MOTT MACDONALD

Duct and Pole Access Consultation

Openreach's Response

5 December 2017

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Contents

1 Introduction

1.1 Background

In February 2016, Ofcom published their Strategic Review of Digital Communications setting out their approach to regulating communications markets for the next decade.[1]

One of the key proposals in Ofcom's Strategic Review was a major strategic shift to encourage investment in new ultrafast networks, particularly using fibre-to-the-premises (FTTP) technology, as an alternative to the predominately copper-based technologies currently planned by BT. Ofcom explained that one of the ways it would seek to deliver this was by making it easier for competing providers to build their own fibre networks by providing them with improved access to Openreach's duct and pole infrastructure (duct and pole access - 'DPA').

1.2 Software Requirements Specification

Mott MacDonald was commissioned by Ofcom, to develop a hypothetical systems specification that could be used as a basis of delivering the broad outcomes identified by Ofcom and inform the development of its proposals.

At a high level the system specification is aimed at fulfilling two requirements:

- Access to data - Allowing Communication Providers (CPs) access to Openreach's network records information to effectively plan their own network deployments using Physical Infrastructure Access (PIA); and

- Exchange of data – Allowing for an exchange of information between telecoms providers and Openreach so that a telecoms provider can progress an order for PIA.

While preparing the specification, Mott MacDonald consulted with Ofcom, Openreach and a small selection of CPs and their partners to understand:

- End user requirements.
- Ofcom's requirements.
- Openreach's existing systems and processes, and their planned developments.

The document, the 'Software Requirements Specification', specifies the requirements for the 'DPA Solution' to meet the needs of CPs using Openreach's PIA product with ambitions to deploy networks on a large scale. It sets out:

- The overarching processes envisaged that will govern the DPA Solution;
- The use cases from which the solution can be developed (i.e. functional requirements);
- The non-functional requirements such as the performance and security standards that the DPA Solution must meet;
- The suggested testing strategy for implementation;
- An order of magnitude estimate of the costs of the system development;
- An estimate of the timescale needed to develop the DPA Solution;
- Illustrative data structures;
- A glossary of terms used.

[1] Making communications work for everyone, Initial conclusions from the Strategic Review of Digital Communications, 25 February 2016, Ofcom. https://www.ofcom.org.uk/phones-telecoms-and-internet/information-for-industry/policy/digital-comms-review/conclusions-strategic-review-digital-Communications

1.3 Consultation

The Software Requirements Specification (SRS) was published as a supplementary document to Ofcom's 'Wholesale local access market review: duct and pole access remedies' consultation published on 20th April 2017[2].

Following the consultation, Openreach provided a response, dated 19th June 2017. Annex B of this response document, specifically addressed the Software Requirements Specification.

This report provides Mott MacDonald's opinion and comments on Openreach's views as set out in Annex B of its response; addressing those areas that relate to the functional and non-functional requirements specified, and the time and cost estimates provided in the SRS.

[2] https://www.ofcom.org.uk/consultations-and-statements/category-2/duct-pole-access-remedies

2 Opinion and Comment

Openreach have made “initial comments” on the Software Requirements Specification (SRS). We understand that Openreach may comment further; this report provides our view on the comments made to date.

We acknowledge that Openreach are in the process of developing their PIA digital mapping tool and are doing this in consultation with the Passives Industry Working Group.

This section provides our comment and opinion on specific areas of Openreach’s response (the relevant parts of Openreach’s response are stated at the beginning of each section below):

2.1 Supporting Processes

“We consider that the Mott MacDonald report reflects little if any of the complexity of the dependencies of the core system and potential supplier management impacts, approval processes, forecasting, SLA/SLG management, billing and costing impacts that might result from Ofcom’s proposals. Mott MacDonald acknowledge this point in the scope of their report (i.e. that it is concerned with ‘access’ and ‘exchange’ of data). Therefore such costings and timings as set out in the report will only represent one element of a much wider systems/process solution that would be required by Openreach to support Ofcom’s proposals.”

Mott MacDonald’s specification is for the technology system only. As Openreach state, it does not consider any business processes that Openreach may need to operate to support the functionality provided by the system. For example, any processes to handle billing, internal approvals (for Works Orders or Deployments), or service level management and reporting (for any service levels that are subsequently agreed) are not covered in the SRS. The SRS has, however, identified the system requirements necessary to capture the results of Openreach’s internal processes for the assessment of requests (i.e. approved or rejected), and metrics such as timestamps that can be used to measure performance against SLAs.

The cost and timing estimates provided in the SRS, therefore, are for systems development only. They do not include costs for any organisational changes within Openreach; that is, to re-design, implement and resource supporting business processes. For clarity; the cost estimate provided in the SRS allows for the design of the business rules required specifically for the solution to work technically in its own right, not the wider functions and processes that Openreach may be required to undertake to support the system. These supporting processes were always stated as being out of scope, and our working assumption was that Ofcom would not prescribe how Openreach would provide such processes.

2.2 Mobile Working and Updating Records

“Functional – the main issue we have identified is with the mobility proposal and return/update of records. With our current architecture, we do not have the ability to offer a mobile (i.e. over 3/4G) solution to access our records. Our current applications require installation of a thick client on the user’s device, which must be ‘greenside’ (i.e. connected to the internal Openreach network). This prevents both Geohub and PIPeR working on a mobile device. This has led us to consider reviewing and re-architecting our mobility layer and network inventory systems. We cannot currently exchange plant/maps over a mobile/red side solution, and this therefore places major restrictions on our ability to build experiences which would rely on this kind of functionality, including digital job packs, and automatic records return. Today, our records

process relies on the eRecords team within ID manually updating PIPeR and associated inventory from the field return process (which is effectively digital paper). As such, specifying a 24hr update SLA would not be feasible with today's architecture. Currently, for our internal records, the turnaround time is approximately a week."

Mobile Working

With regards to the provision of the mobile working solution, Openreach's position is noted. The requirement for access to the DPA solution via a mobile device was a requirement of CPs and Ofcom, and is functionality that is required for the DPA solution to enable users to work in an efficient manner. It should be noted that our cost and time estimates assumed that access to Openreach's systems would be possible through a remote connection (i.e. without a direct connection into Openreach's network).

Updating Records

With regards to the updating of records in PiPeR, it is noted that it currently takes Openreach a week to process and update such records. In its response, Openreach refer to a 24-hour SLA for the updating of records, (for example, post CP Deployment activities). For clarity, the SRS does not specify a 24-hour SLA but assumes that the DPA solution will synchronise with PiPeR every 24 hours.

The DPA solution makes no assumptions about how PiPeR is kept up to date, merely that it is kept up to date. As per the point made in section 2.1, the SRS does not deal with Openreach's supporting processes, including the maintenance of records in PiPeR.

2.3 Download File Sizes

"Our initial view is that the requirement to expand the record 'tile' which can be downloaded to 10 sq km would not be feasible for both technical and security reasons. Technically, because the file size would be far too large to transfer in a reasonable time, and multiple concurrent requests could jeopardise the performance of our gateways which also host regulated dialogue services. With regard to security considerations we view 10 sq km as too large an element allowing users to quickly build a complete view of our network assets across large proportions of the country, which in the view of our security teams, represents an unacceptable risk. Therefore we currently aim to work within the data limitations and fair usage policy in place today. On the broader non-functional point, particularly where the operation involves requesting considerable amounts of network layer data, we note that we would need to carry out a detailed study based on assumptions of numbers of concurrent users before we could commit to approximately 5 second response times. If implemented we would expect these to be best efforts, rather than carry an associated SLA. We would also expect availability to follow the same arrangements as non-regulated dialogue services during scheduled EMP release windows (i.e. we would not commit to an 'always-on' solution)."

Technical consideration and impact on performance

It is our expectation that the file sizes being downloaded by CPs should be relatively small. Whilst we appreciate that in a built-up city environment there would be many data points for the duct and pole infrastructure elements, we expect each data point to be minimal in terms of its impact on the overall file size. It is our expectation that the data points would comprise simple co-ordinates and vectors that can be efficiently represented within an XML file or similar, for subsequent plotting within the CPs' systems, on background maps chosen by the CPs. It is not, for example, envisaged that the files would incorporate image data constituting "*rich pictures*" of geographical background maps, as this would increase file sizes considerably. Therefore, based

on our assumption, we would not expect download times to be an issue, unless the platform the DPA solution is operating from is only able to process low levels of data.

With regards to response times; for clarity, the SRS does not propose that this is a mandated SLA, rather an expectation of performance to allow Openreach to develop its systems to meet users' needs.

Security considerations

It is our understanding that where 'secure sites' are being served, the data about the serving infrastructure is not shown on Openreach's mapping information (and that CPs can seek the relevant information from Openreach via alternative means), thus security risks can be mitigated.

If the risk that Openreach refer to is of a commercial nature; then, as per Openreach's assertion, this should be managed through the policies which CPs are required to sign up to before accessing the DPA solution.

2.4 Other

"PIA system to allow access to CP 3rd Parties contractors – such access would necessarily need to comply with our security policies, contractor vetting processes etc."

Noted.

"The current PIA system synchronises with PIPeR every 48 hours, not 24 hours as suggested in the report. Hence any future change would need to be subject to feasibility and cost benefit analysis and prioritised in line with the development work stack."

Noted. We consider that the risk that a CP accesses out of date information is likely to be minimal and is mitigated in part by the approvals required from Openreach before any Works or Deployments are able to go ahead. That is, the risk of a CP encountering another contractor and causing disruption whilst working on DPA infrastructure should be unlikely.

"CPs and their contractors recording of 'Whereabouts' is part of the proposed solution. This was de-scoped as part of our L2C order journey, albeit CPs can currently record this data on our portal."

This functionality was included as it was understood Openreach required this information. If Openreach do not deem this information necessary then it can be de-scoped.

"We do not provide 10 sq km square cells, or file sizes up to 15Mb (for the reasons discussed above). To note, the existing limited file sizes have already posed technical problems with the proposed L2C order journey. Hence our initial view that increasing file size is likely to compound the problem."

As per our comments in section 2.3, it is our understanding and assumption that it is simple data points only that will be used by CPs to plot DPA assets in their GIS tools (not rich maps or pictures, for example).

"The report discusses providing aerial sections and pole capacity RAG status and mentions potential further information requirements regarding bores within ducts. We do not provide this, albeit for poles we are looking at the feasibility of introducing reservation status later in the year."

The SRS allows for the provision of information about the capacity of assets. It is unclear from Openreach's response, the reason why capacity RAG status cannot be provided for aerial sections and poles. If the reason is that the data is not currently available, then this data could be gathered and recorded over time. In the event that it is not viable to provide useful information about the available capacity on poles this element of the SRS could be de-scoped.

"Various proposals for additional functionality (e.g. hyperlinks to photos, planned works information, selection/deselection of assets) would all need to be assessed as part of future feasibility studies."

Noted.

"We also note for the record that discussion of systems functionality which enables access to various data sets/attributes without recognising the scale and challenges associated with maintaining the underlying data will be of limited benefit by itself. Any decision to progress such developments will also require an assessment of underlying data quality and the feasibility of collection and validation processes."

Noted. We have worked on the assumption that Openreach would have processes in existence to manage the integrity and quality of data.

"In terms of the exchange of data, we note that additional functionality suggested to be built into the Openreach system (e.g. Functionality to save searches on the Openreach map tool, and retrieve these) may be better developed within CPs own systems."

The premise of the solution is to use technology to aid the access and usability of the required DPA data and support the required workflows. It is difficult to see how saved search functionality could be developed in a CP's systems. For clarity, the retrieval of previous searches is in relation to a CP searching for new data in Openreach's databases (prior to download) and, also to retrieve workflow activities for prospective assets.

"Data Protection Act – any system will need to take into account the requirements under data protection when processing personal data, e.g. engineer whereabouts."

Noted, this is also our expectation.

"Accuracy – any data feeds from CPs into the system (e.g. surveys) will need to have defined quality standards, agreed responsibilities and liabilities etc. Such feeds would need to be approved and validated."

Noted, this is also our expectation.

"SLAs/SLGs – there are potentially significant system and process implications with any new SLA/SLG regime. Systems will need to be robust and limit risk of abuse."

Noted. It is our understanding that SLAs are yet to be defined and agreed.