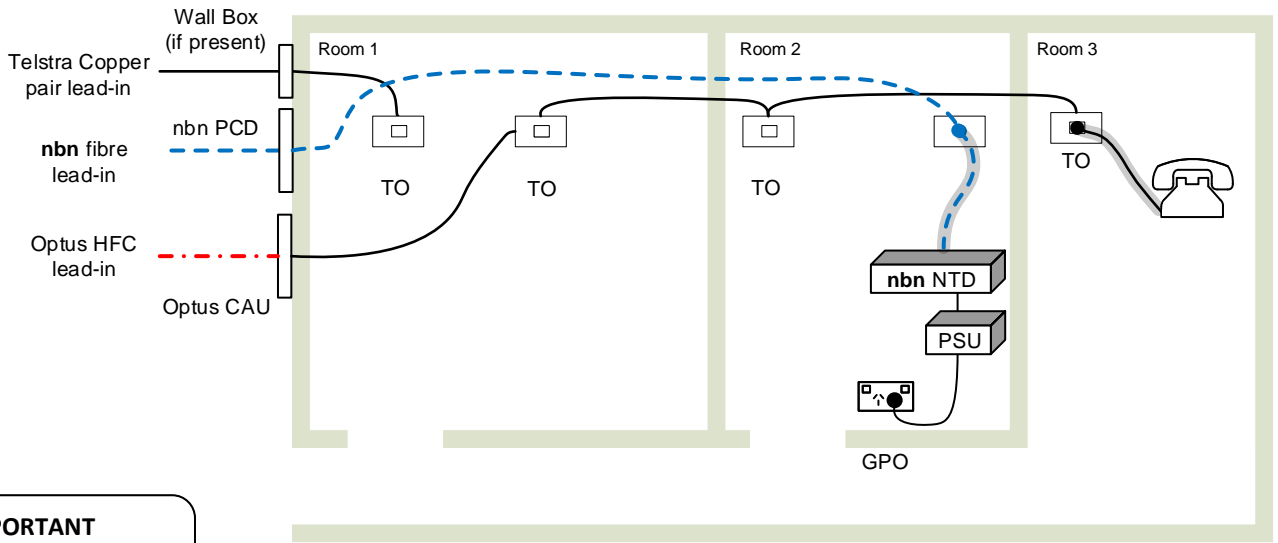
← [Back to CONTENTS](#)

FIGURE 28

Optus phone

FTTP NTD (UNI-V port)

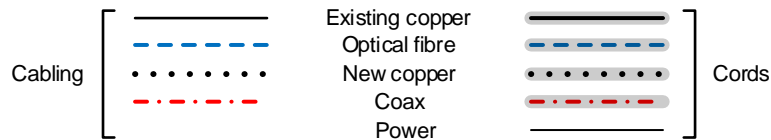
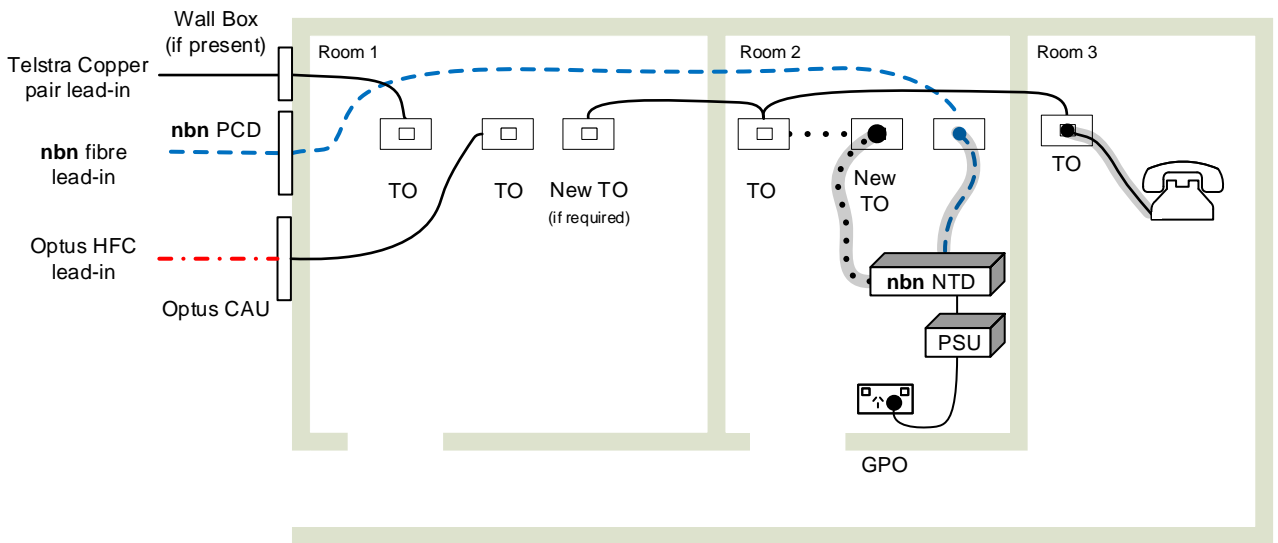
Existing installation



IMPORTANT

Read in conjunction with G649.1

After migration



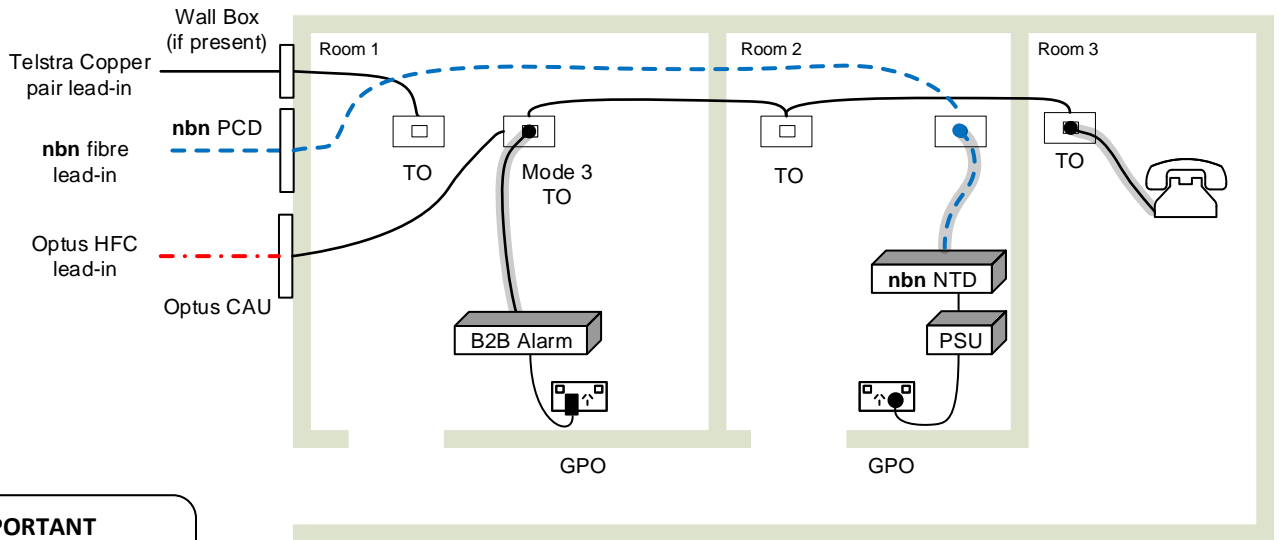
Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider. Disconnect internal cabling from the former first TO to allow use of existing internal cabling for a voice service over the NBN.

Note 2: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram.

[← Back to OPTUS PHONE cabling list](#)

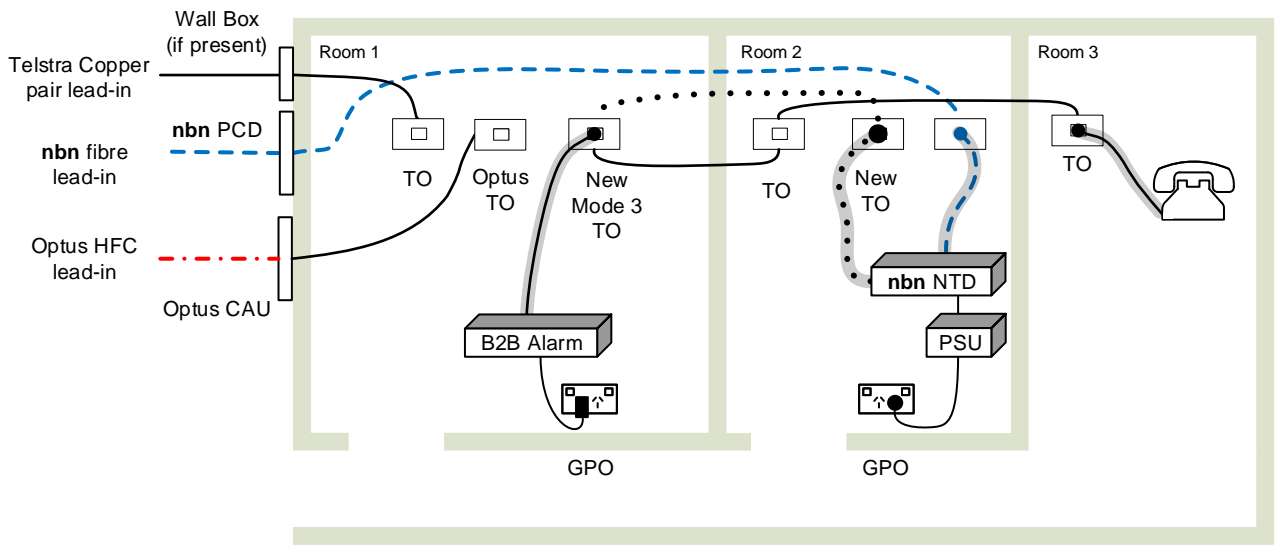
FIGURE 29 **Optus phone** **FTTP NTD (UNI-V port)** **Mode 3**

Existing installation



IMPORTANT
Read in conjunction with G649.1

After migration



| Cabling | | Cords | |
|-------------|-----------------|-------------|-------|
| — | Existing copper | — | Coax |
| - - - | Optical fibre | - - - | Power |
| • • • • • | New copper | • • • • • | |
| - . - . - . | | - . - . - . | |

Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider. Disconnect internal cabling from the former first TO to allow use of existing internal cabling for a voice service over the NBN.

Note 2: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram. Cabling needs to run directly from the new TO to the Mode 3 TO before connecting to other TOs.

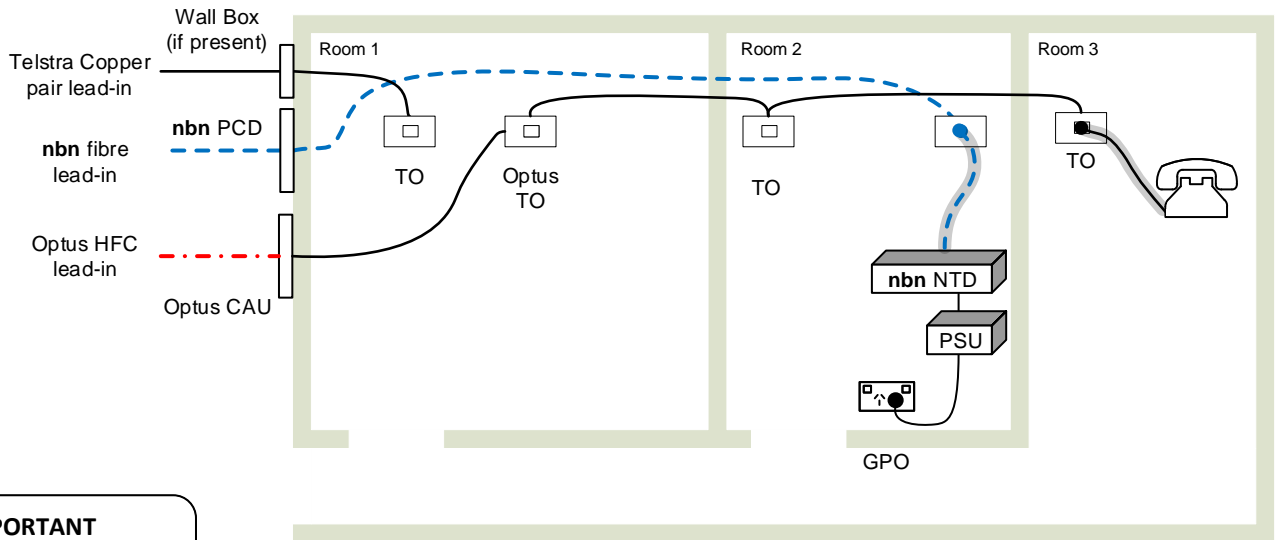
[← Back to OPTUS PHONE cabling list](#)

FIGURE 30

Optus phone

FTTP NTD + Gateway

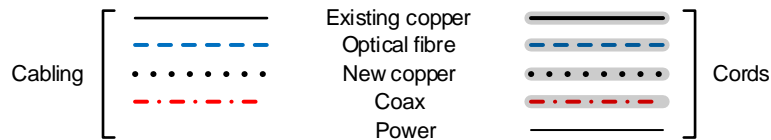
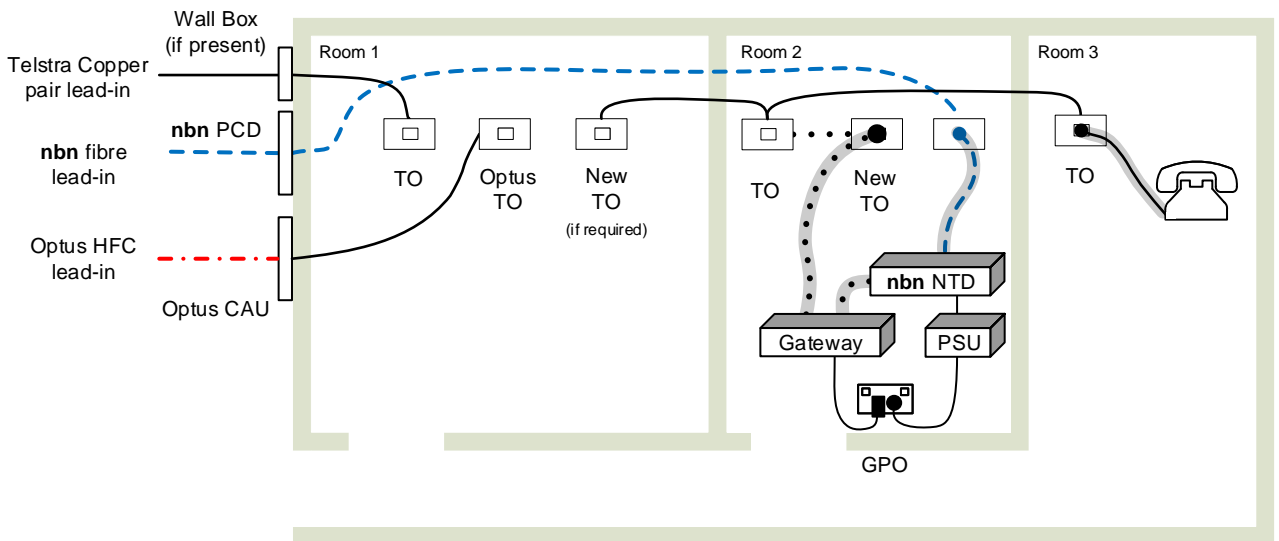
Existing installation



IMPORTANT

Read in conjunction with G649.1

After migration



Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider. Disconnect internal cabling from the former first TO to allow use of existing internal cabling for a voice service over the NBN.

Note 2: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram.

[← Back to OPTUS PHONE cabling list](#)

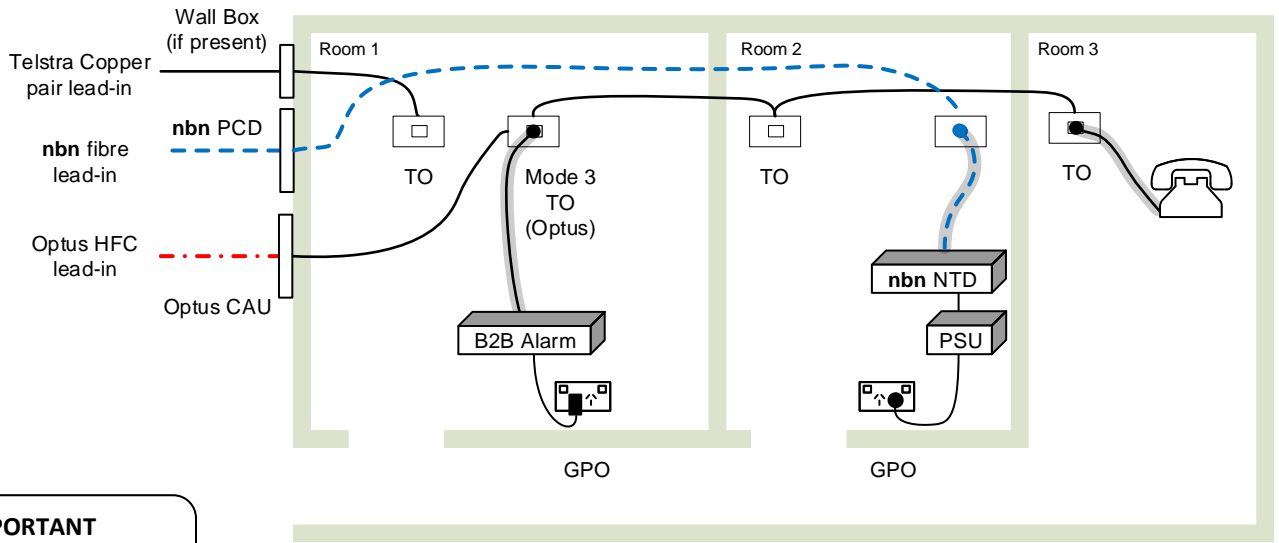
FIGURE 31

Optus phone

FTTP NTD + Gateway

Mode 3

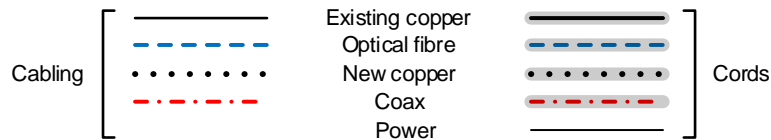
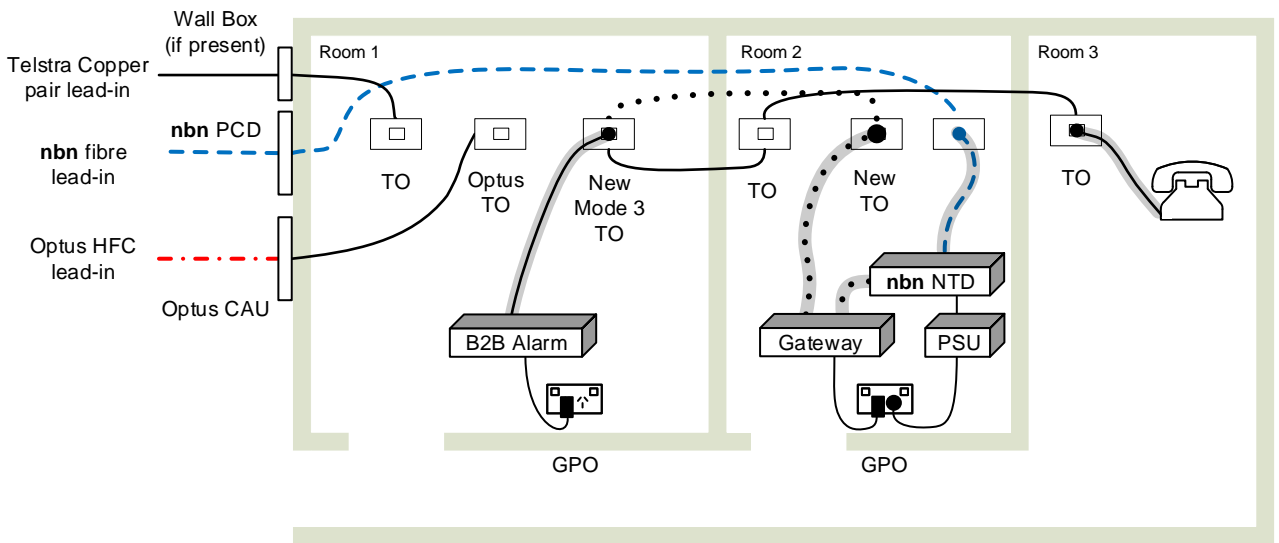
Existing installation



IMPORTANT

Read in conjunction with G649.1

After migration



Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider. Disconnect internal cabling from the former first TO to allow use of existing internal cabling for a voice service over the NBN.

Note 2: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram. Cabling needs to run directly from the new TO to the Mode 3 TO before connecting to other TOs.

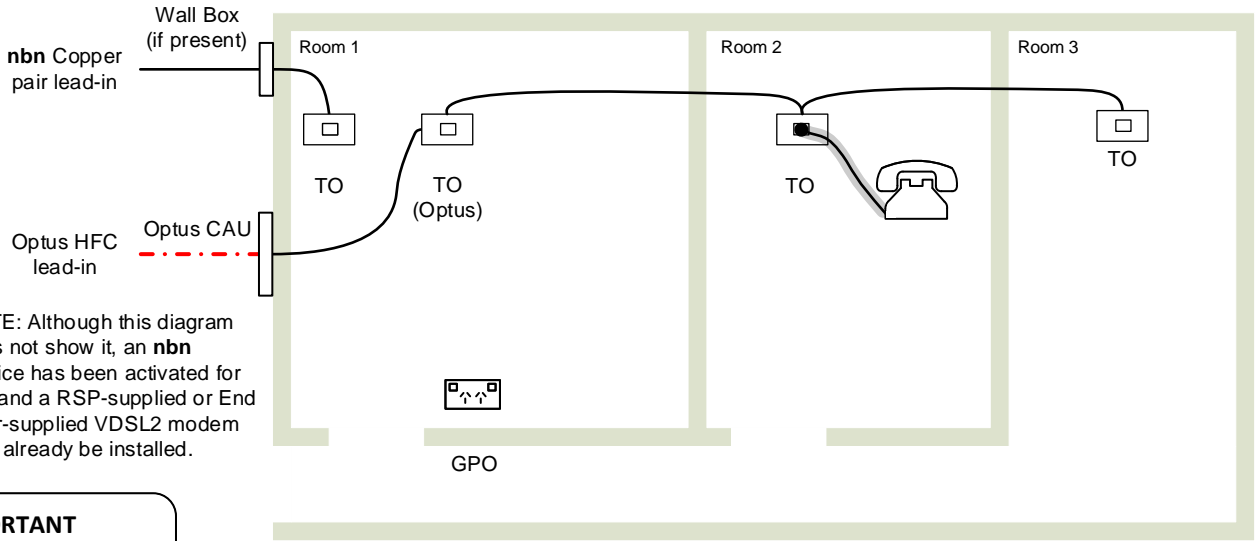
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FIGURE 32

Optus phone

FTTN

Existing installation

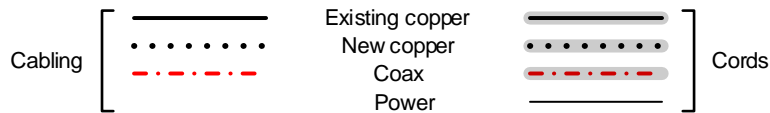
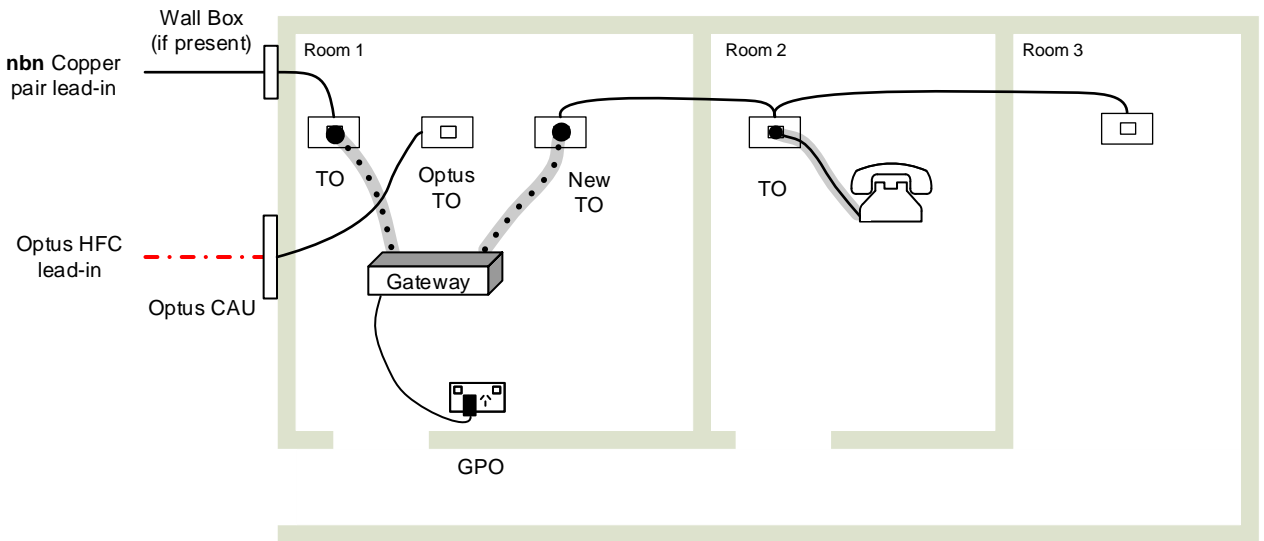


NOTE: Although this diagram does not show it, an **nbn** service has been activated for use and a RSP-supplied or End User-supplied VDSL2 modem may already be installed.

IMPORTANT

Read in conjunction with G649.1

After migration



Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider. Disconnect internal cabling from the former first TO to allow use of existing internal cabling for a voice service over the NBN.

Note 2: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram.

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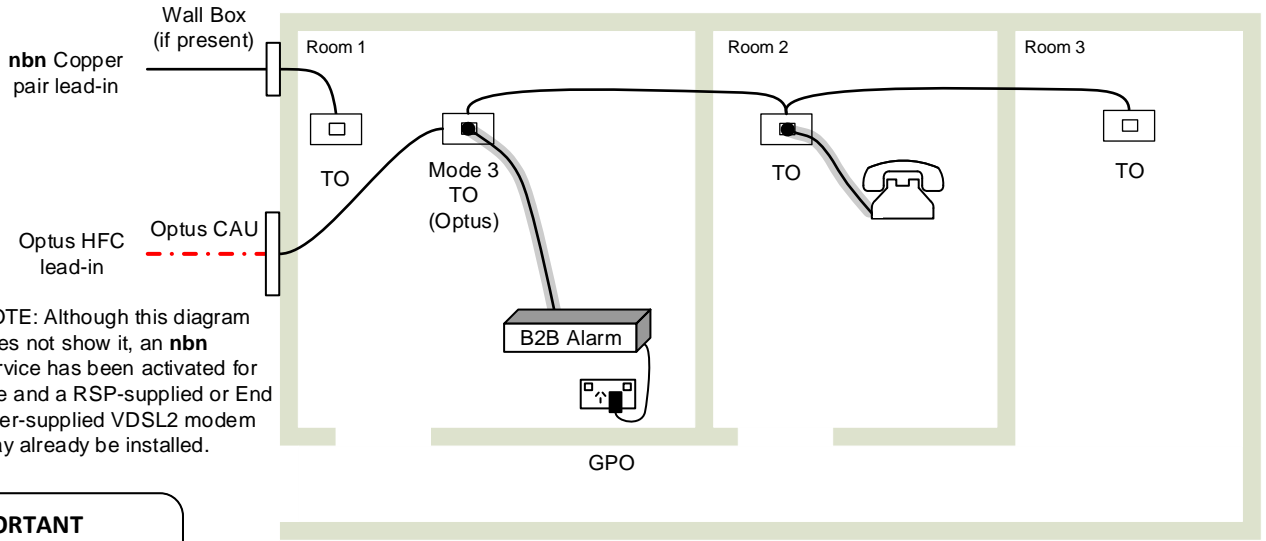
FIGURE 33

Optus phone

FTTN

Mode 3

Existing installation

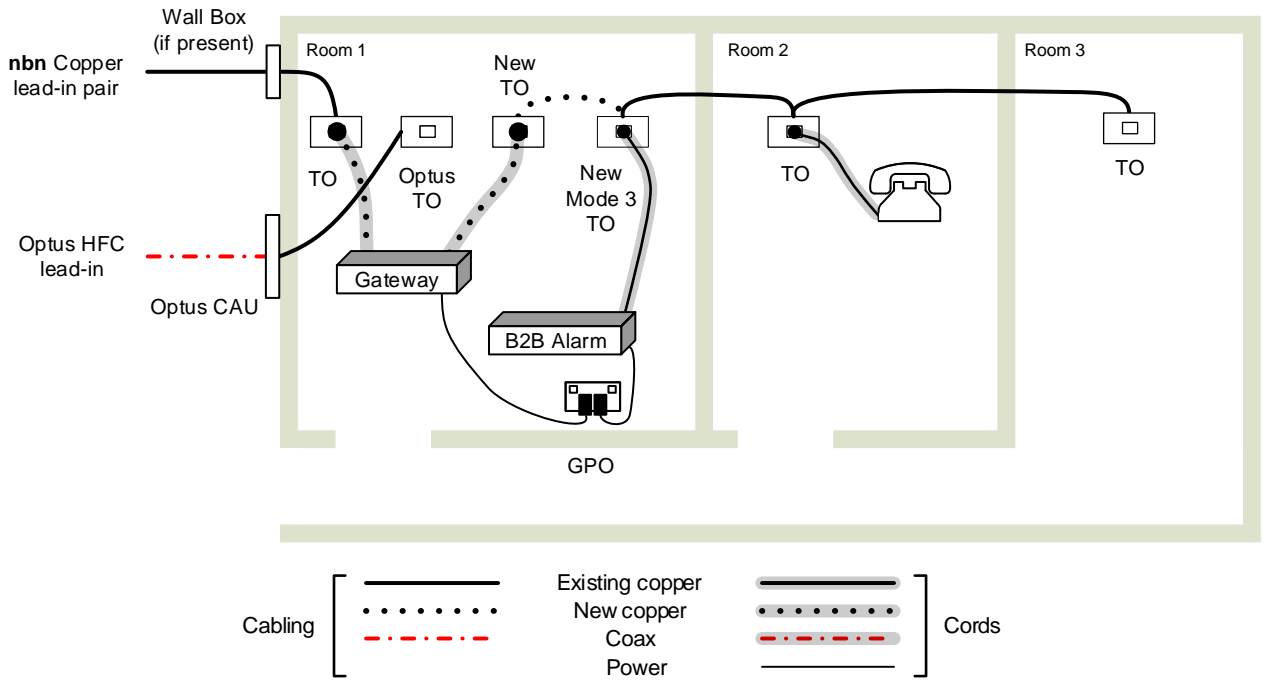


NOTE: Although this diagram does not show it, an **nbn** service has been activated for use and a RSP-supplied or End User-supplied VDSL2 modem may already be installed.

IMPORTANT

Read in conjunction with G649.1

After migration



Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider. Disconnect internal cabling from the former first TO to allow use of existing internal cabling for a voice service over the NBN.

Note 2: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram. Cabling needs to run directly from the new TO to the Mode 3 TO before connecting to other TOs.

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FIGURE 34

Optus phone

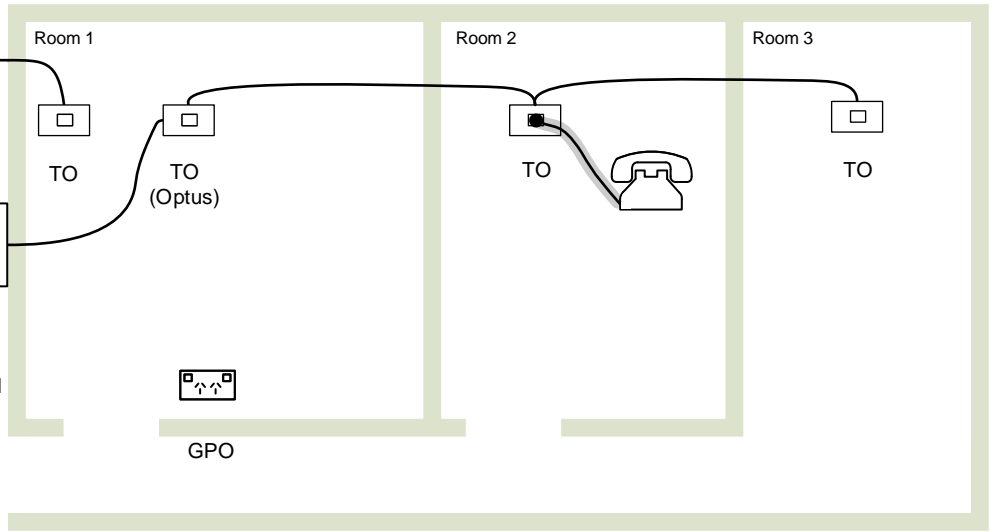
FTTB

Existing installation

Copper pair from MDF or floor distributor (IDF) with **nbn** DSL

Optus HFC lead-in
Optus CAU

NOTE: Although this diagram does not show it, an **nbn** service has been activated for use and a RSP-supplied or End User-supplied VDSL2 modem may already be installed.



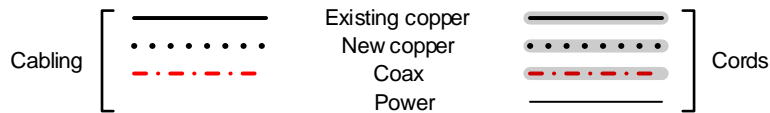
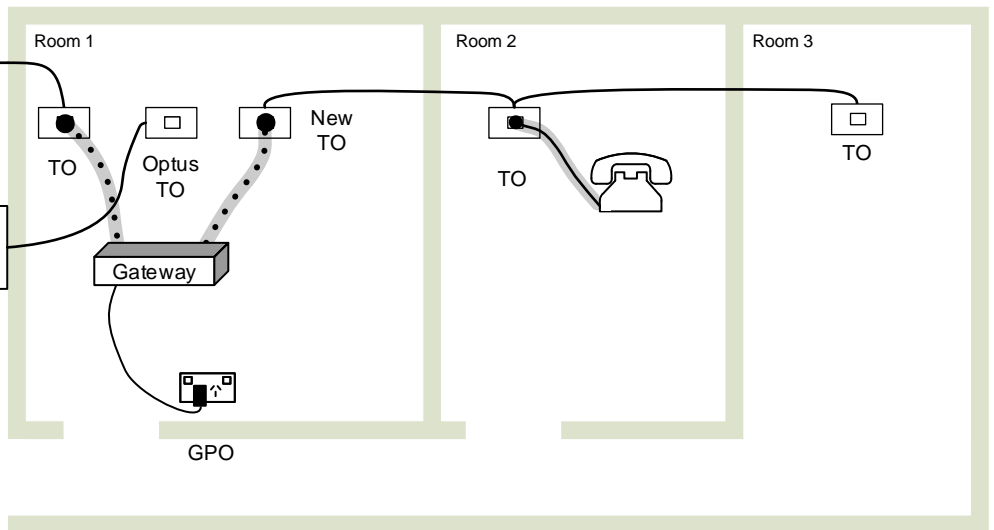
IMPORTANT

Read in conjunction with G649.1

After migration

Copper pair from MDF or floor distributor (IDF) With **nbn** DSL

Optus HFC lead-in
Optus CAU



Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider. Disconnect internal cabling from the former first TO to allow use of existing internal cabling for a voice service over the NBN.

Note 2: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram.

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FIGURE 35

Optus phone

FTTB

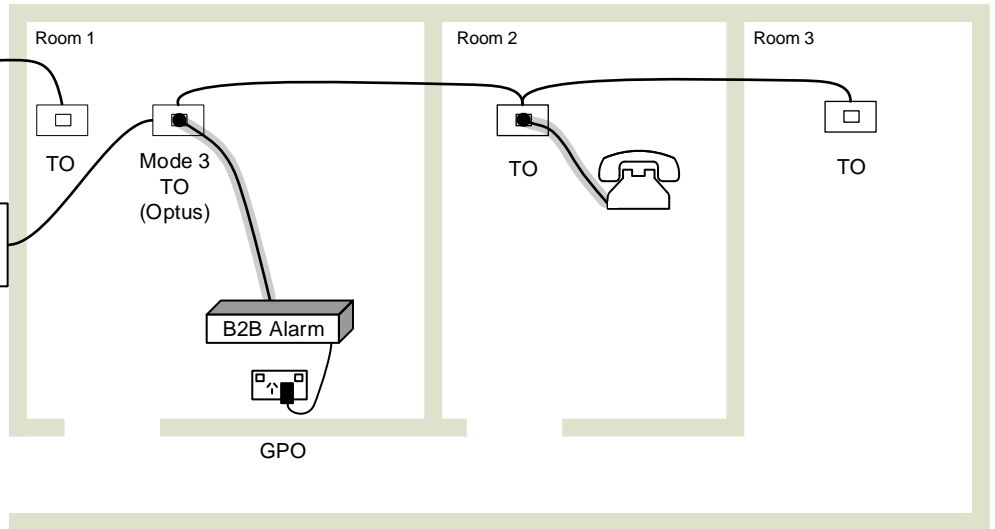
Mode 3

Existing installation

Copper pair from MDF or floor distributor (IDF) With **nbn** DSL

Optus HFC lead-in — Optus CAU

NOTE: Although this diagram does not show it, an **nbn** service has been activated for use and a RSP-supplied or End User-supplied VDSL2 modem may already be installed.



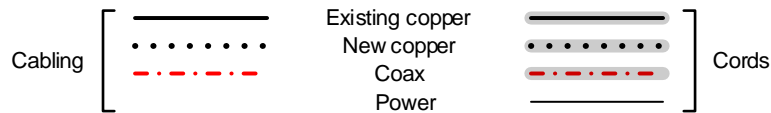
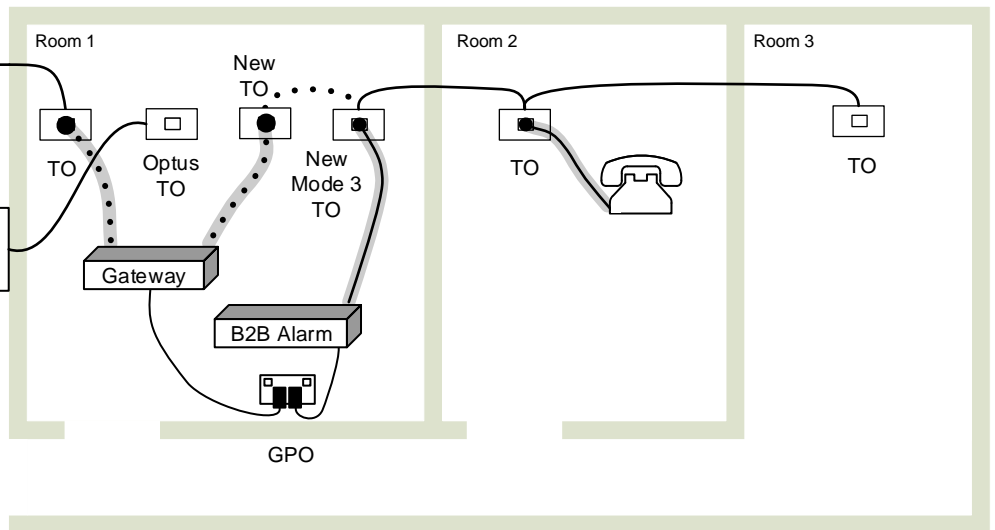
IMPORTANT

Read in conjunction with G649.1

After migration

Copper pair from MDF or floor distributor (IDF) With **nbn** DSL

Optus HFC lead-in — Optus CAU



Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider. Disconnect internal cabling from the former first TO to allow use of existing internal cabling for a voice service over the NBN.

Note 2: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram. Cabling needs to run directly from the new TO to the Mode 3 TO before connecting to other TOs.

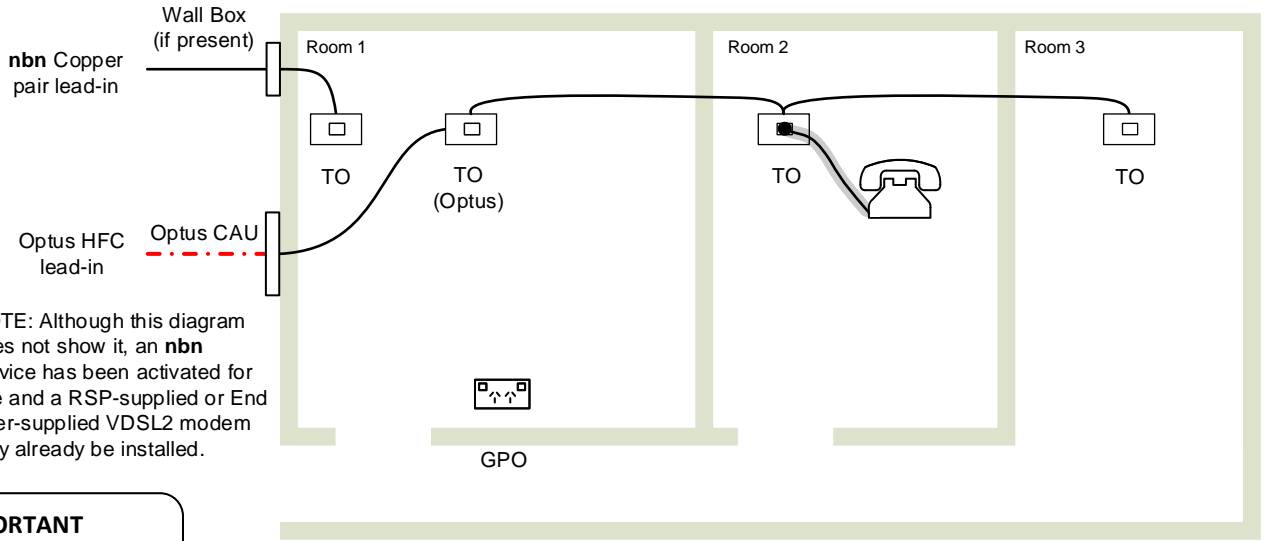
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FIGURE 36

Optus phone

FTTC

Existing installation

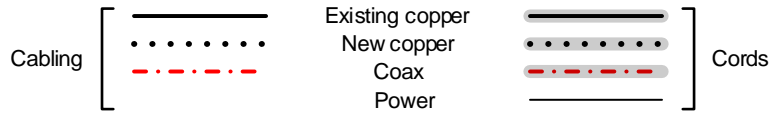
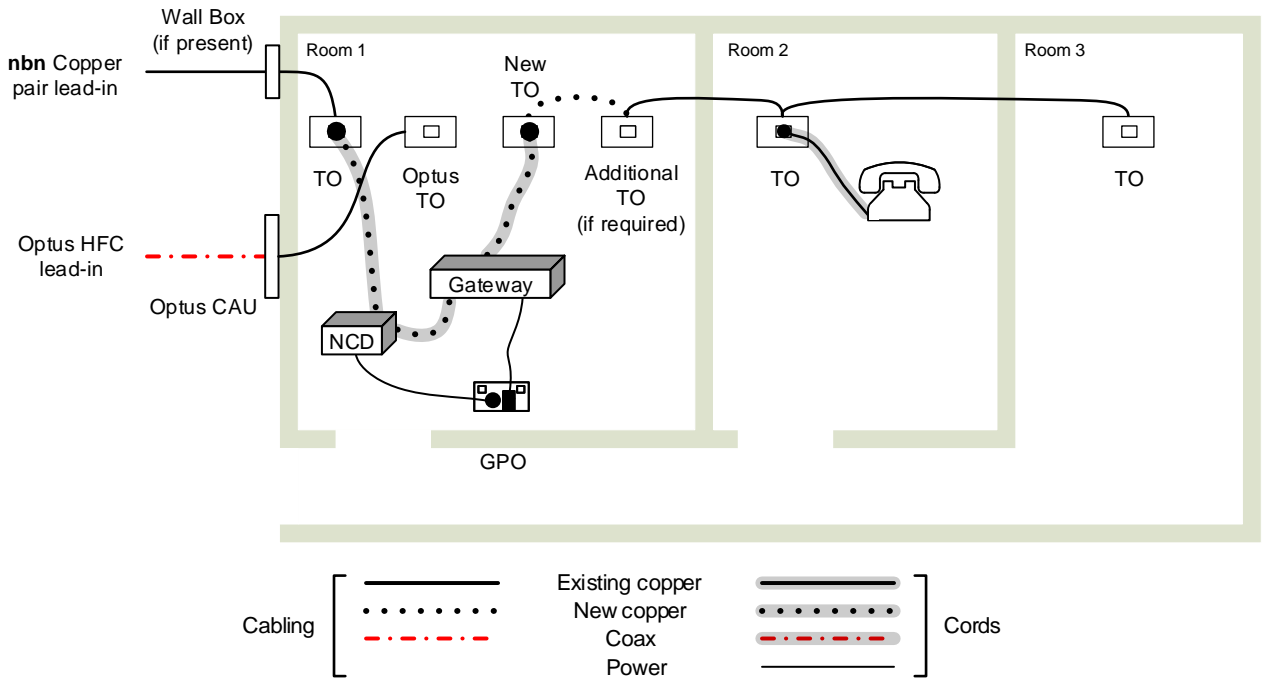


NOTE: Although this diagram does not show it, an **nbn** service has been activated for use and a RSP-supplied or End User-supplied VDSL2 modem may already be installed.

IMPORTANT

Read in conjunction with G649.1

After migration



Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider. Disconnect internal cabling from the former first TO to allow use of existing internal cabling for a voice service over the NBN.

Note 2: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram.

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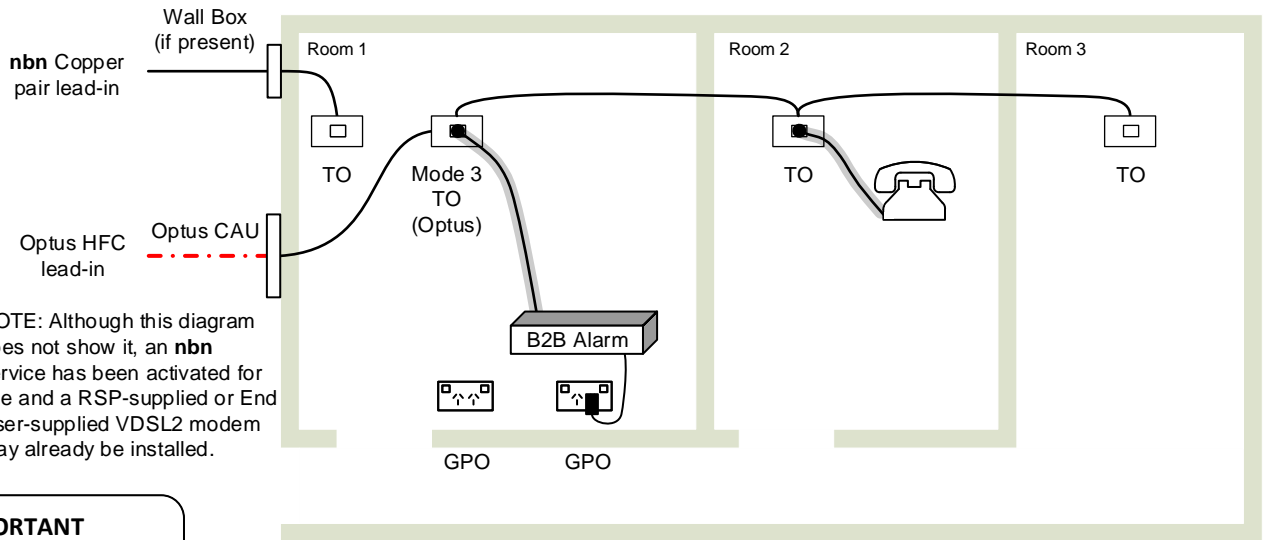
FIGURE 37

Optus phone

FTTC

Mode 3

Existing installation

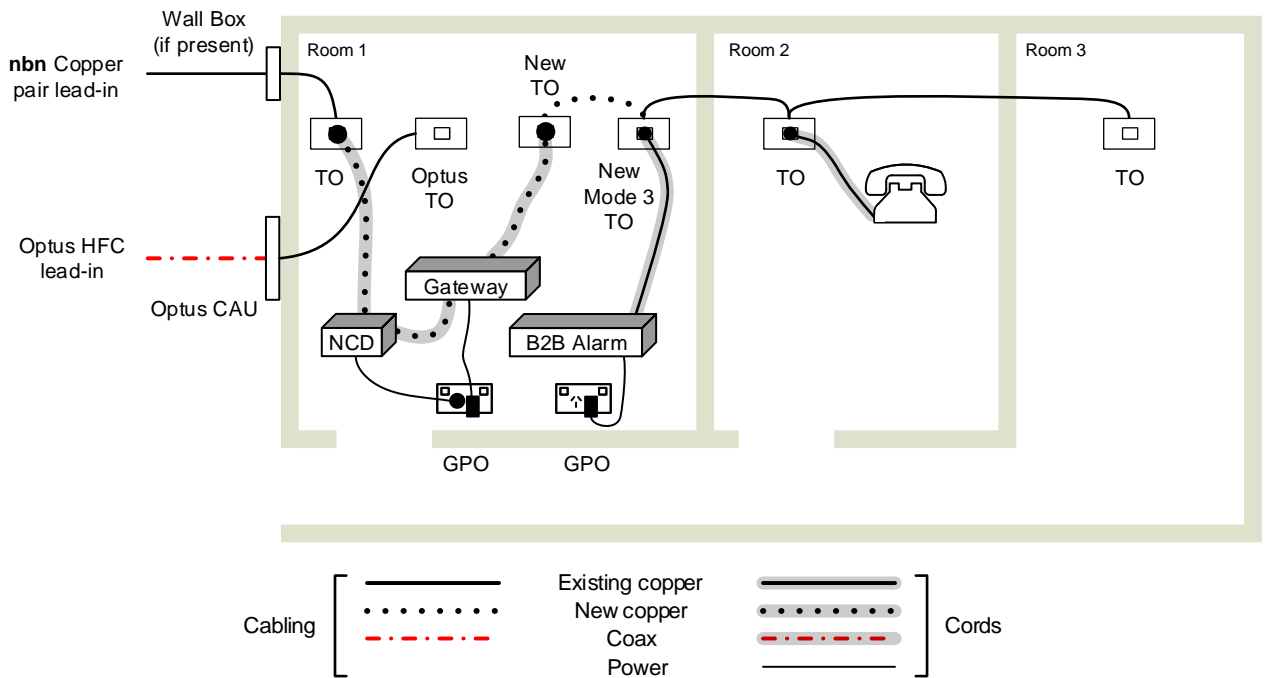


NOTE: Although this diagram does not show it, an **nbn** service has been activated for use and a RSP-supplied or End User-supplied VDSL2 modem may already be installed.

IMPORTANT

Read in conjunction with G649.1

After migration



Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider. Disconnect internal cabling from the former first TO to allow use of existing internal cabling for a voice service over the NBN.

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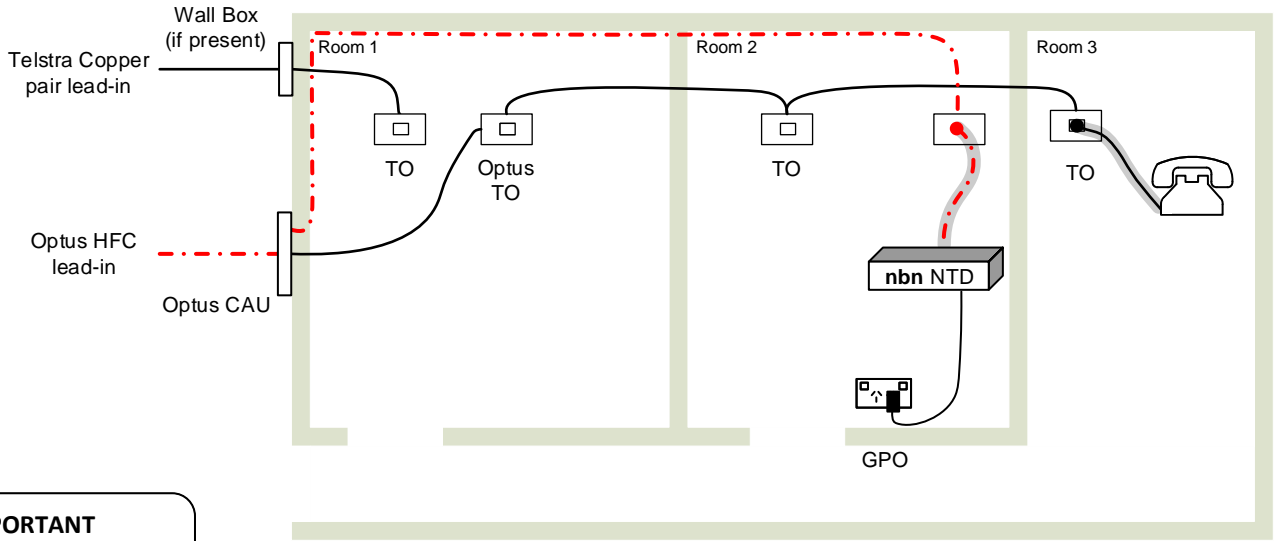
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FIGURE 38

Optus phone

HFC NTD + Gateway (Optus lead-in)

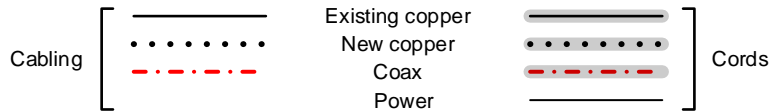
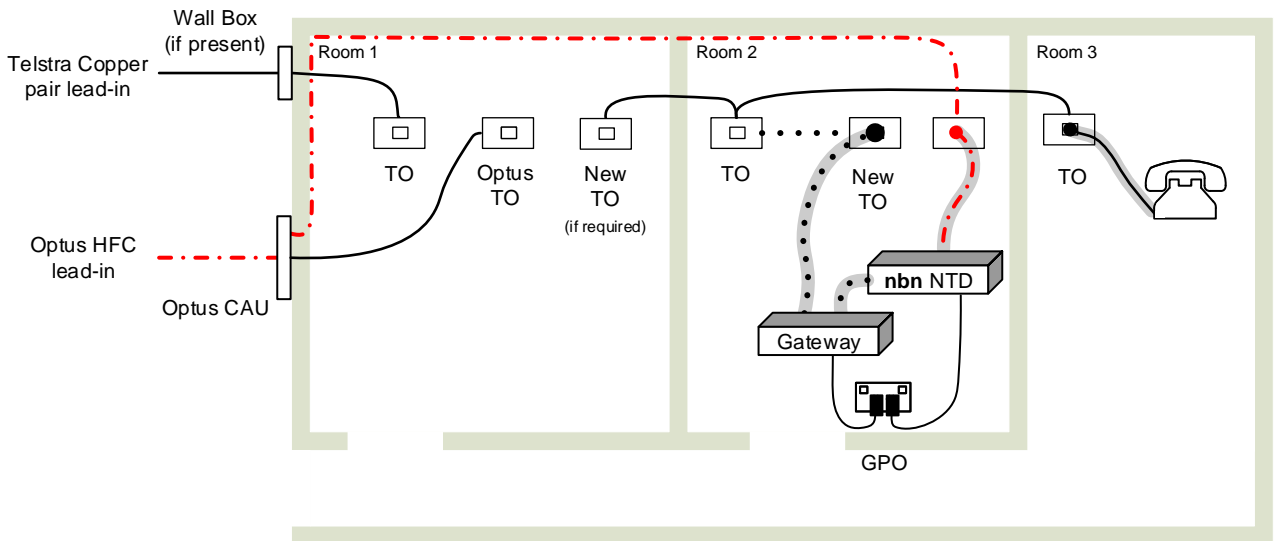
Existing installation



IMPORTANT

Read in conjunction with G649.1

After migration



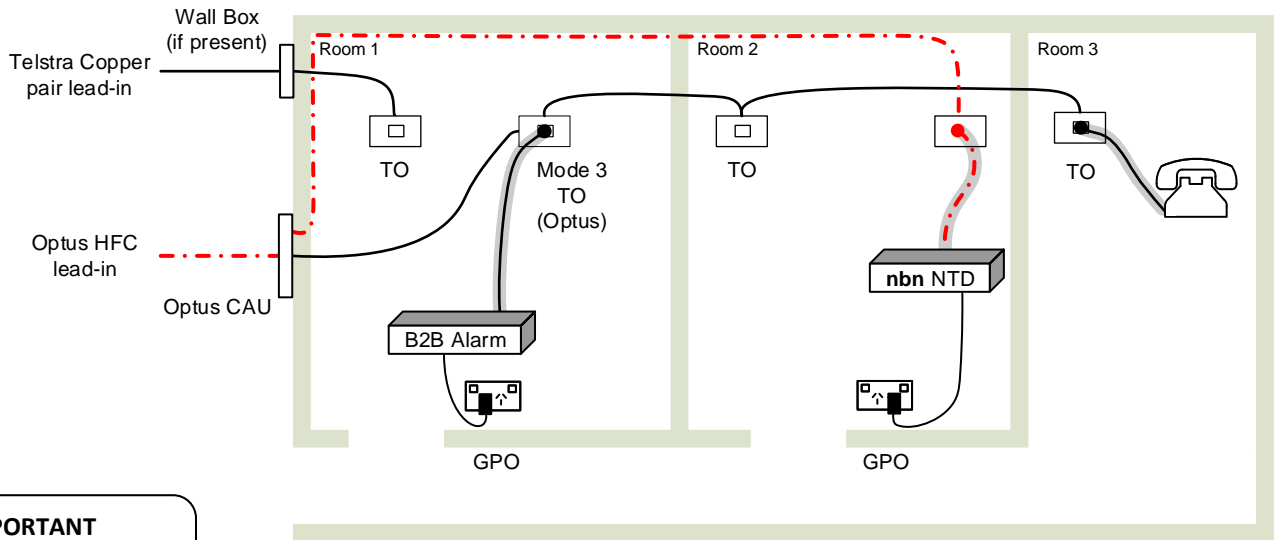
Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider. Disconnect internal cabling from the former first TO to allow use of existing internal cabling for a voice service over the NBN.

Note 2: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram.

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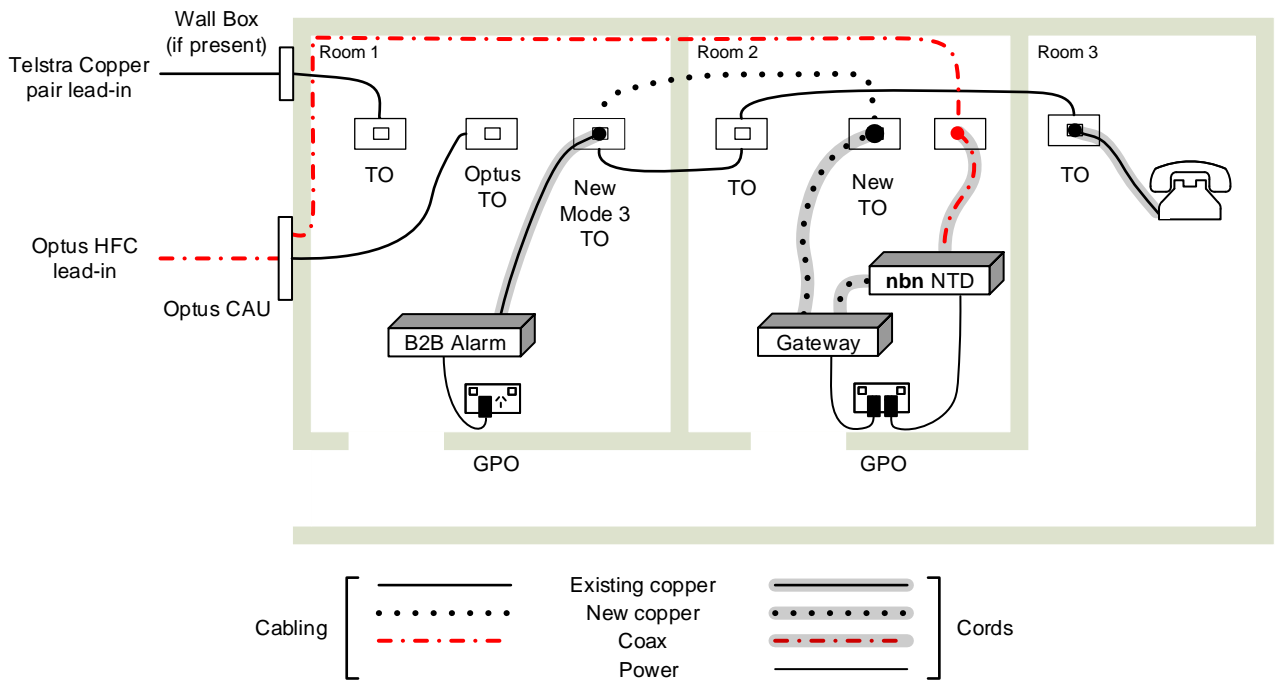
FIGURE 39 **Optus phone** **HFC NTD + Gateway (Optus lead-in)** **Mode 3**

Existing installation



IMPORTANT
Read in conjunction
with G649.1

After migration



Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider. Disconnect internal cabling from the former first TO to allow use of existing internal cabling for a voice service over the NBN.

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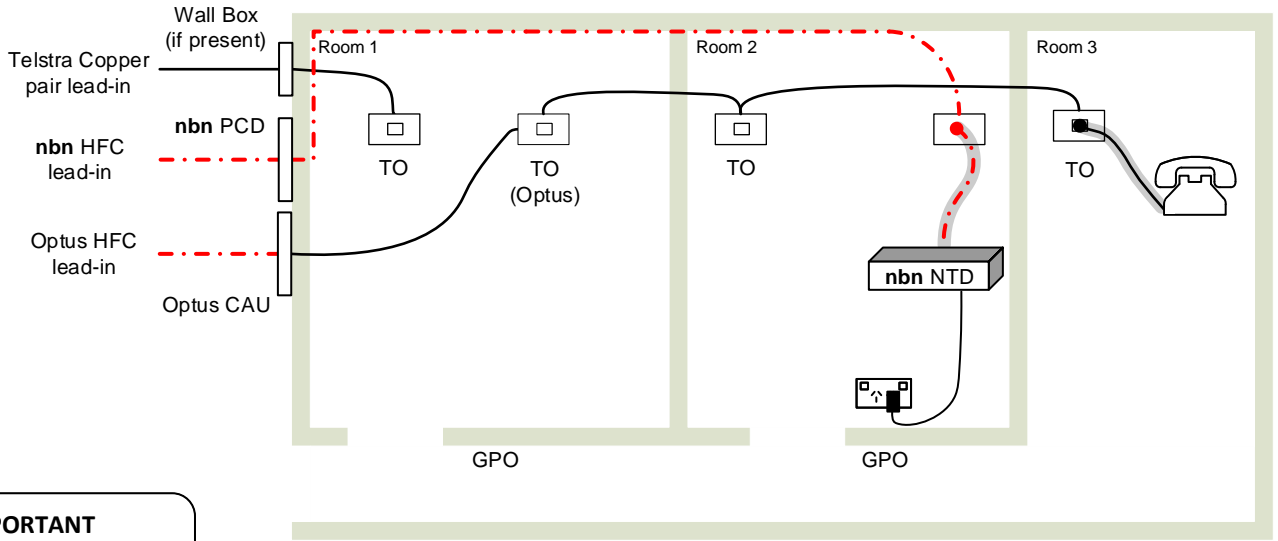
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FIGURE 40

Optus phone

HFC NTD + Gateway (nbn lead-in)

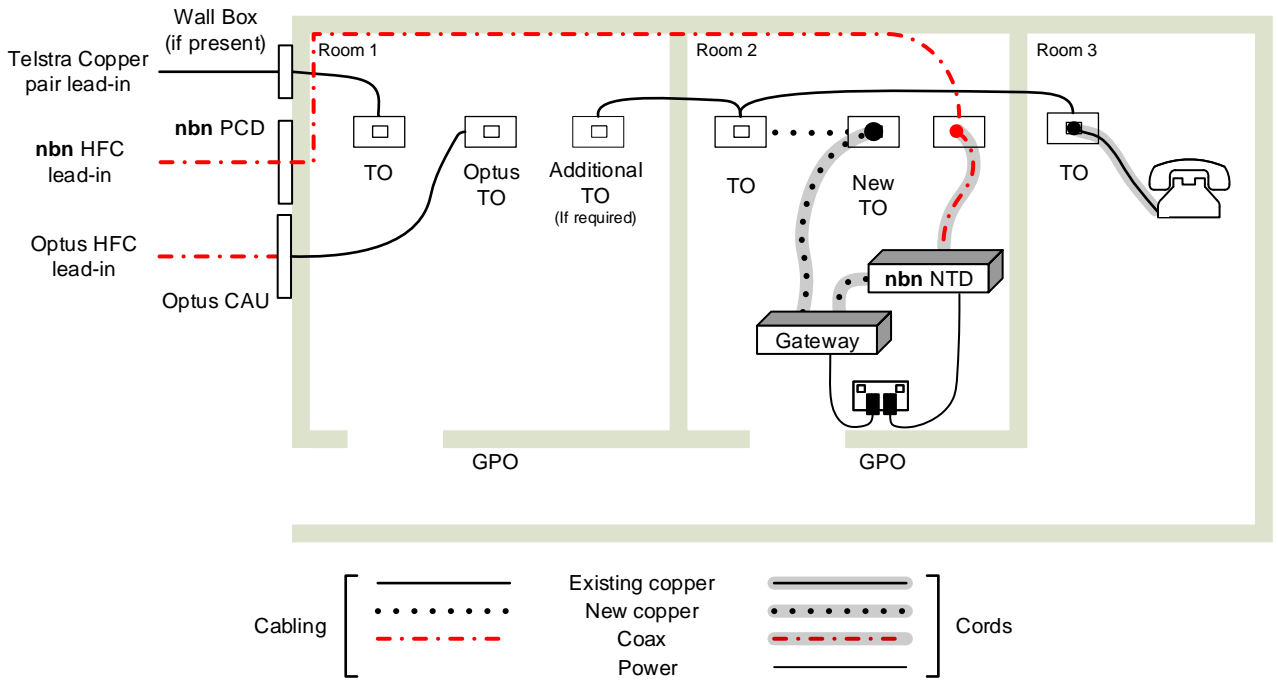
Existing installation



IMPORTANT

Read in conjunction with G649.1

After migration



Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider. Disconnect internal cabling from the former first TO to allow use of existing internal cabling for a voice service over the NBN.

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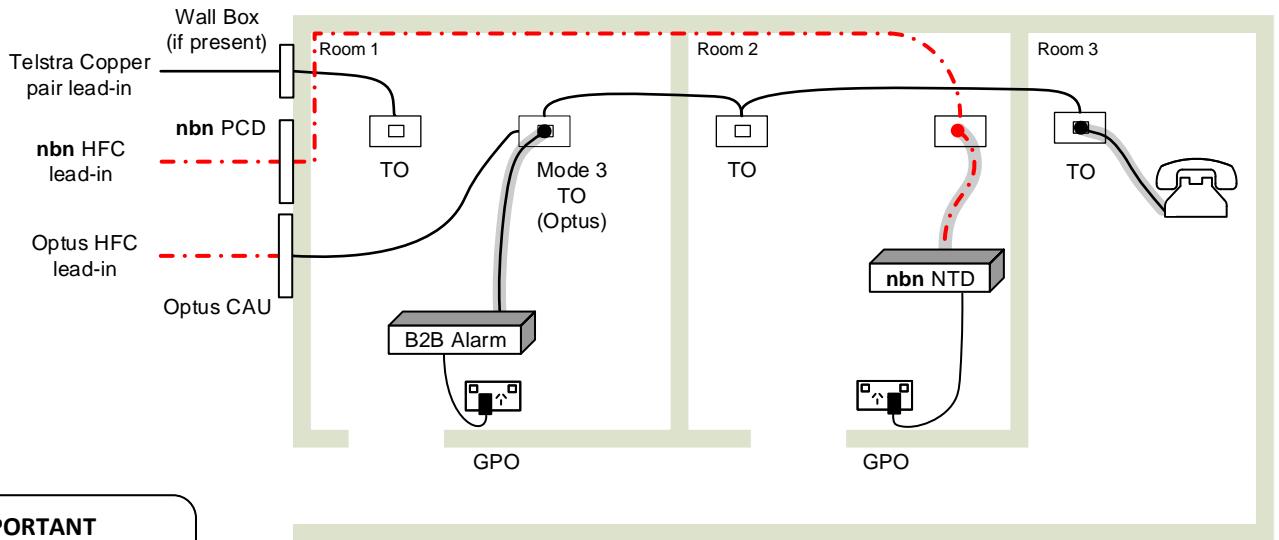
FIGURE 41

Optus phone

HFC NTD + Gateway (nbn lead-in)

Mode 3

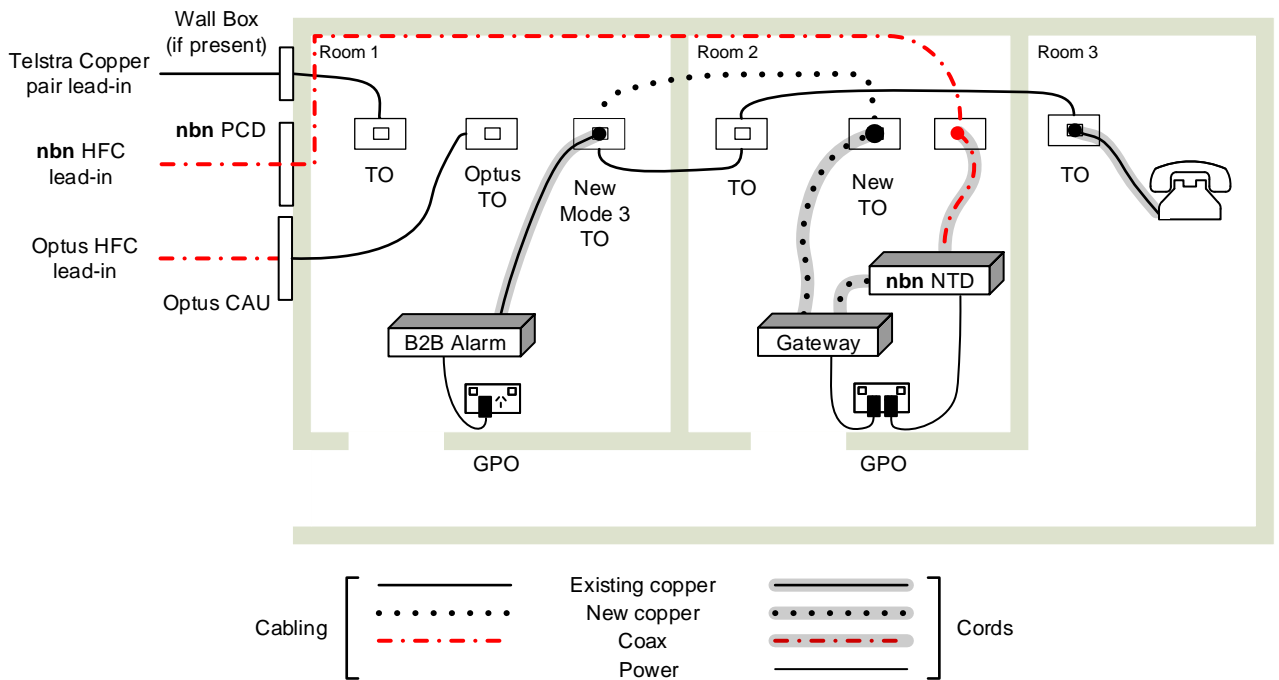
Existing installation



IMPORTANT

Read in conjunction with G649.1

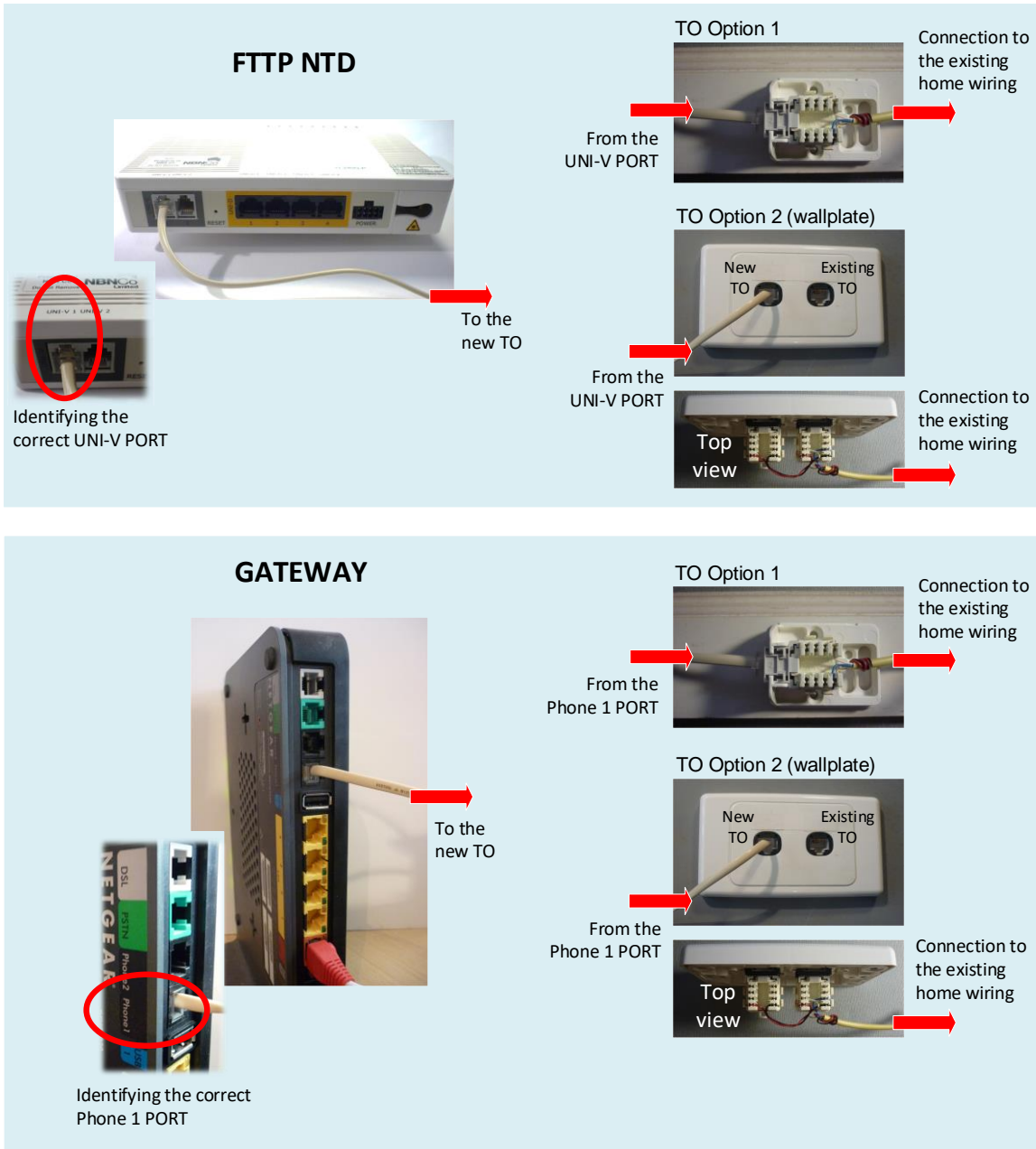
After migration



Note 1: The Optus NBP is owned, installed and maintained by Optus and cannot be migrated to become part of the customer's cabling when the customer cabling is to be connected to another service provider. Disconnect internal cabling from the former first TO to allow use of existing internal cabling for a voice service over the NBN.

Note 2: A TO is required to extend the voice service from the gateway into the existing home cabling. The telephone service is provided by the gateway. In many cases a dual face-plate or new TO will be required, as shown in this diagram. Cabling needs to run directly from the new TO to the Mode 3 TO before connecting to other TOs.

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Note 1: The New TO is used to extend the voice services from the FTTP NTD or Gateway voice port and connect it to the existing home wiring. This TO can be located in a wallplate housing multiple TOs as shown in the options. The 'Existing TO' in Option 2 is wired in parallel with the "New TO" to allow connection of a phone at that location.

Note 2: The Gateway examples shows a red connector in the WAN port as would be used for FTTP, FTTC and HFC networks. For FTTN or FTTB the nbn™ network is connected to the DSL port instead of the WAN port.

FIGURE 42
Cabling the 'New TO' when migrating telephony services onto the nbn™

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MODE 3 CONNECTION FOR ALARM SERVICES

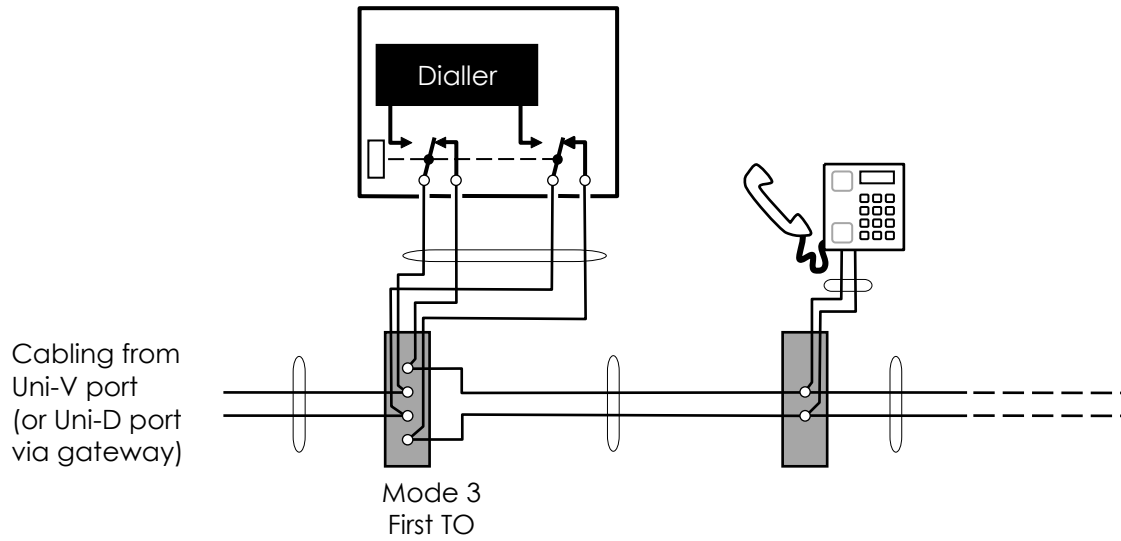


FIGURE 43

Normal telephone operation with Mode 3 dialler disconnected

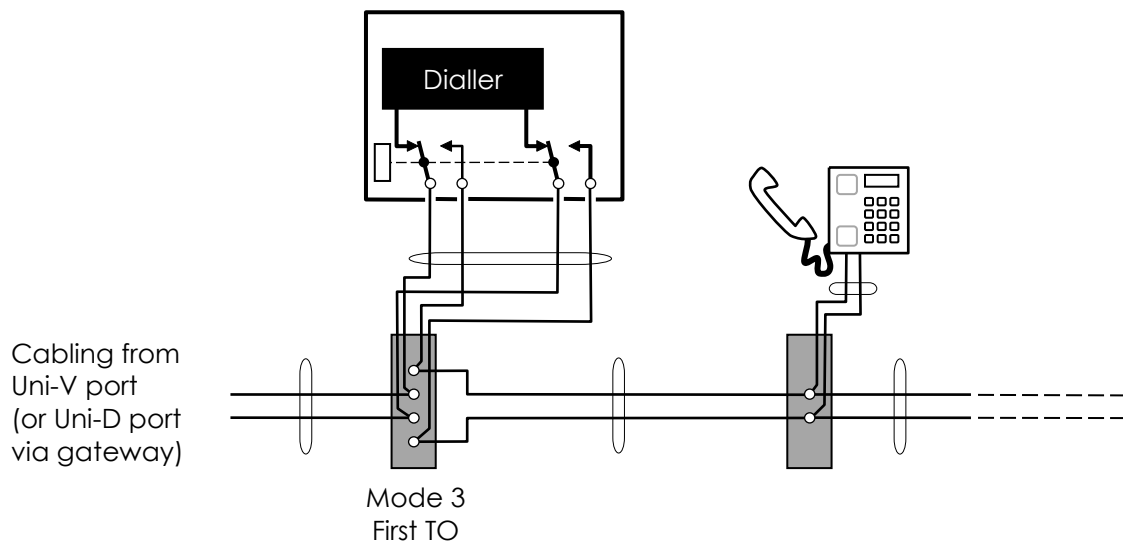


FIGURE 44

Mode 3 dialler activated and disconnecting the telephones

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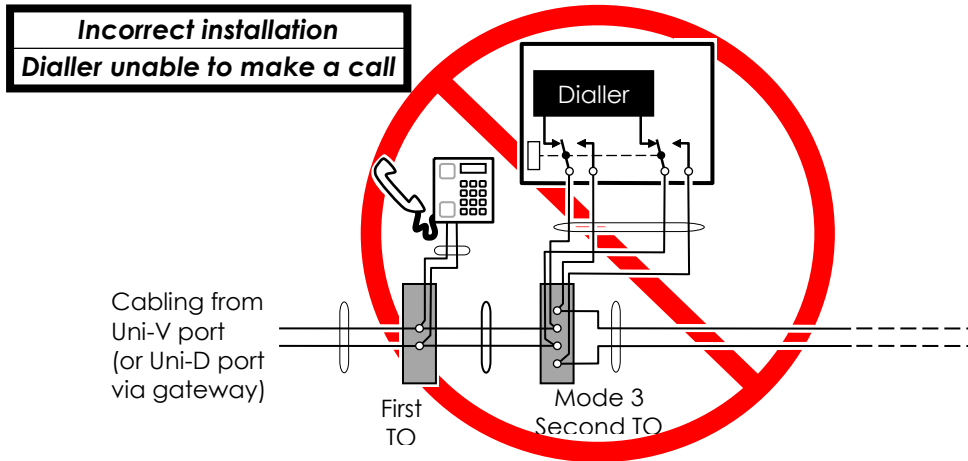


FIGURE 45

Example of an incorrect installation where the dialler is unable to make a call

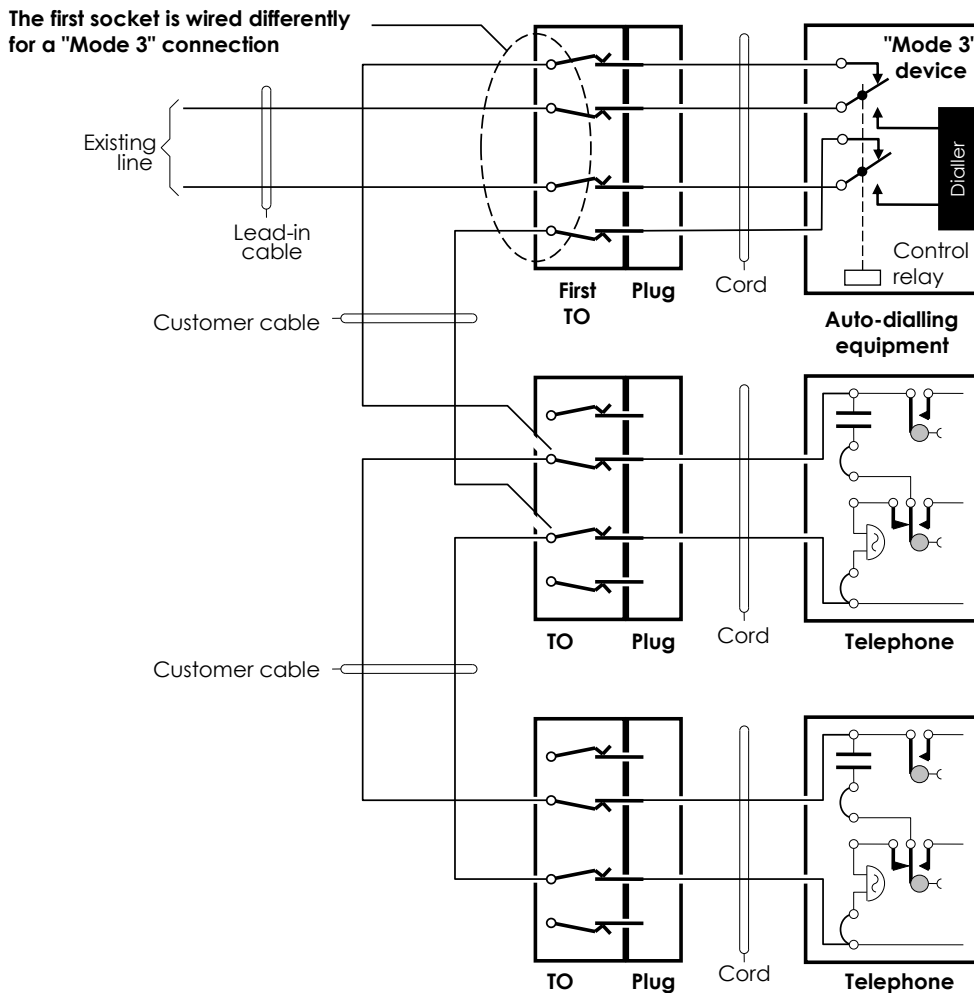


FIGURE 46

Schematic of a Mode 3 installation

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PARTICIPANTS

The Working Committee responsible for the revisions made to this Guideline consisted of the following organisations and their representatives:

| Organisation | Membership | Representative |
|--|-------------------|-----------------------|
| Australian Communications and Media Authority (ACMA) | Non-voting | Cuong Nguyen |
| Australian Communications and Media Authority (ACMA) | Non-voting | Patrick Emery |
| CISCO Systems | Voting | Kim Yan |
| International Copper Alliance Australia | Voting | Ian Millner |
| Milcom | Voting | Les Bailey |
| nbn | Voting | Haydn Dale |
| NetComm Wireless | Voting | Catherine Nicholson |
| NetComm Wireless | Non- Voting | Milan Prosenica |
| Optus | Non-voting | Andrew Robinson |
| Optus | Voting | Brett Gallard |
| Stanimore | Voting | Kevin Richardson |
| Telstra | Non- voting | Guy Di Paola |
| Telstra | Voting | Glenn Walker |

This Working Committee was chaired by Haydn Dale. Mike Johns of Communications Alliance provided project management support.

Communications Alliance was formed in 1997 to provide a unified voice for the Australian communications industry and to lead it into the next generation of converging networks, technologies and services.

In pursuing its goals, Communications Alliance offers a forum for the industry to make coherent and constructive contributions to policy development and debate.

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