Report:

DCC Quarterly Network Enhancement Plan.

CSP Central & South

Measurement Period:

Q3 2020

Identifying and Reviewing Network Enhancement Plans Presented to DCC by CSP Central & South

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1 Introduction

1.1 Purpose

DCC has produced this report pursuant to its obligations under the Smart Energy Code (SEC) defined in Section F7:

F7.21 Within a reasonable period of time following each calendar quarter that ends prior to 1 January 2021, DCC shall produce a report which identifies:

- any new Network Enhancement Plans that have been created during that quarter,
- any Network Enhancement Plans that were completed during that quarter,
- and any ongoing Network Enhancement Plans
- and for each such Network Enhancement Plan:

(i) an overview of the geographic area that is subject to the plan;
(ii) the premises (by postcode) that fall within that area;
(iii) the scheduled date for completion of the planned works (or, where applicable, the actual date of completion).

F7.22 A copy of the report produced under Section F7.21 shall be provided by DCC to the Parties, the Panel, the Authority and (on request) the Secretary of State.

The latest version of SEC documents can be found at:

https://www.smartenergycodecompany.co.uk/

DCC will make available this document on a quarterly basis and it will contain an updated current view of Network Enhancement Plans (NEPs).

1.2 Background

The Smart Energy Code defines NEPs as “plans to undertake work to improve SM WAN connectivity for a cohort of Communications Hubs installed within a particular geographic area”. NEPs are a commercial arrangement in the Communication Service Provider Central and South (C&S) contract and are reflected in the Smart Energy Code (SEC) whereby the CSP can accept the general nature of the coverage and connectivity requirements yet also consider elements which are not under their full control.

CSP contracts contain commercial provisions which are often specific to the unique challenges and requirements of each CSP, and their chosen technology, Region, and contract negotiation. NEPs are one such provision which are specific to CSP C&S and do not appear in the SM WAN arrangements for CSP North.

General coverage and connectivity requirements are those such as the need to offer per-premises commitment and performance metric uniformly, so that for those premises which are in a Coverage Area, DCC Users can approach and plan for Communications Hub installation in a standard way. For example, the Coverage Checker Database (CCDB) expresses coverage commitments in the same terms, regardless of the premises involved, and the approach to performance metrics and SLAs used to monitor connectivity is common, regardless of the premises or Coverage Area.

To secure the most cost-effective provision of connectivity for the highest number of premises in each Region, recognition was given by Government to those aspects of the Smart Meter Wide Area Network (SMWAN) deployment upon which the CSP was dependent yet were not fully under the reasonable control of the CSP. NEPs are a contractual arrangement which allows DCC to hold CSP (C&S) to account for their contractual obligations in respect of coverage and connectivity but which makes allowances for these matters beyond the full control of a CSP.

Two types of allowances were intended to be managed using NEPs, they are “Notice to Quit” (NTQ) and “Planned mesh”.

1.2.1 Notice-to-Quit (NTQ)

Mast sites for the CSP (C&S) cellular network require the consent of a property landlord and planning permission. Whilst CSP (C&S) can use their existing experience to design equipment and select mast locations which would normally gain planning and landlord approval in a known & timely manner, it is not always possible. If this were to occur in the rollout of new network coverage, then CSP (C&S) could make up for that delay or loss of planned connectivity by having contingency in their deployment and still meet their coverage deployment milestones. For this reason, NEPs do not offer a let to CSP (C&S) for their failure to secure network equipment at *new* sites where adequate planning would normally secure a suitable site and planning permission.

However, in cases where:

- CSP (C&S) have *existing* mast sites, *and*,
- the CSP has received an instruction from the landlord to leave the site, *and,*
- planning permission cannot be gained in a timely manner for an alternative site which offers the same or similar coverage,

a temporary allowance is made in the CSP (C&S) connectivity and coverage performance metrics if it can be shown that the CSP has made all reasonable efforts to avoid the situation.

The purpose of this policy arrangement is to prevent CSP (C&S) adding additional risk premium into their cost base to account for such uncertainty which would disproportionately impact the economic efficiency of their service offering or prevent CSP (C&S) a uniform means of expressing coverage commitment to DCC Users.

1.2.2 Planned mesh – Supporting ("Boundary") Node Installations

CSP (C&S) fulfil their network commitments by using a combination of cellular and mesh technologies, with mesh being used in those areas where it would not be currently cost effective to deploy or extend cellular coverage. Mesh is sometimes referred to as "infill" coverage and its deployment relies upon the surrounding Communications Hubs connected to the cellular network to support communications to and from those premises which have Communications Hubs connecting to the SMWAN using mesh.

1.2.3 Responsibility Matrix

NEP Type	CSP Internal	External to CSP	Dependencies
Notice to Quit	Geographical Network Infrastructure	Mast Site Planning	Planning Authority
Planned Mesh	Mesh Gateway Organisation & Planning Topology	Mesh Gateway Installations (SKU2 CH & T2) in Premises	Supplier Parties
	Impacts Target Date	Impacts Completion Date	

1.3 Report Classification

This report is classified as DCC Controlled in accordance with the confidentiality provisions under Section M of the SEC.

1.4 Glossary

The following terms are used within this report.

Term	Description
Planned Mesh	means a NEP that is required to address an identified need to deploy mesh technology to provide SMWAN connectivity.
Notice-to-Quit	means a NEP required because of a Notice-to-Quit
UPRN	means Unique Property Reference Number

2 Executive Summary

Summary of NEP data for the calendar Q3 2020

This report is produced in accordance with Sections F7.21 and F7.22 of the Smart Energy Code (SEC).

Number of NEPs reported in the quarter

- Within the CSP (C&S) Regions there are 207586 (836 + 122691 + 84509) premises cited as being impacted by an NEP. There are approximately 20,000,000 premises in the South & Central Region therefore NEPs represent approx. 1% of these.
- In this quarter, these NEPs comprise planned mesh and a single radio network upgrade in the Central region.

Number of NEPs completed in the quarter

- 9 (2 + 7) NEPs have been completed in the quarter, by 30/09/2020.

Number of NEPs ongoing in the quarter

- 4762 (2835 + 1927) NEPs are ongoing and dependent upon actions from non-CSP parties.
- 0 NEPS are ongoing and dependent upon actions of the CSP in this quarter.

Number of NEPs created in the quarter

- No NEPS have been created that are dependent upon actions from non-CSP parties.
- No NEPS have been created that are dependent upon actions of the CSP in this quarter.

DCC has conducted assurance of the processes and management of both 'Notice-to-Quit' (NTQ) and planned mesh by CSP (C&S), in conjunction with the CSP (C&S).

Section 4.3 'Analysis of Change between Q3 2020 and Q2 2020 allows the identification of changes and the evolution of NEPs between quarters.

3 NEP Data

This report represents the analysis that DCC has produced for the Network Enhancement data supplied by the CSP (C&S) for the quarter ending September 2020.

Four NEP data files (.csv format) were provided by the CSP (C&S) as listed in the subsequent sections. These files will be made available in the same location as this report. Checksum data (SHA256) has been provided in support of each file.

3.1 Central Region NEP File Checksums

NEP List comprising data covering:

UPRN	Postcode	NEP Reference	NEP Name

SHA256 hash of SM_WAN_NEP_CSP_Central_Detail_Sep_2020_v1.0.csv:

fdacf466b349bbd6a09085cd8a70e07cc333222cafff59e49340d34a4df986f5

NEP Details comprising data covering:

NEP type	NEP Reference	NEP Name	Target Date	Completion Date	Status	Number of NEP premises	Description

SHA256 hash of SM_WAN_NEP_CSP_Central_Summary_Sep_2020_v1.0.csv:

7672ea8840c955b20b309535be2475b226c39c0158531acded2895407e86f4d9

3.2 South Region NEP File Checksums

NEP List comprising data covering:

UPRN	Postcode	NEP Reference	NEP Name

SHA256 hash of SM_WAN_NEP_CSP_South_Detail_Sep_2020_v1.0.csv:

9e3cc9a91ea2e8cd96a7d846c045c7602b1e76210b533f17827b69c824926f00

NEP Details comprising data covering:

NEP type	NEP reference	NEP Name	Target Date	Completion Date	Status	Number of NEP premises	Description

SHA256 hash of SM_WAN_NEP_CSP_South_Summary_Sep_2020_v1.0.csv:

7e1d8951ef2582ce9b691c4354a4fe60add5c937727e9d973335faea7a8e38af

3.3 Data Values

Field	Values
NEP Type	Planned Mesh Radio Network Upgrade
Status	In Progress (Existing) In Progress (New) Complete

3.4 Data Interpretation

Terminology	Target Date	Completion Date	Status
General Interpretation	The forecast date on which the replacement site is due on air to replace an NTQ site	The actual date of the installation.	A status which indicates the combined completion status of both CSP and non-CSP actions for this NEP Note. Planned Mesh Schemes that have transitioned to 'Completed' during the quarter have done so for one of two reasons. Either: i) The required mesh comms hub(s) have been installed. or ii) 2G/3G coverage has been provided into the affected locality
Notice to Quit (NTQ)	The planned date when CSP (C&S) has / will have made all reasonable efforts to make necessary arrangements for alternative coverage to be provided as soon as possible	The date when external planning dependencies not under the reasonable control of CSP (C&S) have been completed and subsequent network implementation has taken place, such that the premises can be connected to the SMWAN and No SMWAN incidents related to these nodes can be resolved by CSP (C&S) within the required SLA.	
Planned mesh	The CSP (C&S) systems have will/have been planned, provisioned, and configured the necessary Mesh Head End Systems (HES) such that the deployment of Mesh boundary nodes (supporting Gateways) can commence by Supplier Parties	The date at which Supplier Parties have installed a sufficient quantity of the boundary nodes (supporting Gateway nodes) such that the premises which are reliant on Mesh communications can be connected to the SMWAN and No SMWAN incidents related these nodes can be resolved by CSP (C&S) within the required SLA.	

3.5 Data File Definition

Data within CSP supplied NEP data files (identified in Section 3.1 & 3.2) is formatted in line with the following file format specification which DCC has made available in line with its SEC obligations: 'DCC Guidance Note - Network Enhancement Plan File Format' This document is published in the same folder as this report.

https://capitaitservices.sharepoint.com/:f:/r/sites/LIVEDCC/PARTIES/Information%20for%20SEC%20Parties/Reports/Network%20Enhancement%20Plans?csf=1

4 NEP Data Summary

4.1 Current Quarter – Q3 2020 (Month Ending September 2020)

The NEP statistics representing the NEP data is provided in Table 1.

The explanation of "Target Date" and "Completion Date" is provided in Section 3.4.

Region	NEP type	Status	Count of NEPs	Sum of Premises	NEP Target Date	NEP Completion Date
Central	Radio Network Upgrade	Completed	1	836	n/a	30/09/20
Central	Radio Network Upgrade	In Progress (Existing)	0	0	n/a	n/a
Central	Planned Mesh	Completed (Coverage)	1	8	n/a	30/09/20
Central	Planned Mesh	In Progress (Existing)	2835	122691	n/a	n/a
Central	Planned Mesh	In Progress (New)	0	0	n/a	n/a
Central	Planned Mesh	In Progress (TOTAL)	2835	122691	n/a	n/a

Region	NEP type	Status	Count of NEPs	Sum of Premises	NEP Target Date	NEP Completion Date
South	Radio Network Upgrade	Completed	0	0	n/a	n/a
South	Radio Network Upgrade	In Progress	0	0	n/a	n/a
South	Planned Mesh	Completed (Coverage)	7	170	n/a	30/09/20
South	Planned Mesh	In Progress (Existing)	1927	84059	n/a	n/a
South	Planned Mesh	In Progress (New)	0	0	n/a	n/a
South	Planned Mesh	In Progress (TOTAL)	1927	84059	n/a	n/a

Table 1 – NEP Statistics for CSP (C&S) Q3 2020

4.2 Previous Quarter – Q2 2020 (Month Ending June 2020)

For comparison purposes, the NEP statistics representing the NEP data for the previous quarter is provided in Table 2.

Region	NEP type	Status	Count of NEPs	Sum of Premises	NEP Target Date	NEP Completion Date
Central	Radio Network Upgrade	Completed	0	0	n/a	n/a
Central	Radio Network Upgrade	In Progress (New)	1	836	n/a	n/a
Central	Planned Mesh	Completed (Coverage)	2	14	n/a	30/06/20
Central	Planned Mesh	In Progress (Existing)	2836	122120	n/a	n/a
Central	Planned Mesh	In Progress (New)	0	0	n/a	n/a
Central	Planned Mesh	In Progress (TOTAL)	2836	122120	n/a	n/a

Region	NEP type	Status	Count of NEPs	Sum of Premises	NEP Target Date	NEP Completion Date
South	Radio Network Upgrade	Completed	0	0	n/a	n/a
South	Radio Network Upgrade	In Progress	0	0	n/a	n/a
South	Planned Mesh	Completed (Coverage)	0	0	n/a	n/a
South	Planned Mesh	In Progress (Existing)	1934	83030	n/a	n/a
South	Planned Mesh	In Progress (New)	0	0	n/a	n/a
South	Planned Mesh	In Progress (TOTAL)	1934	83030	n/a	n/a

Table 2 – NEP Statistics for CSP (C&S) Q2 2020

4.3 Analysis of Change between Q3 2020 and Q2 2020

The following table provides data showing change between the previous NEP report and the latest NEP Q3 2020 report and represents the numerical difference between the data contained within two successive Network Enhancement Plans. Note that the tables below do not signify a performance tracker or indicator of progress; they simply log the difference between two quarters worth of data. Any increase or decrease of values from one quarter to the next is not representative of a performance measure.

Region	Q2/20	Q3/20	Change
Central Radio Network Upgrade	0	1	1
Central Planned Mesh	2	1	-1
South Radio Network Upgrade	0	0	0
South Planned Mesh	0	7	7
Total NEPs Completed by NEP Type	2	9	7

Region	Q2/20	Q3/20	Change
Central Radio Network Upgrade	1	0	-1
Central Planned Mesh	2836	2835	-1
South Radio Network Upgrade	0	0	0
South Planned Mesh	1934	1927	-7
Total NEPs In Progress by NEP Type	4771	4762	-9

Table 3 – NEP Statistics – Change Between Current and Last Quarter

Region	Q2/20	Q3/20	Change
Central Radio Network Upgrade	0	836	836
Central Planned Mesh	14	8	-6
South Radio Network Upgrade	0	0	0
South Planned Mesh	0	170	170
Total UPRNs Completed by NEP Type	14	1014	1000

Region	Q2/20	Q3/20	Change
Central Radio Network Upgrade	836	0	-836
Central Planned Mesh	122120	122691	571
South Radio Network Upgrade	0	0	0
South Planned Mesh	83030	84059	1029
Total UPRNs In Progress by NEP Type	205986	206750	764

Table 4 UPRN Statistics – Change Between Current and Last Quarter

5 NEP Data Assurance

5.1 Quarter Ending Sept 2020

DCC has examined the NEP data provided to them by the CSP (C&S).

DCC has additionally performed assurance of the NEP data and this was undertaken with direct support of the CSP (C&S). DCC selected several random named NEPs from the NEP data supplied to DCC and the CSP (C&S) was then asked to show evidence to support each NEP. The assurance report is provided in Appendix A of this document.

DCC concludes that the NEP data supplied by the CSP (C&S) is supported by the CSP (C&S) with appropriate process & management oversight in place.

6 NEP Compliance Statement

The following table sets out the requirements under Section F7.21 of the SEC and details how they have been met in the report.

F7.21 Obligation	DCC Assurance	Assurance Summary	Evidence
Report any new Network Enhancement Plans that have been created during that quarter,	Yes	This NEP report depicts completed and new Network Enhancement Plans for the reporting period for the CSP (C&S) regions.	*See NEP Data Summary -Table 1*
Report any Network Enhancement Plans that were completed during that quarter,	Yes	Assurance that specific sample data corresponds with actual Network enhancement	*See NEP Data Summary -Table 1*
Report any ongoing Network Enhancement Plans	Yes	Those NEPs without a Target Date are ongoing	*See NEP Data Summary -Table 1*

and for each such Network Enhancement Plan:

Overview of the geographic area that is subject to the plan	Yes	Post codes supplied in the NEP data and assurance provided in this report	*See DCC Assurance Activities – NTQ & Planned mesh NEP Representations*
The premises (by postcode) that fall within that area	Yes	The NEP data provides postcode information for each area	*See NEP Data Summary -Table 1*
The scheduled date for completion of the planned works (or, where applicable, the actual date of completion)	Yes	The NEP data provides planned dates for the work (where applicable)	*See NEP Data Summary -Table 1*

Table 4 – DCC SEC F7.21 Statement of Compliance

Appendix A – DCC NEP Assurance

1 DCC Assurance Activities

To underwrite the validity of the quarterly CSP (C&S) provision of NEP data and thus allow DCC to confidently provide a viable report on the quarterly provision of data, DCC undertakes assurance of the processes and management of both Notice-to-Quit (NTQ) and Planned mesh by CSP (C&S).

This is achieved through audit workshops with key stakeholders and experts at CSP (C&S) where processes for the management of NEPs and the production of the quarterly data for DCC are reviewed and scrutinised.

DCC is provided with visibility of the processes whereby the planned decommissioning of existing mast sites (NTQs) are identified in advance, and how CSP (C&S) processes allow timely identification of new sites to replace those locations which are no longer possible to maintain. This is achieved through the insertion of advance notice requirements of NTQs in all CSP (C&S) leasing contracts.

CSP (C&S) maintains sophisticated IT & Geographical Information Systems which allow for the management and evolution of the CSP (C&S) SM WAN coverage provision.

Through drive testing and network planning, it is known which properties in the CSP (C&S) Regions require mesh Communications Hub installations at specific gateway locations to allow the expansion of the SM WAN network to NEP-impacted addresses in clearly identified geographical locations.

These arrangements are tightly linked to the provision of information in the SM WAN Coverage Checker Database (CCDB); namely where it is marked in the CCDB that:

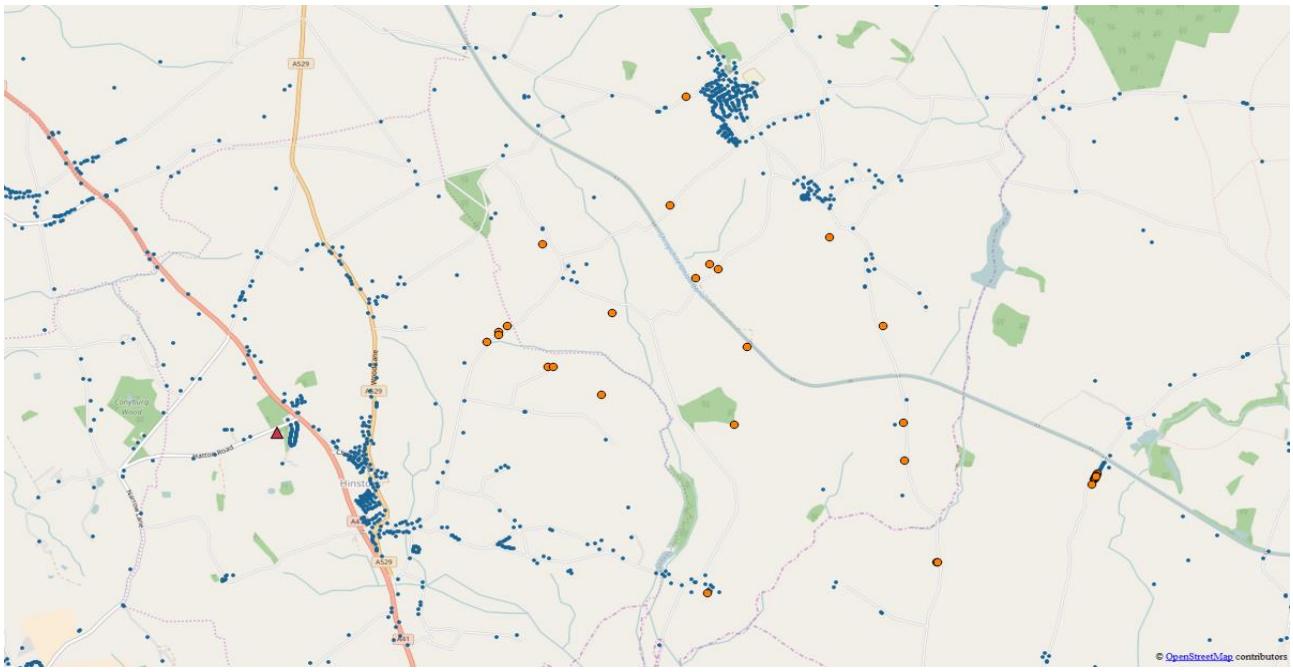
- a premises which requires a Communications Hub WAN variant ‘Cellular + Mesh’ to be installed,
- with an aerial type of ‘T2’
- *and* the clear identification of ‘gateway’ entries in the coverage data

supports this process and clearly identifies those premises which will be used as supporting gateway nodes for those premises reliant at that time upon mesh communications.

CSP (C&S) articulate their ongoing radio planning strategy in accordance with their contracted coverage commitments and have exercised NEPs in alignment with the intended use case scenarios.

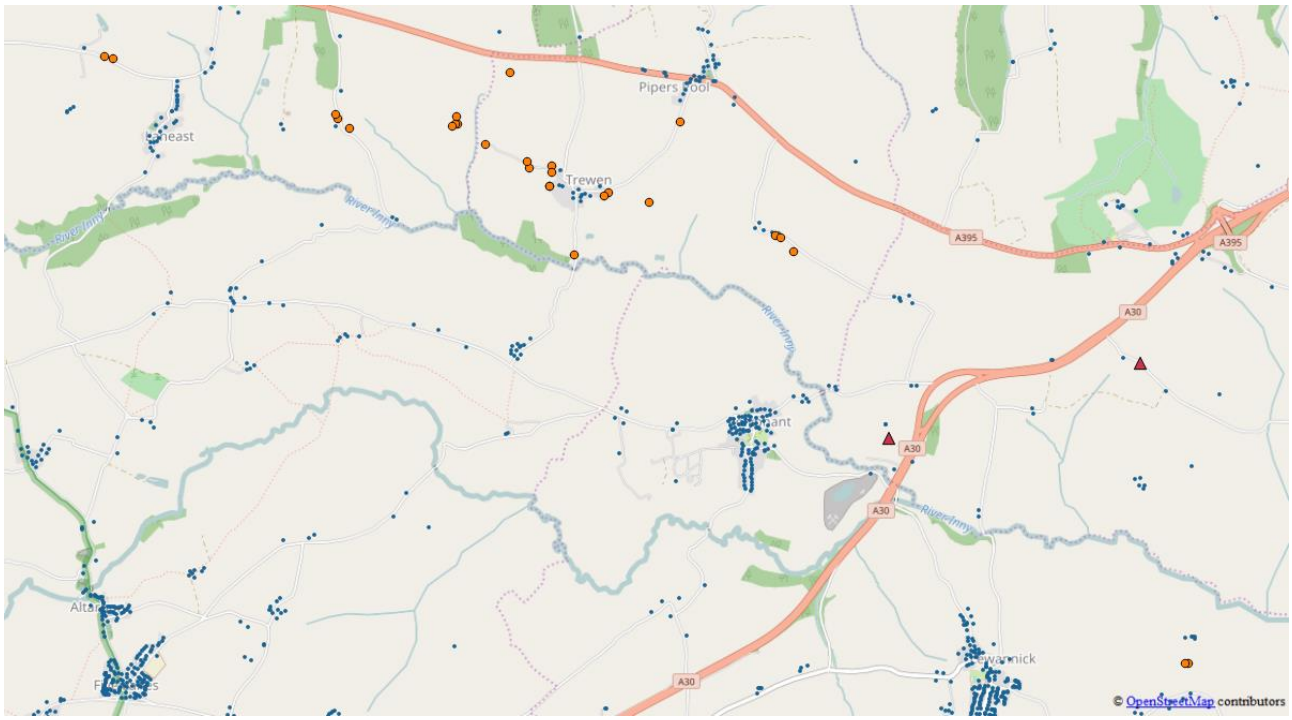
1.1 NTQ NEP Representation

Images from CSP (C&S) IT/GIS systems that portray NTQ data:



Example of a Radio Network Upgrade

The blue dots represent properties; orange dots are the properties where coverage may change following the upgrade and the red triangle shows the mast site location.

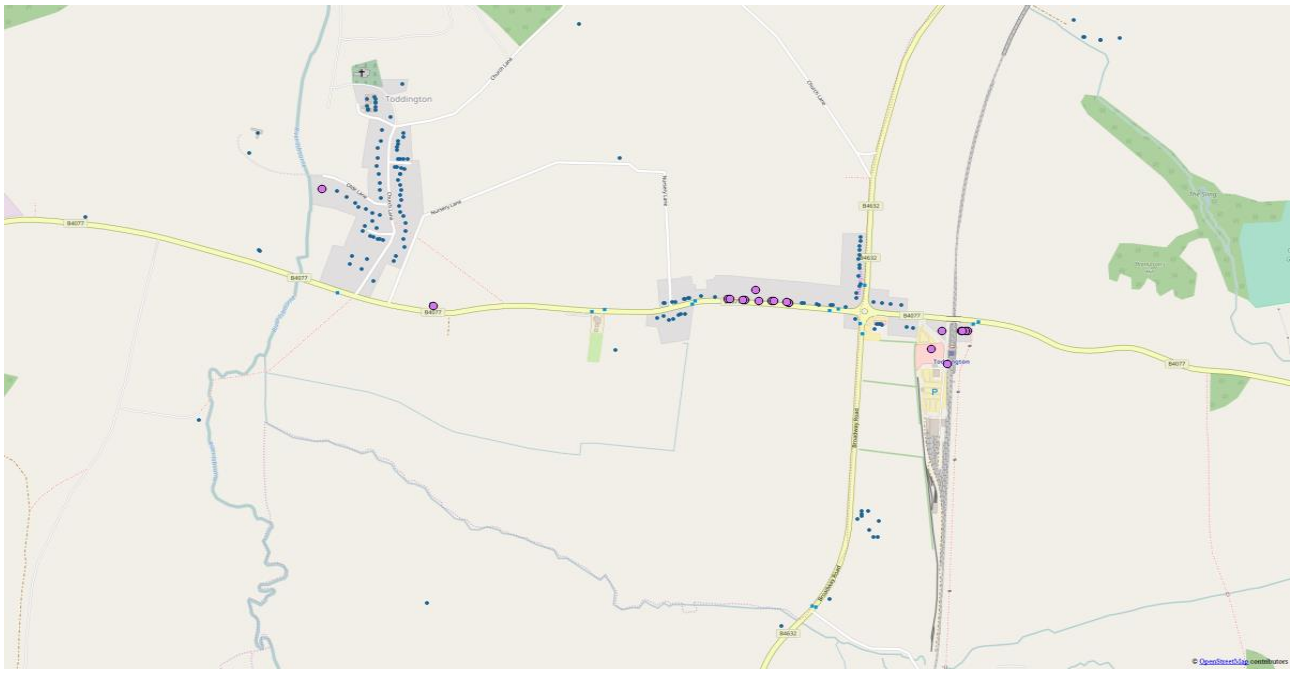


Example of a Radio Network Upgrade

The blue dots represent properties; orange dots are the properties where coverage may change following the upgrade. The red triangles show locations of two sites where equipment on one site has moved to co-locate on another site.

1.2 Planned mesh NEP Representation

Images from CSP (C&S) IT/GIS systems that portray Planned mesh data:



Example of Planned mesh

Blue dots are properties; purple dots show the Mesh properties in the NEP.

Example of Planned mesh

Blue dots are properties; turquoise dots show the Mesh properties in the NEP.