



One Touch Switch of NBICS, including Number Porting

A best practice guide

Version 0.2 – draft
15/11/2023

Disclaimer: This best practice guide has been produced in good faith by industry participants, facilitated by TOTSCo, to assist other industry participants. It is not legal or regulatory advice nor approved and/or endorsed by Ofcom, ICO and/or TOTSCo. Communications providers may not rely on its contents and are responsible for their own regulatory compliance.

OTS Porting is (at the time of writing, November 2023) still a proposal that has not been fully agreed by the relevant number porting forums. There is overlap between the authors of the OTS Porting proposal and the authors of this document, and those authors have ensured that the references in this document to OTS Porting do reflect the current proposals accurately. If those proposals change, it may be necessary to update the guidance in this document.

Contents

1	Introduction	5
1.1	Change log.....	5
1.2	Contributing authors.....	5
1.3	Abbreviations and definitions	6
2	Reminder of the steps for a switch under the OTS process	8
3	Number porting basics.....	9
3.1	Retail and voice CPs.....	9
3.2	Mechanism for VCPs to exchange number porting information: NPOR and NPAR	9
3.3	Number porting processes.....	9
3.4	Right to port out (RTPO).....	10
3.5	Number porting support windows.....	10
3.6	Alignment of number porting with physical installation.....	10
3.7	Alignment of all elements of an OTS switch.....	11
4	Use of telephone numbers in One Touch Switch	12
4.1	NBICS in OTS match request	12
4.2	NBICS in OTS match response	13
4.3	When can a port order be placed or not?.....	14
4.4	Use case 1: Customer wishes to retain their telephone number	15
4.5	Use case 1a: Number porting element of an OTS switch order fails.....	15
4.6	Use case 2: Customer asks to port their telephone number after switch	15
4.7	Use case 3: Customer requests porting after match request with cease or identify.....	15
4.8	Use case 4: GRCP supply chain pre-provisions broadband	16
5	Number porting within the One Touch Switch process	17
6	One Touch Switch and number porting problem statements.....	18
6.1	Relative timing of receipt by LRCP of OTS trigger and number export notifications	18
6.2	Number export can trigger cessation of linked IAS by the network operator	19
6.3	Open unsolicited cease due to number export can prevent an RCP initiated cease	19
6.4	Export of VoIP DN and cessation of underlying IAS	19
7	Best practice for the GRCP	20
7.1	For timed number ports.....	20
7.1.1	Guidance for the GRCP.....	20
7.2	For auto postpone number ports.....	20
7.2.1	Guidance for the GRCP.....	21
7.3	For OTS number ports.....	21
7.4	Support windows for number porting	21
8	Best practice for the LRCP.....	22
8.1	Number port is completed before receiving the OTS trigger.....	22
8.2	OTS trigger is received before the number port	22

One Touch Switch of NBICS, including Number Porting - A best practice guide

8.3 Unacceptable options 23

9 OTS number porting..... 24

10 Best practice for VCPs 25

11 Best practices for creating number port orders..... 26

1 Introduction

This document is one of a series of best practice guides related to One Touch Switching. This document focuses on how to use One Touch Switch to switch a customer with an NBICS, including number porting, in a consistent and reliable manner. The lead authors were members of the original design drafting group (OTS-DDG), and the content has been reviewed by the Industry Process Group which is co-chaired by TOTSCo and OTA2.

The intended audience of this document is personnel responsible for the technical implementation of One Touch Switching in retail communications providers and MAPs, including business analysts, solution architects, and implementation and testing teams. It will also be of interest to equivalent personnel in voice CPs.

It is assumed that readers are familiar with both the OTS Industry Process and the OTS Message Specification, as well as the Best Practice Guides, all of which can be found at <https://totsco.org.uk/process-technical-documents/>. If you are not familiar with the content of those documents, you are strongly encouraged to download and read them before reading this document.

1.1 Change log

Version Date Changed by	Reason for change
V0.1 First draft 29/10/2023 Dave Stubbs	First draft for discussion and review by the OTS Industry Process Group.
V0.2 draft 15/11/2023 Niall Gillespie	Updates from discussions withing OTS Industry Process Group. First version circulated for industry review.

1.2 Contributing authors

Author	Organisation
Dave Stubbs	Virgin Media
Niall Gillespie	BT

1.3 Abbreviations and definitions

Abbreviation / term	Meaning / definition
TOTSCo	The One Touch Switching Company www.totsc.org.uk
TOTSCo Hub	This is the formal name used by TOTSCo to refer to the hub which will provide services to CPs in support of OTS and GPLB processes, and possibly for other industry processes in the future. TOTSCo have chosen Tech Mahindra to implement and operate the TOTSCo Hub.
CP	Communications provider This is a term defined by Ofcom in their General Conditions of Entitlement as: “a person who provides an Electronic Communications Network or an Electronic Communications Service”.
VCP	Voice CP This term is used in OTS documents to represent the communications provider responsible for the voice (NBICS) services. Voice CPs are holders of CUPIDs used for identification in number porting processes.
RCP	Retail CP This term was first defined in the OTS Industry Process (and re-used in the GPLB documentation) to define those CPs who provide services at the retail level to end-users, both consumer and business.
GRCP/GVCP	Gaining retail or voice CP
LRCP/LVCP	Losing retail or voice CP
GPL	Gaining provider led Ofcom has mandated that OTS is a gaining provider led process, i.e. the customer does not need to contact their LRCP, and can expect the GRCP to co-ordinate all aspects of the switch, including number porting where it is part of the overall switch.
MAP	Managed Access Provider This is the term used by TOTSCo to refer to providers of “Managed Access Solutions” for RCPs who do not wish to interact directly with the TOTSCo Hub, and who wish instead to use the services of a TPI to interact with the Hub.
TPI	Third party integrator This is a commonly used term within the UK telecoms industry to refer to parties who provide integrations services to CPs, but are not themselves CPs.
OTA2	The Office of Telecommunications Adjudicator. The OTA2 was established as a follow-on to the original OTA Scheme, and is independent of Ofcom and of industry.
CRD	Customer Required by Date A common term indicating the date that the customer has stated as their requirement in a captured order, e.g. for provision, regrade or cessation.
CCD	Customer Committed Date Supply chains are sometimes not able to meet the CRD, and instead return a date that they can commit to. Delays are more common on provision and regrade orders. Cease orders tend to have short lead times (usually same day), so any CRD can generally be met.
PONR	Point Of No Return A common term indicating the cut-off time for amending or cancelling an open order. It is often specified relative to CCD, e.g. “CCD-1;16:00” means 4pm on the calendar day before CCD.
NPOR	Number Port Order Request An Excel form based mechanism for exchanging porting data between gaining and losing VCPs.

Abbreviation / term	Meaning / definition
NPAR	<p>Number Port Activation Request</p> <p>A formatted file mechanism for exchanging porting data between gaining and losing VCPs.</p>
SPX	<p>Switch Port eXecute</p> <p>A type of switch order delivered in the NPOR or NPAR files to be processed near real time.</p>
SPQ	<p>Switch Port Query</p> <p>A type of switch order delivered in the NPOR or NPAR files to verify the portability of a number in near real time.</p>
CUPID	<p>Communications Provider Identity Code</p> <p>Used by those CPs that are voice CPs as identification in number porting processes.</p>
RTPO	<p>Right to Port Out</p> <p>This refers to a customer’s right to port their number for up to one month after cessation (31 days counting the day of cessation as day 0).</p>
NBICS	<p>Number Based Interpersonal Communications Service</p> <p>Note that the term NBICS includes mobile, but OTS only covers NBICS provided at a fixed location (typically with 01 and 02 numbers).</p>
IAS	<p>Internet Access Service</p> <p>Note that the term IAS includes mobile broadband, but OTS only covers IAS provided at a fixed location.</p>

2 Reminder of the steps for a switch under the OTS process

The OTS Industry Process defines three primary steps for switching:

1. Matching, including dispatch of implications of switching by the LRCP.
2. Switch order initiation, using an SOR (switch order reference) returned from an earlier match.
3. Switch trigger, sent by the GRCP when they are ready for the LRCP to cease existing services.

Additionally, a switch order may be updated (to change the proposed migration date) or cancelled.

3 Number porting basics

Number porting comes in several different forms, both process wise and technology. The following sections provide the basics that will be referred to when defining the best practices.

3.1 Retail and voice CPs

Whilst retail CPs will capture a request from their customer for retention of existing numbers, the parties involved in exchange of number porting messages are voice CPs, who are identified by CUPIDs in the same way that OTS RCPs are identified using RCPIDs.

There are always three voice CP parties in a number port: the gaining VCP, the losing VCP and the range holder. Depending on the number being ported, either the gaining VCP or losing VCP could also be the range holder. Other parties include the GRCP and LRCP (who may or may not be virtually integrated with their VCP), wholesalers and porting agents.

3.2 Mechanism for VCPs to exchange number porting information: NPOR and NPAR

There are two mechanisms for sending and receiving number port information between voice CPs:

- **NPOR** are orders presented in an Excel document. This is an old format maintained primarily to support VCPs that have no automated processing, though some VCPs still use this even with automation.
- **NPAR** are orders presented in a fixed record file format and facilitates sending and receiving many porting transactions in a single file.¹

NPARs are typically better automated and have faster processing times than NPORs. RCPs will typically be unaware of which of these mechanisms are being used unless they are a vertically integrated VCP.

3.3 Number porting processes

Number ports are facilitated using one of three processes. In sequence of creation / industry adoption, these are:

- **Timed Number Ports** are porting requests where at the time of placing the port order, the requestor specifies the exact date and time the port is to be performed.
- **Auto Postpone Number Ports** are porting requests where an indicative date for the port is provided, but an activation message is sent by the requesting VCP at the time the port is required. Some VCPs generate confirmation notices in response to these activations and some don't.
- **OTS Number Ports** are the proposed new mechanism to processes number ports where there is no requirement for an order to be placed first, only the activation request is sent. This is predicated on the switching process already having obtained switch approval from the customer and the LRCP in the matching process.

Timed and Auto Postpone number ports are both subject to a minimum lead time: 4 working days for a port where either the GVCP or LVCP is also the range holder, or 7 working days if the range holder is different². OTS Number Porting will have no lead times and is subject to a confirmed SOR being obtained from a LRCP and them providing the CUPID of the VCP where the telephone number is currently in service.

OTS Number Porting will likely not be ready to use before Q3 2024, but is included here for completeness and to provide guidance on how the processes will differ depending on what porting processes a VCP follows.

¹ The EDI specification for NPAR defines a batch file with header, footer and one or more data records. The VCPs who currently use NPAR send and poll for batch files on intervals of around 3 to 5 minutes – these could be termed “micro batches”.

² When a number has been ported from RH (VCP1) to VCP2, and now the customer wants to move to VCP3, this is termed a “subsequent port” (often abbreviated to “sub port”), and requires 7 working days lead time.

Best practice

When an OTS switch includes a number port, the preference of porting process is as follows:

1. OTS number port is the preferred process, if the combination of RH, LVCP and GVCP support this process, and the GRCP is able to use this process via their supply chain.
2. Auto postpone is the second preference.
3. Timed port is the least preferred process. RCPs using timed port are encouraged to discuss with their supply chain partners how they could move to auto postpone, and eventually to OTS porting.

3.4 Right to port out (RTPO)

EECC and Ofcom have also introduced a right for a customer to port their number for up to one month after cessation – this is commonly referred to as “right to port out” (RTPO), and came into effect on 03/04/2023.

Note that the timing of elements of an OTS switch may mean that the voice service is sometime ceased by the LRCP first, the number enters quarantine, and then it is ported out (maybe minutes or hours later). RTPO removes any ambiguity about whether the LVCP must enable such a port – they must.

3.5 Number porting support windows

The support windows for activation of number ports are documented at http://www.offta.org.uk/_data/assets/excel_doc/0016/214702/App-G9.2-GNP-CP-Support-times.xlsx.

In summary, the support windows for single number ports are Mon - Sat, 08:00 - 18:00.

3.6 Alignment of number porting with physical installation

Some OTS switch orders will involve a physical installation, e.g. of a new copper line or full-fibre.

Best practice

GRCPs should consider how they keep number porting aligned with any physical installation, especially where the physical installation is delayed.

Auto postpone ports can be activated up to 7 working days after the proposed date – this allows a small window for short delays (e.g. an installation runs over, but is completed the next day).

If a GRCP becomes aware of a more significant delay, they should amend any open port order. If the delay is to a known date (e.g. a committed date from the supply chain), the amendment should be to that date. If there is no known date (e.g. the supply chain has not yet provided commitment, but the end of the auto postpone window is approaching), the delay can be for an arbitrary period.³

OTS porting has no open port order – the port request is for an immediate activation. It would only be sent when the GRCP (or their supply chain) has completed the other steps of the overall switch and is ready to import the number. Thus keeping porting aligned with other aspects of the switch should be easier – this is one reason why OTS porting is the preferred porting process.

³ This is sometimes referred to as “keeping the order alive”.

3.7 Alignment of all elements of an OTS switch

There could be delays on any element supporting an OTS switch:

- Physical installation could be delayed as per the section above.
- A porting order could be rejected (e.g. non OTS port requests can fail when the postcode held by the LVCP / LRCP differs from the value captured by the GRCP). If a revised port order is issued, it may be necessary to delay the OTS switch order and any network order to maintain alignment of dates.

Best practice

The GRCP should consider what delays (including rejection and re-issue) could arise, and how they ensure that all elements of the overall OTS switch are kept aligned to the same CRD.

4 Use of telephone numbers in One Touch Switch

This section focuses on NBICS in match requests and responses, and the related use of telephone numbers.

4.1 NBICS in OTS match request

If NBICS is included in the match request, `serviceIdentifier` is optional. If populated, it must contain a full telephone number (DN) in 10 or 11 digit format, including the leading 0.

(The Matching Best Practice Guide and accompanying Request and Response Scenarios define how the `serviceIdentifier` should be used in conjunction with other inputs to match a customer, account or subscription.)

There are three options for the `action` defined within the OTS message specification for NBICS in a match request and these are as follows.

Action	Meaning
port	<p>A port provides an indication that DN of the NBICS service is intended be ported and that the CUPID, should be returned in the match response. A full DN should <u>always</u> be provided when making a port request.</p> <p>A successful response (<code>ServiceFound</code>) to a port request acts as pre-authorisation to porting – this pre-authorisation is <u>required</u> to use OTS porting, and supports compliance with Ofcom GCs for any porting process.</p> <p>Just because <code>port</code> is specified in the match request, the GRCP is not obliged to port, or a port could be started and subsequently cancelled (or delayed) without affecting the validity of the overall OTS switch.</p>
identify	<p><u>Requires</u> the presentation of a full telephone number and can be used by the LRCP as a means to identify the customer’s account or subscription.</p> <p>If the number is associated with the IAS, but the NBICS is provided by another RCP, for example in a WLR situation with split retailers, then the number can still be used to identify the IAS.</p> <p>If a number is presented just for identification, and the number is found, the LRCP should respond with either <code>ForcedCease</code> or <code>OptionToRetain</code>⁴ – see below for more details.</p>
cease	<p>A request to cease is very explicit, and asks that the LRCP ceases the voice line when the switch is triggered. A cease does <u>not require</u> that the DN be presented as the service identifier, but the DN can optionally be provided. The assumption being that there is a single matching voice service available at the losing CP and that they will cease that service when the switch trigger is received.</p>

The match request sent by the GRCP should enable the LRCP to understand the customer’s intent around porting their number; the LRCP may assume that the customer intent has been correctly captured by the GRCP; LRCPs may vary their communications to their customers based on that intent.

Best practice

Where a customer is requesting to switch their existing number, the match request should include NBICS with an action of `port`, and the DN as the `serviceIdentifier`. The response should include the `CUPID` of the current voice CP where known, and acts as pre-authorisation of porting of the full DN, regardless of porting process.

⁴ §5.11.1 of the OTS Industry Process states that the match response must include a response for each service that was included in the match request. The action of `identify` was added in v4.3, and in §6.5.1 states that the LRCP will not need to include NBICS in the response if the customer can retain their service. This Guide resolves this anomaly by recommending that the LRCP returns `OptionToRetain` when the NBICS can be retained – this removes any ambiguity in the response, and allows the GRCP to easily inform the customer that their NBICS can be retained. Note that there is no need for the LRCP to also offer `OptionToCease` in this scenario.

4.2 NBICS in OTS match response

Whether a request to **identify**, **cease** or **port** is made as part of a match request, or NBICS is omitted from the match request, if an NBICS would be impacted by the switch, then information must be returned to the GRCP to inform the customer and where necessary direct them to consult the full implications of switching sent by the LRCP.

If a full DN was provided as the serviceIdentifier for NBICS in the match request, it should be reflected as an identifier of type **DN** in the response. Otherwise, the LRCP should only return the last 2 digits of the DN as **PartialDN**.⁵

For **port**, the LRCP should⁶ return the CUPID of the current VCP, to assist the GRCP in evaluating (with their supply chain) whether OTS porting can be used or not. The LRCP may choose⁷ to also return CUPID for **identify** and for **cease**, but is not obliged to do so.

The match response for an NBICS provides the resulting **switchAction**, and this value can affect how the GRCP subsequently requests a port if required.

NBICS switchAction	Explanation
ServiceFound	This value will be returned in response to port or cease where an NBICS has been found. It implies that the NBICS will be ceased if a switch order is placed, so it should <u>not</u> be returned if the action was identify and the LRCP <u>can</u> retain the NIBCS (instead return OptionToRetain).
ServiceNotFound	If the match request included IAS which was found, and NBICS as cease with no serviceIdentifier, but no NBICS was found, the match response for NBICS would be ServiceNotFound , and there would be no PartialDN or CUPID . (If a DN was included with port , identify or cease , but that DN was not found, the LRCP would return a match failure with faultCode 1105 or 1116 .)
ForcedCease	This may be returned in response to identify , where NBICS has been found, but there is no option to retain the NICS if the linked IAS is switched. It may also be returned when NBICS was not included in the match request, but an NIBCS is bound to the IAS (either technically or commercially). This is an information message for the GRCP to make the customer aware that the NBICS will be ceased if the IAS is switched.

⁵ This ensures that OTS matching cannot act as a reverse lookup from name and address to full DN.

⁶ §6.5.1 of the OTS Industry Process states that the LRCP must return the CUPID. This Guide recognises that OTS Porting has not yet been fully agreed, and some LRCPs may not know the CUPID (e.g. if they use a mixed supply chain). Where the LRCP reasonably knows the CUPID (e.g. they only use a single voice CP), they must return the CUPID.

⁷ §6.5.1 of the OTS Industry Process states that the LRCP does not need to return the CUPID for **cease**, but there is no prohibition on returning it, .e.g. if it leads to a simpler implementation of common code.

NBICS switchAction	Explanation
ServiceWithAnotherCP	<p>This may be returned in response to a port, identify or cease action, but may also be returned when NBICS was not included in the match request, but an NBICS is bound to the IAS (for example WLR with split retailers).</p> <p>This is an information message that the NBICS is with another RCP. If the customer wishes to port their number, or the switch <u>might</u> impact the NBICS (e.g. an intra-network transfer of a copper line⁸), an additional match request must be made to the RCP that is billing for the NBICS.</p> <p>For an inter-network switch, it is still recommended that an additional match request is made – if the customer is not porting their number, there is a likelihood that they expect their old NBICS to be ceased.</p>
ServiceWithAnotherCust	<p>This is similar to ServiceWithAnotherRCP, but indicates that the NBICS service is with a different customer (or billing account) with the same RCP as the IAS.</p> <p>The guidance and recommendations are the same for both.</p>
OptionToRetain	<p>This may be returned in response to identify where an NBICS was found and will not be ceased by the switch⁴, (i.e. the customer can retain their NBICS with the LRCP). Note that the LRCP does not need to return an alternate SOR with OptionToCease in this scenario.</p> <p>It may also be returned in the event that NBICS was not included in the match request but was found and the LRCP is willing to give the customer a choice between retention and cessation, including generating impacts of switching to explain this choice to the customer.</p> <p>The option to retain means the number will not be ceased as a result of the switch and porting should not be used to obtain the number.</p>
OptionToCease	<p>In the event that NBICS was not included in the match request but was found, and the LRCP is willing to give the customer a choice (as above), one SOR should have OptionToRetain and another OptionToCease – the choice of which is the main SOR lies with the LRCP.</p>

4.3 When can a port order be placed or not?

Please note that there are no restrictions in place in the number porting processes, other than within OTS porting, that will prevent a number port being raised that was not part of the OTS process. However, whilst technically porting will work as it does today, porting a number for a residential customer who is simply switching provider and not doing so by following the OTS process is in breach of the Ofcom GCs.

A port order can be raised when the OTS match request included NBICS as [port](#) with full DN, and the match response indicated NBICS was [ServiceFound](#).

- If the match response includes the [CUPID](#) of the current VCP, and the GRCP and their supply chain support OTS porting, the CUPID can be used to check if OTS porting is feasible for this DN.
- Non OTS porting may be used if any of the above checks fail.

If the OTS match request included NBICS as [identify](#) or [cease](#) with full DN, raising of a port order is strongly discouraged by this Guide. The GRCP has not told the LRCP of the customer’s intent to port; the LRCP might have communicated to the customer that porting is not expected as part of the OTS switch; the audit trail will have no evidence of intention to port.

⁸ Following national stop-sell of WLR on 05/09/2023, any intra-Openreach transfer of a copper line must be for SOGEA, which would trigger cessation of the WLR. The customer must be informed of the impacts from their WLR RCP as well as from their broadband RCP – e.g. they could have ETCs from either.

If the OTS match request included NBICS as cease with no DN, raising of a port order is again strongly discouraged by this Guide. Even if the GRCP matches the last two digits of the full DN with the partial DN, there is still a risk of other digits being incorrect, and the full DN belonging to another customer who has not received full impacts of switching as per the Ofcom GCs.

Some customers will raise an order with their GRCP that does not include porting, and then complain after switching that they have lost their number. Porting may be requested under RTPO rules regardless of what was included in the OTS match request. The GRCP may choose to do an OTS match with the full DN to verify that the LRCP does not find working NBICS, so the use of RTPO is reinforced.

4.4 Use case 1: Customer wishes to retain their telephone number

If the customer is clear that they are proposing to switch and would want to retain their existing telephone number, the match request **should** include NBICS with action of **port**, and including the full DN. The match response will confirm that the number is working, and provide the CUPID, where known, which can be used to evaluate whether or not OTS porting can be used.

4.5 Use case 1a: Number porting element of an OTS switch order fails

It will occasionally happen that the number porting element of an OTS switch order fails. The GRCP has two options: They may choose to postpone the IAS installation and align it with a new port date, or they may choose to finish the IAS switch first, and only re-try the port after the IAS has been switched. It is the GRCP's obligation to communicate the options to the customer and coordinate with them as, in the case of switching IAS first, this may result in a loss of the NBICS service for a number of days while a subsequent port is processed.

If the match request had included NBICS with an action of **port**, the GRCP could use OTS porting if applicable⁹ – the port would be both under RTPO rules and deemed to be pre-authorized by the OTS match request and response. OTS porting may still be capable of being completed on the same day as the IAS installation, subject to porting windows.

4.6 Use case 2: Customer asks to port their telephone number after switch

It may happen that a customer is switched to a broadband only service, and only queries the loss of their telephone number after the switch.

The customer may exercise their right to port their number within the month after cessation. However the GRCP would most likely have to use non-OTS porting to port the customer's number.

4.7 Use case 3: Customer requests porting after match request with **cease** or **identify**

It may happen that a customer is not clear that they wish to retain their number, but when warned that the match response indicates that their NBICS service will be disconnected, they then state a need to retain their number.

For some GRCPs, if this is discovered only at the point of matching, they will need to “roll back” their order capture to a stage where they can capture the DN to be imported (and add NBICS to the basket) – for some GRCPs, this may be as severe as having to re-start the order capture process.

Best practice

If the customer presents a request to retain their number after a match response where the request did not include **port**, the best practice is to make another match request (e.g. as part of a re-started order capture process) with **port** and the full DN, obtain the CUPID, and decide if OTS Porting can be obtained.

See §4.3 above for more guidance.

⁹ Recovery processes will vary. E.g. if OTS porting fails due an incorrect CUPID returned by the LRCP, then any recovery might need to use non-OTS porting.

4.8 Use case 4: GRCP supply chain pre-provisions broadband

Some broadband provisions can take an extended period of time, e.g. where network is being built out, and the customer may be one of the first provisions on that portion of the network.

The GRCP may not wish to maintain an OTS switch order which is open for a long period of time. But the GRCP will want to port the customer's existing number as soon as the broadband is provisioned (or when a final date of provisioning can be agreed with the customer, e.g. they need to agree an appointment for the final connection into their home).

Best practice

It is valid for the GRCP to make a fresh match request, at the point where their service has been pre-provisioned. This request should be for both **cease** of IAS and **port** of NBICS. The GRCP can then issue an OTS switch order with a short lead time, particularly if they can take advantage of the OTS porting process and its lack of any lead time.

The GRCP should avoid using a match request that only includes **port** of NBICS – they run the risk that the LRCP will retain broadband, which the customer is expecting to be “switched” to the GRCP (i.e. ceased by the LRCP and their supply chain).

5 Number porting within the One Touch Switch process

Although the OTS and number porting processes are separate processes, with their own working groups, documentation etc. and are governed by different industry bodies, they must work together to achieve a reliable business and customer experience.

It is important for all RCPs to understand and recognise that a number port being performed for a customer where they are not moving premise but are changing RCP is mandated by Ofcom GC's to follow the OTS process to ensure the customer is adequately informed of the impacts of switching. This is true whether an IAS is a part of a switch, impacted by a switch, or if there is no IAS involved.

An example of this would be a simple number port where the resulting IAS service will also cease. The current porting processes do not mandate any customer communications related to the impacts of this, where clearly OTS is used to ensure the customer is adequately informed not only of any resulting charges, but also the impacts to other services.

Note, house moves are not covered under the OTS regulations and therefore a port in that situation will follow the standalone porting processes.

With OTS and Number porting being two separate processes, and in many cases these can be performed by two entirely different organisations, coordinating the two is required to ensure a good customer experience, and to ensure the Ofcom GCs are met relating to no dual charging and no unavoidable loss of service. This requires a number of best practices to be defined in order for all parties in a switch scenario to meet their obligations.

Also, as there are many RCPs who use a third party to handle the porting process on their behalf, the steps required to achieve a port may not be something they are aware of, and may require new interaction with their VCP to achieve the required outcome.

6 One Touch Switch and number porting problem statements

This section outlines a number of problems that can arise between OTS and number porting, which may not be obvious to all parties.

6.1 Relative timing of receipt by LRCP of OTS trigger and number export notifications

As defined within the One Touch Switch industry process, a GRCP should send a [residentialSwitchOrderTriggerRequest](#) to the LRCP once they have completed providing their contracted services to the customer.

If a number port has also been requested for the same customer, this means completing the number port should have been achieved before the GRCP sends the switch trigger message to ensure there is no loss of service or dual billing.

VCPs, where they are not the RCP, can receive a number port and may be unaware it is part of a switch, or indeed not even care that a switch is involved as they currently have no regulatory responsibilities to the OTS process, only to the porting process.

This may mean that at the time of completing a number port, using whichever mechanism and order processes was followed, that they may release the number to the new VCP, but there may be a delay in notifying the LRCP (or their supply chain partner) who previously was the billed party for that number. That delay may be compounded if there are multiple parties in the supply chain.

The result may be that a LRCP may receive the switch trigger message either before or after the number port completion is confirmed, and therefore be unclear on the action they must take either with the VCP, or in responding to the switch trigger message.

This problem could be compounded further by timed number ports that may result in porting occurring before the GRCP is able to completely deliver their service and potentially even on a different day. Although with a timed number port the GRCP should be aware of when that port is requested and coordinate their switching accordingly.

Therefore, the result is that the LRCP must be able to handle the switch trigger and port messaging arriving in any sequence.

Best practice

OTS is a “gaining provider led” process, and the prime responsibility for co-ordination of the various elements of an overall OTS switch lie with the GRCP.

The GRCP should consider how they discharge their responsibilities for minimising any gap in service and the customer not having overlapping billing. This may include considering the support from their supply chain, and ensuring they have support which enables them to meet their obligations (e.g. not accepting support for only timed ports).

The LRCP can reasonably expect a sensible level of co-ordination by the GRCP, but they should consider the detail. E.g. the GRCP should only send an OTS trigger when they believe that number porting has been completed at the network level, but the GRCP may have no visibility of any delays in the supply chain of the LRCP.

E.g. if the LRCP and their LVCP rely on manual updates (e.g. email) and OTS messages arrive more quickly via the TOTSCo Hub, it is the responsibility of the LRCP to sensibly handle this effective race condition on the sequencing of completion messages.

6.2 Number export can trigger cessation of linked IAS by the network operator

It should be noted that number export may have an impact on some IAS services. E.g. certain Openreach products (notably ADSL and FFTC) are dependent on an underlying WLR or MPF voice service. Although Openreach has public plans to withdraw WLR by the end of 2025, MPF may continue beyond this date.

Export of a WLR or MPF DN may cause the network CP to trigger an unsolicited cease of any linked copper broadband, and the LRCP would have no method to delay the IAS cessation to await the arrival of an OTS trigger message.

6.3 Open unsolicited cease due to number export can prevent an RCP initiated cease

Many VCPs send an unsolicited cease to the LRCP when a number export process is underway. Typically an open unsolicited cease prevents the LRCP from placing an CP initiated cease into their VCP – any attempt to do so may be rejected.

For a timed or auto postpone number port, the LRCP will likely be notified of the unsolicited cease shortly after the port order is submitted, and the cease will remain open until the number port is completed (or cancelled). If the LRCP receives an OTS trigger, they may have no option other than to wait for completion of the unsolicited cease.

For an OTS number port, there is a risk of a race condition:

- The LVCP (particularly if also RH) may choose to prioritise the physical number port (application of the routing prefix in their voice network) over keeping the LRCP informed of the resultant cease of their NBICS. Or there may be multiple parties in the losing supply chain and/or manual steps / notifications that could also delay receipt of notification of the completed export and resultant cessation of NBICS.
- The OTS trigger could arrive at the LRCP before they are informed of the number export.
- The LRCP may send a CP initiated cease to their VCP, in the belief that the GRCP has decided not to port the DN. But the LVCP might be in the middle of processing the number port and reject the CP initiated cease.

6.4 Export of VoIP DN and cessation of underlying IAS

Typically VoIP services operate over the top of an underlying IAS, and can be ceased without cessation of the IAS.

If a customer is switching IAS and porting away their VoIP DN, the LRCP is aware of the open OTS switch order, and the LRCP receives notification from their VCP of cessation of their VoIP service due to number export, they may wish to hold their “retail” cessation of both IAS and NBICS until receipt of the OTS trigger. E.g. raising a single “retail” cessation order which ceases both IAS and NBICS may be less onerous for the LRCP.

7 Best practice for the GRCP

To establish the best practice guidance, it is first important to define the problem statements by asking the relevant “What If” questions.

The issues can be broken down into two broad categories, based on the type of porting process followed and whether or not the RCP and VCP are vertically integrated or not, with the key questions being in each combination what should the GRCP do to ensure they send the OTS trigger message only when they have a reasonable belief that the number port has been completed, but without any excessive delay.

Best practice

The GRCP should aim to trigger a number port associated with an OTS switch on the same day as the trigger of the OTS switch order.

As mentioned earlier in the document, even if **port** was requested on a match request, there is no absolute obligation on the GRCP to generate a port request. If no port request is ever received from the GRCP, the LRCP should treat the OTS switch as a cease of the NBICS service.

7.1 For timed number ports

Timed number ports present a challenge to a consistent and reliable switching process as it may not be feasible to align the porting events with the rest of an OTA switch.

RCPs have been known to schedule a port for the morning of an installation, only to find later in the day the customer needs to postpone the installation and thus delay the switch, which has the potential to significantly disrupt the customer’s services.

The best practice recommendation in this Guide is to not use timed ports at all, but for those RCPs where that is not acceptable or an option, the following guidance is given.

7.1.1 Guidance for the GRCP

For the GRCP, when placing a timed port request, either if they are vertically integrated or the porting is managed by a VCP through their supply chain, the OTS trigger request should not be sent to the LRCP until at least 15-30 minutes after the port was scheduled.

As the GRCP has no idea how long the supply chain will take to process the timed port at the network level¹⁰, and from an LRCP perspective, they have no idea how long it takes from processing the port to notifying the LRCP that the line has been ceased and the number ported away, a reasonable length of time should be buffered into the activation workflow to try to ensure the LRCP receives all of their notifications in a meaningful order. This is never going to be 100% reliable with timed porting, but building in a buffer time gives at least some help in this regard.

These delays are not infallible, and processing times of porting batched by VCPs as well as how long and when they notify the RCPs of the results of the actions are extremely variable and unquantifiable. Therefore, an unhappy path has to be accommodated by the LRCP where an OTS switch trigger request is received before a port is completed.

7.2 For auto postpone number ports

Auto postpone ports benefit from only activating the port order at the designated time under the GRCP's control. Typically, this occurs as a part of a manned installation or a coordinated provisioning workflow to ensure all services are delivered simultaneously (or at least in rapid succession).

¹⁰ Activation of a port requires the RH to apply the new routing prefix, so that inbound calls from 3rd party voice networks are re-directed to the GVCP network. Additionally the LVCP may need to remove any routing that kept inbound call from their own network as on-net routing.

It has some drawbacks related to the non-standardisation on how the ports are activated and the port order lead times, but it is considered significantly more reliable than fixed-time porting when used as part of the OTS process.

7.2.1 Guidance for the GRCP

For auto postpone number ports, the same guidance is true to delay an OTS trigger to give time for a LRCP supply chain to process the porting transactions. The GRCP should first send the port activation request via their VCP, or directly if vertically integrated, or some supply chains will do this co-ordination on behalf of the GRCP. If they are sending the activation to a VCP that acknowledges the activations they should wait until a positive acknowledgement has been received, and then finally add another 15 minutes delay before notifying the LRCP with the switch trigger that processing is complete. If the VCP does not acknowledge activations, then 30 minutes delay should be used to provide adequate processing time.

These delays are not infallible, and processing times of porting batched by VCPs as well as how long and when they notify the RCPs of the results of the actions are extremely variable and unquantifiable. Therefore, an unhappy path must be accommodated by the LRCP where an OTS switch trigger request is received before a port is completed.

7.3 For OTS number ports

The OTS porting process will provide the best experience for both the GRCP and the LRCP. The GRP should send a port request and wait until they receive a response confirming its success before sending the OTS trigger message. This should apply whether the GRCP is vertically integrated or not and will require VCPs to provide the appropriate communications to support this workflow.

For an LRCP, as there is no pending port order against a line, it matters less whether the OTS Trigger is received and processed before the number port. There may however be impacts within the LRCP or LVCP. If an LRCP receives an OTS trigger and as a result attempts to cease a voice line, while at the same time the LVCP has received and is processing an OTS port order, they may have order conflicts to resolve. The reality is they are both compatible with each other as in both cases the result would be the customer's voice service would be ceased.

There is no ambiguity in OTS porting for the GRCP as every porting request must be responded to within a short SLA period and this results in a tight process for the GRCP.

7.4 Support windows for number porting

GRCPs (and their supply chains) should be aware of the support windows for number porting (Mon - Sat, 08:00 - 18:00, excluding bank holidays). GRCPs should aim to schedule timed ports and activate auto postpone ports and OTS ports inside these times.

Some GRCPs may support self-activation by customers. E.g. the customer's home has an existing DOCSIS cable connection, and when the customer connects their CPE, the switch process is automatically triggered. The GRCP may be capable of providing instant working IAS, but what happens if the customer does this connection outside of the standard support windows for number porting? The GRCP has several options:

- Advise the customer to connect their new CPE inside the support window for number porting, and if they do it outside of the window, their number might not be ported until the next day.
 - Some ports with full automation may complete outside of the support window.
 - Ofcom GC 7.4(d) states that "any loss of service ... does not exceed one working day".
- Delay the triggering of the both the port and the OTS switch until the next day (Mon – Sat), and also delay the start of retail billing.

Some GRCPs (and their supply chains) may support engineer installations that can run beyond 18:00 (e.g. up to 20:00) or on a Sunday. The options for the GRCP are the same as above.

8 Best practice for the LRCP

So establishing that the GRCP can control their processes only up to a point in coordinating with the number porting process, there needs to be guidance for the LRCP on how to process in either sequence the notification of cease of NBICS due to completion of a port order and the trigger notification of the OTS switch order.

Best practice

The LRCP should consider how they are notified of cessation of NBICS due to completion of a number export, perhaps in conjunction with their supply chain, and how they should handle number export and OTS trigger in either sequence.

8.1 Number port is completed before receiving the OTS trigger

If a number port (via any of the number processes listed at §3.3 above) is completed before receiving the OTS trigger, that event may also have resulted in the cessation of other services within the LRCP or their supply chain. This is entirely acceptable and there is no requirement for the LRCP to wait for the OTS trigger to cease the associated services – the expectation is that the GRCP is responsible for co-ordination given that OTS is a GPL process.

There may be several reasons why the LRCP or their supply chain would cease other services. Firstly, there may be a technical dependency that ceasing the NBICS service results in a loss of the IAS service (see §6.2 above for examples). The second may be simply a commercial decision that there is a dependency between the two and ceasing one automatically ceases the other. Another may be that it is deemed simpler to trigger a whole service cease when the voice service is turned off to simplify order processing rules, though there is a marginal risk that a switch cancellation could be received in place of a trigger.

To be clear, the guidance is that the LRCP is free to treat a port activation as a proxy for an OTS trigger to complete the switch of the customers services. This may result in other actions such as production of final bill etc. as per standard business processes.

It is not a requirement to hold back processing of a cease until the OTS trigger is received if any operator wishes to use the port activation as the means to trigger the switch.

Whatever process the LRCP chooses to follow, until they receive the OTS trigger message from the GRCP they should not send any messages to them. When the trigger arrives, then the LRCP can respond subject to ceasing any other services on the switch order.

This represents the best possible workflow for a combined IAS and NBICS switch.

8.2 OTS trigger is received before the number port

In the event an LRCP receives an OTS trigger but knowingly has a number port pending that is part of the OTS switch, they cannot simply acknowledge the switch without some thought as to what acknowledgement implies.

To acknowledge a switch, the LRCP must have ceased services, or at least know they are going to be ceasing the services and back date any billing to the date specified on the OTS trigger.

In the case of an open port, porting is an independent process which must also complete following its messaging, timelines and processes.

So consider a timed port that has not yet reached its time of activation, and an OTS trigger is received. Or an auto postpone or OTS number port has been completed, but the corresponding notification has not yet reached the LRCP. The LRCP has several choices.

1. To do nothing, hold on to the OTS trigger message until all of the porting activity has completed and only at that point to acknowledge the OTS trigger message.

2. To acknowledge the OTS trigger in the knowledge that they will complete the number port and the cessation of all other associated service in accordance with the service cease date provided on the OTS trigger request.
3. Decouple the voice service from the number port, so that all of the services can be ceased now, but the port remains in place under the RTPO process as the number is moved to a quarantined state.

The ability for an LRCP to take any of the above actions is entirely dependent on whether they are vertically integrated, or if they use a VCP, and if either their own or the VCPs systems and interfaces provide the means to support these actions.

Another possibility, especially for non-vertically integrated LRCPs is that their VCP may not have made them aware of the port order, and at the time of receiving the OTS trigger they may be unaware that a port is in progress. If there are any LRCPs using VCPs integrated in this way, then changes may be required by the LRCP and supply chain to support the ability to cease a voice line while a port is in progress, and therefore decouple the port to leave it following the RTPO process.

8.3 Unacceptable options

The OTS process, specifically the OTS trigger, cannot be used as a means to prematurely complete a port transaction, or to facilitate the cancellation of a port order. The porting process remains the primary mechanism for switching between VCPs and OTS does not replace it.

Final points

The above processes are neither ideal or potentially even practical to implement. As a LRCP you have no control over how a number port order is raised, but providing a recommended best practice to **not** use timed ports in the context of a one touch switch process mitigates the level of impact associated with the above options.

9 OTS number porting

The OTS porting process will provide the best experience for the customer and GRCP:

- It has no lead time, enabling switches to be completed more quickly.
- There should be less failure points (notably the postcode check is skipped – differences in postcode on gaining and losing sides are a common reason for failure of port orders).

The experience of the GRCP will depend on their supply chain. Vertically integrated CPs may have more visibility of OTS number porting. Other supply chains may still require the GRCP to place a port order and then activate the port (with the supply chain sending SPQ when the order is placed, and SPX at time of activation); or the supply chain may activate the port on behalf of the GRCP. And because the OTS porting process is tightly coupled between VCPs, the GRCP will also receive a response in a timely manner and should wait until it is received before sending the OTS trigger message to the LRCP.

The LRCP processes are also significantly simplified as no pre-port order is created in their system and until such time as the OTS port is raised at the point of the GRCPs activation no orders or placeholders are needed to protect the porting process. For vertically integrated LRCPs this will provide a mechanism to not only instantly perform the port, but to also treat it as a proxy for the OTS switch trigger to cease other services in the associated OTS switch as well.

For non vertically integrated RCPs, depending on the nature of their integration with their VCP:

- They may get an immediate and single notification of a voice line being ceased and ported away.
- They may get notifications similar to other porting processes, but with shorter gaps.¹¹

Again the final notification can be treated as a proxy for the OTS trigger message.

What this means is that, until a port order is received and processed, any OTS trigger request can be simply processed as a cease of service and is not bound and required to coordinate with a port order.

As previously specified, the **action** against NBICS included in the switch match request is only for guidance and does not imply an explicit behaviour. So if a match specified a **port**, receiving a switch order trigger without ever receiving a port request is not an error and should just be processed as a cease.

If the GRCP is raising an OTS port request, and has mistakenly raised the trigger before the port order, then because the number will still be retained in quarantine by the LVCP, it is still subject to RTPO rules and the number can be obtained using any of the port order types, including the OTS port order.

For the LRCP, receiving the OTS Port before the OTS trigger would be the generally expected behaviour.

If the OTS Port is received and processed before receiving the OTS trigger, that event may also result in the cessation of other services within the LRCP. As described in §8.2 above, this is entirely acceptable.

Whatever process the LRCP chooses to follow, until they receive the trigger message from the GRCP they should not send any communications to them. When the trigger arrives then the LRCP can respond quickly subject to ceasing any other services on the switch order.

¹¹ For timed and auto-postpone number ports, Openreach send managed cease notifications to their LRCPs. KCI1 and KCI2 are sent on the day the port order is placed, and KCI3 on the day it is activated. For OTS number ports, Openreach will send KCI1, KCI2 and KCI3 in rapid succession, all triggered the SPX port order.

10 Best practice for VCPs

Prior to OTS, cessations of voice service triggered by number exports would originate from the LVCP and be notified up the supply chain to the LRCP. Typically the LRCP would not also be trying to start an LRCP initiated cease at the same time.

OTS changes this dynamic. Number porting processes will continue, but the LRCP now also has an obligation to ensure that the voice service is ceased when it is part of an OTS switch. All VCPs will need to consider the implications of processing a port order while at the same time potentially processing a service cease order from the LRCP. As these are two independent events they cannot be guaranteed to occur in any specific order and can overlap each other.

The outcome of both OTS and porting is that the voice service formerly supplied by the LRCP should be ceased. So there is no real conflict in the outcome, but there may be conflict in order processing that needs to be considered.

For timed and auto postpone ports, the lead times are there to allow time for the LVCP to notify the LRCP of the pending export. The LVCP may have existing conventions that they will not accept a CP initiated cease request when they have notified the LRCP of a pending export – but they may want to reinforce these conventions with their CP customer.

For OTS porting, there is no lead time, and a risk of race conditions as described earlier in this document. The LVCP may choose to simply extend the conventions from previous porting.

Best practice

VCPs should consider the impacts of OTS on existing porting processes, and the additional impacts of OTS porting. They should consider issuing guidance to their CP customers (RCPs and supply chain partners), even if this guidance is just reinforcing long-standing conventions.

RCPs are encouraged to consult with their VCPs and supply chain and ask what guidance exists that they can consume.

11 Best practices for creating number port orders

It is clear that the priority for switching will be to adopt the OTS Porting process once available.

However, in the meantime, it is also clear that the use of timed porting has the potential to be problematic and should be avoided where possible, meaning that auto postpone porting should be used with the OTS process wherever possible.

It is recognised that these recommendations may be beyond the control of the GRCP and LRCPs as their VCPs are not mandated to provide any support for the OTS process. In these instances, and assuming the RCPs are unable to influence the VCPs adoption of the best practices, then the GRCP and LRCP should act in accordance with the best practices in this document for the processes forced upon them.

End of document