



One Touch Switch

Industry Process

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Contents

1	INTRODUCTION	5
1.1	OFCOM CONSULTATION AND STATEMENT DOCUMENTS	5
1.2	VERSION 4.2.....	5
1.3	MATERIAL CHANGES FROM v4.1 TO v4.2	6
1.3.1	<i>Switching Implications SLA</i>	6
1.3.2	<i>Openreach Specific Purposes</i>	6
1.4	CHANGE LOG	6
2	OVERVIEW OF ONE TOUCH SWITCH PROCESS	9
2.1	COMMUNICATIONS PROVIDERS IMPACTED BY ONE TOUCH SWITCH.....	10
2.1.1	<i>Terminology: "Order"</i>	10
2.1.2	<i>Terminology: Retailer v Reseller</i>	11
2.2	POSITIONING OF ONE TOUCH SWITCH RELATIVE TO OTHER GRCP PROCESSES	11
2.3	CONCEPT OF "SWITCHING INFORMATION"	11
2.4	CUSTOMER INTENT DURING SWITCHING	12
3	TOTSCO HUB	13
3.1	INTERACTIONS BETWEEN GRCPs AND LRCPs VIA THE HUB WILL ALL BE ASYNCHRONOUS	13
3.2	HUB DATA FORMAT	13
3.3	USE OF RCPID TO ROUTE REQUESTS AND RESPONSES	13
3.4	HUB SUPPORTING SERVICES	14
3.5	SUPPORT FOR TESTING	14
4	PROCESS FLOW DIAGRAMS.....	15
5	MATCH REQUEST AND RESPONSE	16
5.1	SW1.1 CUSTOMER WANTS TO SWITCH.....	16
5.2	SW1.2 CUSTOMER CONTACTS GRCP VIA SALES CHANNEL	16
5.3	SW1.3 CUSTOMER PROVIDES DETAILS REQUIRED FOR INITIAL MATCH REQUEST	16
5.4	SW1.4 GAINING RETAIL PROVIDER TAKES DETAILS	16
5.4.1	<i>Identity of the losing retail provider</i>	17
5.4.2	<i>Location of services to be switched / ceased</i>	17
5.4.3	<i>Customer surname</i>	17
5.4.4	<i>Services to be switched or ceased or retained</i>	17
5.5	SW1.5 GAINING RETAIL PROVIDER SENDS MATCH REQUEST TO HUB	20
5.6	SW1.6 HUB LOGS MATCH REQUEST AND ROUTES TO LOSING RETAIL PROVIDER	20
5.7	SW1.7 LOSING RETAIL PROVIDER PROCESSES MATCH REQUEST	20
5.8	SW1.8 LOSING RETAIL PROVIDER REPLIES WITH FAILURE TO MATCH	20
5.9	SW1.9 HUB LOGS MATCH RESPONSE AND ROUTES TO GAINING RETAIL PROVIDER	21
5.10	SW1.10 GAINING RETAIL PROVIDER RECEIVES FAILED MATCH RESPONSE.....	21
5.11	SW1.11 LOSING RETAIL PROVIDER FINDS A MATCH.....	21
5.11.1	<i>List of impacted services</i>	21
5.11.2	<i>Method of communication to customer of the switching information from the LRCP</i>	22
5.12	SW1.12 SUPPLY CHAIN PROVISION OF INFORMATION TO SUPPORT LRCP	23
5.13	SW1.13 LOSING RETAIL PROVIDER SENDS SWITCHING INFORMATION TO THEIR CUSTOMER	23
5.14	SW1.14 HUB LOGS MATCH RESPONSE AND ROUTES TO GAINING RETAIL PROVIDER	23
5.15	SW1.15 GAINING RETAIL PROVIDER CONFIRMS SUCCESSFUL RESULT TO THE CUSTOMER	23
5.16	END OF OVERALL STEP 1	23
6	FURTHER DETAIL ON MATCH REQUEST AND RESPONSE	24
6.1	SELECTION OF LOSING RETAIL PROVIDER AND LRCP RCPID	24
6.1.1	<i>Consumer v Business</i>	24
6.2	LOCATION DETAILS	25
6.2.1	<i>Expectation of quality address data</i>	25
6.3	ADDITIONAL (OPTIONAL) INFORMATION IN MATCH REQUEST	25
6.3.1	<i>LRCP account number / reference</i>	26
6.4	PRINCIPLES OF MATCHING	26
6.4.1	<i>LRCP matching when neither account number nor telephone number is included</i>	26
6.4.2	<i>LRCP matching using LRCP account number</i>	27
6.4.3	<i>LRCP matching using telephone number</i>	27
6.5	INFORMATION IN MATCH REQUEST ON SERVICES TO BE SWITCHED AND CEASED.....	27
6.5.1	<i>Telephone number for NBICS</i>	28

6.6	GENERATION OF SWITCH ORDER REFERENCE (SOR) BY LOSING RETAIL PROVIDER	29
6.7	INFORMATION IN MATCH RESPONSE ON SERVICES TO BE CEASED, OR WHERE THE CUSTOMER HAS A CHOICE TO CEASE OR RETAIN	30
6.7.1	<i>LRCP knowledge of services from another provider</i>	<i>32</i>
6.8	IMPACTS ON SALES JOURNEY OF GRCP	32
6.8.1	<i>Customer wishes to switch both broadband and voice</i>	<i>32</i>
6.8.2	<i>Customer wishes to take broadband only with GRCP</i>	<i>32</i>
6.8.3	<i>Customer wishes to take voice only with GRCP</i>	<i>32</i>
6.8.4	<i>Match on LRCP account number and surname/voice number, but failure on address</i>	<i>33</i>
7	PROVISION OF SWITCHING INFORMATION TO THE CUSTOMER BY THE LOSING RETAIL PROVIDER	34
7.1	INFORMATION SHOULD BE DISPATCHED BY THE LOSING PROVIDER	34
7.2	UPDATE OF CONTACT DETAILS AND RE-SENDING OF SWITCHING INFORMATION	34
7.3	FREQUENCY OF SENDING SWITCHING INFORMATION	34
8	GAINING RETAIL PROVIDER SALES PROCESS AND ORDER CAPTURE	37
8.1	SW1.16 REST OF GAINING RETAIL PROVIDER SALES PROCESS	37
8.2	SW1.17 GAINING RETAIL PROVIDER CAPTURES EXPRESS CONSENT	37
8.3	SW1.18 CUSTOMER DOES NOT PROVIDE CONSENT – CANCEL ORDER	38
8.4	SW1.19 CUSTOMER PROVIDES CONSENT – GAINING RETAIL PROVIDER RECORDS CONSENT	38
8.5	SW1.20 GAINING RETAIL PROVIDER PLACES ORDER	38
9	ORDER PROCESSING	39
9.1	SW1.21 CUSTOMER RECEIVES ORDER CONFIRMATION FROM GRCP	39
9.2	CONTENT OF SWITCH ORDER	39
9.3	SW1.22 HUB LOGS SWITCH ORDER REQUEST AND ROUTES TO THE LOSING RETAIL PROVIDER	40
9.4	SW1.23 LOSING RETAIL PROVIDER RECEIVES SWITCH ORDER AND CONFIRMS ACCEPTANCE OR REJECTION	40
9.5	SW1.24 LOSING RETAIL PROVIDER SENDS NOTIFICATION TO CUSTOMER	40
9.6	LOSING RETAIL PROVIDER SHOULD NOT INITIATE CEASE ON A FIXED DATE	40
9.7	SW1.25 HUB LOGS RESPONSE TO SWITCH ORDER AND ROUTES TO GAINING RETAIL PROVIDER	41
9.8	SW1.26 GAINING RETAIL PROVIDER RECEIVES RESPONSE FROM THE LRCP	41
9.9	SW1.27 GRCP HANDLING OF REJECTED SWITCH ORDER	41
9.10	SW1.28 GAINING SUPPLY CHAIN RECEIVES ORDER FROM GRCP	41
9.11	SW1.29 GAINING SUPPLY CHAIN RAISES NUMBER PORT ORDER(S)	42
9.12	SW1.30 GAINING SUPPLY CHAIN PROGRESSES ORDER(S)	42
9.13	SW1.31 GAINING SUPPLY CHAIN COMPLETES ORDER(S)	42
9.14	SW1.32 GAINING SUPPLY CHAIN COMPLETES NUMBER PORT ORDER(S)	43
9.15	SW1.33 RECEIPT OF NOTIFICATIONS OF UNSOLICITED CEASE(S) BY LRCP	43
9.16	SW1.34 GAINING RETAIL PROVIDER RECEIVES ORDER(S) COMPLETION FROM SUPPLY CHAIN	43
9.17	SW1.35 CUSTOMER RECEIVES CONFIRMATION OF ORDER COMPLETION	43
9.18	SW1.36 HUB LOGS SWITCH ORDER TRIGGER MESSAGE AND ROUTES TO THE LOSING RETAIL PROVIDER	43
9.19	SW1.37 COMPLETION OF SWITCH ORDER BY LRCP	43
9.20	SW1.38 CEASE OF SERVICE(S) BY LOSING SUPPLY CHAIN	44
9.21	SW1.39 LOSING RETAIL PROVIDER NOTIFIES GRCP THAT SWITCH IS COMPLETE	44
9.22	SW1.40 HUB LOGS SWITCH ORDER COMPLETION AND ROUTES TO GAINING RETAIL PROVIDER	44
9.23	SW1.41 GAINING RETAIL PROVIDER RECEIVES NOTIFICATION THAT THE SWITCH IS COMPLETE	44
10	MANUAL RESOLUTION OF SWITCH MATCH FAILURE – BACK OFFICE	45
11	CANCEL OWN	45
11.1	SW3.1 CUSTOMER WISHES TO CANCEL THE SWITCH	46
11.2	SW3.2 GRCP CANCELS THE PROVISION / TRANSFER ORDER(S) AND SWITCH ORDER	46
11.3	SW3.3 GAINING SUPPLY CHAIN CANCELS PROVISION / TRANSFER ORDER(S)	46
11.4	SW3.4 GAINING SUPPLY CHAIN NOTIFIES LOSING RETAIL PROVIDER OF CANCELLATION OF UNSOLICITED CEASE	46
11.5	SW3.5 LRCP RECEIVES NOTIFICATION OF CANCELLATION OF UNSOLICITED CEASE(S)	46
11.6	SW3.6 GRCP CREATES A SWITCH ORDER CANCELLATION REQUEST	46
11.7	SW3.7 HUB LOGS SWITCH ORDER CANCELLATION MESSAGE AND ROUTES TO THE LOSING RETAIL PROVIDER	46
11.8	SW3.8 LRCP RECEIVES SWITCH ORDER CANCELLATION REQUEST	47
11.9	SW3.9 LOSING SUPPLY CHAIN CANCELS CEASE ORDER	47
11.10	SW3.10 LRCP RESPONDS TO SWITCH ORDER CANCELLATION	47
11.11	SW3.11 HUB LOGS RESPONSE TO SWITCH ORDER CANCELLATION AND ROUTE TO GAINING RETAIL PROVIDER	47
11.12	SW3.12 GRCP – NO ACTION	47
12	CANCEL OTHER – PROHIBITED FOR OTS SWITCH ORDERS	48

12.1	OFCOM GUIDANCE	48
12.2	RIPPLE EFFECT ON OPENREACH /KCOM TRANSFER ORDERS AND NUMBER PORT ORDERS	48
13	LRCP RE-SEND OF SWITCHING INFORMATION (CHANGE OF COMMS METHOD/DETAILS)	49
13.1	SW5.1 CUSTOMER – CHANGE TO CONTACT INFORMATION AND REQUEST RESEND OF SWITCHING IMPLICATIONS	49
13.2	SW5.2 LRCP – PROCESS REQUEST TO UPDATE COMMUNICATION METHOD AND RESEND IMPLICATIONS OF SWITCHING.....	49
14	INTERACTION WITH NUMBER PORT	50
14.1	PROPOSAL FOR NEW AUTOMATED “EXPRESS PORT” REQUEST TYPE – SPX.....	51
14.2	RIGHT TO PORT FOR ONE MONTH AFTER TERMINATION	52
14.3	HOME MOVE WITH NUMBER IMPORT	52
14.4	OUT OF AREA GEOGRAPHIC NUMBERS	53
14.5	SUMMARY OF IMPACTS ON RCPs FROM THE COMBINATION OF OTS AND NUMBER PORTING	53
15	SWITCH FROM MULTIPLE LRCPS TO ONE GRCP	55
15.1	CUSTOMER WISHES TO SWITCH BOTH VOICE AND BROADBAND	55
15.2	CUSTOMER WISHES TO SWITCH BROADBAND AND CEASE VOICE.....	56
15.3	CUSTOMER WISHES TO SWITCH BROADBAND AND RETAIN VOICE	56
15.4	CUSTOMER WISHES TO SWITCH VOICE AND CEASE BROADBAND.....	56
15.5	CUSTOMER WISHES TO SWITCH VOICE AND RETAIN BROADBAND	56
16	UNHAPPY PATHS / FAILURE SCENARIOS	57
17	SECTION INTENTIONALLY LEFT BLANK	58
18	SECTION INTENTIONALLY LEFT BLANK	59
19	APPENDIX 1: SLAS AND RESPONSE TIMES	60
19.1	HUB HOURS OF OPERATION	60
19.2	SLAs AND RESPONSE TIMES	60
20	APPENDIX 2: DEFINITION OF COMMUNICATIONS PROVIDER.....	62
20.1	COMMUNICATIONS PROVIDERS IN THE CONTEXT OF THE ONE TOUCH SWITCH PROCESS	63
21	APPENDIX 3: ADDRESS QUALITY AND UNIQUE PROPERTY REFERENCE NUMBER (UPRN).....	64
21.1	UPRNs ARE AVAILABLE FOR ALL OF UK, INCLUDING NORTHERN IRELAND.....	64
21.2	STRUCTURE OF A UK ADDRESS.....	65
21.3	DO ALL ADDRESSES HAVE UPRNs?	65
21.4	LRCP MATCHING OF ADDRESS.....	66
21.5	BT’S CP TEST FACILITY	67
22	APPENDIX 4: ASYNCHRONOUS COMMUNICATIONS PROCESSES VIA THE HUB	68
23	APPENDIX 5: HUB DATA FORMAT (JSON V XML)	70
24	APPENDIX 6: OBLIGATIONS ON LOSING RETAIL PROVIDER AROUND DELIVERY OF SWITCH INFORMATION.....	71
25	APPENDIX 7: OBLIGATION ON LOSING RETAIL PROVIDERS AROUND “NOTIFICATIONS”	72
26	APPENDIX 8: MIGRATION ON A WORKING DAY	75
26.1	HOURS OF OPERATION FOR TOTSCO HUB.....	76
27	APPENDIX 9: IMPACTS ON WHOLESALERS IN THE SUPPLY CHAIN.....	77
28	APPENDIX 10: SPECIFIC DETAILS FOR OPENREACH	78
28.1	OPENREACH ACCESS SERVICE IDENTIFIERS	78
28.2	OPENREACH INFORMATION TO BE INCLUDED BY THE LRCP IN THE MATCH RESPONSE	79
28.3	UNDERSTANDING BY LRCP OF OPENREACH PRODUCTS	79
28.4	PROCESS TO BE FOLLOWED BY GRCP.....	80
28.5	UNDERSTANDING BY GRCP OF OPENREACH PRODUCTS	80
28.6	SWITCHES AND TRANSFERS WITH A PENDING CEASE	80
28.7	CHANGE IN TIMING OF MANAGED CEASE NOTIFICATIONS TRIGGERED BY EXPRESS PORTING (SPX) NUMBER PORT	81

1 Introduction

In February 2021, the Office of Communications (**Ofcom**) consulted on “*proposals for a new switching process for residential landline and broadband customers*”.¹ In September 2021, Ofcom published their “*final decisions on these changes, including [their] requirement for a new ‘One Touch Switch’ process where landline and broadband customers will only need to contact their new provider to switch*”.²

Ofcom asked the Office of the Telecommunications Adjudicator (**OTA2**) to kick start appropriate industry discussions. OTA2 convened cross-industry sessions which led to the formation of a One Touch Switch Steering Group (**OTS-SG**) and a Process Design Drafting Group (**OTS-DDG**). Version 4.2 of this document is part of the output of various industry representatives and the OTS-DDG.

A separate process documenting switching for business customers will be published by the Gaining Provider Led Business Steering Group(**GPLB-SG**).

1.1 Ofcom consultation and statement documents

Ofcom published a number of consultations and statements:

- Ofcom’s updates to the General Conditions of Entitlement (as part of implementation of the European Electronic Communications Code (**EECC**)) began with a consultation on 17 December 2019, a further statement and consultation on 27 October 2020 and final statement on 17 December 2020.
<https://www.ofcom.org.uk/consultations-and-statements/category-1/proposals-to-implement-new-eecc>
- On 3 February 2021, Ofcom published a consultation on switching, with a further consultation and statement on 28 September 2021 and final statement on 3 February 2022.
<https://www.ofcom.org.uk/consultations-and-statements/category-2/simpler-broadband-switching>
- This document makes references to the following Ofcom documents:
 - February 2021 Consultation¹
 - September 2021 Consultation and Statement²
 - February 2022 Statement³
 - Revised General Conditions 3 April 2023 (final version published alongside February 2022 Statement)⁴

1.2 Version 4.2

This is version 4.2 of the One Touch Switch Industry Process and includes changes based upon Industry feedback and consequential design development or clarifications. It was created by various industry representatives, the OTS-DDG (One Touch Switch – Design Drafting Group) and OTA2 under the governance of TOTSCo (The One Touch Switching Company)

¹ Ofcom, February 2021. [Quick, easy and reliable switching: Proposals for a new landline and broadband switching process and to improve information for mobile switching](#) (February 2021 Consultation)

² Ofcom, September 2021. [Quick, easy and reliable switching: Statement and consultation on a new landline and broadband switching process and improved information for mobile switching](#) (September 2021 Statement and Consultation)

³ Ofcom, February 2022. [Quick, easy and reliable switching: Statement on changes to the General Conditions](#)

⁴ Ofcom, [General Conditions of Entitlement \(Unofficial Consolidated Version\)](#) with effect from: 3 April 2023 (General Conditions April 2023)

1.3 Material changes from v4.1 to v4.2

This section refers only to material changes between this version of the document and the previous version. For a full history of the changes to the document, please refer to previous versions and to the Change Log below.

The majority of changes between this version of the document and the previous version are not material and constitute corrections and clarifications, but please see the below material changes.

1.3.1 Switching Implications SLA

In January 2023, TOTSCo performed a consultation with industry to form a service level agreement (SLA) in relation to the dispatch of switching implications to customers via e-mail, SMS and postal service. The results of the consultation were published by TOTSCo on 6th March 2023 and the revised SLA has been added to Appendix 1 of this document

1.3.2 Openreach Specific Processes

Feedback was provided on the last version of this document to suggest that details relating to Openreach Specific Processes were inaccurate. Corrections and clarifications to these processes have been made throughout this version of the document, specifically in Appendix 10: Specific Details for Openreach

1.4 Change Log

Version Date Changed By	Reason for change
Initial working drafts January 2022 OTS-DDG	Initial series of working draft only circulated within the OTS-DDG.
v1.0 First draft 24/01/2022 OTS-DDG	First draft output from the OTS-DDG (design drafting group) established by OTA2 and OTA2-SG (steering group). This draft will be circulated by OTA2 to their wide distribution list of industry reps.
v1.x working drafts February 2022 OTS-DDG	Various working drafts circulated within the OTS-DDG and shared with respondent to v1.0 to gain their agreement on corrections / improvements to workings and explanations.
v2.0 Second draft 23/02/2022 OTS-DDG	Second draft output from the OTS-DDG. This draft incorporates all the feedback on v1.0, plus addition of proposals for small retailers.
v2.x working drafts March - June 2022 OTS-DDG	Various working drafts circulated within the OTS-DDG and shared with relevant stakeholders to gain their agreement on corrections / improvements to workings and explanations.
v3.0 Third Draft 25/06/2022 OTS-DDG	<ul style="list-style-type: none"> • Emphasis on capture of customer intent around which services to cease and which to retain with the LRCP. (New §2.4, impacts to §5.4.4, §6.5, §6.5.1, §6.7, new §6.8.) • Use of new RCPID in place of RID (§3.3 and throughout the document). • Addition of type of match request, to enable support for both consumer OTS and possible use for simple business GPL switching (§5.4). • Addition of another switch in progress as a valid reason to reject a match request or switch order (§5.8). • Removal of proposals for the match response to include any information on ETCs or impacts on other services (§5.11 and deletion of some sub-section of §6). • Addition of masked emailed address and masked SMS number to support the method of sending switching impacts (§5.11.2). • Addition that LRCP should advise when switching information is expected to be sent, or was last sent (where rate limiting kicks in) (§5.11.2). • Explanation of matching process to be used when LRCP account number is supplied (§6.4.2).

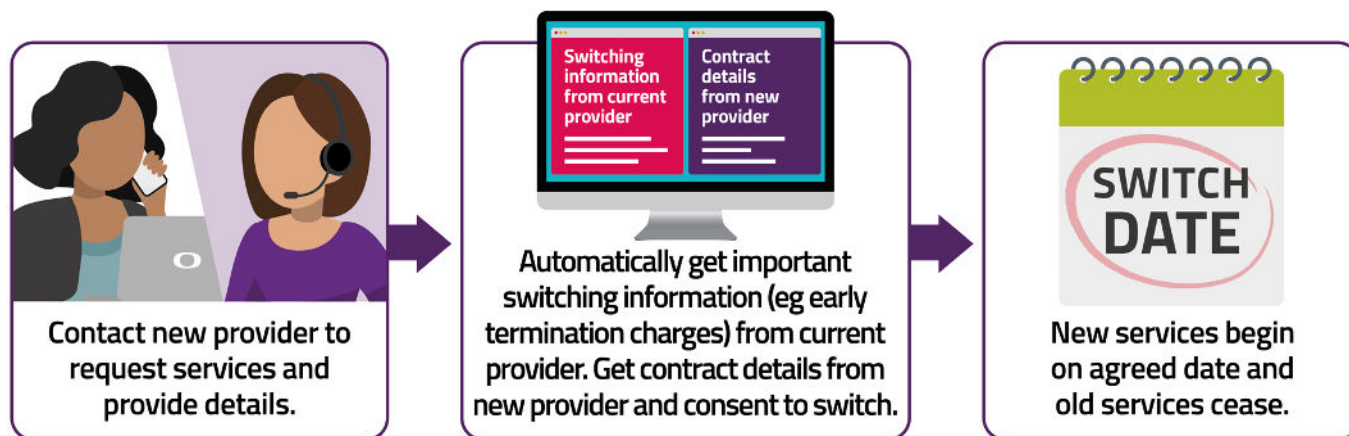
	<ul style="list-style-type: none"> • Removal of return of LRCP service identifier in the match response and use in the switch order (§6.7). • Addition of further detail on rate limiting (§7.3). • Addition of detail of the content of a switch order, including indication of intra/inter network switch and number porting (§9.2). • Reinforcement that LRCP should not treat the switch order as having a fixed cessation date (new §9.6). • Reinforcement that the back office processes are for exceptional cases expected to be low volume (§10). • Cancel Other is prohibited for switch orders (§12). • Addition of detail on interaction with number porting (§6.5.1 (return of CUPID) and §14. The final decisions on number porting remain outstanding. • OTS matching will not be used in support of right to port for one month (§14.2). • Addition of detail on switching from multiple LRCPs (§15). • Addition of appendix with Openreach specific details (§28).
v3.x working drafts. July 2022 OTS-DDG	Various working drafts circulated within the OTS-DDG and shared with relevant stakeholders to gain their agreement on corrections / improvements to workings and explanations.
v4.0 Fourth Draft 10/08/2022 OTS-DDG	<ul style="list-style-type: none"> • Changes to switching of a single service, so that LRCP returns information on any extra services found, and what options are available for the customer (impacts on §5.4.4, §5.11.1, §6.5.1, §6.6, §6.7, §6.8, §8.2, §9.2, §9.5). • Avoiding use of back-office channels by return of full address when there is a strong match (impacts on §5.8, §5.10, new §6.8.4). • Added examples of replacement of accented characters in surname (§5.4.3, footnote 10). • Added examples of masking of mobile number in international format, plus made the additional information mandatory (§5.11.2). • Additional information on addresses (move of detail from §6.2.1 and §6.4 to Appendix 3). • Added new §6.4 on principles of matching, with details of each combination of input data. • Updated §6.6 to explain the reasoning for an SOR expiring after 31 days. • Updated §14 to reflect the decision in number porting forums for SPX to be a 1-stage process. • Changed Appendix 1 to cover suggested SLAs and response times. • Extended Appendix 3 to include detail on structure of a UK address, to include address example that had been elsewhere in the document, and to include detail on exact and close matches of address. • Removed mention of Cancel Other in Appendix 9 (missed in v3.0). • Added §28.6 with detail on intra-Openreach transfer with a pending cease and §28.7 highlighting the impact of SPX number porting on the timing of managed cease notifications.
V4.1 Draft 30/09/2022 OTA2 & OTS-DDG	<ul style="list-style-type: none"> • Rebranded to TOTSCo branding • Error corrections made: <ul style="list-style-type: none"> ○ Changed references to “OTA” to be “OTA2” ○ Changed references to “All IP” to be “All-IP” ○ Corrected typos in §5.4.4 and §6.8.3 to refer correctly to voice. • Anonymised customer Data in “Appendix 3: Address Quality & Unique Property Reference” • Removed “Confidential” status. • Standardized use of the term ‘Hub’ • §5.4.3: LRCP is now responsible for all surname conversion logic.
V4.2 Draft 31/03/2023 Various Industry Representatives, OTA2 & OTS-DDG	<ul style="list-style-type: none"> • Footnote corrected at 5.4.3 to remove requirement for TOTSCo or Hub Service Provider to produce full documentation for the mapping of special characters • Access Network Provider ID definition and details added at §6.7 • Information included Switch Order Request corrected at §9.2 • Appendix 1 updated with SLA details including the outcome of the Switching Implications SLA consultation by TOTSCo in January 2023 • Removal of Match Type as a field in messages • Removal of references to switching of business customers

	<ul style="list-style-type: none">• Removal of redacted text in v4.1• General wording corrections and clarifications made throughout the document, particularly around timings at §9 Order Processing and around Openreach Specific Processes in Appendix 10
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2 Overview of One Touch Switch process

This section provides an overview of the “One Touch Switch” (OTS) process, especially for those who may not have read Ofcom’s Consultation and Statement documents, or their General Conditions. (Readers are very strongly encouraged to also read those documents.)

The following figure (taken from Ofcom’s September 2021 Statement) gives an overview of the One Touch Switch process:



The following steps were documented in Ofcom’s September 2021 Statement (but step 2 has been updated to refer to Ofcom’s changes around the contact method and details used by the losing provider, and we’ve clarified a few points):

Step	Description
Step 1: Customer contacts the gaining provider and provides details	<ul style="list-style-type: none"> The customer contacts their chosen gaining provider (in store, online or by phone) and requests to switch their services. The customer shares their: <ul style="list-style-type: none"> name; address and postcode; contact details; losing provider’s name; and the services they want to switch. The customer chooses the new services, confirms if they want to keep their phone number and agrees a switch date (this can be as soon as the next day, but can take longer). The gaining provider confirms whether any engineer visits are necessary. The gaining provider identifies the correct customer and services to switch. If this is unsuccessful (i.e. there is no match against the losing provider’s records), the gaining provider asks the customer for more details (e.g. losing provider account number, phone number or serial number on their equipment).
Step 2: Losing provider automatically gives customer switching information and customer gives the gaining provider their consent to the switch	<ul style="list-style-type: none"> The losing provider automatically gives the customer switching information (e.g. early termination charges, impact on other services) without the need for the customer to request it. The information is provided by the quickest communication method available (unless the customer has requested otherwise) and the losing provider will notify the gaining provider of the method by which the switching information has been sent, so they can tell the customer. The gaining provider gives the customer information about their new contract. After having the opportunity to consider the information, if the customer is happy to proceed, they give the gaining provider their consent to switch (who retains a record of consent). This can happen in real time during their phone or online conversation. The gaining provider confirms the start date and the services being provided.
Step 3: Customer’s new services begin on agreed date	<ul style="list-style-type: none"> On the agreed date the new services will start and the old services will end. If requested, the customer’s phone number is transferred. The customer does not have to pay any notice period charges beyond the switch date. Note that early termination charges may apply.

Subsequent sections of this document will describe the One Touch Switch process in greater detail.

2.1 Communications Providers impacted by One Touch Switch

Throughout their September 2021 Statement, Ofcom uses the terms “losing provider” and “gaining provider” (and only uses the term “retailer” in reference to switching by energy customers).

In the “Revised General Conditions 3 April 2023”⁴, Ofcom provides the following definitions:

‘**Losing Provider**’ means the **Communications Provider** from whom a **Switching Customer** is or is considering transferring;

‘**Gaining Provider**’ means:

- (a) the **Communications Provider** to whom a **Switching Customer** is or is considering transferring; or
- (b) the **Communications Provider** to whom an **Inbound Switching Customer** makes a **Home-Move Request**;

‘**Communications Provider**’ means a person who (within the meaning of section 32(4) of the **Act**) provides an **Electronic Communications Network** or an **Electronic Communications Service**;

Ofcom’s definition of a CP therefore covers every organisation from access or infrastructure providers at one extreme to the smallest retailer at the opposite extreme. Given the target audience, this Industry Process uses the following terminology:

- “Retail Communications Provider” (**RCP, LRCP, GRCP**). Retail providers sell directly to end customers. We sometime refer to this provider as “the name on the bill”.
- “Communications Network Provider” (**CNP**) - (See Appendix 2 for an example of where Ofcom use this terminology and abbreviations.) The term “network” covers both physical copper / fibre, and any form of communications network. For the purposes of OTS, it is more useful to distinguish:
 - “Access Communications Provider” (**ACP, LACP, GACP**). – may also be known as the “infrastructure provider”. This is the most upstream CP that owns the “kit in the ground”, e.g. Openreach, Virgin, full-fibre alt-net.
 - “Voice Communications Provider” (**VCP, LVCP, GVCP**). Voice providers (or voice operators) operate voice services, and typically hold (one or more) CUPIDs used in number porting. E.g. Sky and TalkTalk rent LLU (MPF – metallic path facility) lines from Openreach, but operate their own voice services over these lines.
- Some wholesalers also operate communications networks (e.g. BT Wholesale), and others may act as an interface between multiple retailers and multiple network / access / voice providers, but not operate any network of their own.
 - Note that some wholesalers handle switches within their own domains, e.g. between two of their RCPs. Such wholesalers are impacted by OTS in a similar way to access providers.
- Some CPs are often described as “vertically integrated”, and may operate as all the types of CP listed above. In reading this industry process, such CPs may need to consider their responsibilities as e.g. a retail CP or an access CP.
 - Note that some vertically integrated CPs (e.g. Virgin) in reality have internal divisions and systems that separate network/voice and retail operations.
- Third Party Integrators (TPIs) were originally established to support small retailers interacting with Openreach. It is not clear if Ofcom would consider a TPI as a CP, but some TPIs may choose to offer services in support of OTS.

The One Touch Switch rules and process apply primarily to retail providers, although there are ripple effects on network / access providers, voice operators and wholesalers.

2.1.1 Terminology: “Order”

In the review comments on draft version 1.0 of this document, there was some confusion around the use of “order” which it might be useful to address. Many CPs have the concept of an order, but the content of that order differs depending on the role of the CP:

- The retail CP will have a “sales order” or a “customer order”, typically held in their CRM system. They may create this order before the customer provides express consent to proceed with a switch, e.g. it may sit in a “Pending” state until the customer gives their consent.
- Network / access CPs also typically refer to orders. E.g. for a simultaneous provide of WLR and broadband, Openreach will have two linked orders. It is not expected that GRCPs will raise orders into their supply chain / ACP until the customer has given their express consent to the switch.
- The Number Port Provisioning Core Processes refers to number port request as “orders”. Again these orders will only be raised after customer gives consent.
 - Note that some RCPs use a supply chain which isolates them from the true geo number porting order. E.g. Openreach support number port requests as part of a WLR order, and Openreach generate the geo number porting order behind the scenes.

- Once the customer gives consent to a switch, there will be a “switch order” from the GRCP (via the Hub) to the LRCP.
 - Openreach referred to their orders under the former NOT+ process as “transfer orders”. This document retains that use of “transfer order” when talking about ACP orders to support a customer switch, and uses “switch order” for the retailer → retailer order that goes via the Hub.

2.1.2 Terminology: Retailer v Reseller

In the cross-industry discussions, we have noticed that the term “reseller” is used in different ways:

- Some people use it a synonym for retailer – i.e. an organisation who buys services from upstream CPs and resells them to end customers.
- Some people use it for an organisation who buys services and resells them to retailers (i.e. not end customers).

We have chosen to use the terms “retailer” and “retail CP” to refer to CPs who sell services directly to end customers, and whose name appears on the bills received by those end customers – we believe that this removes ambiguity and aids mutual understanding. We avoid using the term “reseller” in this document.

2.2 Positioning of One Touch Switch relative to other GRCP processes

In capturing a switch request from a customer, a gaining retail provider is also capturing a provision order from the customer.

It is important to note that other provisions of EECC and resultant Ofcom General Conditions also apply to this provision order. These include (but are not limited to):

- Condition B3 (Obligation to enable number portability) – where the switch involves number porting.
- Condition C1 (Contract requirements), including Contract Information and Contract Summary.
- Condition C5 (Measures to meet the needs of vulnerable consumers and end-users with disabilities).

A customer approaching a potential gaining retail provider, particularly via an on-line channel, may pass through several steps such as providing their address, retrieving service availability at that location (e.g. is full-fibre available?), presentation and choice of options/packages/offers, and choice of whether they want optional services (such as a VoIP service). Many of these steps may happen before the customer is given the opportunity to assert that they are a switching customer.

The set and sequence of steps may vary from one provider to another, and from one sales channel to another of the same provider.

It is strongly recommended that GRCPs do not start the OTS matching process until they have a level of confidence that the customer intends to take the GRCP services. See §5.2 below for more explanation of this point.

This document and the accompanying process flow diagrams concentrate on the steps and interactions that are specific to switching, and should be read in that context. They do not attempt to identify all the steps that the gaining retail provider may take, nor do they fully specify the steps necessary for compliance with Condition C1 – providers are advised to make themselves familiar with the full set of General Conditions published by Ofcom.

2.3 Concept of “Switching Information”

In their September 2021 Statement, Ofcom stated that a customer must give express consent to a switch, meaning the express agreement of the customer obtained in such a manner which has enabled the customer to make an informed choice

They reiterated that the decision on the part of a customer to switch services involves both:

- a decision to accept a contract for new services with a gaining provider; and
- a decision to cancel a contract for services with the losing provider.

It follows that in order for a customer to make an informed choice about whether to switch their services, and therefore to be in a position to give their express consent to a switch, the customer needs to have been given information about both:

- the new services they are taking with the gaining provider; and
- the consequences of their decision to cancel their services with the losing provider.

Footnote 42 of the Statement states that the switching information rules are set out in GCs C7.10-13 – these rules cover Regulated Providers, both in the gaining and losing position.

So in most general terms, “switching information” covers information provided by both providers. When we talk about losing providers sending switching information, they can only provide the information known to them, e.g. early termination charges and impacts on other services provided by that provider.

2.4 Customer intent during switching

The One Touch Switch rules in the revised General Conditions apply only to Internet Access Service (IAS) and Number-based Interpersonal Communications Service (NBICS) (more commonly referred to as “broadband” and “voice”).

Customer switching to broadband only service

Consider a customer with existing voice and broadband interacting with a potential gaining provider where the sales journey is leading to a broadband only sale (e.g. gaining provider only sells data services and does not provide voice). Some have argued that the customer is only switching broadband, and the losing provider may continue to bill the customer for voice.

The intent of the customer could be any of the following three outcomes:

1. They may wish to also switch voice (and likely retain their existing number).
2. They may wish to cease their voice service (“I haven’t used my landline for some time”) and wish to have no further commercial relationship with their former provider (unless they have TV or other services that are not covered by EECC/OTS).
3. They may wish to retain voice service with their current provider (though the losing provider might not support their request, for technical or commercial reasons).

This Industry Process takes the position that a gaining provider led (GPL) process, compliant with the spirit of EECC and Ofcom’s consultations and General Conditions, **must** be capable of supporting all of these customer intents (even if to inform them that it is not feasible).

This seems a reasonable position to take after re-reading the Ofcom wording quoted in the previous sub-section §2.3 above. E.g. a possible consequence of switching only broadband and leaving voice with the former provider is a change in price for that voice service – if the OTS GPL process did not support the customer being given that information, it is difficult to think that Ofcom would deem it compliant with their position around express consent (which they have re-iterated multiple times to industry).

However this Industry Process does not mandate that every RCP has to support every one of the three outcomes listed above. E.g.:

- A GRCP can choose to only sell broadband. However they must make clear to the customer that they do not sell voice, and explain any impacts on voice service, e.g. whether the LRCP says it will be lost or says it can be retained, and draw the customer’s attention to read the switching information sent by the LRCP.
- An LRCP is not obliged to retain voice service, but they must inform the customer (via the switching information) of what will happen to their voice service.

Customer switching only voice

Now consider a customer with existing voice and broadband who is asking to switch only voice.

If the customer is switching and porting their number to a specialist voice provider (e.g. Vonage), it is more likely that they wish to retain their existing broadband.

Again, this Industry Process does not mandate that every RCP has to support every possible intent of the customer. E.g.:

- If the number to be ported is currently in use for WLR or MPF, any ADSL or FTTC broadband will be ceased (unless it is regraded to SOGEA).
- Even if the number to be ported is currently in use for a VoIP service, the LRCP might not offer broadband only service.

3 TOTSCo Hub

Ofcom have determined that the One Touch Switch process will “apply to residential customers who are switching Fixed Communications Services at the same location”.

It is estimated that there may be 2,000 Communications Providers (CPs) in the UK. Even considering only those retail CPs who service residential customers, there are still too many for “point to point” communication. So, One Touch Switch will use a “hub and spoke” arrangement, where all CPs interact via a Hub.

The cross-industry discussions initiated under the auspices of OTA2 have led to the establishment of The One Touch Switching Company (TOTSCo), which will arrange provision and operation of the Hub, which will be known as the “TOTSCo Hub”⁵.

This document mostly uses the term “Hub” – for the avoidance of doubt “Hub” or “Industry Hub” refers to what is formally termed as the “**TOTSCo Hub**”, and “Hub Service Provider” is the term used to identify TOTSCo or TOTSCo’s authorised agent.

For the purposes of One Touch Switch, the Hub (or the Hub Service Provider) will provide the following facilities:

- Mechanisms for “on boarding” of new RCPs, and for existing RCPs to update information such as their brand name(s) and endpoint(s).
- Publication of a centralised list of RCPIDs and RCP brand names (“name on the bill”).
- Support for match requests and responses.
- Support for switch order requests and responses.
- Support for switch order updates and cancellations.
- Support for auditing of switching transactions, and for MIS, primarily to support any Ofcom investigations, but also for use by CPs connected to the Hub.
- Support for testing, including simulation of a test RCP that RCPs can interact with to verify their processes and implementation.

3.1 Interactions between GRCPs and LRCPs via the Hub will all be asynchronous

See Appendix 4 for a full explanation as to why all the communication processes via the Hub will be asynchronous.

3.2 Hub data format

See Appendix 5 for a full explanation of why JSON has been specified as the messaging format for all transactions passing through the Hub.

Note that the Hub will act primarily as a “post office”, routing messages from one part to another, but doing no processing on those messages, other than storing them for audit and MIS purposes.

3.3 Use of RCPID to route requests and responses

There is an existing concept of a “reseller identification” code, usually abbreviated to RID. RIDs are managed by Ofcom and published in the numbering section of their website.⁶ (§6.1 goes into more detail on use of RIDs, including by those CPs who hold multiples RIDs.) The original proposal was that RID would re-used as an identifier for RCPs communicating via the Hub. However, this proposal has led to several concerns, including:

- Some RCPs have several RIDs and some don’t currently have a RID.
- RID was originally intended to identify resellers of BT Wholesale services, but has been used (and maybe mis-used) in other contexts with little control.
- Ofcom have shown no interest in helping to tidy up existing RIDs, or even to update their definition as the master source of RIDs.

To address these concerns, we have decided to have a new identifier, known as RCPID. The processes for application, modification, and cessations of RCPIDs will be resourced by the Hub Service Provider (including the initial peak workload when

⁵ The term “TOTSCo Hub” is intended to distinguish this Hub from any other “hubs” (e.g. the Syniverse platform used to store PAC and STAC codes for mobile switching might also be classified as a hub, but it separate from the TOTSCo Hub).

⁶ <https://www.ofcom.org.uk/phones-telecoms-and-internet/information-for-industry/numbering>

every RCP is applying for a new RCPID inside a short period of time⁷). RCPs will **require** an RCPID to take part in the One Touch Switch process.

All messages sent via the Hub will require both:

1. RCPID of the sender – the Hub will validate that the message is originating from a source point that is authorised to use that RCPID.
2. RCPID of the target – the Hub will look up the end point to deliver the message to.

Any updates to end points would be via processes exposed by the Hub Service Provider – the sending RCP sends to the Hub, and does not need to know the end point that the Hub will route to for the target RCP.

Note that a response message will use the sender of the original request as the target of the response message.

3.4 Hub supporting services

In addition to inter provider asynchronous communications, the Hub will also provide a number of synchronous convenience services.

The first such service will provide the ability to request (via an API exposed by the Hub) a current list of the RCPIDs supported for switching with a view that GRCPs will regularly (e.g., daily) refresh the list they present in their sales channels when selecting the LRCP.

3.5 Support for testing

The Hub Service Provider will be required to support cross-industry testing.

Testing requirements will be documented separately and a guide will be made available at a later date.

⁷ Even if we had re-used RID, the Hub Service Provider would have had to resource the on-boarding of every RCP, including configuration of endpoints. Removing the need to validate an RCP's assertion that they own a RID, and instead simply allocate a new RCPID, might reduce the workload during this intensive phase. It is also feasible to include resourcing this workload into the contract for the Hub Service Provider.

4 Process flow diagrams

This version of this document is accompanied by a separate set of process flow diagrams, with swim-lanes for customer, GRCP, Hub, LRCP and supply chain.

Each step in the process flows is numbered, as follows:

- “SW” prefix (short for “switching”)
- Process flow number
- Step number

E.g. “SW1.2” is the 2nd step of process flow 1 (the main switching process). These step numbers are used for cross-reference with this document.

The process flows are prepared in Visio and are available as a PDF from the Resources section of the TOTSCo website.

5 Match request and response

Step 1 of the overall One Touch Switch process (see §2 above) is when the customer contacts the gaining retail provider and provides details which can be used by the gaining retail provider to consult the losing retail provider⁸ (via the Hub).

Throughout this document we refer to the interactions between the GRCP and LRCP at this overall step as the “match request” and “match response”.

This section takes the reader through the steps in sequence, to establish an understanding of the main process flow. §6 below provides greater detail on different variants, but needs the reader to first understand the basic flow in this section.

5.1 SW1.1 Customer wants to switch

This step represents the state of mind of the customer. It may be prompted by receipt of an End-of-contract Notification from their current provider, or by changes in contractual terms or pricing, but customers are in control of the timing. At this stage, the customer may only be considering switching, and may approach several potential gaining retail providers to compare their offers. The consideration to switch may also be promoted by outbound marketing by retail providers who are trying to gain customers.

5.2 SW1.2 Customer contacts GRCP via sales channel

As a reminder of §2.2 above, capturing the information needed for a match request should not be the first step for a gaining retail provider. At this step in the customer journey, the gaining retail provider should ascertain service availability at the customer’s address and pitch offers to the customer, possibly to the extent of deciding on broadband only (no voice) or switching of voice with retention of existing number.

Retail CPs are encouraged to create sales processes that allow customers to explore the available options when considering switching, and only start the matching process when there is some indication that the customer wants to explore the full impacts of switching. This will minimise the load placed on losing retail providers, and reduce worries about receipt of repeated switching information from their current provider being regarded by customers as a nuisance.⁹

See also §7.3 for a discussion around the frequency of sending switching information, and Appendix 7 for further detail.

5.3 SW1.3 Customer provides details required for initial match request

A customer considering switching (beyond a high level exploration of service availability and offers) will need to provide details for the GRCP to attempt a match with the LRCP.

5.4 SW1.4 Gaining retail provider takes details

Condition C7.10 requires that “Regulated Providers must [...] provide guidance on the Communications Provider Migration process, including the right to compensation in accordance with Condition C7.47...” Retail providers will thus need to provide customers with some guidance on the switching process at this point (if not already provided).

If the customer advises that they wish to switch services from another provider, the gaining retail provider will need to follow a matching process via the Hub with the losing retail provider. There are several key pieces of information needed to attempt an initial match:

- Identity of the losing retail provider.
- Location of services to be switched (i.e. address).
- Surname of customer.
- Services to be switched / ceased (including any telephone number that the customer wishes to retain).

⁸ This document uses the term “losing retail provider” to refer to the RCP who would be the LRCP if a switch order were to be placed, and only uses the term “current retail provider” where it makes linguistic sense (e.g. the phrase “the customer will not know the RCPID of their current retail provider” reads more easily than “... the RCPID of their losing retail provider”).

⁹ E.g. a customer may use the public websites of a number of retail CPs to check service availability at their address, and to explore and compare the available offers. The customer is unlikely to welcome multiple provisions of switching information by their current retail provider, especially if there is no or little difference.

There is other optional information that can be provided. If the initial attempt to match fails, the GRCP can ask the customer to provide e.g. their account number with the losing retail provider. This extra information cannot be mandatory for an initial attempt at matching, though a customer may choose to proactively provide extra information. §6 below documents the other optional information that can be provided.

At this point the GRCP is also gaining the customer's consent to interact with the LRCP (via the Hub) to attempt a match and trigger dispatch of switching information by the LRCP.

5.4.1 Identity of the losing retail provider

This is a key piece of information to attempt a match – without this, the Hub would not know where to route the match request.

See §6.1 below for more detail on RCPID selection – this section continues to give an overview of the matching process for readers that are new to One Touch Switch concepts.

5.4.2 Location of services to be switched / ceased

This is another key piece of information to attempt a match – losing retail providers are likely to use location as the primary search within their asset data.

Matching will be based on the GRCP providing the customer address, preferably including a matching UPRN – see Appendix 3 for some background to and discussion of addresses and UPRN. Note that the request message will include **all of the elements** of the address (not just the UPRN) – this is to assist in creating an audit trail that can be more easily read by humans.

Many provider journeys will already have ascertained the service availability, and by implication will have captured the customer's address, including the GRCP's matched UPRN.

5.4.3 Customer surname

For clarity, provision of customer surname only applies to switching by Consumers.

The choice of customer surname only was based on a number of factors:

- Ofcom wanted a switching process that was quick, easy and reliable.
- Some losing retail providers might only record initials and not full first name / given name, e.g. customers who had been with BT for many years.

The GRCP will send the surname as captured from the customer. The LRCP will apply the following conversions to the supplied surname and their own record of the surname when deciding if the surname is a match:

- Any accented characters will be replaced by the equivalent non-accented character.¹⁰
- All characters will be converted to upper case.
- Any characters outside of A-Z will be removed.

Note that a customer should be permitted to provide a different surname to the one used for credit checking or establishment of potential contract with GRCP:

- The LRCP might have an incorrect spelling, or a different format of name.
- The LRCP might hold a former name, e.g. a name before marriage or civil partnership or deed poll.

5.4.4 Services to be switched or ceased or retained

The Ofcom documents (and the original industry submissions) mostly refer to the “services to be switched”. However, this Industry Process more accurately acknowledges that voice might be ceased instead of being switched, as introduced in §2.4 above and expanded in the following explanation.

¹⁰ Examples include é and è are replaced by e, ç is replaced by c, ü is replaced by u, ß is replaced by ss.

The One Touch Switch rules in the revised General Conditions apply only to Internet Access Service (IAS) and Number-based Interpersonal Communications Service (NBICS) (more commonly referred to as “broadband”¹¹ and “voice”).

In many networks, the broadband and voice are technically linked, e.g.:

- In the Openreach network, ADSL and FTTC broadband require an underlying WLR or MPF service (although SOGEA and FTTP do not).
- Consumer VoIP services (e.g. BT’s Digital Voice) are commonly dependent on the underlying broadband service.

Even where not technically linked, they are often strongly linked by contracts and bundles.

Today, most customers who have broadband also have a voice service, due to the historical technical need to have WLR/MPF or equivalents in other networks. Many customers no longer use their “landline”, relying entirely on mobile and services such as WhatsApp, FaceTime or Facebook Messenger for voice connectivity.

Customer switching to broadband only service

Increasingly, many providers are offering “broadband only” services, e.g. using Openreach’s SOGEA or full-fibre services, and do not force the customer to take a VoIP service that they will not use.

Taking all of the above into account, a customer switching from voice and broadband with an LRCP to broadband only with a GRCP may want one of three things:

1. They really wish to also switch their voice service (most likely retaining their existing number¹²), but the sales process has not properly captured their requirement (e.g. the customer has not realised that the proposed GRCP offers only data services, and is assuming they also offer voice service).
 - a. Condition C5 covers measures to meet the needs of vulnerable customer – a GRCP who did not check if a customer was dependent on any existing voice service (e.g. access to 999, or a healthcare pendant) is likely to be in breach of this condition.
2. We believe that the majority of customers requesting broadband only will want to end up with **only** broadband, and thus want their former “landline” service to be ceased – and they will expect a gaining provider led process to trigger the cease.
3. A very small numbers of customers will want to only switch broadband, and positively retain voice with their LRCP – but increasingly we do not expect this to be technically (or commercially) feasible.

Increasingly switching customers requesting broadband only will be starting from a position of having only broadband. The GRCP should be able to ascertain (via the OTS matching process) if the customer has existing voice, and need only ascertain the customer’s intent for the voice when it is present. To support this:

- The GRCP will indicate in the match request that they are only seeking information on broadband (and omit voice from the request).
- If the LRCP finds that the customer has only broadband:
 - They will send switching information based on only broadband being ceased.
 - They will return a successful match response with a Switch Order Reference (SOR) and information about the broadband.
- If the LRCP finds that the customer also has voice, but they cannot retain the voice (for technical or commercial reasons):
 - They will send switching information based on both services being ceased.
 - They will return a successful match response with an SOR, and include information about both the broadband and voice services in the match response.
 - The GRCP must advise the customer that the LRCP has found existing voice, but it cannot be retained.

¹¹ In the September 2021 Consultation the stakeholder comments included “Three said that its home broadband product, where customers can use a Three mobile data SIM in a mobile router device, should be out of scope of any fixed switching GC requirements...” and later “In response to Three’s question, we confirm that the new process must be available for use by all residential customers switching fixed voice and broadband services (those services within scope of the new switching rules provided at the same location) regardless of the technology or network the provider uses.” So please be aware that Internet Access Service is the term used by Ofcom in their General Conditions.

¹² It is assumed that most customers wanting to switch voice will also want to retain their existing number (and be able to provide it on request). But a small volumes of customers may want a new number. (This is analogous to PAC and STAC for mobile auto switch.)

- If a GRCP places an order with the SOR, the LRCP will assume that the GRCP has gained the customer's express consent to ceasing both services.
- If the LRCP finds that the customer also has voice, and they can retain the voice:
 - They will send switching information explaining that the customer must interact with the GRCP to choose whether to retain or cease the voice, and explaining the impacts of both choices.
 - They will return a successful match response with two SORs: one SOR will correspond to the choice of switching broadband and retaining voice; the other (additional) SOR will correspond to cessation of both services.
 - The GRCP must advise the customer that the LRCP has found existing voice, and ask them to make a choice to retain or cease the voice service.
 - If the GRCP places an order with one of the SORs, the LRCP will assume that the GRCP has gained the customer's express consent to either retain or cease voice corresponding to the SOR used.

Customer switching only voice

A customer switching only voice may also want one of three things:

1. They really wish to also switch their broadband service, but the sales process has not properly captured their requirement.
2. They may wish to port their number to a specialist voice provider, and retain their existing broadband (e.g. to act as the bearer for a proposed VoIP service).
3. A very small number of customers will want to end up with **only** voice, and thus **want** their former broadband service to be ceased.

The GRCP should be able to ascertain (via the OTS matching process) if the customer has existing broadband, and need only ascertain the customer's intent for the broadband when it is present. To support this:

- The GRCP will indicate in the match request that they are only seeking information on voice (and omit broadband from the request).
- If the LRCP finds that the customer has only voice:
 - They will send switching information based on only voice being ceased.
 - They will return a successful match response with an SOR and information about the voice.
- If the LRCP finds that the customer also has broadband, but they cannot retain the broadband (for technical or commercial reasons):
 - They will send switching information based on both services being ceased.
 - They will return a successful match response with an SOR, and include information about both the voice and broadband services.
 - The GRCP must advise the customer that the LRCP has found existing broadband, but it cannot be retained.
 - If a GRCP places an order with the SOR, the LRCP will assume that the GRCP has gained the customer's express consent to ceasing both services.
- If the LRCP finds that the customer also has broadband, and they can retain the broadband:
 - They will send switching information explaining that the customer must interact with the GRCP to choose whether to retain or cease the broadband.
 - They will return a successful match response with two SORs: one SOR will correspond to the choice of switching voice and retaining broadband; the other SOR will correspond to cessation of both services.
 - The GRCP must advise the customer that the LRCP has found existing broadband, and ask them to make a choice to retain or cease the broadband service.
 - If the GRCP places an order with one of the SORs, the LRCP will assume that the GRCP has gained the customer's express consent to either retain or cease broadband corresponding to the SOR used.

Services to be ceased by the LRCP

This document will typically refer to the "services to be ceased by the LRCP", with an assumption that one or more corresponding services will also be provided by the GRCP, meaning the overall interaction will be considered a switch from the point of view of the customer (and Ofcom).

See §6.3 below for further details on service information within a match request – this section continues to give an overview of the matching process for readers that are new to One Touch Switch concepts.

5.5 SW1.5 Gaining retail provider sends match request to Hub

As interactions between RCPs and the Hub will be asynchronous, it will be necessary for the gaining retail provider to generate a correlation identifier to include in the match request. When the losing retail provider sends a match response (via the Hub), it will include the correlation identifier (to enable the GRCP to correlate the response with their request). The correlation identifier will be in a format determined by the sender of the message.

A successful match response will also include a Switch Order Reference (SOR) (i.e. correlation identifier and SOR are different concepts and data values.)

5.6 SW1.6 Hub logs match request and routes to losing retail provider

The Hub will log the match request message (for audit trail purposes) and route the request to an end point as defined by the RCP that owns the losing retail provider RCPID.

The losing retail provider could nominate another CP (e.g. their upstream reseller or wholesaler) to receive and process their match requests.

5.7 SW1.7 Losing retail provider processes match request

The losing retail provider will receive the match request from the Hub, and will attempt to find a match. The algorithm adopted by the losing retail provider will include the following elements:

- Does the losing retail provider recognise the address?
- Does the losing retail provider have any customers with active service at that location?
- If so, do any of those customers match on surname? The LRCP should apply the conversion as documented in §5.4.3 when deciding if the surname is a match.

Please see §6 for more detail on the matching process.

If the LRCP finds a single matching customer, they will return a match response with an indication of success and a Switch Order Reference (SOR) (see §5.11 on step SW1.11 below for details).

Note that the LRCP does not need to search for any former customers with former services at that location. This means that OTS match request does not support verification of customer who are asserting that they have a “right to port” a number which was recently ceased – see §14.2 for details on “right to port”.

5.8 SW1.8 Losing retail provider replies with failure to match

If the LRCP does not find a single matching customer, they will return a match response with an indication of failure (step SW 1.8). The failures (and possible GRCP actions to resolve) could be:

- No customers found with service at that location.
 - The GRCP could check that the customer has provided the correct LRCP and location.
- One or more customers found, but no exact match on surname.
 - The GRCP could check with the customer the spelling of the surname as held by the LRCP.
- Multiple customers found, with multiple customers matching on surname (e.g. two family members with same surname have services at the same address).
 - The GRCP could ask the customer to provide their account number with the LRCP.
- Customer found with matching surname, but they have multiple services at the same address.
 - Adding account number may result in the same response, but the GRCP could ask the customer to provide extra service information (this could be as simple as the telephone number)
- Location not found.
 - E.g. the UPRN does not exist, or is outside the LRCP’s coverage area.
- A switch is currently in progress (i.e. LRCP has an open switch order).
 - Note that this could arise when a customer has cancelled another switch order with another GRCP¹³, but the cancellation has not yet reached / been processed by the LRCP.

¹³ Or even with the same GRCP – e.g. the GRCP has encountered a failure on its original order and has issued a replacement order on behalf of their customer, but has not allowed enough time for the first order to be fully cancelled at the LRCP.

Note that if the request includes sufficient information to match to customer records, but the address is not a close enough match, this would not be considered a successful match, but the service address as held by the LRCP will be included in the match response for the GRCP to consider – this is described in more detail at §6.4.2 and §6.8.4 below.

For the avoidance of any doubt, in these scenarios the losing retail provider will not send any switching information to the customer, and will not generate a Switch Order Reference.

A list of the response codes can be found in the separate One Touch Switch Response Codes document.

5.9 SW1.9 Hub logs match response and routes to gaining retail provider

The Hub will log the match response message (for audit trail purposes) and route the request to an end point as defined by the RCP that owns the gaining retail provider RCPID.

Any updates to end points would be via processes exposed by the Hub Service Provider – the LRCP sends to the Hub, and does not need to know the end point that the Hub will route to for the GRCP.

5.10 SW1.10 Gaining retail provider receives failed match response

The gaining retail provider will inform the customer of the failed response, and may attempt to resolve the non-match.

Resolutions could include:

- Correction to information already provided, such as correction of spelling of surname to match the variant held by the LRCP.
- Addition of extra information, such as the LRCP account number, or additional service identifiers.
- Further querying the customer and accepting that the address held by the LRCP is a good enough match for a gaining provider led switch. The GRCP would then make another match request quoting this address – that request would lead to a successful match.

Note that the customer could drop off and return later (e.g. when they find their LRCP account number). When they return, they may be able to provide the extra information in the initial steps of their second interaction with the GRCP (e.g. they complete optional fields that they skipped on their first interaction), or the GRCP implementation (especially for on-line) may force them to repeat a simple match (with the same failure) and only then permit them to supply extra information.

The customer may also choose to abandon their attempt to switch services.

If the GRCP is able to correct or add information, they send a fresh match request to the Hub. The GRCP may re-use the original correlation identifier, or create a new identifier, depending upon their own internal implementation. A successful match via the hub with the return of an SOR is required in order to proceed with a switch order.

5.11 SW1.11 Losing retail provider finds a match

If the losing retail provider finds a customer at the address, where there is a match on surname (or an alternative match such as LRCP account number – see §6.3.1 below), and at least one of the requested services is matched, the LRCP should return a positive match response to the GRCP (via the Hub).

There are several key pieces of information that the LRCP must include in the response message that it generates to be sent to the GRCP (via the Hub):

- Correlation identifier – the LRCP must reflect the identifier generated by the GRCP (so that the GRCP can correlate this response with their earlier request).
 - The LRCP will also provide their own correlation identifier for their response – this is mainly in case the Hub needs to report a failure back to the LRCP.
- Switch Order Reference (SOR) generated by the LRCP.
- List of impacted services – mandatory with optional elements.
- Method of communication to customer of the switching information from the LRCP – mandatory.

5.11.1 List of impacted services

The match response message **must** include a response for each service that was included in the match request – e.g. if the match request included voice, but no voice service was found, the response must provide that information.

The list may also include a service (broadband or voice) which was found by the LRCP, but was not included in the match request and where there is an impact on that service if the customer were to proceed with switching the other service.

5.11.2 Method of communication to customer of the switching information from the LRCP

General Condition C7.27 reads as follows:

C7.27 The Regulated Provider [losing provider] must:

- (a) ensure that the information referred to at Condition C7.25 is made available to the Fixed Switching Customer promptly in accordance with any applicable industry agreed processes and via the quickest communications method, unless the Fixed Switching Customer requests an alternative communications method; and
- (b) inform the Gaining Provider of the means by which this information has been made available to the Fixed Switching Customer.

Section 7 below provides more detail on how to interpret this Condition. The LRCP may choose to send the switching information by multiple methods, and should indicate all the methods which would constitute a durable medium. E.g. if the full information is sent by letter, and the LRCP chooses to also send an SMS message advising only that an important letter is on its way (but the SMS does not replicate all the switching information), then letter is the only means which should be reported.

Additional information must be provided alongside each method as follows:

Method	Additional information
Email	Masked email address: first few characters of “username” element and full “domain” element, all other characters replaced with *. The number of unmasked characters should be no more than 50% of the entire username or 3, whichever is smaller, e.g.: nia*****@gmail.com da**@daves-domain.com
SMS	Masked mobile number: If the LRCP stores the SMS number in UK format, first and last three digits, all other digits replaced with *, e.g.: 078****713 If the LRCP supports SMS numbers in international format, the country code and first two significant digits after country code should not be masked, e.g.: UK example: +4478****713 ROI example: +3538****915 (an alternative is +3538****915 if having consistency of 5 x * was easier to implement) US example: +160****576 The masked number may optionally include spaces (which should not be replaced with *) and (0) ¹⁴ , e.g. +44 (0) 78** ***713
1 st class post	Note that the method will not be just “Letter” – instead it will indicate the type of delivery method (helping the GRCP / customer to understand the likely arrival date). The letter will be sent to the contact/billing address as held by the LRCP (the service address for most consumer customers) and there is no need for any additional information to be included in the response.

GRCPs must be able to handle a potential list, and advise the customer which methods have been used.

Other methods may be added based on confirmation that the new method would be considered durable and what additional information / masking rules should be defined.

The LRCP should also advise when (date and time) the switching information is expected to be sent to the customer, or when switching information was last sent to the customer and rate limiting means that information will not be re-sent due to this match request.

¹⁴ E.123 specifically recommends that only spaces should be used to visually separate groups of numbers in international notation, so some people frown on the use of (0).

5.12 SW1.12 Supply chain provision of information to support LRCP

The LRCP may need to invoke real-time automated query services¹⁵ provided by their supply chain (and the supply chain CPs may need to implement these services in response to Ofcom's decisions on EECC and One Touch Switch). Notable examples include:

- Mapping from a supply chain service identifier (e.g. the identifier used by a wholesaler CP and known to the LRCP) to a service identifier used by the underlying network provider (and an indication of the network provider in supply chains where the LRCP does already know this information).
- Information to support potential porting, such as the CUPID of the current voice CP.
- WLR operators should be aware that broadband could be provided by a different RCP over the same line as their WLR service, and will have direct or indirect access to Openreach "dialogue services" to check for presence of broadband on their WLR line¹⁶. This is covered in more detail in §28.3 of Appendix 10.

It is also open to RCPs to work with their supply chains to do bulk updates to their service asset information to add (or refresh) the above information, so that they do not need to rely on real-time responses from their supply chain.

5.13 SW1.13 Losing retail provider sends switching information to their customer

GCs C7.12 and C7.25 document the switching information that must be sent by the losing retail provider to their customer – see §2.3 for an introduction to the concept of "switching information".

5.14 SW1.14 Hub logs match response and routes to gaining retail provider

The Hub will log the match response message (for audit trail purposes) and route the request to an end point as defined by the RCP that owns the gaining retail provider RCPID.

§7 below provides more detail, and some other impacts on losing providers.

5.15 SW1.15 Gaining retail provider confirms successful result to the customer

The GRCP will advise the customer of the successful match, including the means by which the switching information has been sent by the LRCP to the customer.

5.16 End of overall Step 1

This marks the end of Step 1 of the overall One Touch Switch process (see §2 above).

§6 below provides greater detail on different variants of matching, now that the reader understands the basic flow.

§7 below documents the switching information sent to the customer by the losing provider.

¹⁵ Openreach term these as "dialogue services", but other network/access providers may not use this terminology.

¹⁶ Openreach eMLC service returns the CP who is directly paying for the broadband service (e.g. BT Wholesale), and do not expose the RID of the retail CP. Hence the intentional use of "CP" rather than "RCP" in this paragraph.

6 Further detail on match request and response

The previous section listed the steps, using the same step references as the process flows. This section provides more detail on variants of match request information, processing and responses.

6.1 Selection of losing retail provider and LRCP RCPID

§5.4.1 above specified that the GRCP will need to identify the LRCP by RCPID to submit a match request to the Hub. Obviously, customers do not know the RCPID of their current retail provider, and are only aware of the “name on the bill”.

As described in §3.3 above, the original proposal to re-use RID was dropped, and instead RCPs will apply to the Hub Service Provider for allocation of a new RCPID. Typically there will be a 1:1 relationship between brand and RCPID.

Over the years, there have been many mergers and acquisitions of CPs.¹⁷ RCPs with a single brand will only be allocated a single RCPID, and must accept match requests from GRCPs with the Hub routing to a single end-point for that RCPID. The LRCP may need to attempt matching across multiple internal systems or “stacks” (e.g. if the RCP has multiple system stacks inherited from their M&A), but that should be hidden from the Hub, GRCP and customer, where the LRCP now uses a single brand.¹⁸

However, if the RCP still operates multiple brands, they may publish multiple RCPIDs.¹⁹ The RCP may expose different end-points for each RCPID, or a common end-point.

Additionally all RCPs will need to provide information on their brand name. Where complexity may arise identifying the RCP, some RCPs may provide multiple brand names.²⁰

The Hub Service Provider will support mechanisms for RCPs to update their RCPID data, including brand names and the end-points to which requests and responses should be sent.

The Hub Service Provider will publish a regularly updated list of RCPIDs and corresponding RCP brand name(s) (“name on the bill”). RCPs will download this list on e.g. a daily basis, and will then cache that download for use in their sales systems.

We expect to provide algorithms and code snippets for a “type ahead” matching process – e.g. typing “v” might give several matches but “vir” might give only “Virgin” as a match. So the customer / sales agent will not need to scroll down a long list, but will simply need to type a few characters.

6.1.1 Consumer v Business

Many RCPs have both consumer and business brands, but consumer customers are not necessarily aware of the business brand. E.g. a bill for a customer of BT Consumer does not include the word “Consumer” anywhere and gives the legal name as British Telecommunications plc. Equally many consumer customers of Virgin Media may not have much awareness of Virgin Business.

When configuring their RCPIDs, each RCP should specify what type(s) of match request are supported for that RCPID. The following examples use real company names but are totally hypothetical:

- The RCPID for Virgin Media might only support consumer requests, and not business.
- The RCPID for Virgin Business might only support the business types, and not consumer.

¹⁷ E.g. https://en.wikipedia.org/wiki/NTL_Incorporated: “In March 2006, NTL merged with fellow cable telecom company Telewest, and created 'NTL:Telewest', which then also merged with Virgin Mobile UK and Virgin.net in June 2006 [...] In February 2007, NTL:Telewest was rebranded as Virgin Media.”

¹⁸ It would not be acceptable for a GRCP to have to try “Nobandwidth.com-1” and “Nobandwidth.com-2” (etc) simply because Nobandwidth.com had bought another provider, merged their brands, but not yet merged their system stacks. One brand means one RCPID and one match request which must be properly serviced.

¹⁹ E.g. EE was acquired by BT, but is still positioned as a separate brand alongside BT and Plusnet. As EE, BT and Plusnet are separate brands, they can each hold an RCPID.

²⁰ At the point when NTL:Telewest was rebranding to Virgin Media, they would need to have supported customer who were still using the old brand, and customers who had rapidly adopted the new brand. If Virgin Media wanted to know which brand their customers were quoting, they might have decided to apply for a new RCPID, but they would need to have achieved a match regardless of which brand the customer quoted.

- BT may decide that the RCPID for the BT brand will support all types.²¹

GRCPs may choose to use the information on types of match request associated with RCPID to do intelligent filtering at the time of user selection of the losing provider name. Continuing the hypothetical example above:

- A sales portal for the consumer channel of a GRCP may choose to initially filter out Virgin Business, since it does not support the consumer type of match requests.
- However, GRCPs should be aware that switching from consumer to business, and vice versa, are both feasible, and ensure that any filtered list can be expanded by the user to show all brands / RCPIDs.

6.2 Location details

The gaining retail provider will need to capture the address of the customer as held with the losing retail provider. In most cases, this should be the same address as where the gaining retail provider is expecting to provide service.

Appendix 3 contains more detail on addresses, UPRN and techniques for matching.

6.2.1 Expectation of quality address data

It is expected that retail CPs will use authoritative sources of quality address data, such as:

- Ordnance Survey's AddressBase products, covering addresses in GB.
- Ordnance Survey's AddressBase Islands products (which includes Northern Ireland).
- Ordnance Survey NI's Pointer products, covering addresses in Northern Ireland.
- Royal Mail's PAF products, covering all of the UK.
- Or a commercial provider who aggregates all the above data.

It is also expected that retail CPs will understand the structure of a UK address, including sub building name, building name, building number, dependent thoroughfare, thoroughfare, double dependent locality, dependent locality, post town and postcode (and not just "line 1", "line 2").²²

By using AddressBase and ABP Islands/Pointer, retail CPs should be able to map the addresses of all of their existing Consumer customers to a UPRN. Retail CPs might seek the assistance of their supply chain in achieving this (and supply chains may need to build facilities to support retail CPs in validating and updating their mapping of customer services to an address²³).

When a RCP is in the position of a losing retail provider processing a match request, they will need a mechanism to rapidly search for potentially matching customers at an address. It is expected that most RCPs will use UPRN as an efficient search key, but it is open for them to use alternative search algorithms (using other elements of the address) which effectively provide the same result.

Thus the gaining retail provider must include **all** the address elements relevant to the address (not just UPRN), and must ensure that the UPRN and the set of other address elements refer to the same address.

Appendix 3 contains more detail on addresses, UPRN and techniques for matching.

6.3 Additional (optional) information in match request

§5.4 above listed the key pieces of information needed to attempt an initial match request – most customers should be able to achieve a match using those pieces of information (perhaps with several matching attempts with corrections to the spelling of their surname as held by the LRCP).

²¹ This assumes that BT Group could publish a single end-point, and use the (mandatory) type in the match request to steer request internally to the relevant consumer or business system stack. Again this is a hypothetical example to illustrate the principles.

²² Readers unfamiliar with the structure of a UK address may wish to consult the Royal Mail PAF Programmers' Guide at <https://www.royalmail.com/marketing-services/address-management-unit/address-data-products/programmers-guide>. (Note that most modern addressing products do not split thoroughfare into name and description – PAF started in the days of exchanging data by tapes, and needing to save every byte! But this Guide remains a definitive starting point.)

²³ E.g. in support of migration to "All-IP", Openreach are now providing their WLR CPs with a list of WLR numbers and the address for each as held on Openreach systems (which is generally of a good quality).

To limit the use of back-channel processes²⁴, there are other pieces of information that a GRCP could ask for, and a customer could reasonably provide without the need to contact their LRCP.

6.3.1 LRCP account number / reference

It is assumed that all RCPs have the concept of an account number or account reference²⁵ (even if they use terms such as “customer id”). Most RCPs ask customers to treat this value with some confidence, and use it as one element of their caller validation processes.²⁶

If a GRCP cannot get a successful match using surname (perhaps after several attempts), it is reasonable to ask the customer if they can provide their LRCP account number / reference. Customers may be able to provide this value from a recent bill, an end of contract notification, or by logging into their online account with the LRCP. It cannot be mandatory for an initial match, but for many customers it is not a high barrier to provide this information.

For compliance with GDPR, the GRCP must only use the LRCP account number for the purpose for which it was supplied (i.e. in support of an automated OTS match). The GRCP must not retain or use it for any other purpose.

6.4 Principles of matching

The LRCP must use the information supplied in the match request to try to find a single matching customer with a single broadband and/or single voice service.

We have defined the following principles for matching:

- There must be at least two “strong points of contact”.
- There must be no “negative points of contact”.
- There may be “neutral points of contact”.

The following are considered as strong points of contact:

- An exact match of account number (if account number is provided in the request).
- A match of surname (using the conversion described in §5.4.3 above).
- A match on voice telephone number (whether provided indicating intention to port, or just for identification and matching purposes).
- Note also that a voice telephone number which differs would be a negative point of contact.

It is mandatory to include a full address:

- The address may be an “exact match”. If so, this is considered as a strong point of contact.
- The address may be a “close match”. If so, this is considered a neutral point of contact.
- The address may be not even a close match. If so, this is considered a negative point of contact (and results in a failed match).

6.4.1 LRCP matching when neither account number nor telephone number is included

When the match request does not include either the account number or voice telephone number, the LRCP must search for a matching customer using the supplied address. The LRCP must find an exact (or very strong) match of address to even have a customer surname to verify the match.

²⁴ It is assumed that all RCPs will want to limit the use of back-channel processes, as they will likely be labour intensive processes for both gaining and losing providers.²⁵ The format of account number or reference varies between RCPs. E.g. BT account references are two letters followed by eight numbers, and are commonly termed the “account number” even though they are not purely numeric!! The Ofcom consultation and statement exclusively used the term “account number”. References in this document to “account number” do not imply a purely numeric value.

²⁵ The format of account number or reference varies between RCPs. E.g. BT account references are two letters followed by eight numbers, and are commonly termed the “account number” even though they are not purely numeric!! The Ofcom consultation and statement exclusively used the term “account number”. References in this document to “account number” do not imply a purely numeric value.

²⁶ E.g. in the event of bereavement, many RCPs will accept contact from a family member to cease services, where that family member can quote the account number.

6.4.2 LRCP matching using LRCP account number

If the LRCP account number is supplied, the LRCP will use the account number to locate the customer records. It is expected that this will be a much more reliable method to locate the customer records for most LRCPs, compared to trying to find customer by address.

If the account number is typically displayed as a fixed length field with leading zeros, the LRCP should consider supporting a match to an input without leading zeros (or with an incorrect number of leading zeros) – this Industry Process permits such a match to be considered to be an exact match.

If the request also includes a voice telephone number, the LRCP should check if the telephone number matches their records for the customer's voice service:

- If the number is an exact match, this is considered as a strong point of contact.
- If the customer has multiple fixed voice numbers, and the requested telephone number matches one of them, the LRCP should return details for the voice service with the matching number (the other services may need to be mentioned in the impacts of switching, but not in the match response).
- If the number does not match, this is considered as a negative point of contact.
- If no voice telephone number is included, this can be considered neutral.

If the request also includes the surname of the customer:

- If there are already two strong point of contacts (e.g. account number plus either telephone number or address), the surname can be ignored.
- If there is only one strong point of contact (i.e. account number), then the surname must match (using the conversion described in §5.4.3 above).

If the request has two strong points of contact (e.g. account number plus either surname or telephone number), but the address was not a strong match:

- The LRCP may consider the address to be a close match, and thus consider the overall match to be successful, return SOR, and send impacts of switching to the customer.
- The LRCP may consider the address to not match. If so, they must return their address in the match response, **not** generate an SOR and **not** send impacts of switching.
 - The GRCP must only use the address information as per §6.8.4 below.

6.4.3 LRCP matching using telephone number

If the LRCP account number is **not** supplied, but the voice telephone number is included, the LRCP will use the telephone number to locate the customer records. It is expected that LRCPs will be able to search their customer records using the telephone number of the voice service.

The request **must** also include the surname (i.e. telephone number and address is not sufficient).

If the telephone number and surname are both a match, the LRCP will then consider the address (it is mandatory to include a full address):

- The address may be an "exact match". If so, this is considered as a strong point of contact.
- The address may be a "close match". If so, this is considered a neutral point of contact.
- The address may be not even a close match. If so, this is considered a negative point of contact (and results in a failed match).
 - (For the avoidance of any doubt, a match of only telephone number and surname (without account number) is not considered sufficient to return the address – there is too much risk of this being used as a reverse lookup from phone number to address.)

6.5 Information in match request on services to be switched and ceased

The match request will include a list of one or more services to be switched and ceased.

As per §5.4.4 above, the GRCP will list only the service(s) that they propose to switch and which thus will need to be ceased by the LRCP. The LRCP may also find that the customer has either voice or broadband which is not requested to be switched but is impacted, and will include information on that service in the response, indicating whether it must be ceased, or if the customer has a choice to retain or cease.

For each service in the match request, the following information will be provided:

- Service type – this is mandatory.
 - The initial set of values will be “IAS” and “NBICS”.²⁷
- LRCP service identifier.
 - Optional for IAS. Only likely to be provided when initial matching fails. It could be a telephone number of a voice service linked to the broadband, or it could be an internal value advised by the LRCP.
 - For NBICS, this will be the telephone number in UK format with a leading 0. Also optional.
- Action
 - The action is mandatory.
 - “port” is only valid with NBICS and a telephone number, and indicates that the customer wishes to retain their existing telephone number. The LRCP will provide extra information in support of a potential number port. See below for more explanation. “port” also implies that the voice service should be ceased by the LRCP if the customer proceeds with this switch.
 - “cease” indicates that the service should be ceased, and that the customer is proposing to switch to an equivalent service with the GRCP. It is valid for both IAS and NBICS.

6.5.1 Telephone number for NBICS

To understand this section, it is useful to remember that there are three main scenarios to consider:

1. The customer knows their number, and wants to retain it on a voice service supplied by the GRCP.
2. The customer does not want to retain their number, but there are multiple lines, and they can provide the number to help achieve a single match.
3. The customer does not want to retain their number, and may not remember the number, or perhaps may not realise or remember that they have a landline service at all.

For an NBICS (voice) service, the service identifier containing a directory number would be interpreted as follows:

1. If a number is provided along with an action of “port”, the match request is asking whether that particular number is found, and also indicating that the customer wants to retain it.
 - The LRCP must return the CUPID of the current voice provider.
 - The GRCP will use this information to determine if a full port is needed (if the GRCP uses the same voice provider a process other than port may be used) and the lead times.
2. If a number is provided along with an action of “cease”, the match request is asking whether that particular number is found:
 - E.g. customer has multiple voice services, and this is the one to be ceased.
 - E.g. customer has multiple voice and broadband services, and providing the number enables a single match.
 - The LRCP does not need to return the CUPID.
3. If no number is provided, the action must be “cease” and the match request is asking whether or not there is a voice service, and if there is, to assume it will be ceased when producing the switch information for the customer.
 - By positively including NBICS in the match request with a request type of cease, the GRCP is asserting that customer positively wants to cease any voice service (even if the LRCP could technically retain it).
 - The customer is probably taking a voice service with a new number – if they were taking broadband only, the match request should only include broadband and should omit voice.
4. However, if NBICS (voice) is not requested for switching, but is found by the LRCP:
 - The LRCP must advise the customers in their impacts of switching of whether the voice service must be ceased when broadband is ceased, or if the customer has a choice to retain or cease the voice and what the impacts of each choice are.
 - The LRCP must also advise the GRCP in the match response of the presence of voice and whether it must be ceased, or whether the customer must make a choice with the GRCP. The GRCP must inform the customer of the presence of voice, capture their choice if required, and capture their express consent to their choice (or to cessation if they had no choice).
 - The customer is likely to have a choice to retain voice only if the voice is a VoIP service which is not dependent on the broadband service or broadband hub/router provided by the LRCP.
 - E.g. for a voice service provided over Openreach MPF, the broadband cannot be switched to another RCP using Openreach services without terminating the full MPF service, including the voice element. So the voice over MPF must be ceased.

²⁷ See §5.4.4 for an explanation of these terms.

- E.g. for a voice service provided over Openreach WLR, in the past it would have been possible to switch broadband to another RCP using Openreach services. But with the forthcoming switch-off of WLR, it is expected that no RCP will want to continue to provide WLR only service with someone else providing broadband over the same line.
- Even if the switch is to a GRCP who does not use Openreach (e.g. Virgin or an alt-net, and thus the WLR or MPF could technically survive), it is likely that the LRCP will not support retention of the voice for commercial reasons (WLR is being withdrawn by Openreach, and MPF operators are likely to have withdrawal plans for their TDM voice services.)
- E.g. BT's Digital Voice service is dependent on using a BT supplied hub connected to a broadband service also supplied by BT. Thus if the broadband is switched, the Digital Voice cannot be retained by the LRCP and the customer must agree (via the GRCP) with it being ceased. This (dependency of VoIP on broadband) is understood to be common for consumer RCPs.
- For intra-Openreach switches, it is also feasible that the LRCP may offer a choice of retention (e.g. of WLR voice), but the GRCP knows they will be requesting a technology (e.g. SOGEA) that invalidates any retention. (This will only arise if there are any WLR CPs that will offer a choice of retention.) The GRCP must explain to the customer that retention is not feasible, and can only proceed if they gain the customer's express consent to cessation.
- It is also permissible for a GRCP to upsell the customer to a voice service once they are aware that the customer has existing voice with the LRCP – but they would need to repeat the match request if the customer wanted to retain their existing number (to validate the number port).

Note also that for switching from an LRCP using Openreach WLR to a GRCP who also uses Openreach, there may not be a full number port. Openreach support processes that they call "integrated transfer" and "integrated port" when BT is the range holder of the number, and the number is to be hosted on a GP VoIP service.²⁸

6.6 Generation of Switch Order Reference (SOR) by losing retail provider

If the LRCP finds a match, they need to generate and include a Switch Order Reference (SOR) in the response. The SOR will be a UUID as defined by IETF RFC4122²⁹.

If the LRCP works out that the customer has a choice of whether to cease or retain voice, or broadband, the LRCP will generate two SORs, one for each choice. When the GRCP captures the customer's choice, they will use the corresponding SOR as evidence that they have captured the customer's express consent to that choice.

Note that an SOR will expire after 31 days – this is necessary for several reasons:

- Customers must have been sent relatively recent impacts of switching to be able to give their express consent based on an informed choice.
- The GRCP may need to give the customer some time to receive and consider the impacts of switching (and the details of the propose new contract with the GRCP), so the SOR needs to have a reasonable lifetime.
- LRCPs can perform reasonable housekeeping of unused SORs.

The use of 31 days is consistent across other OTS, is consistent with the right to port a ceased number for 31 days, and is similar to the expiry of a mobile auto switch PAC after 30 days.

²⁸ Technically, the number is marked as ported on CSS, and the number is configured on the DLE (digital local exchange) with a routing prefix pointing to the VoIP call server. But the gaining number provider remains as 001 (BT), and there is no geo number porting NPOR process (Openreach integrate the updates into their processing).

If the number has been imported into BT, then the RH will need to be sent a geo number porting PXC order to update the routing prefix held at their end – the GRCP is then responsible for raising a "standalone port" (i.e. not managed by Openreach). "Integrated port" is also used for switches from WLR to MPF – the integrated port acts as the request for full porting (i.e. no NPAR or NPOR is needed.)

²⁹ <https://www.ietf.org/rfc/rfc4122.txt>

6.7 Information in match response on services to be ceased, or where the customer has a choice to cease or retain

The gaining retail provider will include a list of services in the match request. For the initial implementation, this will be restricted to IAS and NBICS.

The LRCP must provide a response for **each** service in the match request, even if that response indicates that the customer does not have that service with the LRCP.

The LRCP must additionally include a response for any voice or broadband that was not included in the match request, was found by the LRCP, and has a potential impact for the customer.

For each service, the following pieces of information must be included in the response:

- Service type – mandatory.
 - The initial set of values will be “IAS” and “NBICS”.
 - Whether the service has been found – mandatory for the service(s) included in the request:

Value	Meaning
ServiceFound	The LRCP has found this service for the matched customer. This is a positive result, and the GRCP may raise a switch order asking for this service to be ceased.
ServiceWithAnotherCust	The LRCP has found this service, but it is recorded against a different customer (not the matched customer). The GRCP may try a second match, for the same LRCP, but using different customer details.
ServiceWithAnotherRCP	The LRCP is aware that this service must exist with another RCP. E.g. the LRCP found WLR voice service for the matched customer, and the line has broadband service, but with a different RCP. The GRCP may try a second match for the other LRCP.
ServiceNotFound	The LRCP has not found this service. The overall match may be positive with an SOR (e.g. broadband has been found, but voice has not). If the customer proceeds with a switch order, this service should not be included.

- Whether the customer has a choice of cessation or retention, or whether cessation is mandated – only included and mandatory if this service was not included in the match request, but was found by the LRCP as an additional and impacted service.

Value	Meaning
ForcedCease	The LRCP has found this service as an additional service (i.e. it was not included in the match request) and the service must be ceased if the customer proceeds with a switch of the other service.
If the LRCP find an additional service (i.e. voice or broadband which was not included in the match request), the LRCP will generate two SORs, one for each of the following choices that the customer can make:	
OptionToCease	The customer has a choice to cease this additional service.
OptionToRetain	From the point of view of the LRCP, the customer has a choice to retain this additional service. Note that for an intra-network switch, the GRCP may know that they will make a technology choice that invalidates the option to retain (e.g. choice of SOGEA would trigger cessation of WLR voice).

- There are some interactions between the above two pieces of information
 - If this service has been found by the LRCP, the information on customer choices will be as per the combination of technology and LRCP commercial policies.
 - If the service has not been found, but the LRCP is aware that the service must exist with another CP (or was found against a different customer), the information on customer choices should match to the scenario. E.g.:
 - If the request was to switch only voice, and the LRCP found WLR with broadband with another supplier (or another customer), the response would be that the IAS must be ceased.
 - If the request was to switch only broadband, and the LRCP found FTTC or ADSL broadband but the WLR is with another provider (or another customer), the response would be that NBICS can be retained. (Here we are applying the technical rule that WLR can survive if copper broadband is ceased – the LRCP **cannot** impose a commercial decision to cease WLR on another RCP (or another customer who has not been matched). Note also that if the GRCP is proposing to transfer the line to SOGEA broadband, they would need to also match the voice with the other LRCP (or other customer).)

- If the service has not been found at all, the LRCP would not return any value for service retention.
- Access provider – mandatory
 - The access provider may also be known as the infrastructure provider or network provider – it is the most upstream CP that owns the “kit in the ground”, e.g. Openreach, Virgin, full-fibre alt-net.
 - Sky and TalkTalk are both voice operators, but where they use an underlying Openreach MPF service, Openreach would be the correct access provider.
 - For some RCPs, the access provider will be known (e.g. they only use Openreach, or they explicitly record which access provider is used for each retail service).
 - Other RCPs may need to query their supply chain (e.g. if they use a wholesaler, and that wholesaler uses a number of network/access providers, but hides the network from the retail CP, or the retail CP does not record the information).
 - For IAS, there will always be a physical access provider, so this value is mandatory.
 - For NBICS, there may or may not be a physical access provider:
 - For WLR and MPF, Openreach provide the physical access, so this value is mandatory.
 - For a VoIP NBICS, the physical network supports the IAS, and the VoIP runs over the IAS.
 - We will define an ACPID to represent a generic VoIP access, so that this field can be positively populated with a recognised value (rather than just left blank and looking like missing data).
 - The network/access provider will be represented by a new identifier mastered by TOTSCo (and not by CUPID³⁰, or RID). An Access Network Provider ID (ACPID) will be assigned to each provider. A list of ACPIDs will be available from TOTSCo.
- Access provider service identifier type and value – mandatory for some access providers, e.g. Openreach.
 - If the GRCP uses the same access provider, they will be able to place an order with their supply chain targeting the existing infrastructure for transfer³¹. Having the LRCP return identifier(s) helps the GRCP to ensure they are targeting the correct existing infrastructure, and helps avoid erroneous transfers (e.g. of the wrong copper line). The valid types and values may vary by access provider – e.g. Appendix 10 documents the types and values appropriate when Openreach is the access provider.
 - Note that the technology may change in a transfer order. E.g.:
 - A WLR or MPF service identifier can be used as the starting point for a transfer to SOGEA – the copper pair will be re-used.
 - A WLR, MPF or SOGEA service identifier can be used in an order for provision of new FTTP in a brownfield location – providing the identifier of the copper service permits Openreach to manage the cease, and perhaps recover the copper.
 - Some RCPs will know a service identifier used by the access provider (e.g. an ALID used by Openreach).
 - Other RCPs may need to query their supply chain (e.g. if they use a wholesaler, and that wholesaler exposes their own service identifier, e.g. TalkTalk expose a “CASR ref” to their retail CPs, and do not expose the LLU ServiceId or ALID used by Openreach).
 - Some access providers support a number of types of service identifier, e.g. Openreach support DN, PartialDN, ALID and ONT Reference + port number. If the access provider supports different types, it is mandatory for the LRCP to return both the value and the type.
 - It is acceptable to return a service identifier which is only meaningful in conjunction with the address – e.g. a WLR RCP may return a PartialDN (last 2 digits of the full DN) which can be matched against the results of Openreach’s MLPA service when invoked with the Openreach NAD (address) key of the address.
- Voice provider – mandatory for NBICS
 - This is the CUPID of the current voice provider (as required on a valid number port request).
 - For WLR, this will be 001 (BT).
 - For MPF, this will be the CUPID of e.g. Sky or TalkTalk.
 - For VoIP, this will be the CUPID of the voice operator, e.g. BT, Virgin, Sky, TalkTalk, Gamma.

³⁰ CUPID (Communications Provider Identity Code) is a 3 digit code allocated by Ofcom to identify CPs, notably the network providers and voice operators. CUPIDs are used in number porting processes to identify the range holder and the losing and gaining CPs.

³¹ Openreach use the term “transfer order” rather than “switch order” and given their plan to make minimal changes, they are likely to continue with this term. This document uses “switch” at the retail CP level, and “transfer” at the network/access CP level.

The LRCP must store a record of the SOR and which services they have indicated in the switching information (sent to the customer) would be ceased if the switch order goes ahead. If a switch order is sent quoting an SOR, the corresponding services (as held by the LRCP against the SOR) will be ceased.

6.7.1 LRCP knowledge of services from another provider

Some services are provided in a true “over the top” fashion, e.g. they will work over any IAS. Examples include voice services such as Vonage and TV services such as Now & Netflix. This Industry Process does **not** expect an LRCP to be aware of such services, or to report them in the match response – in general switching broadband will not impact such services, and customers using more specialised services (e.g. fixed IP address) are expected to be more knowledgeable around their own needs.

However RCPs who consume Openreach services are expected to be aware of the interdependencies, especially between copper based services, such as WLR, MPF, ADSL and FTTC.

6.8 Impacts on sales journey of GRCP

This section describes the impacts on the sales journey of the GRCP to support the various combination of customer intent.

6.8.1 Customer wishes to switch both broadband and voice

If the customer requests the GRCP to switch both broadband and voice, the match request must include both IAS and NBICS. The LRCP will provide switching information to the customer based on the contract(s) for both services being terminated. Typically the customer will also want to retain their number, and the match request will include the action as “port”, but the customer could choose to switch voice service and ask for a new number.

6.8.2 Customer wishes to take broadband only with GRCP

If the customer requests the GRCP to provide only broadband, the GRCP **must** ascertain the customer’s full intent as follows:

- The GRCP will send a match request specifying only broadband to be switched.
- If the LRCP finds no voice, the journey can proceed and the customer will be asked for express consent to switch only broadband.
- If the LRCP finds voice which cannot be retained, the GRCP must advise the customer and gain their express consent to switching of broadband and resultant cessation of voice.
- If the LRCP finds voice and the customer has a choice to cease or retain, the GRCP must advise the customer, capture their choice, and gain their express consent to that choice.
- The GRCP should also advise the customer to check the impacts of switching as sent by the LRCP.

Note that some customers, especially of a younger demographic, may have never used their “landline” service, and may have forgotten that they have such a service. However, the GRCP must still gain their express consent to cessation of that voice service – the GRCP is effectively acting as an agent of the customer.

§6.5.1 (point 4) gives some examples of where the LRCP might not be able or willing to retain voice service if broadband is being switched.

6.8.3 Customer wishes to take voice only with GRCP

Alternatively, if the customer requests the GRCP to provide voice only, the GRCP again **must** ascertain the customer’s full intent, as follows:

- The GRCP will send a match request specifying only voice to be switched.
- If the LRCP finds no broadband, the journey can proceed and the customer will be asked for express consent to switch only voice.
- If the LRCP finds broadband which cannot be retained, the GRCP must advise the customer and gain their express consent to switching of voice and resultant cessation of broadband.
- If the LRCP finds broadband and the customer has a choice to cease or retain, the GRCP must advise the customer, capture their choice, and gain their express consent to that choice.
- The GRCP should also advise the customer to check the impacts of switching as sent by the LRCP.

Where the GRCP has chosen to install a new broadband service (e.g. new alt-net provision) and the final step is porting of the telephone number from the old provider and cessation of their broadband, it might appear that the correct match request is just switch of voice – however the overall process is switching of both services, and a double match request would trigger full

impacts of switching both services to be sent by the LRCP. (GRCPs following such a path should also ensure that they are compliant with the spirit of Ofcom's GCs around avoiding double billing to the customer.)

6.8.4 Match on LRCP account number and surname/voice number, but failure on address

The section covers where the match request includes LRCP account number, the LRCP finds a customer, there is an additional match on surname or voice number, but the service address held by the LRCP was not an exact or close match to the address provided by the GRCP.

The LRCP will include their service address in the match response. This is intended to avoid the need for back-office work, and achieve Ofcom's goals of "quick, easy and reliable switching". It also addresses worries about the quality of addresses held by RCPs.

Note that the LRCP will **not** send impacts of switching, or generate an SOR, as the GPL process does not yet have a verified match against the LRCP customer.

The return of this address has some impacts on the GRCP sales journey:

- The GRCP will **need to ensure that they comply with applicable data protection law**, and should take their own legal advice on their compliance. They should consider:
 - not reading out or displaying the address to the customer (remember that the person on the phone may not be the actual customer, and could have fraudulent intentions).
 - training Sales agents to challenge the customer to provide details matching the address returned by the LRCP. Examples include:
 - "Might your losing provider have recorded a different postcode?"
 - "Does your home have a house name as well as a number?"
 - whether it is feasible to have a carefully designed self-service sales journey that would ask similar questions – it is expected that many RCPs will only handle this scenario in an assisted sales journey.

If the sales agent (or enhanced self-service journey) is satisfied that the customer is a legitimate switcher, they will trigger another OTS match request, reflecting back the service address as returned by the LRCP (and repeating the account number and surname/voice number). This request should then be considered a successful match by the LRCP, and would trigger the sending of impacts of switching, and generation of SOR and service related information.

7 Provision of switching information to the customer by the losing retail provider

GCs C7.12 and C7.25 document the information that must be sent by the losing retail provider to their customer – in the September 2021 Statement, Ofcom refer to the LRCP sending “switching information” to their customer.³²

7.1 Information should be dispatched by the losing provider

General Condition C7.27 reads as follows:

C7.27 The Regulated Provider [losing provider] must:

- (a) ensure that the information referred to at Condition C7.25 is made available to the Fixed Switching Customer promptly in accordance with any applicable industry agreed processes and via the quickest communications method, unless the Fixed Switching Customer requests an alternative communications method; and
- (b) inform the Gaining Provider of the means by which this information has been made available to the Fixed Switching Customer.

Therefore the losing retail provider will send the switching information directly to their customer. E.g.:

- If the provider holds an email address for the customer (and the customer has not previously asked for all future communications by letter), the provider will send an email using their existing smtp infrastructure, including any SPF, DKIM or DMARC implementation that they may use for other email communications to their customers. The losing provider should ensure that this email is sent without any unnecessary delay.
- If the provider does not hold an email address (or the customer has previously opted out of email communication), the provider will send a letter using their print and dispatch mechanisms.
 - For Consumer customers, their contact address will most likely be the address at which they have service, but if they have previously provided an alternative address for all communication, the provider can use that address.
 - The letter should be sent without any unnecessary delay. However, providers are likely to run their print and dispatch mechanisms on a batch basis, tied in to their contracts for collection of postal items. So the dispatch may take several days, especially at weekends and bank holiday periods.
- Providers may also send an SMS to their customer, if they have suitable contact details. This may constitute all of the switching information, or may just advise the customer to expect an email or letter with the information.
 - Providers may also choose to use SMS as the method to deliver the switching information (as for Auto-switch for mobile). However some RCPs may feel that their record of mobile contact numbers for their fixed customer base is not sufficiently reliable / up-to-date to use for such an important communication
- Providers may also deliver information via other available mechanisms, such as a push to a mobile app, but should remain aware of the need to send the information on a durable medium. Providers may also choose to deliver information via multiple methods, e.g. email and letter.

7.2 Update of contact details and re-sending of switching information

Appendix 6 quotes statements that Ofcom included in their September 2021 Statement – in summary, if the customer doesn’t receive their switching information from the losing retail provider, the customer can contact the losing retail provider to update their contact details, and ask for the switching information to be re-sent to the new contact details.

In practice, retail providers will need to support:

- Customers updating details such as email address or contact address for letters.
- Customers changing their preferred contact mechanism, e.g. providing an email address for the first time, and asking for switching information to be re-sent via email.
- Triggering the re-sending of switching information.
- Possible access to switching information via online account.

Process flow SW5 covers this topic.

7.3 Frequency of sending switching information

Gaining retail providers should be able to offer basic information to a customer considering switching to them, without needing to invoke a match request. E.g. a potential gaining retail provider should be able to check service availability at the customer’s

³² See §2.1 for an introduction to the concept of switching information.

address (e.g. does their supply chain offer full-fibre service at that location), pitch offers to the prospective customer, and ascertain if the customer is interested in broadband only, or also wants to switch voice service and retain their existing number.

However, there is a legitimate worry about whether a malicious actor could use (maybe multiple) GRCP sales journeys to trigger dispatch of multiple switching information with the intent of causing nuisance to an individual, or of causing embarrassment to the UK telecoms industry (including Ofcom).

Appendix 7 goes into detail on what Ofcom have written around “notification” and “information”, and how it can reasonably be interpreted for an agreed industry process.

This industry process permits LRCP to “rate limit” their dispatch of notifications with switching information, triggered by successful match requests:

- Rate limiting should only be applied when the switching information would not be materially different from previously sent information.
 - Change of GRCP is not considered a material difference.
 - A request to cease voice may be considered materially different from a request to retain voice.
 - A request to cease may lead to wording such as “your landline will be ceased”. A request to retain voice could lead to wording such as “your landline cannot be retained when you switch broadband”. These are materially different statements for the customer (even though the end impact is the same).
 - A small decrease in ETC value may be considered to not be material, especially if the original switching information provided enough detail for the customer to calculate the changes in ETC value, or to know the date when ETC value would become zero.
- Rate limiting period:
 - The LRCP has discretion around its implementation of rate limiting, subject to a maximum period of 31 days.
 - E.g. the LRCP may choose to apply rate limiting to letters, but not to email.
- Rate limiting across match request and switch order:
 - If the switching information has to be sent by letter, and the customer gives express consent to the GRCP without delay, the LRCP may choose to send a single letter confirming the switch order, but must ensure that all the impacts of switching are included.
 - If the information is sent by email, most RCPs will dispatch the initial email without delay, and before the switch order is received. Thus the switch order will trigger a second email confirming the switch.
- Most customers will only trigger a single successful match, so the notification(s) which are sent should include the identity of the GRCP that sent the match request which triggered that notification.
 - It is likely that switching information which is suppressed during the rate limit period after an initial notification only differs in the identity of the GRCP.
 - The information sent by the LRCP when a switch order is placed will include “confirmation of the identity of the gaining provider” (as mandated in the GCs).
- If an RCP decides to implement a rate limit, in their match response, they should indicate the date of last dispatch of switching information, where the current request will be suppressed by the rate limiting.
 - This implies that an expected date should be included if the dispatch of switching information has not been rate limited, e.g. today for email, expected dispatch date for a letter.
- It is expected that as time passes, any ETCs would reduce in value.
 - Thus any ETCs in a suppressed notification should have ETCs which are either the same or smaller than the notification that was last sent.
 - Additionally the switching information should include information about the commitment period (in addition to a simple total amount).³³
- RCPs should keep their own audit trail of successful matches and whether switching information was sent to the customer or suppressed by the rate limiting.
 - RCPs may make this information available to their customer service advisors (e.g. to assist with a customer enquiry), or only available to staff with specialised access (e.g. to support a statutory request from Ofcom under section 135 of the Communications Act 2003).

³³ September 2021 Statement, paragraph 4.208. “For many customers, the [LRCP switching] information is likely to be limited to telling the customer whether they are still within their minimum contract term, and if so, how long is left and what they would have to pay if they switched before the end of the term.”

- If RCPs choose to give customers visibility of switching information via their online account, they are encouraged to give visibility of all successful matches, including those where the switching information was suppressed by the rate limiting.

8 Gaining retail provider sales process and order capture

After getting a successful match response, the gaining retail provider can proceed with the rest of their sales process. They must obtain the customer's express consent before they can submit a switch order to the Hub (and corresponding processes with their supply chain).

8.1 SW1.16 Rest of gaining retail provider sales process

This step represents the rest of the gaining retail provider sales process, and could include:

- Credit check by gaining retail provider (some GRCP s may perform the credit check earlier in the journey).
- Final configuration of the services the customer is ordering (e.g. optional extras) (again some GRCP s may have captured this information before triggering the match request).
- Provision of contract summary and contract information to the customer.

8.2 SW1.17 Gaining retail provider captures express consent

In the General Conditions, Ofcom define express consent as:

'Express Consent' means the express agreement of a **Customer** to contract with a **Communications Provider**, or to transfer their **Public Electronic Communications Service(s)** or port their **Telephone Number(s)**, where the **Communications Provider** has obtained such consent in a manner which has enabled the **Customer** to make an informed choice;

The September 2021 Statement included the following paragraphs:

- 7.95 Express consent means the express agreement of the customer obtained in such a manner which has enabled the customer to make an informed choice (see the definition of 'Express Consent' in the GCs).
- 7.96 As noted in our October [2020] Statement, the decision on the part of a customer to switch services involves both:
- a decision to accept a contract for new services with a gaining provider; and
 - a decision to cancel a contract for services with the losing provider.
- 7.97 It follows that in order for a customer to make an informed choice about whether to switch their services, and therefore to be in a position to give their express consent to a switch, the customer needs to have been given information about both:
- the new services they are taking with the gaining provider; and
 - the consequences of their decision to cancel their services with the losing provider.
- 7.98 Given the obligations in GC C7.9 and the new obligations on the gaining provider in proposed GCs C7.21-7.24 [...], we consider that in order to ensure they do not switch customers without their express consent, a gaining provider must take the following steps:
- a) request that the losing provider make the switching information available to the customer;
 - b) notify the customer that the switching information has been made available and how it has been made available;
 - c) expressly draw the customer's attention to the importance of the information; and
 - d) provide contract information in accordance with GCs C7.11 and C1.

The customer can give their consent at the point of sale:

- The customer may have a recent end of contract notification, and already understand the impacts of switching.
- The customer may have checked their contract position via their online account with the LRCP.
- The customer may have completed a match request via a different GRCP (or even the same GRCP) at an earlier date, and have received switching information from that earlier match request.
- The customer may simply wish to proceed without delay.

However, the GRCP must give the customer the option to consider either the switching information from the LRCP or the contract information from the GRCP, or both.

Note also that if the LRCP returned a match response indicating a customer choice to retain or cease any service not being switched, the express consent must clearly record what choice the customer made, and the resultant switch order must use the SOR corresponding to the customer's choice.

8.3 **SW1.18 Customer does not provide consent – cancel order**

If the customer does not provide their express consent (at point of sale, at a later point, or after some period of time of no contact from the customer), the GRCP will need to cancel any order (or other record of the potential switch) where they are awaiting customer consent.

Note for clarity: there should not be any order submitted into the GRCP's supply chain before the customer provides express consent. So the above paragraph is referring to a possible order or sales lead within the GRCP systems.

8.4 **SW1.19 Customer provides consent – gaining retail provider records consent**

The GRCP must capture a record of the customer's consent as per GC7.15:

- C7.15 For each contract entered into with a **Switching Customer** who is a **Consumer**, in relation to all **Relevant Communications Services**, the **Regulated Provider** that is the **Gaining Provider** must create and keep individually retrievable records of the following, for a period of no less than twelve months:
- (a) a direct record of consent, as provided by the **Switching Customer**, to migrate from the **Relevant Communications Services** supplied by the **Losing Provider** to the **Relevant Communications Services** supplied by the **Gaining Provider**;
 - (b) a record of the explanation from the **Gaining Provider** that they are required to create a record of the **Switching Customer's** consent;
 - (c) the name and address of the **Switching Customer**;
 - (d) the time, date and means by which the consent in sub-section (a) above was given;
 - (e) where appropriate, the place where the consent in sub-section (a) above was given and the salesperson(s) involved;
 - (f) where relevant, a direct record of consent to begin acquiring the **Relevant Communications Services** over the **Target Line**, the **Target Address**; and where appropriate, the **Calling Line Identification** of the **Target Line**; and
 - (g) all available records regarding the sale of its **Relevant Communications Services**, including the date and approximate time of the contact with the **Switching Customer**, the means through which the contract was entered into, the place where the contract was entered into, where relevant, and sufficient information to allow subsequent identification of the salesperson(s) involved and to assist in dealing with any complaint or query.

8.5 **SW1.20 Gaining retail provider places order**

After gaining and recording express consent from the customer, the gaining retail provider will complete any steps required for their own order that have not yet been completed. This includes agreeing a migration date with the customer:

- The customer may want a delay, e.g. to line up with the end of a commitment period with the LRCP.
- The provision of service via the GRCP's supply chain may have a lead time.
- The provision of service may require an engineering appointment, and if this is for a customer facing visit, the customer will need to pick an available slot when they can arrange to be at home.
- The gaining supply chain may use a model where they reply with a committed date³⁴, and any date quoted to the customer at the point of sale is aspirational.

For many RCPs, at this point the sales order is "submitted" (by sales agent in call centre or retail store, or by customer in online self-serve journeys). Typically a sales agent would complete any "call wrap-up" and then move on to helping the next customer in the queue.

The next section describes what happens in the GRCP's sales order processing stage, including placing of order(s) into the gaining supply chain.

³⁴ E.g. in brownfield locations, Openreach sometimes need to complete survey work before they can commit to a date for FTTP installation (known as "KCI2 Assure process"). The GRCP may quote an aspirational date to the customer, but the committed date may turn out to be later.

9 Order processing

In the previous section a customer order has been captured and submitted. For many RCPs this represents a transition from order capture to order processing (or from Buy to Get in the Learn, Buy, Get, Use, Pay and Support (LBGUPS) model).

A “customer order” in a typical RCP’s systems will result in multiple “supplier orders” (or “fulfilment strands”), including:

- One or more orders into the RCP’s supply chain (e.g. a SIM2 provision with Openreach requires two orders: one for the WLR or MPF, and the other for the broadband (which is via BT Wholesale for many RCPs); number port is often a separate order into the supply chain (Openreach sometimes term these as a “standalone port”).
- An order for delivery of equipment, such any hub/router needed for broadband access.
- An order to set up the customer and their services on the RCP’s billing systems.

In order to progress the switch from the LRCP, the GRCP will send a “switch order” request to the Hub for onward routing to the LRCP. For many RCPs, the OTS switch order will be considered as another “supplier order” to be managed alongside all the other supplier orders.

The switch order effectively allows the GRCP to tell the LRCP that the customer has given express consent to the switch. It informs the LRCP of the proposed migration date (though there could be subsequent supply chain delays), and (by means of the chosen SOR) which LRCP services must be ceased (either because they are being switched, or e.g. the customer no longer wants any voice service and is taking a broadband only service from the GRCP). The LRCP will trigger a “Sorry to see you go” type of comms to the customer. Note that the switch order is in addition to any of the following existing order types:

- Number porting request (from voice provider in gaining supply chain to voice provider in losing supply chain).
- Order for intra network transfers (e.g. “transfer orders” into Openreach).

GRCPs should take note of the following timing considerations:

1. The supply chain orders should not be delayed awaiting acceptance of the OTS switch order, in case the LRCP has manual steps (e.g. they use a portal and have to manually accept an order). Switch orders are likely to be placed with customer lead times which may be close to the minimum lead time imposed by the supply chain. Delaying the order into the gaining supply chain (e.g. by a day waiting for acceptance) risks violating those minimum lead times, and most GRCPs are unlikely to want to risk either the supply chain rejecting the order or committing to a later date than discussed with the customer.
2. The OTS switch order should not be delayed awaiting acceptance of supply chain orders. E.g. an order with Openreach can go to survey, and can takes weeks to be committed. The LRCP should be aware of the customer providing their express consent without any delay, and send the STSYG comms without delay, even if the provision order is subject to delays such as survey.

The only practical way for a GRCP to deal with the apparent conflict of 1 and 2 above is to initiate both the OTS switch order and the required supply chain order(s) in rapid succession³⁵, without waiting for either to be acknowledged before initiating the other.

The processing load and time taken by the TOTSCo Hub will be small in comparison to the processing of intra-network switches and number ports and the generation of the resultant unsolicited ceases sent to the LRCP. Thus LRCPs can expect the OTS switch order notification to arrive before any unsolicited ceases in support of that switch, and may choose to design their systems accordingly.

9.1 SW1.21 Customer receives order confirmation from GRCP

The step represents the receipt by the customer of all the information sent by the GRCP after the customer gives their express consent to the switch, and the GRCP starts processing their “customer order”.

9.2 Content of switch order

The switch order should include the following information:

- Identity of the losing retail provider.
- Switch Order Reference

³⁵ The sequence (switch order first, or supply chain first) is not important, as long as the gap between them is very short. If the gap cannot be made very short, then GRCPs are encouraged to initiate the OTS switch order first.

- Where the match response included more than one SOR, the value used in the switch order must correspond to the choice captured by the GRCP from the customer (e.g. to retain voice or cease voice when only broadband is being switched).
- Intended migration date.

The indication of intra-network transfer or number port may assist the LRCP in correlating the OTS switch order with any unsolicited cease that their supply chain may send for the transfer or number port. This correlation will help the LRCP to understand that the unsolicited cease is associated with the OTS switch order, and thus Cancel Other of those unsolicited ceases is prohibited (see §12.2 below).

9.3 SW1.22 Hub logs switch order request and routes to the losing retail provider

The Hub will log the switch order message (for audit trail purposes) and route the request to an end point as defined by the RCP that owns the losing retail provider RCPID.

9.4 SW1.23 Losing retail provider receives switch order and confirms acceptance or rejection

This step represents the receipt of the switch order by the LRCP. The LRCP must respond to the switch order with either an acceptance or a rejection.³⁶

If the LRCP already has an open switch order against some or all of the services requested for cessation (whether from another GRCP or the same GRCP), they would reject the switch order.

However, if their customer has placed a cease order, the LRCP should make every effort to accept the switch order, taking the migration date in the switch order as higher priority. RCPs may choose to cancel the customer's pending cease order, and replace it completely with the details from the switch order³⁷, but they must inform the customer of the impacts.

Other possible reasons for rejection include:

- Invalid switch order reference.
- Switch order reference has expired.
- Services already ceased.

Note that it is expected that the switch order notification should arrive with the LRCP before any unsolicited cease notifications (e.g. for intra-networks transfers or number ports). However, each LRCP should evaluate the risk of making any system design decisions based on this assumption (e.g. what would be the impact if the OTS switch notification was to be delayed and arrive after any unsolicited cease notifications from their supply chain?).

9.5 SW1.24 Losing retail provider sends notification to customer

If the LRCP accepts the switch order, they must send a notification to the customer:

- If all of the customer's services are being ceased (whether explicitly in the switch order, or implicitly by the LRCP, e.g. TV will be ceased as a result of cessation of broadband), this will be a "sorry to see you go" (STSYG) notification.
- If any services are being retained or changed, the notification may be partly STSYG and partly notification of the impacts on the other services.
- Where the customer had a choice of retention or cessation, the notification will effectively confirm which choice was captured by the GRCP and included in the switch order.
- In both cases, the notification must include confirmation of the identity of the GRCP, as required by GC C7.25(b).

9.6 Losing retail provider should not initiate cease on a fixed date

It is important to note that the switch order will contain an intended migration date:

³⁶ It was not thought that having multiple responses analogous to Openreach's KCI0 (order pending), KCI1 (acknowledged), KCI2 (committed) would add any benefit. The LRCP is effectively responding to a cease request, so they should be able to provide the equivalent of commitment inside a few hours processing.

³⁷ If a RCP has an open cease order with Openreach, and a GRCP places a transfer order targeting the same line, Openreach cancel the RCP's original cease, and replace it with their managed cease. So this suggestion is consistent for RCPs that use Openreach.

- The GRCP will have asked a customer to agree an intended migration date.
- The customer may have requested a delayed migration date, e.g. to fall after expiry of a minimum commitment period (to avoid ETCs) or to a date for engineering visit that suited them.
- The gaining supply chain may follow a process where the GRCP requests a date, and the supply chain confirms if that date can be met (with a possibility that they commit to a later date).
- Delays can be encountered, e.g. a difficulty encountered during an engineering visit, which delays completion past the original commitment date.

On receipt of the switch order, the LRCP **must not** initiate a cease with a fixed date.

Some supply chains might support raising a cease order which will await a trigger from the LRCP. But it is expected that most supply chains will request the LRCP to not send any cease order until after the OTS switch trigger is received, and will then support cessation with no lead time – the rest of this document assumes this pattern. §9.7 below covers the LRCP cease processing.

E.g. Openreach have advised their CPs that Openreach will continue to send unsolicited cease notifications (Openreach use the term “managed cease”) for line transfers and number exports. When Openreach have an open or complete managed cease, they do not accept a cease sent by the CP. (The LRCP will still need to cease their billing and any other impacted services.)

9.7 SW1.25 Hub logs response to switch order and routes to gaining retail provider

The Hub will log the switch order response message (for audit trail purposes) and route the request to an end point as defined by the RCP that owns the gaining retail provider RCPID.

9.8 SW1.26 Gaining retail provider receives response from the LRCP

This step represents the receipt of the LRCP response to the switch order.

9.9 SW1.27 GRCP handling of rejected switch order

If the LRCP sends a rejection of the switch order (see SW1.23 above for possible reasons for rejection), the GRCP will be responsible for resolution of this rejection.

The GRCP may need to consult with the customer, and will need to cancel their order with their supply chain if they cannot fix the issue with the switch order.³⁸

E.g. if the LRCP rejects a switch order as it has another open switch order, the possible resolutions include:

- Full cancellation of the GRCP’s “customer order” if the customer advises that they are proceeding with another GRCP. In this case, the GRCP must cancel their order with their supply chain.
 - Note that for an intra network switch, the gaining supply chain may have already rejected the “transfer order” from the GRCP for the same reason, i.e. the asset is already being transferred to the other GRCP.
- If the customer advises that they have cancelled the order with another GRCP, this could be a timing issue, and a re-submission of the switch may be accepted (once the LRCP has received and processed the cancellation of the first switch order). In this case, the order with the supply chain would not be cancelled.

9.10 SW1.28 Gaining supply chain receives order from GRCP

The GRCP will also send an order request to their supply chain. This may be before, after, or in parallel with, the GRCP sending the OTS switch order to the Hub.³⁹

The supply chain will progress this order according to the specific order type and scenario.

³⁸ Some have suggested that the GRCP should await acceptance of the OTS switch order before placing an order into their supply (to avoid any potential need to cancel with their supply chain). However with Ofcom encouraging quicker switching, delaying the order into the gaining supply chain risks violating minimum lead times, and most RCPs are unlikely to want to risk order rejections.

³⁹ This is analogous to a SIM2 order into Openreach, where there is both a WLR/MPF order and a broadband order, and no requirement on which comes first. If number porting is a separate supplier order, there is no requirement on whether it comes before or after the line order(s). So the OTS switch order is joining a set of order types that can be placed in any sequence into the supply chain(s).

If the GRCP uses a different network/access provider to the LRCP, this is an “inter network switch”:

- The order may be a request for full provision of new service.
- It could also be re-use of existing infrastructure, e.g. a start of a stopped line, or activation of a spare port on an existing ONT⁴⁰.

If the GRCP and LRCP use the same network/access provider, this is an “intra network switch”:

- Openreach refer to this as a transfer order – other supply chains may have their own terminology.
- The order is likely to target the same infrastructure, e.g. same copper pair or ONT port.
- Note that Openreach support provision of new FTTP (fibre and ONT) in a brownfield location, with co-ordinated cessation of former copper service, and they still classify this as a transfer order.
 - Openreach have also stated that they prefer the GRCP to raise a transfer order with co-ordinated cessation, since this allows Openreach to remove the copper if appropriate. They also make it cheaper for a GRCP, to encourage this behaviour.

There may be multiple orders with the supply chain. E.g. Openreach require separate orders for the WLR/MPF and for the broadband (often linked as a pair of orders for a “SIM (simultaneous) provide).

Note also that the order may include a request for number porting:

- For WLR, Openreach supported request for number porting as part of their provision orders.⁴¹
- For MPF, Openreach is not the voice operator, and e.g. Sky or TalkTalk will raise the porting request.⁴²
- With the forthcoming demise of WLR and use of VoIP, there can be a complex arrangement between Openreach and the CP as to who handles what element of porting – but this is existing complexity for CPs working in this space.

9.11 SW1.29 Gaining supply chain raises number port order(s)

If the switch contains a number port, the GRCP via their supply chain⁴³ will raise a port order with the losing voice provider, and also with the range holder if different, using the most efficient method available as identified during the matching process.

The porting process itself remains relatively unchanged, with the possible exception of skipping the initial call to Range Holder (RH) if the gaining supply chain is able to utilise the information on the losing voice provider returned in the match request and passed on by the GRCP. (See §14 for a full explanation.)

9.12 SW1.30 Gaining supply chain progresses order(s)

If the order is an intra network switch, the supply chain will typically generate an unsolicited cease⁴⁴ notification(s) to the LRCP.

The order(s) will progress as per the standard processes for the supply chain, with their standard order updates to the GRCP.

9.13 SW1.31 Gaining supply chain completes order(s)

The supply chain will complete provision or transfer of service(s), and inform the GRCP of completion.

If the order is an intra network switch, the supply chain will disconnect the service(s) provided to the LRCP and then connect the new service(s) for the GRCP (“break just before make”). The supply chain will inform the LRCP of completion of the unsolicited cease(s) – quite likely before they inform the GRCP of completion of their order(s) (though not guaranteed).

If the voice order involves number porting, that may be a separate supply chain, and the completion for the porting may come from a different source and at a different time.

⁴⁰ Optical Network Termination (ONT) – the unit which terminates a full-fibre service. Some providers use the term ONU.

⁴¹ Given the plans to withdraw WLR, it is likely that Openreach will make no changes to WLR ordering, including maintaining a 7 working day lead time on ports (7 days is to allow for a possible subsequent port).

⁴² Note that Openreach may trigger the port on completion of the frames activity in the exchange, but that is as losing voice provider.

⁴³ E.g. for WLR any number port request is included with the “transfer order” raised in Openreach, and Openreach raise any required NPOR/NPAR in the background. In other cases, the GRCP will raise a port request into their voice provider who will raise the NPOR/NPAR. In other cases, the GRCP may raise the NPOR/NPAR themselves.

⁴⁴ Openreach use the term “managed cease”, but some of their CP customers refer to them as unsolicited ceases.

9.14 SW1.32 Gaining supply chain completes number port order(s)

The gaining supply chain on providing the new voice service notifies the losing voice provider (and range holder if different) to execute the port out order immediately. The losing voice provider (and range holder) must perform the port out activities in line with porting guidelines to ensure the routing is correct.

9.15 SW1.33 Receipt of notifications of unsolicited cease(s) by LRCP

This step represents the receipt by the LRCP of various notifications around the unsolicited cease(s), from initial notification to final completion. Again the supply chain may generate separate unsolicited ceases for the voice and broadband, and number port may result in a separate unsolicited cease.⁴⁵

Openreach have advised that they are not changing their managed cease notifications, and they will continue unchanged for an intra network switch or a number export from WLR (e.g. KCI1, KCI2, KCI3)

9.16 SW1.34 Gaining retail provider receives order(s) completion from supply chain

The GRCP will receive notification from their supply chain of completion of their provision or transfer order(s). There may be several notifications, e.g. if their supply chain has separate orders for voice and broadband, or the order involves number porting via a different supply chain (e.g. for a VoIP service).

The GRCP will send confirmation to the customer of completion of the switch and activation of their new service(s).

The GRCP will also send the Hub a “trigger message” for the switch order, to trigger the LRCP to cease their service(s) and complete the switch order – see SW1.37 below for the LRCP handling of this trigger message.

9.17 SW1.35 Customer receives confirmation of order completion

The customer will receive confirmation from the GRCP, e.g. “welcome to service” messages.

The customer will also receive confirmation from the LRCP, and a final bill – for some LRCPs, the final bill may act as confirmation of cessation of services.

9.18 SW1.36 Hub logs switch order trigger message and routes to the losing retail provider

The Hub will log the switch order trigger message (for audit trail purposes) and route the request to an end point as defined by the RCP that owns the losing retail provider RCPID.

9.19 SW1.37 Completion of switch order by LRCP

The LRCP will receive the switch order trigger message.

Note that the original switch order will have included an intended migration date. But the provision of service by the GRCP’s supply chain may have been delayed (e.g. customer missed their original appointment and the engineer visit was re-scheduled for a later date). The LRCP must not trigger any cessation activities until they receive the switch order trigger message, even if the original migration date has passed. The switch order trigger message effectively provides a final migration date.

For an inter network switch, the LRCP must send a cease request(s) to their supply chain.

For an intra network switch, the handling will depend on their supply chain. E.g. Openreach will reject a cease request if their managed cease order is open or complete, so the LRCP should not send a cease request to Openreach.

In both cases, the LRCP will need to cease other services as appropriate (e.g. TV service which was dependent on their broadband), and trigger other actions, such as prompting the customer to return equipment.

⁴⁵ Openreach will consolidate transfer of WLR and any associated number port into a single managed cease notification for the downstream LP. The network functions of Sky and TalkTalk may do similar for their downstream retail divisions or retail CPs. With the move to VoIP, CPs are increasingly required to handle porting separately from Openreach.

The LRCP will also need to update their billing systems. If they did not process the switch order trigger message on the day it was sent, they may need to back-date the cessation date on their billing systems, ensuring that rental liability and relevant contractual obligations did not extend past the final migration date. The LRCP will then send a final bill to the customer.

Some terms and conditions of the LRCP contract may continue to apply. E.g. if the customer does not return the equipment, the LRCP may be entitled to charge the customer a penalty for the non-return (possibly some time after the supposed “final bill”).

9.20 SW1.38 Cease of service(s) by losing supply chain

When the LRCP receives the switch order completion message, for an inter network switch, they will ask their supply chain to cease service(s).

This may be the first notification(s) that the losing supply chain receives for the overall switch process, and the cessation request(s) will have no lead time.

Supply chain processing may not be able to cease the service(s) until the next day or next working day.⁴⁶ E.g. the GRCP supply chain may support late evening and/or weekend working, so the switch order trigger message may arrive with the LRCP out of normal working hours, and they may immediately send a cessation request(s) to their supply chain.

The GCs prohibit the LRCP from charging beyond the final migration date. The arrangement between RCPs and their supply chains is a commercial matter, but supply chains that do not support cessations with no lead time may find themselves under pressure to change their commercial arrangements.⁴⁷

9.21 SW1.39 Losing retail provider notifies GRCP that switch is complete

The losing retail provider will send a response to the switch order trigger message to the GRCP via the Hub – effectively this message represents completion of the switch order by the LRCP.

The sending of this message might be delayed by processing either by the LRCP or their supply chain, e.g. if cessations are only processed on a working day.

However, the LRCP must not delay the response for things such as payment of the final bill or return of equipment by the customer.

9.22 SW1.40 Hub logs switch order completion and routes to gaining retail provider

The Hub will log the switch order completion message (for audit trail purposes) and route the request to an end point as defined by the RCP that owns the gaining retail provider RCPID.

9.23 SW1.41 Gaining retail provider receives notification that the switch is complete

The GRCP will receive notification that the LRCP has completed all their steps to cease service(s) and billing.

Note that this response may be delayed by processing either by the LRCP or their supply chain.

GRCP s may choose to close their customer order when they have received completion from their supply chain (e.g. if having an open order prevents the new customer from raising any fresh orders). However, the GRCP should be able to handle the LRCP response as a late update to their customer order.

GRCP s should also monitor for lack of receipt of confirmation from the LRCP, and treat this similar to other order failures.

⁴⁶ Note that it is expected that “hard ceases” (e.g. removal of a temporary line) will be very rare for the LRCP when the customer is switching to another provider.

⁴⁷ Openreach have already identified one cessation lead time that they plan to remove, and are reviewing all of their lead time for impacts from One Touch Switch.

10 Manual resolution of switch match failure – back office

A best practice guide is intended to be produced for CPs to follow in the event that communication is required between CPs to resolve an issue with matching. This is expected to be a low frequency occurrence and will not be a mechanism to bypass proper validation of the customer if they are unable (or unwilling) to provide their account number.

11 Cancel Own

Having successfully placed the switch order and with that switch order being 'in-flight' with both GRCP and LRCP, the customer may for whatever reason choose to cancel that order. Where the customer chooses to cancel the switch order via the GRCP with whom they placed the original switch order, this will be referred to in this document as a "Cancel Own"⁴⁸. Such cancellations will be subject to the standard Point of No Return (PONR) restrictions imposed by the gaining supply chain.

11.1 SW3.1 Customer wishes to cancel the switch

After placing their order and providing their express consent to proceed with the process the customer is within their rights to cancel the order with the GRCP.

Where the switch order is either complete or has passed the point of no return (PONR) as defined by the GRCP a Cancel Own request would not be processed.

The GRCP should be in a position to understand the PONR timing imposed by their supply chain (e.g. for Openreach, it is typically 4pm on the day before the commitment date), and how much extra safety margin they apply (e.g. many RCPs using Openreach apply a 3pm cut-off for capture of a cancellation request, so that they can get it to Openreach before 4pm).

11.2 SW3.2 GRCP cancels the provision / transfer order(s) and switch order

Once the customer has requested that the order be cancelled, the GRCP must:

- Notify the LRCP of the switch order cancellation via the Hub (see §SW3.6 for more detail)
- Send an order cancellation request to the gaining supply chain to initiate cancellation of the provision / transfer order (see §SW3.3 for more detail)

11.3 SW3.3 Gaining supply chain cancels provision / transfer order(s)

Once the switch order cancellation has been initiated the gaining supply chain should cancel down the provision / transfer order(s). It is expected that GRCP's and their supply chains will follow their existing Cancel Own processes.

11.4 SW3.4 Gaining supply chain notifies losing retail provider of cancellation of unsolicited cease

In an intra network switch, the supply chain will have notified the losing retail provider of unsolicited cease(s) triggered by the GRCP placing transfer order(s) for the switch.

As per the existing cancel own process in place the gaining supply chain will notify the losing retail provider that those unsolicited cease(s) have been cancelled.

11.5 SW3.5 LRCP receives notification of cancellation of unsolicited cease(s)

In an intra network switch, the LRCP will receive the notification of cancellation of the unsolicited cease(s). The LRCP will take the appropriate steps to clean up their records of the unsolicited cease(s)⁴⁹.

11.6 SW3.6 GRCP creates a switch order cancellation request

Alongside sending an order cancellation request into the gaining supply chain the GRCP will also need to create a switch order cancellation request message and send it to the LRCP via the Hub. This request message should include:

- The switch order reference
- A cancellation response code as appropriate from the One Touch Switch Response Codes document

11.7 SW3.7 Hub logs switch order cancellation message and routes to the losing retail provider

The Hub will log the switch order cancellation request (for audit trail purposes) and route the request to an end point as defined by the RCPID owned by the LRCP.

⁴⁸ The terminology of "cancel own" and "cancel other" was used in the former NOT+ process and rules, and is thus recognised by many in the industry, and retained in this industry process.

⁴⁹ The LRCP may delay creation of a "customer order" until they receive notification of triggering of the switch order. So we're being careful not to use the term "order" where for some RCPs, there may not be an "order" at this point in time.

11.8 SW3.8 LRCP receives switch order cancellation request

Once routed correctly the LRCP will receive the switch order cancellation request from the GRCP as defined at §SW3.6.

Note that in an intra network switch, the LRCP will also receive notification of cancellation of the unsolicited cease(s) from their supply chain. The notifications from the Hub and from the supply chain may arrive in either sequence and the LRCP must be able to handle this.

In most cases, the LRCP will not need to cancel with their supply chain:

- For an intra network switch, the LRCP should receive notification from their supply chain of cancellation of the unsolicited cease(s). So the LRCP does not need to initiate cancellation.
- For an inter network switch, the LRCP is very unlikely to have yet told their supply chain about the expectation of a cease on the future migration date, so there would be no pending order with their supply chain to cancel.

But in some scenarios, they may need to inform their supply chain, depending on the processes used by their supply chain.

11.9 SW3.9 Losing supply chain cancels cease order

Upon instruction from the LRCP, the losing supply chain will cancel the in-flight cease order where one exists. As mentioned in SW3.8 above, there may be no need for this step.

11.10 SW3.10 LRCP responds to switch order cancellation

When the LRCP received the original switch order request they will have created some record of this.⁴⁹

The LRCP will need to update their record of the switch order (e.g. record it as cancelled), wait for a response from their supply chain (if appropriate, and expected to be unlikely as per SW3.8 above), and then send a response to the GRCP (via the Hub) to confirm that they have received the switch order cancellation and completed their processing.

11.11 SW3.11 Hub logs response to switch order cancellation and route to gaining retail provider

The Hub will log the switch order cancelled notification (for audit trail purposes) and route the request to an end point as defined by the RCPID owned by the GRCP.

11.12 SW3.12 GRCP – no action

Here the GRCP receives the confirmation from the LRCP that the switch order has been successfully cancelled. The GRCP should log this for audit purposes.

12 Cancel Other – prohibited for OTS switch orders

Having successfully placed a switch order and with that switch order being ‘in-flight’ with both GRCP and LRCP, the customer may for whatever reason choose to cancel that order. If the customer has simply changed their mind, they should be encouraged to cancel via the GRCP.

12.1 Ofcom guidance

OTA2 on behalf of OTS-SG sought Ofcom’s input. Ofcom responded in an open letter on 12 May 2022. Their main points were:

- Cancel Other is no longer appropriate as a mechanism to prevent slamming.
- OTS process must work across all networks.
- OTS is designed to ensure the customer gives informed consent before a switching order is placed and is not intended to provide an additional cancellation mechanism.
- It is Ofcom’s role to enforce compliance with the General Conditions.

The OTS-SG discussed Ofcom’s letter at their next meeting, and directed that Cancel Other will be prohibited against OTS switch orders.

12.2 Ripple effect on Openreach /KCOM transfer orders and number port orders

Openreach and KCOM permit Cancel Other against their “managed cease” (unsolicited cease) orders. This was in support of both the old NOT+ general conditions (replaced by OTS), and for erroneous working line takeovers (which continue).

Number porting processes also support Cancel Other, including both for customer request and when an auto postpone order is not activated within 7 days.

The responsibility lies with the LRCP to not use Cancel Other when it knows (or should reasonably know) that an unsolicited cease of line or number is associated with an OTS switch. If the LRCP has received an OTS switch order targeting the same asset / line / number (see §9.2 above for details), they are deemed to reasonably know that the unsolicited cease is associated with the OTS switch.

13 LRCP re-send of switching information (change of comms method/details)

In paragraph 4.199 of the September 2021 Statement, Ofcom wrote (emphasis added):

“In our view, the losing provider switching information should only be sent to the contact details already registered with the losing provider. However, **we think losing providers should ensure a customer can subsequently contact them to update their contact details and ask for the information to be re-sent to the new contact details.**”

In paragraph 7.55, Ofcom wrote (emphasis added):

“We recognise that none of the options addresses the risk that customers might be unable to access their switching information at all if it has been sent to an old email address which the customer cannot access. **In these circumstances a customer would need to contact the losing provider to update their contact details.**”

13.1 SW5.1 Customer – Change to contact information and request resend of switching implications

In the event a customer does not receive switching implications, or perhaps is informed they will be sent by letter but wants them sooner, they can contact their LRCP and change their contact preferences and request the implications are sent to them again by the same or an alternative medium.

If a copy of the printed implications is re-requested, the LRCP can impose a lead time before this can be requested again thereby implementing rate limiting according to their policy.

13.2 SW5.2 LRCP – Process request to update communication method and resend implications of switching.

Upon request by the customer to update their communication preferences and/or resend the implications of switching notification the LP should process and honour this request according to the customer's preferences. The customer could, for example, change or add an email address to their account, and/or request the implications be sent to them using a different method or to a different destination to that previously used.

14 Interaction with number port

Number porting and OTS are on the surface two separate processes. OTS is an interaction between retail providers while number porting is an interaction between voice (NBICS) providers (who provide voice services to the retail providers). However, the current number porting processes, and especially the lead times involved, prohibit the goals of OTS and must be addressed to support it.

Over 90% of all porting errors today are encountered during the validation phase of porting, for example sending the initial porting request to the range holder only to find the number has been ported out to a different voice provider and then initiate a subsequent port request with them.⁵⁰

The OTS process requires that where a number port is required the LRCP should, when responding to the customer matching request, return all details required to raise a successful port request with the losing voice provider sufficient to support an automated porting process capable of being executed on the next day⁵¹ (and possibly same day).

Key to meeting this goal is obtaining the CUPID of the losing NBICS provider. Knowing the CUPID from where to request a port and understanding from the losing supply chain that the port is going to be valid at the time the order is placed with the GRCP are key to eliminating most consumer porting errors, and to eliminating long porting lead times.

Note that we believe that the majority of RCPs either use a single voice supplier (with a single CUPID) or explicitly record the voice supplier against each voice service. Some RCPs might need to work with their voice supplier to get a bulk refresh of the mappings, but we think it is unlikely that any RCP will need to make a real-time query to ascertain the CUPID. In addition, voice providers with multiple CUPIDs (e.g. due to mergers and acquisitions) may use OTS as a justification to move to a single CUPID.

A significant proportion of porting requests, at least 90% of consumer ports, are performed between BT, Sky, TalkTalk and Virgin Media using automated porting processes. By identifying the correct CUPID(s) and utilising the automated switching processes, OTS can remove all artificial lead times from the switching and porting process and will be capable of being performed same or next day where the supply chains are also able to meet those timescales.

The number port working group have previously considered a real time activation request as recently as 2018⁵², however this was never implemented. OTS-DDG have worked alongside industry representatives with a background in number porting to devise a proposed “Express Port” variant (also referred to as “SPX”), which takes advantage of the combination of pre-validation by the OTS matching step and of porting automation to enable porting with a lead time of zero days.

This proposal has been generated with input from the voice providers using automated processes today, but it is also recommended that the current automated porting processes (described above) be expanded to become an industry standard requirement to provide 100% coverage for all providers.

For OTS the changes required are as follows:

- NBICS providers should implement the ability to support automated porting transactions to ensure numbers are ported the same day as the port is requested.⁵³
- RCPs may need support from their wholesalers and underlying NBICS providers, e.g. to understand what CUPID is used by their wholesale voice provider.
- Wholesalers should support placing orders containing the porting information (CUPID of current voice provider) obtained from the OTS match response and passed on by the GRCP.
 - Note that Openreach will not be making any changes to orders for WLR with an associated number import, as WLR is a dying product.

⁵⁰ The Number Port Provisioning Core Processes states: “It is the GCPs responsibility to establish who the RH and LCP are before the order can be placed. If the GCP is unable to confirm who the LCP is then they will submit a provide request to the RH. The RH will then reject the order using rejection code 30 and supply the CUPID of the LCP.” Response code 30 has become the only legitimate way to determine a sub-port – but it is still a rejection code, and it slows down the porting process / increases the lead time.

⁵¹ Ofcom have aimed OTS at next day switching (and not at same day switching). Number porting order(s) currently have minimum lead times longer than next day.

⁵² December 2018 [Geographic Number Portability Process Automation](#)

⁵³ The currents SLAs are 95% within 15 mins and 99% within 20 mins.

Improvements to the number porting process generally, including standardisation on communications methods would significantly improve the reliability and speed of porting processes, but are beyond the remit of the OTS process.

14.1 Proposal for new automated “Express Port” request type – SPX

The number porting working groups considered variants of the current porting process which would speed up porting, and presented their ideas to the OTS-SG and wider OTS and number porting working groups. The OTS-DDG have contributed to these proposals and the consensus variant is summarised here:

- The OTS matching process (where it requests to cease voice and retain/port the existing number) is considered as a pre-validation step for number porting, evidenced by the OTS SOR.
 - The OTS matching process requires the LRCP to return the CUPID of the current voice provider.
- The new variant is strongly proposed to be used between the VCPs who currently use NPAR (the automated versions of number porting NPOR requests and responses). These VCPs have multi point-to-point communication paths.
 - The new variant could also be used with NPOR where there is also a high level of automation.
 - Support for the new variant is optional – a sufficient number of VCPs have committed to supporting the new variant for launch. Other VCPs may choose to join at a later date, or may never support the new variant.
- The GRCP will call a new real-time query mechanism exposed by their gaining supply chain to ascertain if the number can be ported using the new SPX variant (and probably more helpfully what the lead time needs to be).
 - The query will include the number to be ported and the CUPID of the Losing Voice Communications Provider (LVCP) as returned in the match response.
 - The Gaining Voice Communications Provider (GVCP) will look-up the range holder (RH) for the number (existing functionality for all VCPs).
 - The GVCP will maintain records of which VCPs support the new variant, and what lead time they support.
 - If both the RH and LVCP support the new variant, the new variant can be used, and the lead time for number porting can be zero days (there will likely be other lead times for the GRCP, such as CPE delivery).
 - If either of the RH or LVCP do not support the new variant, then standard number porting processes must be followed (4 working days lead time for a simple port, or 7 days where a sub port has been identified).
- When the order is placed with the gaining supply chain:
 - The GRCP will indicate in their order a request for SPX porting, and include the number to be ported and the CUPID of the LVCP.
 - The GVCP will **not** notify the LVCP or RH until the gaining supply chain is ready to port the number.
- When the gaining supply chain is ready to port the number:
 - The GVCP will send SPX port requests to the RH and LVCP as appropriate, quoting the number to be ported, new routing prefix and SOR:
 - For sub-port (GVCP, LVCP and RH are different VCPs), there will be two porting requests:
 - Initial SPX request to the RH, who will accept the request, update the routing prefix, and return a new warning response code along with the CUPID of the LVCP.⁵⁴
 - Second SPX request to the LVCP, who will accept and complete the porting request.
 - For simple port (RH is also LVCP), there will be one porting request:
 - SPX request to the RH, who will accept and complete the request as they are also the current VCP.
 - For return to rangeholder (GVCP is also RH), there will be one porting request:
 - SPX request to the LVCP, who will accept and complete the request.
 - The SPX order type will suppress validation of the postcode (the GVCP may continue to include the postcode in the request) and will permit a lead time of zero days. All other validations will continue (e.g. validation of CUPIDs and porting prefix).
 - The LVCP may optionally validate the SOR if they have access to the SOR issued in their supply chain, e.g. where a supply chain is fully integrated.
 - The LVCP will send unsolicited cease notifications to the LRCP (via any intermediaries in the losing supply chain), as per today’s number porting processes.
 - LRCPs may be used to receiving the initial notification on day zero with a future port date, and completion when the port is activated. Under SPX, the initial notification and the completion will arrive when the port is requested (on migration date), with only a short gap in between.

⁵⁴ Although the match request has returned the CUPID of the current VCP, the losing CUPID returned by the RH may be different: some VCPs have multiple CUPIDs and the one returned in the match request may only be a representative value. The value held by the RH is more likely to result in a successful port.

- The LVCP will send export requests to ESDB/Trinity (999 database), quoting the number and CUPIDs of both GVCP and LVCP, and similar to the DQ systems. The GVCP will send corresponding import requests.

A few points to note:

- Express Port (SPX) is positioned as a variant of the existing number porting process, using the combination of automation and OTS pre-validation to reduce the lead times.
- The existing communication paths for NPAR requests (and for NPOR requests with high levels of automation) will be re-used – i.e. there is no proposal to send these messages via the Hub.
- At the time of writing (August 2022) this variant is only proposed for single number consumer ports, but it is open for the discussions on business switching to consider this variant.
- The import and export messages sent to ESDB (999 database) (and similar sent to DQ systems) are unchanged.
- GVCP, RH and LVCP will retain a record of the SOR for audit purposes.

14.2 Right to port for one month after termination

Right to port was part of Ofcom’s consultations and statements on switching, but is not strictly part of OTS. It is included in this document as it will likely be of interest to anyone working on EECC and switching, there are some interactions which need to be understood by RCPs

The 3 April 2023 GCs include the “right to port” as follows:

C7.6 All **Regulated Providers** shall ensure that:

- ...
- they provide **Number Portability** for a minimum of one month after the date of termination by the **Switching Customer** of the contract for the provision of the **Relevant Communications Service(s)**, unless the **Switching Customer** expressly agrees otherwise at the point when they terminate the contract; and
...

The issued 'Right to Port' best practice process will be available in the Number Porting section of the OTA2 website.⁵⁵

For the avoidance of any doubt, the OTS match processing described earlier in this document only requires the LRCP to identify customers with active⁵⁶ broadband or voice service at the location identified by the UPRN. They do not require the LRCP to identify customers with recently ceased services.

Thus it is not necessary for the GRCP to raise an OTS matching request when they are in a known “right to port” scenario. However, it is recognised that a GRCP might raise an OTS matching request, and use the failure to further question the customer and ascertain that it is a “right to port” scenario.

14.3 Home move with number import

The current number porting processes permits number import for a customer who is moving to a new address. A typical scenario is:

- Customer has active voice service (and possibly broadband as well) with RCP1 at their old address.
- Customer is about to move home. They decide to approach RCP2 for voice service (and possibly broadband as well) at their new address – this could simply be a customer choice, or perhaps RCP1 does not cover their new address.
- The customer wishes to retain their existing phone number, and it can technically be hosted by RCP2’s supply chain at their new address.

RCP2 can raise a provision order (new installation, working service takeover, start of stopped service) at the new address, and include a request to port the customer’s DN from the voice provider serving RCP1 at the old address to the voice provider serving RCP2 at the new address. A number of RCPs (including at least BT Consumer) have order capture journeys (assisted and self-service) which can capture such an order.

Note that the port order must indicate that the customer is moving, and provide the postcode of the old address.

⁵⁵ <http://www.offta.org.uk/best-practice-guide>

⁵⁶ “Active” is used here to mean “not ceased”, e.g. it includes service which has been suspended for non-payment, but not yet ceased.

In relation to customer's right to retain a telephone number, Ofcom have made several recent decisions:

- In their statement on the future of telephone numbers⁵⁷, they wrote in paragraph 3.24 "We consider that it is appropriate to maintain the rules which permit out-of-area use of geographic numbers. We consider that out-of-area use benefits consumers and businesses by enabling phone users to retain landline numbers when moving out of area, and by enabling businesses to develop trust and recognition through the use of an area code linked to a local area. On balance we consider that these benefits outweigh any risks that might be posed by this flexibility." This permits customers to move home within the UK and retain their 01/02 number where technically feasible (e.g. in an "All-IP" network).
- EECC includes a mandatory provision concerning the right to port for one month after the date of termination, and Ofcom have enshrined this right in the revised GCs which come into effect on 3 April 2023.

So it is clear that Ofcom place importance on the rights of a customer to retain their number, including when they are moving home. (And it seems disingenuous to interpret Ofcom's consultations and statements on EECC switching as being any obligation for RCPs to stop supporting this scenario, given that that would be at odds with Ofcom's other statements on the customer's right to retain their number.)

The current number porting processes only permit a customer to request number port when the number is currently working, but the EECC right to port will extend this to numbers which have been ceased, and remove any ambiguity around numbers which are working at the time of the initial port request, but ceased at the time of activation of the port (which can easily arise in the home move scenario described above).

However, Ofcom's September 2021 Statement has somewhat muddied the waters:

- OTS only applies to "residential customers who are switching Fixed Communications Services at the same location".
- The GCs on home moves cover a confusing mixture of home moves and working line takeover.

So that leaves the question of how RCPs continue to service customers in the scenario described above:

- Given that Ofcom have constrained OTS to exclude home moves, this scenario appears to be outside OTS.
- Additionally, the customer needs to be in explicit control of the cease date at the old address:
 - The customer knows the date on which they are moving out, and will want to ensure they are not liable for any calls made after they move out.
 - The provision date at their new address may be delayed (due to lead times or engineering appointment availability). I.e. the provision date cannot be considered to be a "migration date".
- RCPs may choose to use an OTS match request to verify the customer's ownership of the number, and if matched, to advise the customer of the need to cease with their retail provider at their old address.
- However an OTS switch order must not be raised for the scenario where the customer is moving home, and wanting to port their number.

14.4 Out of area geographic numbers

During discussions with CPs, the OTS-DDG have found that some CPs have missed the recent Ofcom guidance that geographic numbers can be taken out-of-area, notably when a customer moves home and the voice network can support the retention of their existing number (notably in "All-IP" networks).

GRCPs are reminded that they need to check that their gaining supply chain can support any number that the customer wishes to retain, in addition to checking whether it can be imported using SPX porting. Supply chains may offer a single combined check, or the GRCP may need to invoke separate checks.

The supply chain might not support the number for technical reasons (e.g. older PSTN technology typically restricted the number ranges that could be hosted on an exchange, whereas "All-IP" networks typically have less constraints) or for commercial reasons (e.g. calls from 028 numbers to the Republic of Ireland may have a cheaper rate, so supply chains may constrain 028 number to Northern Ireland only and vice versa).

14.5 Summary of impacts on RCPs from the combination of OTS and number porting

In summary:

⁵⁷ Ofcom, March 2022. [Statement: Future of telephone numbers](#)

- When processing a match request, LRCs need only look for matching active service. They do not need to look for recently ceased service, and OTS matching is not a support mechanism for “right to port” after cessation.
- For a successful match, when number porting is requested, the LRC must return the CUPID of the current voice provider. This may be used by the gaining supply chain to determine the porting variant and thus the required lead time.
- When processing a number port request associated with a home move (old postcode is populated), the LRC should not expect any corresponding OTS switch order.
- If a voice service was active at the time of the match request (and generation of the SOR), was later ceased, and the switch order is placed after the cessation, the switch order can be rejected. But any number port request raised by the GRCP will still be subject to the right to port for one month. It is likely that the LVCP will accept the port request (if inside the 31 days since cessation) and the former RCP may not even become aware that the port has happened.

15 Switch from multiple LRCPs to one GRCP

To explain the steps involved in a customer switching from multiple LRCPs to one GRCP, it is worth considering a worked example.

Consider a customer who takes WLR voice service from Post Office⁵⁸, with FTTC broadband from Zen on the same line, and wishes to switch to Virgin. There are a couple of points to consider:

- Even if the customer proactively volunteers that they have multiple LRCPs, it is likely that the sales journey of most GRCPs will be optimised for the majority of customers with only a single LRCP, and will thus initially ask for a single current provider.
- When asked to select their current provider (“name on the bill”), the customer could offer Post Office or Zen first, and the processes must work both ways round.
- Post Office are an Openreach WLR CP, and as such will be aware that broadband could be provided by a different CP over the same line as their WLR service, and will have direct or indirect access to Openreach “dialogue services” to check for presence of broadband on their WLR line. This is covered in more detail in §28.3 of Appendix 10.
- Zen are an Openreach broadband CP, and as such will be aware that their FTTC broadband service requires an underlying WLR service which could be provided by a different CP.

The initial stage of the GRCP sales journey (address selection, service availability, offer selection, credit check) will remain unchanged.

The descriptions here assume a simple match first time for each of Post Office and Zen, but there could be multiple attempts to get the surname or address correct, or use of LRCP account and the “two strong points of contact” principle as documented in §6.4.2 above.

15.1 Customer wishes to switch both voice and broadband

In this scenario, the customer wishes to switch both services to Virgin.

Voice LRCP first

If the customer selects Post Office for the first match request:

- The initial match request will request cessation of both IAS and NBICS, quoting the telephone number along with retention / port indicator. At this stage, the GRCP systems will not be aware of the multiple LRCPs.
- Post Office will find their active voice service, and generate a positive match response for the NBICS, including that the current CUPID is 001 (BT).
- Post Office will find that they do not have any broadband service (on this customer’s account or any other customer).
- Post Office will call Openreach’s eMLC service (via their supply chain) – this will provide information that there is already broadband service on the copper line. Post Office will return a warning against the IAS that it must be with another RCP. (§6.7 above provides details of how these warnings will be encoded in the match response.)
- The SOR generated by Post Office will authorise the switch of voice service, but only if the GRCP addresses the IAS warning.
- The switching information sent by the Post Office to the customer will also make clear that the IAS warning needs to be addressed.

The GRCP will use the warning on the IAS to prompt the customer if they have a different provider for their broadband – the customer will select Zen:

- The second match request should also be for IAS + NBICS.
- Zen will find their active broadband service, and generate a positive match response for the IAS.
- Zen will find that they do not have the underlying WLR service (on this customer’s account or any other customer) and will return a warning against the NBICS that it must be with another RCP.
- The SOR generated by Zen will authorise the switch of broadband service, but only if the GRCP addresses the NBICS warning.
- The switching information sent by Zen to the customer will also make clear that the NBICS warning needs to be addressed.

⁵⁸ This example is based on a real customer. Post Office sold their telecoms business to Shell Energy, but we have stuck with the historic brand and consumption of WLR for this example.

The GRCP can now combine the two responses, and gain the customer's express consent to the double switch. The switch order sent to Post Office will request cessation of voice service, and the one sent to Zen will request cessation of broadband service.

Broadband LRCP first

If the customer selects Zen for the first match request, the overall process will be very similar to above, but swapped round.

The match requests to both Post Office and Zen should be for both IAS and NBICS. This allows both LRCPs to understand that the customer wishes to switch both services, and to send switching information with wording that reflects that wish.

15.2 Customer wishes to switch broadband and cease voice

If the customer wishes to switch broadband from Zen and cease the voice service with Post Office, the match requests would be the same as above.

For this to be a valid use of the OTS process, at least one service must be switched. It does not matter that the only impact on Post Office is to cease their WLR voice service, as long as the GRCP can prove that broadband was also switched.

15.3 Customer wishes to switch broadband and retain voice

In this scenario, the customer wishes to switch broadband from Zen and retain the voice service with Post Office. Let's assume the customer is sensible and provides Zen as the current provider:

- The initial match request will request cessation of IAS and retention of NBICS.
- Zen will find their active broadband service, and generate a positive match response for the IAS.
- Zen will find that they do not have the underlying WLR service (on this customer's account or any other customer) and will return a warning against the NBICS that it must be with another RCP, but it can be retained.
- The SOR generated by Zen will authorise the switch of broadband service.
- The switching information sent by Zen to the customer will cover the proposed loss of broadband only, and should inform the customer that WLR is not expected to be impacted.

No match request will be sent to Post Office, and their WLR service can continue unchanged.

15.4 Customer wishes to switch voice and cease broadband

A possible scenario is that customer has arranged provision of Virgin broadband, now wants to port their telephone number onto a VoIP service from Virgin, and is happy that both the Post Office WLR and Zen FTTC service will now be ceased.

The match requests would be the same as for a customer switching both services.

15.5 Customer wishes to switch voice and retain broadband

In this scenario, the customer wishes to switch voice from Post Office and retain the broadband service with Zen. Let's assume the customer is sensible and provides Post Office as the current provider:

- The initial match request will request cessation of NBICS only.
- Post Office will find their active voice service, and generate a positive match response for the NBICS, including that the current CUPID is 001 (BT).
- Post Office will find that they do not have any broadband service (on this customer's account or any other customer).
- Post Office will call Openreach's eMLC service (via their supply chain) – this will provide information that there is already broadband service on the copper line. Post Office will return a warning against the IAS that it must be with another RCP, and a further warning that the IAS cannot be retained if the WLR is ceased.
- The SOR generated by Post Office will authorise the switch of voice service, as long as the customer is happy with the loss of broadband.
- The switching information sent by the Post Office to the customer will also make clear that the IAS warning needs to be addressed.
- The GRCP must heed the warning that the IAS cannot be retained, and the customer cannot give their express consent to the switch as they have not yet been fully informed of the impacts from Zen.
- If the customer is agreeable to cessation of broadband, the GRCP may continue to another OTS match with Zen (as if the customer had originally asked for double cessation.)

16 Unhappy paths / failure scenarios

The appropriate industry body will identify and work through Unhappy Paths and Failure Scenarios. This section will then be updated or additional guidance documentation will be produced accordingly

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19 Appendix 1: SLAs and response times

Ofcom's goal is "quick, easy and reliable switching" and they have an expectation that the larger RCPs selling to Consumers (if not all RCPs selling to Consumers) will implement automated solutions to respond to matching requests.

19.1 Hub hours of operation

It is expected that the Hub will operate 24/7 with a high level of availability.

19.2 SLAs and response times

There are a number of expected response times, expiry periods, audit trail periods and other SLAs:

Item	SLA and comments
Response to an OTS match request	95% within 60 seconds, measured from the receipt of request by Hub from GRCP to sending of response by Hub back to GRCP. This time was proposed based on Ofcom's requirement for generation of a mobile switching PAC inside one minute, and has been endorsed by Ofcom in their communications to Industry.
Dispatch of impacts of switching by email/SMS ⁵⁹	Within 60 seconds of receipt of a match request from the gaining provider in 99% of cases. Within 1 hour of the receipt of a matching request in 100% of cases. Time is measured from successful delivery of the switch match request.
Dispatch of impacts of switching by letter	When the match request is received before 13:00 on a work day, 99% by the end of that work day and 100% by 12:00 the following work day. When the match request is received after 13:00 on a work day or received on a non-work day, 99% by 12:00 the following work day and 100% by the end of the following work day. CPs remain responsible for meeting their obligations under the Equality Act, including making reasonable adjustments by providing letters in other formats such as Braille or Audio. In these circumstances, a short delay in sending letters in other formats will not automatically constitute a breach of this SLA. 1 st Class Royal Mail service to be used.
Expiry of an SOR	An SOR is valid for 31 days (counting the day of generation as day 0). An attempt to place a switch order using an SOR more than 31 days old will be rejected by the LRCP.
Retention of SOR by LRCP	The LRCP should retain the SOR for at least another 31 days after expiry (so that the response can be that SOR is expired, rather than invalid if it were already deleted). LRCP's housekeeping and audit trail policies may mean that they retain expired SORs and other OTS match audit trail information for a much longer period.
Acceptance or rejection of switch order	95% within one hour, 99% within 2 hours. Time is measured from successful delivery of the switch order, switch order update or switch order cancellation. This also covers any rejection of the request.
Acceptance or rejection of an amendment or cancellation of a switch order.	As above.
Latest date to trigger an open switch order	The GRCP must trigger an open switch order within 31 days of the migration date (counting the migration date as day zero). If the migration date was changed in a switch order amendment, this is relative to the migration date in the last update.

⁵⁹ SMS refers to the sending of impacts of switching by SMS or sending a link via SMS to a separate document containing the impacts of switching. It does not refer to the use of SMS to inform the customer that the impacts of switching have been sent via a different medium e.g. post

Item	SLA and comments
	This period is intended to account for typical delays, such as engineering issues being encountered on the installation date (which are typically resolved within a few days), or a gaining supply chain which use a “commit on CCD” ⁶⁰ model.
Confirmation of completion of a request to trigger a switch order.	99% by close of play on the next working day. (As a reminder, the LRCP may need to back-date their final billing date if they cannot action the cessation on the day the trigger request is received.)

⁶⁰ For some Openreach order scenarios, the RCP send a Customer Requested Date (CRD) based on minimum lead time (or customer choice of CRD if later), Openreach start “left to right” planning and then provide a Customer Commitment Date (CCD). E.g. “KCI2 Assure” for installation of FTTP in a brownfield location where there may be blocked ducts or other access issues. This is often referred to as “Commit on CCD”.

To ensure that the LRCP can inform their customer that a switch order has been placed, the GRCP cannot delay the sending of the OTS switch order until Openreach provide commitment (which can take days or longer), and thus the GRCP will send their CRD as the migration date in the switch order. If Openreach commit to a date that is close to the CRD, there is no need to send an amendment to the OTS switch order – it is expected that the GRCP will inform the customer of any delays to their provision and the switch.

It is likely that other ACPs and supply chains will have similar engineering related delays.

20 Appendix 2: Definition of Communications Provider.

Throughout their September 2021 Statement, Ofcom uses the terms “losing provider” and “gaining provider” (and only uses the term “retailer” in reference to switching by energy customers).

In the “Proposed revised General Conditions 3 April 2023”⁴, Ofcom provides the following definitions:

‘Losing Provider’ means the **Communications Provider** from whom a **Switching Customer** is or is considering transferring;

‘Gaining Provider’ means:

- (a) the **Communications Provider** to whom a **Switching Customer** is or is considering transferring; or
- (b) the **Communications Provider** to whom an **Inbound Switching Customer** makes a **Home-Move Request**;

‘Communications Provider’ means a person who (within the meaning of section 32(4) of the **Act**) provides an **Electronic Communications Network** or an **Electronic Communications Service**;

‘Electronic Communications Service’ means any of the following types of service provided by means of an **Electronic Communications Network**, except so far as it is a **Content Service**:

- (a) an **Internet Access Service**;
- (b) a **Number-based Interpersonal Communications Service**; and
- (c) any other service consisting in, or having as its principal feature, the conveyance of **Signals**, such as a **Machine-to-Machine Transmission Service** or a transmission service used for broadcasting;

‘Internet Access Service’ means a service made available to the public that provides access to the internet, and thereby connectivity to virtually all end points of the internet, irrespective of the network technology and terminal equipment used;

‘Number-based Interpersonal Communications Service’ means an **Interpersonal Communications Service** made available to the public which:

- (a) connects with publicly assigned numbering resources, namely, a number or numbers in a national or international numbering plan; or
- (b) enables communication with a number or numbers in a national or international numbering plan;

The earlier October 2020 Statement and Consultation⁶¹ included a reference to an enforcement case⁶², which includes some interesting insight into Ofcom’s use of terminology:

- In the enforcement case document, Ofcom make a distinction between a Communications Network Providers (parties that own the networks that carry the telephone service) and other Communications Providers. (We have not spotted this use of CNP in any other Ofcom documents – it seems to match well with the concept of holders of CUPID’s for number porting.)
- Section 5 goes to significant lengths to assess that Cloud M is a Communications Provider.
- Paragraph 5.62 includes “The Order Validation part of the process as set out in the Manual can only be completed by the Losing Provider – i.e. the party with the contractual relationship with the Subscriber – which in this case is Cloud M. This is because it requires knowledge of the installation address (the address to which the telephone line is provided) and the Subscriber’s billing address and these are matters that only the Losing Provider would know.”

For clarity, this Industry Process document uses the terms “losing retail provider” and “gaining retail provider” to refer to the parties which have the former and prospective/new contractual relationships with the customer. Note that this does not preclude any retail provider from contracting with another CP (or other competent body, such as a TPI or the Hub Service Provider) to discharge some or all of its obligations as a losing retail provider.

⁶¹ Ofcom, October 2020, [Fair treatment and easier switching for broadband and mobile customers: Implementation of the new European Electronic Communications Code](#) (October 2020 Statement and Consultation)

⁶² Ofcom, November 2018. [Notifications under s96C and s139A of the Communications Act 2003 served on Cloud M](#)

20.1 Communications Providers in the context of the One Touch Switch process

There are potentially CPs at different points in the supply chain, impacted in different ways by One Touch Switch:

- At one extreme are the CPs with the contractual relationship with the customer – both losing provider and gaining provider. These CPs are sometimes termed the retailers, and this document refers to them as retail providers.
- At the other extreme are the CPs who own/operate the infrastructure and networks. These include Openreach, Virgin, full-fibre providers (sometimes termed “alt nets”, and sometimes using Openreach’s Physical infrastructure access (PIA) (pole and duct sharing)). This document refers to these CPs as access providers.
 - Openreach are largely not impacted by One Touch Switch. Although the NOT+ rules are being removed by Ofcom, Openreach will maintain their “managed cease” processes, with the main change being reduced lead times.
- In between, there may be zero, one or more CPs. E.g.:
 - Many CPs who directly consume Openreach’s WLR products use BT Wholesale for provision of Broadband, e.g. BT Consumer, EE Home, Plusnet and others.
 - Shell (formerly Post Office) are a reseller of TalkTalk services – TalkTalk use Openreach’s MPF products, but operate their own voice service.
- Some CPs are also the voice operators – typically these CPs hold a CUPID (allocated by Ofcom) and participate directly in the geographic number portability processes.
 - E.g. BT⁶³, Virgin, Sky, TalkTalk and Gamma all hold CUPIDs and operate voice networks.
- Some CPs (e.g. Virgin) are often described as “vertically integrated”, but in reality have internal divisions and systems that separate network/access and retail operations.

⁶³ Openreach front up much of BT’s interaction with other operators for number portability, but CUPID 001 is formally allocated to BT, and BT internally operate several voice networks (including traditional local exchanges for WLR, and VoIP networks).

21 Appendix 3: Address quality and Unique Property Reference Number (UPRN)

UK Government has established a standard called Unique Property Reference Number (UPRN).

GeoPlace LLP is a joint venture between the Local Government Association and Ordnance Survey. Their creation was approved by the Office of Fair Trading, and they started their work in 2011. Effectively they are the master of UPRN for all of the UK.

Openreach have exposed UPRNs via their address matching dialogue services for several years now; Virgin use UPRNs internally; newer network/access providers (alt-nets) are very likely to have used UPRN since their inception. So UPRN should be a recognized concept even for CP's at the retail end of the chain.

Given the provenance of UPRNs, and the existing widespread usage, UPRN will be a key piece of data for successful matching.

21.1 UPRNs are available for all of UK, including Northern Ireland.

A Google search for "UPRN Northern Ireland" (as of 13/01/2022) includes a commercial site⁶⁴ in the search results which includes "UPRN excludes Northern Ireland". In addition, for a Google search of "UPRN lookup", many of the publicly available search sites⁶⁵ only cover GB.

The "Open standards for government" includes a Guidance document "Identifying property and street information"⁶⁶ which states "UPRNs are the unique identifiers for every addressable location in Great Britain⁶⁷" and in early January 2022 GeoPlace's website page introducing UPRN⁶⁸ used similar wording in its headline, implying that the concept of UPRN is not UK wider.

All of the above are misleading: there **are** UPRNs for addresses in Northern Ireland.

Reading further down GeoPlace's main page introducing UPRNs we find (emphasis for NI added):

GeoPlace is the central source for UK addresses and streets. We work contractually with all 339 councils in England and Wales which have statutory responsibility for approving and creating addresses and 174 local highways authorities. We manage a central hub of 42.8 million addresses and 1.3 million streets, taking feeds of address and street data from local authorities in England and Wales, central government, Ordnance Survey, Royal Mail and data from Scotland, Northern Ireland, Isle of Man and the Channel Islands via the Improvement Service, Land & Property Services, Isle of Man Government and Digimap respectively. Find out more, and see the infographic that shows the processes that take place at GeoPlace [here](#).

The more comprehensive understanding is:

- The AddressBase range of products from Ordnance Survey cover Great Britain.
 - AddressBase Islands extends the coverage to Northern Ireland (plus Isle of Man and the Channel Islands)
- The Pointer range of products from Ordnance Survey NI cover Northern Ireland.

Here are links to a few sites that support easy lookup of UPRNs:

- <https://www.findmyaddress.co.uk/search> - this is a GeoPlace service covering GB addresses only
- <https://ideal-postcodes.co.uk/guides/uprn> - this allows searches of GB and NI addresses, but returns the UPRN as "Not Available" for NI addresses.
- <https://valuationservices.finance-ni.gov.uk/Property/Search> - this is an LPSNI service covering NI addresses only.

⁶⁴ <https://ideal-postcodes.co.uk/guides/uprn>

⁶⁵ E.g. <https://www.findmyaddress.co.uk/search> and <https://uprn.uk/>

⁶⁶ <https://www.gov.uk/government/publications/open-standards-for-government/identifying-property-and-street-information>

⁶⁷ The full name of UK is "United Kingdom of Great Britain and Northern Ireland" – so GB usually implies England, Wales and Scotland only.

⁶⁸ <https://www.geoplace.co.uk/addresses-streets/location-data/the-uprn> Note that Niall Gillespie engaged with GeoPlace to query their positioning with regard to Northern Ireland, and within a few days they improved the wording on this page to refer to "UK" (rather than "GB") and added references to Pointer and LPS.

21.2 Structure of a UK address

The structure of a UK address consists of the following elements:

Element	Comments
Sub building name	E.g. 'Flat 1', 'Apartment 1'
Building name	E.g. 'Rose Cottage', 'Mandela House'
Building number	E.g. '1', '1A', '101-102'
Dependent thoroughfare	
Thoroughfare	Aka street name
Double dependent locality	
Dependent locality	
Post town	Mandatory
Postcode	Mandatory

This structure was initially documented by Royal Mail in their PAF Programmer's Guide²².

Note that the PAF Guide defines some very strict rules:

- PAF building numbers can only be purely numeric, and values such as '1A' and '101-103' are held as building name. Most modern implementations and data sources permit values such as '1A' and '101-102' as the building number.
- The original PAF split thoroughfare and dependent thoroughfare into a separate name and descriptor with a standard list of approximately 200 descriptor words (e.g. 'Avenue', 'Street'). Modern implementations and data sources combine the name and descriptor as a single string.

PO Box number is intentionally omitted from the above list, as it could not be a valid service address. Similarly Organisation name is held by Royal Mail to help users select a correct address and postcode – CPs would tend to hold the business name separate from the physical address. County is also omitted, as it is not required as part of a correct postal address (Royal Mail removed it from PAF in December 2000), and differences between Postal County, Traditional County and Administrative County can increase the difficulty of matching.

21.3 Do all addresses have UPRNs?

At a simple level, and especially considering residential addresses, we might expect every residential address to have a UPRN. Empirically, testing Openreach's address matching services, the vast majority of both Gold and Silver addresses have a UPRN – but not all.

There are circumstances where network providers (and thus their retail CPs) record residential address that are more detailed than an official address with UPRN. Examples include:

- A large house where the owner rents out part of the property (e.g. top floor) which is somewhat self-contained (e.g. has its own kitchen or bathroom) and is commonly referred to as "the upstairs flat" or "the flat".
- In the past, it was common for a tenant to have their own landline, and Openreach would record a sub-premises⁶⁹ with a name such as "The flat" or "Flat 1".
- These days, the house owner is more likely to include wi-fi access to their broadband service within the rent.
- For a house in multiple occupation (HMO)⁷⁰ (e.g. a student house), it is also likely that either the landlord includes wi-fi access, the occupants club together for a single broadband services, or the tenants all use personal mobile services.
- Openreach also use sub building name for "Alarm line" and "Lift line" – these indicate where the line terminates, and apply both to multi dwelling residential units and to business premises. (Lift and alarm lines probably ought to be on business contracts, but it is possible that some are on consumer contracts, and subject to OTS.)

Here's one example (this is based on a real 3-storey mid-terrace Victorian property in Belfast, but not quoting the actual thoroughfare or full postcode/UPRN/Openreach NAD keys for privacy reasons):

- Using the LPSNI link above, there is a single entry for "65[Thoroughfare], Belfast BT* ***" with UPRN 1*****0 – to the best of the author's understanding, number 65 is a single rateable property. (NI still has rates!)
- Using the Openreach Portal to invoke their address matching service, there are two Gold NAD keys:

⁶⁹ BT's CSS (Customer Service System) uses the terms "Sub premises" and "Premises name". Openreach's address matching dialogue service uses the terms subBuildingName and buildingName (as per Royal Mai)

⁷⁰ See <https://www.gov.uk/private-renting/houses-in-multiple-occupation> for a definition of HMO.

- A00003***** for 65 [Thoroughfare], with same UPRN as held by LPSNI.
 - A00003***** for Flat 1, 65 [Throughfare] and no UPRN.
- At the time of writing (13/01/2022), MLPA shows no lines at either address (and eMLC shows no FTTP ONTs) – but at some point in the past, there would have been Openreach services at both NAD keys, and customers could have attempted to switch them.

Openreach are proposing to make changes to their addressing database such that addresses with extra sub-premises / sub building name information are mapped to the UPRN of the address without sub building name. E.g. Flat 1, 65 [Thoroughfare] would be mapped to the same UPRN as for 65 [Throughfare]. This technique will naturally feed through to Openreach CPs and may be adopted by other CPs.

21.4 LRCP matching of address

The section contains some suggestions on how LRCPs may match the address supplied in the match request against the addresses held by the LRCP in their customer records.

Exact match of UPRN

If the UPRN sent in the match request and the UPRN held by the LRCP are the same, the address can be considered to be a full match. There is no obligation on the LRCP to check any of the other elements of the address, though a check for matching postcode and post town is recommended.

In the examples of additional sub-building information (not recognised in authoritative addressing sources), the check on surname or LRCP account number will act as a check that the correct customer has been matched.

E.g. if the unofficial flat was rented out to someone with a different surname, then only one of the customers linked to the single UPRN would match. If it was rented to someone with the same surname (e.g. family member), and both customers were with the same LRCP, then the LRCP would find two potential matching customers linked to the single UPRN – the customer would then need to provide their LRCP account number to achieve a successful single match.

Exact match without UPRN

If the UPRN is missing in either the match request or the LRCP address, but the other address elements are identical, the address can be considered a full match.

The LRCP may choose to process the address provided in the match request against an authoritative source to map it to a “best version” of the address and then match that against the best version of their own addresses.

Another example is a social housing block in Belfast, where the name of the block is the thoroughfare appended with “Court”. The official addresses (as per Royal Mail and LPSNI) hold the apartment number as building number, and the string ending in “Court” as the thoroughfare, as per the left hand address below. But a customer might quote their address as per the right hand format below, and if the match request arrived in that format, but the LRCP was able to use an authoritative source to map it to a “best address” matching the left hand version, this would be considered a successful match.

35 [Thoroughfare] Court	Apt 35
Belfast	[Thoroughfare] Court
BT* ***	[Thoroughfare]
	Belfast
	BT* ***

Close match

If the match request included the LRCP account number plus either matched surname or voice telephone number, there would be two strong points of contact, then an address which is a close match can lead to an overall successful match.

An address is deemed to be a close match if the postcode matches on the outcode and the first digit of the incode (i.e. only the last two letters are different). Since a close match is only valid alongside LRCP account number and another strong point of contact, there is no need to check any of the other address elements.

A worked example of a close address match:

In 2013, parts of County Fermanagh in Northern Ireland were given new postcodes by Royal Mail in conjunction with the local council. E.g.: the following two addresses refer to the same property (again not quoting the actual address details for privacy reasons):

[House Name]	[House number] [Thoroughfare]
[Thoroughfare]	[Double dependent locality]
[Locality]	[Locality]
Enniskillen	Enniskillen
BT92 0xx	BT92 0yy (Royal Mail changed the last 2 chars of the postcode in 2013)
UPRN: null	UPRN: 1*****3

An LRCP might hold the old address (used when service was originally installed) and the GRCP might use the new address:

- A match on account number would be the first strong point of contact.
- A match on surname or voice telephone number would be the second strong point of contact.
- The match of postcode BT92 0** would be neutral.
- So overall this would be a match.

However, if the input address had postcode BT92 1AA, this would have been a negative point of contact, and would have resulted in a failed match.

21.5 BT's CP Test Facility

BT's CP Test Facility is located in Swansea Automated Telephone Exchange on Strand in Swansea.

BT's internal buildings site quotes postcodes of SA1 2AW and SA1 2AB. Google Maps has BT Tower, Strand with postcode SA1 2AG.

Royal Mail's postcode lookup has the following matches.

- British Telecom, Automatic Telephone Exchange, Strand, Swansea, SA1 2AB
- British Telecom, Tower Block, Automatic Telephone Exchange, Strand, Swansea, SA1 2AB
- CP Test Facility, Automatic Telephone Exchange, Strand, Swansea, SA1 2AB
- British Telecom, Tower Block, Strand, Swansea, SA1 2AG
- SA1 2AW does exist, but appears to be further north along

FindMyAddress appears to have 2 UPRNs:

- 1*****4 for Automated Telephone Exchange, Strand, SA1 2AB
- 2*****1 for British Telecom, BT Tower Block, Strand, Swansea, SA1 2AG

Openreach's NAD has many postcodes for this test facility – most of them are made up postcodes. Most of the addresses have no UPRN.

Testing switching at this location may not be feasible!

22 Appendix 4: Asynchronous communications processes via the Hub

Asynchronous messaging is a common practice in IT integrations where parties in a communication process cannot guarantee a response time.

Interactions between elements in an asynchronous process can either follow a 'fire and forget' methodology, or as will be the case with the Hub, synchronous assured delivery between actors in an asynchronous communications process.

Taking an example of a message between a GRCP and an LRCP to obtain a switching match as an example. The GRCP will place a synchronous request to the Hub, containing routing information identifying the LRCP the message is intended for. The Hub must securely and persistently store that transaction before responding to the GRCP as a confirmation of receipt of that request. As part of receipting that message it will interrogate its header information, authenticate the origin of that transaction against the sender information in the message header and if there any mismatches then it will reject the request to send the message.

The Hub then has responsibility to deliver the message to the LRCP. The Hub will for each LRCP have several end points identifying where a specific transaction type must be sent, that transaction type will again be identified in the header.

The Hub connects synchronously to the end point specified with appropriate security to identify itself to the end point and containing the message from the GRCP untouched. The Hub does not alter the content of the message in any way.

If a connection to the end point cannot be made, then the transaction will be retried. Policies will be defined within the Hub to specify how and when to retry transactions.

If a connection is made, then the message is sent to the LRCP who must respond with an affirmative receipt reply to the Hub for the Hub to consider the message delivered. For the LRCP to send an acceptance to the Hub, it must have securely stored the transaction in its systems to be processed. The Hub then can remove the message from its secure store as it has now been considered delivered.⁷¹

This process provides a level of commitment control to message delivery, ensuring that on passing a request from one party to the other that the delivery is not only acknowledged, but that the transaction cannot be lost due to internal failures in any party's systems.

Some transactions sent via asynchronous messaging will have an SLA. For example, on a switch matching request, a response would be required within 60 seconds for example. This delivery timeout will be included in the routing header of the message. If the Hub cannot deliver the message within that period, it will respond asynchronously to the GRCP indicating delivery was not possible and remove the transaction from its system.

This is appropriate for atomic single use transactions where the non-delivery of a message does not break the process.

However, many other messages, such as the confirmation of a switch acceptance require a guaranteed delivery, and the message header will indicate that the Hub must continue to attempt delivery of the message.

Policies may be applied to these essential messages in the Hub to notify the GRCP if they had not been delivered after a period of time, for example 1 hour, 12 hours etc. allowing a GRCP to initiate any remedial processes if appropriate to that transaction.

If a message sent to the Hub requires a response from the LRCP, then the GRCP must supply a correlation ID. The LRCP will include that in their response message.

No messages should be resent to the Hub unless the Hub connection failed while sending and no response was received before the connection was lost. The Hub should include duplicate message protection, if possible, based on the source identifier and correlation ID to ensure if a duplicate message is sent within a specified time frame that it can respond to the originator with a duplicate message received error. That will protect the processes from duplicate transaction processing during transient failure scenarios.

In all cases, the Hub plays no active part in the processing of the content of the message sent to it, other than to deliver it to the required destination and to maintain a log of transactions for regulatory auditing purposes.

⁷¹ The message will also have been logged by the Hub, to support any disputes, or investigations by Ofcom.

Please refer to the “Developers Guide” that has been produced for more detail on message format.

As described in Appendix 5 on XML vs JSON, the formats can be very flexibly extended as new information is required to support other processes that may utilise the Hub. The routing header will try to remain agnostic of those processes themselves but for example the use of “rcpid” as the source and destination party in the transaction could be replaced with a “CUPID” if the Hub is used for exchanging porting messages.

23 Appendix 5: Hub data format (JSON v XML)

In establishing the recommended messaging structure for One Touch Switch, the following core requirements were taken into consideration.

1. Message must be capable of being validated partially as well as a whole depending on the system processing it.
2. Speed and simplicity of processing.
3. Adaptable, simple to change without impacting existing systems and processes.

XML and JSON, the two principal industry standards, share a lot of similarities. They are both structured message formats capable of organising messages into a machine-readable format that is simple to process. The origins of both stem from different needs and XML specifically was designed with automated processing in mind, with all manner of associated technologies to support things like validation and transformation. However, XML also suffers from generating larger messages, requiring more complex software parsers to process, and is typically very rigidly enforced through the use of schemas making it inflexible to changes in distributed and heterogeneous environments. XML parsing is also typically slower than JSON to process.

One key design decision when comparing the two is the requirement that messages be handled and processed by multiple systems in a workflow where each system only has to consider its own message content requirements. Unlike a client server relationship where an API defines the content, the messages the Hub is routing will pass through several systems on their way between source and destination.

Consider that scenario, the Hub itself has no interest in what the source and destination systems have to say to each other in the body of the message, it only requires to understand how to route the message. The header and body can be both part of the message, but only the header needs to be understood and processed by the Hub. There may be multiple systems involved in a workflow, again only interested in parts of the message, and this has the potential to create a significant impact when it comes to change management regarding message formats.

XML Parsers require processing of the entire document and being able to both validate it and to understand its entire content (unless it is pre-processed or transformed first). JSON on the other hand supports the ability to ignore unknown entities, so that only elements understood by the processing system are interpreted and processed. This is significant, and extremely powerful when messages are handled by multiple systems and processes across many operators.

Consider thousands of users of the Hub, exchanging a common message structure, and then a change is implemented to introduce a new identifier into a transaction for a certain product or process. Coordinating thousands of users to change process at the same time would be impractical, and maybe that change only affects a small subset of the user community. XML would dictate a new message format and a new API. But with JSON that is a simple matter, making use of its ability to ignore unrecognised attributes – everyone continues to use the same message, ignoring the elements they don't need to process.

Though not a strict requirement for JSON, schema standards do exist and can still be provided and applied to message processing. But these schemas again only need to target the key elements of the messages that the processing system must understand to perform its processing.

This is the key design differentiator between XML and JSON, and a principal reason why JSON is the format the Hub will support for all messages.

Further benefits of using JSON are that it produces smaller messages, which are faster to send and take less storage space. JSON parsers are also faster than XML parsers. All good reasons in themselves to consider JSON the preferred format.

Though XML has many other significant supporting capabilities that in certain scenarios could mandate its use, however none are considered necessary for the purposes of those processes that will make use of the Hub.

Therefore, JSON has been specified as the messaging format for all transactions passing through the Hub.

24 Appendix 6: Obligations on losing retail provider around delivery of switch information

There are several points in the September 2021 Statement that are worth noting (emphasis added):

- 4.199 Under the One Touch Switch process as proposed by industry, the Hub will send the losing provider's switching information directly to the customer using the contact details provided by the losing provider, but also to the details provided by the gaining provider, if these are different. We share respondents' concerns that this could lead to customer information being sent to a person other than the authorised customer. In our view, the losing provider switching information should only be sent to the contact details already registered with the losing provider. However, we think losing providers should ensure a customer can subsequently contact them to update their contact details and ask for the information to be re-sent to the new contact details. See also paragraph 5.35 and paragraphs 7.47-7.56.
- 5.35 We have decided to amend the process from that proposed by industry, and set out in Section 2, and will not require that a losing provider send the switching information to the contact details that the customer has provided to the gaining provider (see paragraph 4.199). This means the losing provider switching information will in practice only be sent to the contact details already registered with the losing provider (see also paragraphs 7.47-7.56).
- 7.49 As noted in Section 4 (paragraph 4.199), our view is that allowing a customer to provide new contact details for receiving their losing provider switching information could risk customer information being sent to a person other than the authorised customer. As noted in Section 5 (paragraph 5.35), we have amended the process from that proposed by industry and will not require that a losing provider send the switching information to contact details provided to the gaining provider. This means the losing provider switching information will in practice only be sent to the contact details already registered with the losing provider (unless the customer subsequently contacts the losing provider to update their contact details and asks for the information to be re-sent to their new contact details).
- 7.55 We recognise that none of the options addresses the risk that customers might be unable to access their switching information at all if it has been sent to an old email address which the customer cannot access. In these circumstances a customer would need to contact the losing provider to update their contact details.

Condition C7 then includes:

- C7.4 All **Regulated Providers** shall ensure that:
- [...]
 - they cooperate in good faith and take all necessary steps within their control to complete the **Communications Provider Migration** process in accordance with this **Condition C7** and **Condition B3** and any applicable industry agreed processes;
- C7.10 **Regulated Providers** must take all reasonable steps to ensure that:
- Switching Customers** are adequately informed before and during the **Communications Provider Migration** process, including in relation to their right to compensation in accordance with **Condition C7.47**;
 - [...]
- C7.12 The **Regulated Provider** that is the **Losing Provider** must take all reasonable steps to ensure that **Switching Customers who are Consumers** are provided with the following information, in the manner and form set out in **Condition C7.13**:
[...]

It is likely that Ofcom would refer back to their Statement when considering what constitutes a “necessary step” or a “reasonable step”.

25 Appendix 7: Obligation on losing retail providers around “notifications”

Ofcom’s September 2021 Statement does not make a clear distinction between the communications sent to the customer by the losing retail provider at the time of matching (for a prospective switch) and at the time of switch order placement (for an actual switch). Examples include (emphasis added):

- Paragraph 4.185 includes “In One Touch Switch, the customer and services to be switched are identified through a matching process between the gaining and losing providers, using information the customer provides to the gaining provider. [...] In addition, both the losing provider and the gaining provider will send switching information to the customer which serves as a backstop to warn customers if they did not intend to switch those services or did not want to switch at all.”
 - As explained in §2.1, switching information is provided by both the losing and gaining retail provider (and by implication in multiple messages of notifications).
 - This paragraph does not specify the time at which the information might be sent, and could be construed to represent an accumulated set of information, both from losing and gaining retail providers, and from multiple points in time.
- Paragraph 4.195 includes “In One Touch Switch, the customer and the services to be switched are identified between the gaining provider and losing provider in the matching process. The gaining provider will presume the customer is authorised to request the switch if they provide the correct information and no subsequent objection is received when the losing provider sends out a notification to the customer informing them of the switch. The notification alerts the customer to the switch and names the gaining provider. This could alert customers to attempted slamming.”
 - Note the singular use of “notification”. It is unclear which “notification” this is referring to:
 1. On initial reading, it might be read as the notification sent on a successful match. But this first notification is not “informing them of a switch” – it is instead providing the information needed for a customer to decide whether or not to cancel their contract with the losing retail provider.
 2. It could be read as a later notification that a switch order has been placed with a gaining retail provider.
 - The revised General Conditions includes the following definition of Slamming:

‘Slamming’ means where a transfer of **Internet Access Services** and/or **Number-based Interpersonal Communications Services** has been initiated [...]
 - If Slamming only start when a transfer has been initiated, it reinforces that this paragraph is referring to a notification sent once a switch order has actually been placed, and not to any notification sent at the time of initial matching.
- Paragraph 4.198 includes: “If the requesting customer provides the correct information, the losing provider sends out a notification to the customer informing them of the switch. It can be sent to the customer immediately and automatically. The notification would alert the customer to the switch and name the gaining provider. This would provide additional protection against slamming where the customer has not given their consent to switch (to that provider, or at all). The customer should then have enough time to take action and stop the switch if they did not request it, although we recognise this could take longer if the customer has chosen to receive all communications by post.
 - Note again the singular use of “notification”.
 - “If the customer provides the correct information” – this is a reference to the information captured for the match request. If the losing retail provider finds a match, they send switching information to their customer advising them of the impacts of switching if they were to proceed with a switch. But again, there is no actual switch until the customer gives their express consent.
 - Again the references to “informing them of the switch” and “alert the customer to the switch” imply that this notification is sent after the gaining retail provider proceeds with a switch order. A customer enquiring with a gaining retail provider about options does not yet have an actual switch – at this point, they are simply considering a potential future switch. A switch order can only be submitted after the customer has provided their express consent to the GRCP to start the process. They must have the option of taking time to consider the impacts of switching before giving express consent.
 - Once a switch order has been placed by a GRCP, there is a single gaining retail provider than can be named (as opposed to the multiple prospective gaining retail providers that the customer might have engaged with).
- Paragraph 4.204 then includes: “We also expect that both options would involve further notifications confirming a switch order [...]”.
 - This reinforces that Ofcom are expecting an initial provision of switching information from the losing retail provider (about a prospective switch) and further notification when a switching order is placed by the gaining retail provider.

- Paragraph 4.208 includes “For many customers, the information is likely to be limited to telling the customer whether they are still within their minimum contract term, and if so, how long is left and what they would have to pay if they switched before the end of the term.”
 - This also implies that Ofcom expect that the initial notification could be much more limited.

Turning now to the revised General Conditions:

Provision of information

C7.10 **Regulated Providers** must take all reasonable steps to ensure that:

- (a) **Switching Customers** are adequately informed before and during the **Communications Provider Migration** process, including in relation to their right to compensation in accordance with **Condition C7.47**;
- (b) [...]

C7.12 The **Regulated Provider** that is the **Losing Provider** must take all reasonable steps to ensure that **Switching Customers** who are **Consumers** are provided with the following information, in the manner and form set out in **Condition C7.13**:

- (a) an explanation that the **Switching Customer** is transferring their **Relevant Communications Services**;
- (b) the **Migration Date**, where known to the **Losing Provider**;
- (c) a clear identification of all **Relevant Communications Services** that will be transferred, including, where relevant, the **Calling Line Identification** of all **Relevant Communications Services** that will be transferred;
- (d) the impact, whether direct or indirect, financial or otherwise, that the **Losing Provider** reasonably expects the **Communications Provider Migration** to have on any **Relevant Communications Services** or other types of services provided by the **Losing Provider**, including any services and/or facilities that the **Switching Customer** may have access to pursuant to **Condition C5**;
- (e) all **Relevant Communications Services** provided by the **Losing Provider** that the **Losing Provider** reasonably expects to remain unaffected by the transfer;
- (f) the total charge payable by the **Switching Customer** on the **Migration Date**, or where that date is not known to the **Losing Provider**, on the day on which the information is provided, presented as a single (where applicable, aggregated) charge;
- (g) an explanation of the following:
 - (i) the cost and any process or conditions for retaining or returning **Terminal Equipment**;
 - (ii) in relation to **Mobile Communications Services**, as part of the information provided under (i), whether the handset is provided on a separate contractual basis than the SIM, and if it is, the amount still payable under the contract after transfer to another **Communications Provider** and/or the date on which the **Switching Customer** will cease to pay for the handset; and
 - (iii) any credit balance in respect of prepaid services and, if applicable, the right to a refund of this balance in accordance with **Condition C7.7(d)**, including the process for claiming such a refund and any conditions applying to this refund;
- (h) the location of the **Regulated Provider's** guidance in accordance with **Condition C7.10**;
- (i) the right to compensation in accordance with **Condition C7.47**;
- (j) where the information is provided in a letter, the date of the letter and the relevant contact details of the **Losing Provider**; and
- (k) where the information is provided in an electronic format, a web link to the log-in page for the **Switching Customer's** account with the **Losing Provider**.

C7.13 The information set out in **Condition C7.12** must be:

- (a) accurate; and
- (b) provided in clear, comprehensible and neutral terms and on a **Durable Medium**.

C7.25 The **Regulated Provider** must, upon request from the **Gaining Provider**, make available to the **Fixed Switching Customer** that is identified by the **Gaining Provider** the following information:

- (a) the information listed at **Condition C7.12**;
- (b) confirmation of the identity of the **Gaining Provider**; and
- (c) where the **Fixed Switching Customer** requests to transfer a **Bundle**, an explanation of any steps the **Fixed Switching Customer** needs to take in order to transfer any services forming part of the **Bundle**, including where relevant the steps for transferring **Mobile Communications Services** in accordance with the process set out in **Conditions C7.30 to C7.46**.

C7.26 The **Regulated Provider** must make available to the **Fixed Switching Customer** the information referred to at **Condition C7.25** in the manner and form set out at **Condition C7.13**.

There are a few points to note with these GCs:

- “Information” is an uncountable noun meaning ‘facts about someone or something’ – it has no plural form.
- C7.10(a) refers to “before and during the [...] process”, which is a clear reference to multiple points in time at which this information might be provided.
- Note the use of “confirmation of the identity of the Gaining Provider” in C7.25(b) – the word “confirmation” implies that there is something that needs to be confirmed.

Nothing in the above Conditions says that the losing retail provider must provide all of their switching information in a single notification:

- Some of this information will only be known when the gaining retail provider places the switch order, e.g.:
 - The migration date chosen by the customer in conjunction with the gaining retail provider (e.g. lead time for provision, availability of engineer appointment slots).
 - Confirmation of the identity of the gaining retail provider.
 - The use of the term “confirmation” in Condition C7.25(b) could be construed to be a requirement to clearly inform the customer of the GRCP who has submitted an actual switch order. It could also be construed that there is no Condition requiring notification of the GRCP at the time of matching (since it cannot be confirmed at that point), or that the switching information has to be repeated when another GRCP makes the same matching request as a previous GRCP (particularly if the only difference is the identity of the GRCP).
 - Total charges based on chosen migration date.
- Some of this information can be given at the time of successful match, using the date on which the information is provided (when migration date is not yet known).
 - Some of it could (and should) be repeated once a switch order has actually been placed.
 - E.g. if the total charges were worked out on the date of the match request, and included ETCs, then customer then delays their migration date to the end of their commitment period, the information triggered by the switch order should confirm that there will be no ETCs for the future migration date.
- One interpretation of C7.13 is that the notifications sent at the time of matching should be clear that e.g. the customer is not yet transferring their communication services, and this information is being provided to help the customer make an informed choice.
- It is also noticeable that Condition C7.12(f) refers to total charge payable “on the day on which the information is provided”. This could again be construed that the switching information does not have to be repeated when another GRCP makes the same matching request as a previous GRCP, even if there is a difference in the Early Termination Charge (especially if a small difference) – the total charge was correct on the day it was originally provided and remains so.

Taking all the above into consideration, this industry process states that the customer will receive multiple notifications from their losing retail provider:

1. At the point of successful match by a GRCP, the losing provide will send switching information, advising the customer of the impacts of switching – the customer may decide not to proceed, e.g. if they would face ETCs.
2. At the point of the GRCP sending a switch order, after the customer has provided their express consent to the switch.
 - Many RCPs using the existing NOT+ process refer to a “sorry to see you go” (STSYG) notification – it is likely that this terminology will continue for the notification sent by an LRCP when they receive an OTA2 switch order.

Customer should not be placing switch orders with multiple GRCP s (if an LRCP receives a switch order whilst they have an open switch order, the second order will be rejected), so notification type 2 (STSYG) can only be sent once by the LRCP.

However, if a customer shops around multiple GRCP s, and executes their sales journeys to the point of successful match, the LRCP could receive multiple match requests inside a short period of time. If the LRCP was obliged to send a notification with switching information for each successful match, this could constitute a nuisance for the customer (or perhaps the industry if a malicious actor was involved).

This industry process permits LRCP to “rate limit” their dispatch of notifications with switching information, triggered by successful match requests, as described in §7.3 above.

26 Appendix 8: Migration on a Working Day

The revised General Conditions contain references to Working Day in the context of Migration Date, including (emphasis added):

Migration Date

- C7.3 For the purposes of this **Condition C7**, the **Migration Date** shall be:
- (a) where technically possible, the date requested by the **Switching Customer**; or
 - (b) except where **Condition C7.3(a)** applies:
 - (i) as soon as possible; and
 - (ii) no later than:
 - a. [...]
 - b. in all other cases, one Working Day after the date on which all necessary validation processes have been completed, the network connection is ready for use by the **Switching Customer**, and, where relevant, the porting of the relevant **Telephone Number(s)** is(are) ready for activation.

Provision of services by Losing Provider

- C7.7 The **Regulated Provider** that is the **Losing Provider** must:
- (a) [...]
 - (b) ensure that its contract with the **Switching Customer** is automatically terminated on the Working Day on which the Communications Provider Migration has been completed;

'Working Day' means the hours between 09.00 – 17.00 on Monday to Friday, with the exception of Bank Holidays and public holidays;

Note that Ofcom do not appear to define "Bank Holidays and public holidays" – there are separate holiday arrangement for England and Wales, Scotland and Northern Ireland.⁷²

The OTS-DDG have noted the following points:

- Many gaining retail providers and their supply chain are able to offer installations late evening (i.e. completion after 17:00) and on a Saturday or Sunday or some bank holiday dates. We think this is a positive development for consumer customers, and switching should not artificially constrain the availability of installation slots that customers find beneficial.
- Cessation is fully automated for many LRCPs and their supply chain, and typically does not involve any engineering activity (most cessations take the form of a remote disconnection or de-activation).
- Ofcom's February 2021 Consultation and September 2021 Statement had several references to avoiding double paying for services that overlap.
- Some of the customer's contractual obligations with the losing retail provider will continue after completion of the switch, notably obligation to pay the final bill, and obligation to return equipment (or pay a penalty for failure to do so).

As a result, this industry process assumes that the rental liability finishes on the final migration date (see §9.19 for an explanation of this date), even if the losing RCP processes that as a back-dated update.

- We also noted that the disconnection of the losing RCP service might not happen until the next Working Day after completion of the migration:
 - E.g. Customer picks an evening appointment or provision work runs past 17:00 (end of Working Day as per Ofcom definition), so the cease message via Hub is sent after 17:00 (but maybe before some reasonable cut-off such as 22:00) – the losing RCP may not progress the cessation until the next working day, but should respect the last day of rental liability.
- We also noted that the losing RCP provides service for part of the Migration Date as does gaining RCP, and RCP billing only works at a daily granularity. OTA2 advised the OTS-DDG that Ofcom had previously agreed that the migration date can be both the last date of rental liability for the losing RCP, and first date for gaining RCP.

⁷² <https://www.gov.uk/bank-holidays>

26.1 Hours of operation for TOTSCo Hub

For the avoidance of any doubt, the expected hours of operation of the Hub are 24/7, and Ofcom's use of "09:00 – 17:00" should be not read to imply any lesser requirement.

27 Appendix 9: Impacts on wholesalers in the supply chain

Throughout this document, we have used the term “supply chain” to refer to all of the CPs who are upstream of the LRCP and GRCP.

We note that some switches may be between RCPs who use a common wholesaler, e.g. BT Wholesale, TalkTalk, Sky, Vodafone. Some of these wholesalers may choose to handle any transfer of service between retail CPs without informing the access provider at all, or only sending the access provider a minor update order (e.g. BT Wholesale currently send a modify order to Openreach to amend Openreach’s copy of the RID (and possibly a speed change)).

The wholesalers who use Openreach as their underlying network/access provider generally operate processes that are very similar to NOT+ (e.g. 10 day min lead time, managed cease notifications), and will need to make similar changes as those planned by Openreach, including:

- Removal of 10 day lead time (whilst retaining other provision lead times).
- Continuing to send managed cease notifications / KCIs.

Other wholesalers, e.g. Common Wholesale Platform, will need to consider the impacts of OTS on their operation.

28 Appendix 10: Specific Details for Openreach

This should become one of a series of annexes giving equivalent detail for other intra-network switches. Once the TOTSCo website is fully up and running, we will likely split out this appendix into a separate annex document, stored parallel to this Industry Process and other related documents.

Note that the information in this section was not authored or maintained by Openreach. However, the authors believe that the information is correct at the time of writing (March 2023) and have used live examples to verify behaviour on the Openreach portal. CPs should check with Openreach for the latest available information.

This Appendix contains details that are only relevant to RCPs who purchase services from Openreach (directly or indirectly via a wholesaler or TPI (third party integrator)).

Openreach refer to their customers as CPs. This includes both CPs which sell direct to end customers and are thus RCPs, and CPs who are wholesalers (e.g. BT Wholesale). Note that BT Wholesale also refer to their customers as CPs (and rarely now refer to them as ISPs). This section uses CP when considering actors from an Openreach point of view, and RCP when considering actors from an OTS point of view.

28.1 Openreach access service identifiers

Openreach support several types of identifier for their services / lines:

- WLR Directory Number (DN).
- Serviceld
 - For MPF lines, this starts LL
 - For SOGEA, this starts SGEA
 - For FTTC and FTTP, this starts OGEA
- Access Line Id (ALID) – MLPA⁷³ returns an ALID for each copper line. The ALID is not the same as either the WLR DN or the Serviceld.
- FTTP also has an ONT Reference and data port number.
 - Over the years Openreach has supplied optical network termination units (ONT) with either 4 data ports + 2 voice ports, 1 + 1 or most recently 1 + 0. (The voice ports were used for FVA voice service, which is no longer available for new supply.)
 - An FTTP Serviceld (starting OGEA) refers to service on a single data port.
 - ONTs also have a visible serial number – this is also exposed via eMLC. It cannot be used as a search input, but could be cross-checked with a value supplied by the customer if there is a query on matching the correct ONT.

The data returned by eMLC⁷⁴ depends on what input is given:

- When eMLC is invoked with a Serviceld corresponding to a copper line, the ALID is returned (in the ServiceInformation block for GEA).
- When eMLC is invoked with a WLR DN, the DN is reflected in the response (instead of the ALID).
- When eMLC returns details of one or more ONTs, the Serviceld is returned for each working port, but masked to display only the first and last 4 characters.⁷⁵ Note that this applies regardless of the type of search input (e.g. DN, NAD key, FTTP Serviceld) as long as an ONT is found.
- (eMLC can also be invoked with other inputs, but this section is focussing on invocation using the details of an existing service returned in an OTS match response.)

For an intra-Openreach switch, it is extremely desirable to ensure that the GRCP is targeting the correct line or fibre service for transfer. The LRCP will know either the Serviceld or WLR DN, and MLPA will expose only the ALID to the GRCP.

⁷³ Manage Line Plant Availability (MLPA) is an Openreach dialogue service which returns the available copper lines at an address.

⁷⁴ Enhanced Manage Line Characteristics (eMLC) is an Openreach dialogue service which returns information about both copper and fibre services.

⁷⁵ This was introduced with the v51 schema, and was enabled with release EMP5150.

28.2 Openreach information to be included by the LRCP in the match response

The LRCP must return the following information:

- Access provider = Openreach (represented by an access provider id).
- Access provider service identifier type and value as follows:
 - If the LRCP records the Openreach Access Line Id of a copper service:
 - Identifier type = "AccessLineId"
 - Identifier = value of Access Line Id
 - If the LRCP records only the Openreach ServiceId of a copper service (e.g. MPF or SOGEA), they should invoke eMLC with that ServiceId and return the AccessLineId from the eMLC response as per the previous scenario.
 - If the LRCP records the WLR DN (directory number):
 - Identifier type = "PartialDN"
 - Identifier = last 2 digits of full DN
 - If the LRCP records the ONT Reference, they should return 2 type/value pairs:
 - Identifier type = "ONTReference"; Identifier = ONT Reference
 - Identifier type = "PortNumber"; Identifier = port number.
 - If the LRCP has not recorded the port number, they should omit the second pair – the GRCP will then need to choose the appropriate port (likely there will only be a single working port).
 - If the LRCP records only the ServiceId of an FTTP service, they should invoke eMLC with that ServiceId, and return the ONT Reference and port number as per the previous scenario.
 - The LRCP can match the masked ServiceId returned in the eMLC response with their full ServiceId to ensure that they return the correct combination of ONT Reference and port number.

For ease of matching, the spelling of the identifier types listed above are intended to match the spelling of the XML tags used in the Openreach dialogue services, notably MLPA and eMLC.

As a reminder, it is not mandatory for the customer to provide their existing DN – the customer may not remember the DN of a landline service that they don't use, or may not be aware that they have an existing landline service and DN – or the customer may simply want a broadband only service, and the GRCP does not wish to expend call handling time to capture the DN. A WLR CP will return only the Partial DN (last 2 digits of the full DN) to avoid any GDPR issues associated with returning the full DN that may not be known to the GRCP (or any malicious actor purporting to be the customer).

28.3 Understanding by LRCP of Openreach products

It is expected that CPs consuming Openreach services will be aware of the following:

- Certain forms of broadband (ADSL and FTTC) are dependent on an underlying WLR service, and will be ceased if that WLR service is ceased (including when ceased by transfer orders).
- WLR can be sold to one CP and broadband service on the same copper line to a different CP.
- FTTC can be added to an MPF line, but only by the CP which owns the MPF service.
- Converting a line to SOGEA (including as the target technology of a transfer order) will trigger cessation of any existing WLR or MPF service.
- Both FTTC and SOGEA are available in VDSL and G.fast variants – this document implies both VDSL and G.fast in every usage of the terms FTTC and SOGEA (and avoids the term "SOG.fast").

Consider a customer with WLR via one RCP and ADSL/FTTC via another RCP, wishing to switch their broadband to another RCP, which is an Openreach CP well aware of WLR withdrawal, and thus is now ordering SOGEA.

There are a few expectations on the two LRCPs from this Industry Process:

- The WLR CP should be aware that there could be an ADSL or FTTC service over their WLR line; should be capable of determining if they provide any ADSL or FTTC over their WLR line (for the same or different customer / account); and if they don't, should be capable of involving eMLC (or an equivalent provided by their supply chain, e.g. BT Wholesale's BBAC⁷⁶) to ascertain if there is BB on the WLR line, but from another CP.⁷⁷
- The BB CP should be aware that their existing BB is ADSL or FTTC, both of which require an underlying WLR service; should be capable of determining if they provide that WLR service (for the same or different customer / account); and if

⁷⁶ BBAC is BT Wholesale's broadband availability check, and uses eMLC to derive its results.

⁷⁷ E.g. a Technology code of Z in the eMLC response indicates "no issues" with providing new broadband, which can be used to infer that the WLR line has no existing broadband.

they don't, know that another RCP must be providing the required WLR service (there is no need to verify this using anything like eMLC).

RCPs who are Openreach CPs should take careful note of the requirement in §6.7 to return values such as "ServiceWithAnotherRCP" (e.g. for IAS when eMLC indicates BB on the line, but not found in the RCP records) or "ServiceNotFound" (e.g. for IAS when eLMC returns Z).

28.4 Process to be followed by GRCP

This section only applies when the GRCP is an Openreach CP, and wishes to use Openreach to provide service for this switching customer.

The GRCP should already have checked the service availability at the address, before invoking the OTS match process.

When they receive the match response with the access provider as Openreach, they can recognise the switch as an intra-Openreach switch.

- The LRCP should **not** have provided an Openreach Serviceld in the match response.
- If the LRCP has provided an Access Line Id (ALID):
 - The GRCP should check that this Access Line Id was returned in the MLPA response for the chosen Openreach NAD key – this may be a fresh MLPA call, or a cached response from the initial check for service availability.
 - The transfer order should be placed using the Access Line Id.
- If the LRCP has provided a PartialDN:
 - The GRCP should check that this PartialDN was returned in the MLPA response for the chosen Openreach NAD key – this may be a fresh MLPA call, or a cached response from the initial check for service availability.
 - The transfer order should be placed using the ALID of the line with the matching PartialDN.⁷⁸
- If the LRCP has provided an Openreach ONT Reference:
 - The GRCP should invoke eMLC using the chosen Openreach NAD key, and verify that an ONT is returned with the same reference.
 - If the LRCP did not provide a port number, the GRCP will need to choose the most appropriate port (1+1 and 1+0 ONTs only have a single data port, and a 4+2 is likely to only have one working port).
 - The transfer order should be placed using the ONT reference and port number.

Note that the option for the LRCP to return an Openreach Serviceld in the match response has now been removed from this process. Not all GRCPs have direct access to invoke eMLC (instead they may invoke some form of "broadband availability check" exposed by their supply chain, which typically either don't support Serviceld as an input, and/or don't return Access Line Id in their output). Thus it is the responsibility of the LRCP to return identifiers (such as Access Line Id) that can be directly used by the GRCP.

28.5 Understanding by GRCP of Openreach products

A GRCP proposing to use an intra-Openreach transfer with a target technology of SOGEA should be aware that such a transfer can impact both a WLR and existing ADSL/FTTC service, or an existing SOGEA service.

Openreach CPs should take careful note of the detail in §15 on switching from multiple LRCPs to one GRCP, taking into account the likely inclusion of "ServiceWithAnotherRCP" in the match responses from the LRCPs.

28.6 Switches and transfers with a pending cease

Openreach support the placement of a transfer order when the LRCP has placed a pending cease order with a future date. If the transfer order is accepted by Openreach, it results in a new managed cease order (triggered by the transfer order) replacing the original LRCP initiated cease order (Openreach cancel the original cease order).

§9.4 documents the equivalent scenario for an OTS switch, and states that "RCPs may choose to cancel the customer's pending cease). Given that the Openreach are not changing their handling of transfer orders, including the detail in the previous

⁷⁸ There is a slight risk that the GRCP has chosen an incorrect address, which happens to have a WLR line ending in the same last 2 digits. Unfortunately, eMLC does not return Access Line Id when invoked with a DN. However the risk of an erroneous line selection is small, and with WLR a dying product, that risk will reduce further over time.

paragraph, Openreach CPs should consider the detailed impacts, and are likely to conclude that cancelling the customer's pending cease is the best option.

28.7 Change in timing of managed cease notifications triggered by Express Porting (SPX) number port

WLR CPs may be used to receiving the initial (unsolicited) managed cease notification on the date a port order is placed, with a future expected porting date, and then receiving the completion notification when the port is activated.

Use of SPX by the GRCP and supply chain will impact on the timing of sending of the managed cease notifications: the initial notification (KCI1 and KCI2) will be sent after the gaining supply chain trigger the port, and the completion will follow shortly afterwards – i.e. all on the same day. WLR CPs will need to consider if this has any impact on their internal processing.

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