SP Energy Networks 2015–2023 Business Plan

Updated March 2014

Annex

BT21CN Mitigation Strategy

SP Energy Networks

March 2014

SP ENERGY NETWORKS

BT21CN Mitigation Strategy

March 2014

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17th March 2014	1.0	P. Dolan	First Issue

1. Scope

This Annex covers our strategy for BT21CN mitigation throughout the ED1 period.

2. Table of linkages

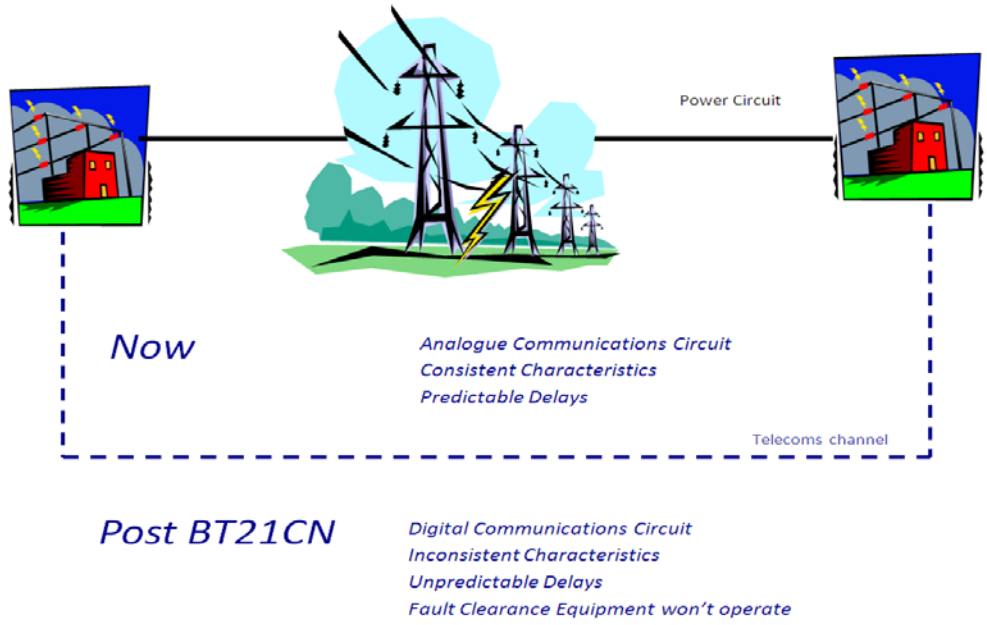
This strategy supports our ED1 Business Plan. For ease of navigation, the following table links this strategy to other relevant parts of our plan.

Document	Chapter / Section
SP Energy Networks Business Plan 2015-2023	Chapter C6 – Expenditure e. Non Load Related Investment
SP Energy Networks Business Plan 2015-2023 Annexes	Annex C6 – Expenditure Supplementary Annex - Section 8.3.10
SP Energy Networks Business Plan 2015-2023 Annexes	Annex C6 – Cost Benefit Analysis – SPEN - Reference 65
SP Energy Networks Business Plan 2015-2023 Annexes	Annex C6 – SP Manweb Company Specific Factors – SPEN Section B3
SP Energy Networks Business Plan 2015-2023 Annexes	Annex C5 – Black Start Capability – SPEN

3. Introduction

SPD and SPM are currently reliant on leased line BT circuits for critical protection applications, including unit protection and intertripping. Since the advent of broadband the use of these leased lines has declined dramatically so much so that these services will be made obsolete by 2018 as BT develops its 21CN services. No equivalent service is available via the existing BT copper cables, the alternatives available such as broadband are not suitable for protection applications and as a result we need to identify and invest in alternative protection communications solutions.

Figure 1: BT21CN Development and Impact to Leased Line Services



SP Energy Networks is proactively mitigating circuits affected by BT21CN by ensuring that adequate communications services are provided for associated protection. Circuits where the BT21CN impact has been mitigated in DPCR4 and DPCR5 have required investment in alterative communications solutions and protection changes. SPEN will continue this approach for all remaining 192 circuits in SPM and 34 circuits in SPD affected by BT21CN in line with the BT lease services forced migration in 2018

Table 1: ED1 BT21CN Investment

BT21CN Mitigation	RIIO-ED1	
	SPD	SPM
	£m	£m
BT21CN	5.0	28.3

There are elements of expenditure in this annex which relate to the SPM special factors case, details of which are contained within **Annex C6 – SP Manweb Company Specific Factors – SPEN**.

4. Background

4.1. DPCR5 and ED1 Approach

SPM is the DNO worst affected by BT21CN because it has utilised more leased line services than any other UK DNO for protection applications.

Our strategy in relation to BT21CN mitigation was outlined prior to the award of an ex-ante allowance in DPCR5 and publically disclosed in SP's Statement below.

"Following the NGN workshop we have reconsidered our plans for BT21CN over DPCR5 and DPCR6 to acknowledge BTs "2018 switch off" for the platform associated with the analogue leased lines. To minimise the cost impact on customers during DPCR5, we have re-profiled and reduced our expenditure investment in DPCR5, and "tail ended" the expensive and complicated solutions into DPCR6".

This strategy was supported by OFGEM at the time and SP Energy Networks was the only DNO to receive 100% of our requested ex ante allowance for both SPD and SPM

https://www.ofgem.gov.uk/ofgem-publications/46803/septemberupdateletter.pdf

As anticipated our planned investment in BT21CN Mitigation activity will ramp up from 2015 until 2018 and the closure of the BT20CN Lease Lines Platforms.

4.2. BT21CN Timescales

SPEN has continued to monitor the BT and OFCOM position with regard to the leased lines delivered through legacy (BT20CN) platforms. BT has reinforced the 2018 closure date in recently. BT leased line volumes continue to decline, hence are becoming less economically viable to support as the majority of their users switch to BT21CN Ethernet/IP services.

Sources which confirm the BT Leased Line Platform Closure Date include BT - TDM Statement Nov 2011 iss4 protected.pdf. (Nov 2011) and OFCOM - Business Connectivity Market Review: Sections 1 - 4 (June 2012)

In line with the latest communications listed from BT and OFCOM, by 2018 BT will cease the leased line platform with no equivalent alternative being offered.

5. Mitigation Approach

5.1. BT21CN Mitigation Solutions

SPENs BT21CN mitigation strategy is based on utilisation of a 'toolbox' approach where least cost solutions have been selected on a circuit by circuit basis and all opportunities to utilise existing / developed infrastructure have been explored. This is demonstrated by the efficiency of our unit costs for the solutions employed to date compared to others with similar requirements in the industry.

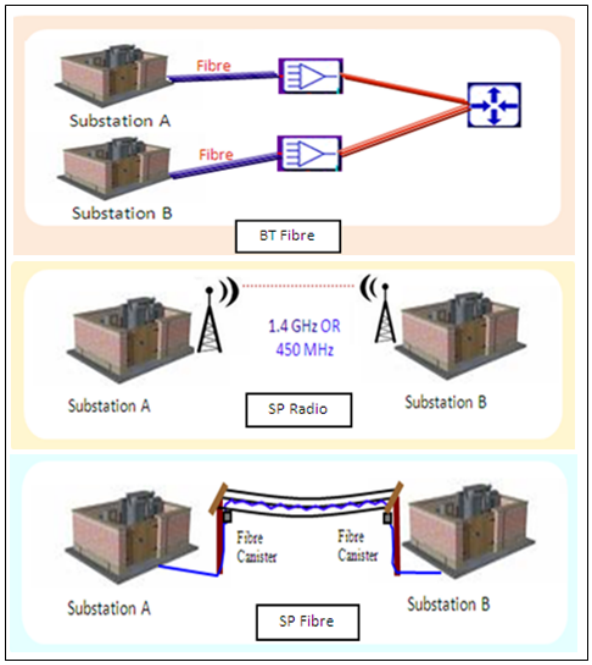
The uplift in investment requirement in ED1 reflects the increase in complexity and costs associated with individual circuit migration solutions. SPEN have increased the resource allocation on this project in recent months and will proactively develop detailed engineering plans associated with ED1 solutions and secure delivery partners in advance of the capital investment works

Our toolbox approach includes building block technology solutions such as Radio (and Hill site service establishment), fibre installation and use of 3rd party telecoms services which offer adequate performance post-BT21CN. Solutions where the communications performance is lower than current provisions have been considered in tandem work to replace existing protection with new equipment compatible with the communications service

BT21CN mitigation in ED1 will focus on establishment of infrastructure. Accordingly BT21CN mitigation solutions may use a combination of these building block technologies and existing infrastructure to form replacement telecoms routes for effected circuits. Where practicable and appropriate, we plan to deploy infrastructure that can be shared by a number of services requiring mitigation.

Work on BT21CN mitigation aligns with our strategy to enhance systems resilience as part of the Black Start Resilience overall strategy (see **Annex C5 – Black Start Capability – SPEN**). Accordingly a minimum of one resilient communications route out of each Grid Supply Point and 132kV active network sites will be established.

Figure 2 : BT21CN Solutions



The breakdown of BT21CN activities in ED1 is shown in the tables below. Where mitigation solutions are based on shared infrastructure development (comprising of multiples solutions), the main solution invested in to mitigate the associated circuit is listed.

Table 2: BT21CN Mitigation Solutions

BT21CN Mitigation Solutions		Volumes
SPD	SPEN Fibre	4
	BT Fibre	19
	BT Fibre + Protection Change	2
	SPEN Microwave / Radio	9
	Total	**34**
SPM	SPEN Fibre	26
	BT Fibre	42
	BT Fibre + Protection Change	75
	SPEN Microwave / Radio	49
	Total	**192**

5.2. Approach Efficiency

SPEN has completed a Cost Benefit Analysis, **Annex C6 – Cost Benefit Analysis – SPEN**, Reference 65, which demonstrates that our best BT21CN mitigation options are circuit specific and rely on a range of solutions including suitable BT products. Our efficient approach selects the best circuit specific solution for each service to be mitigated to achieve the most cost effective overall programme.