

MP082 '2.4GHz Channel Management'

Business requirements – version 0.3

About this document

This document contains the business requirements that support the solutions for this Modification Proposal. It sets out the requirements along with any assumptions and considerations. The DCC will use this information to provide an assessment of the requirements that help shape the complete solution.

1. Business requirements

This section contains the functional business requirements. Based on these requirements a full solution will be developed.

Business Requirements	
Ref.	Requirement
1	Where interference is deemed to be a cause for HAN devices to go “dark”, a channel frequency change shall be enabled and allow Parties the ability to trigger channel change remotely, or to allow automatic recovery (avoid site visit).
2	To preserve the battery life of battery powered HAN Devices, the absolute number of channel changes shall be limited.
3	Any changes would need to consider pre-existing HAN Devices to limit Devices from being stranded and inoperable.

2. Considerations and assumptions

This section contains the considerations and assumptions for each business requirement.

2.1 General

This solution will be applied to SMETS2 Devices.

2.2 Requirement 1: Where interference is deemed to be a cause for HAN devices to go “dark”, a channel frequency change shall be enabled and allow Parties the ability to trigger Channel change remotely, or to allow automatic recovery (avoid site visit).

It is assumed that an [automated / Service Request (SR)] delivery mechanism will be used to [instruct / enable] the Communication Hub to affect a channel frequency change.

If SR is used this shall be a new [Critical / non-Critical] command created specifically for affecting a Channel Change

If an automated mechanism is used, the Communications Hub shall make the channel frequency change based on an agreed set of parameters.

It is assumed in all circumstances, irrespective of delivery, that the Communication Hub will manage the activation of the channel change.

To reduce impacts to Energy Supplier Customers and reduce costs for Energy Supplier Parties, all channel changes will be activated by a remotely.

Site visits to affect a channel change are not considered viable.

2.3 Requirement 2: To preserve the battery life of battery powered HAN Devices, the absolute number of channel changes shall be limited

Battery operated devices on the HAN, e.g., Gas Smart Metering Equipment (GSME) have a finite amount of power. To reduce the frequency of “waking” and processing instructions related to channel frequency changes, the number of times a command to affect a channel change will be limited.

2.4 Requirement 3: Any changes would need to consider pre-existing HAN Devices to limit Devices from being stranded and inoperable.

Thorough testing of any solution prior to implementation will need to include testing on device types already installed on the HAN. Any solution that is implemented must ensure that any stranding of devices is eliminated. This will ensure, that site visit costs to replace any such stranded devices are kept to an absolute minimum.

3. Solution options

This section outlines the solution options for this Modification Proposal. It provides detailed information on the proposed solution for the business requirements contained in Section 1 of this document.

Solution Option 1 - Communication Hub (CH) selects channel by continuously monitoring

The Communications Hub (CH) performs internal assessment to select the best channel by continuously monitoring the HAN channel. No external triggers from Devices / DCC users / CSP is supported.

The CH would only initiate changes based on Radio Frequency (RF) environment seen by the CH.

Number of channels changes per [X period] would be required mandated to mitigate risks of draining batter powered HAN devices.

Changes to GBCS, CHTS and SMETS would be required.

The solution would require extensive testing to ensure that already installed HAN devices are able to react to any message to change channel from the Communication Hub

Solution Option 2 - Implement 2.4GHz Frequency Agility aligned to Sub-GHz Frequency Agility Solution

This solution requires changes to GBCS, CHTS, DUIS and SMETS but is the most complete solution from a functional perspective.

There is potential that features would need to enable on the CH may also require Zigbee Alliance specification. This could take considerable time with no guarantee that the Zigbee Alliance would agree to such changes.

The number of channels changes per [X period] would be required mandated to mitigate risks of draining batter powered HAN devices.

The solution would require extensive testing to ensure that already installed HAN devices are able to react to any message to change channel from the Communication Hub.

4. Glossary

This table lists all the acronyms used in this document and the full term they are an abbreviation for.

Glossary	
Acronym	Full term
DCC	Data Communications Company
HAN	Home Area Network
GBCS	Great Britain Companion Specification
CHTS	Communication Hub Technical Specification
SMETS	Smart Metering Equipment Technical Specification