National Broadband Scheme

Wholesale Data MVNO Overview

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Document Overview

The purpose of this document is to present a high level overview of the proposed wholesale relationship that 3 Ireland, under the National Broadband Scheme, will offer to potential Wholesale End User partners. This document outlines the type of wholesale arrangement 3 Ireland envisages developing. The Wholesale End User agreement will only be for data traffic on the National Broadband Scheme infrastructure and does not included 3 Ireland's existing infrastructure/network. Any agreement between 3 Ireland and a Wholesale End User will be subject to contract. This is not a legal document. This document is without prejudice to the legal position or the right and duties of 3.

Background

As part of National Broadband Scheme 3 Ireland will provide a Wholesale Service in National Broadband Scheme Coverage Areas. This Wholesale Service will deliver the necessary support systems and 3 Ireland core network changes that are required to enable Authorised Undertakings to integrate with the 3 Ireland NBS Infrastructure and offer mobile broadband services in National Broadband Scheme Coverage Areas. The *Wholesale End Users will offer mobile broadband services to fixed residential and business customers in National Broadband Scheme Coverage Area.

*Wholesale End User = Authorised Undertakings

In summary, Wholesale End Users will be responsible for acquiring customers, credit checking, selling services and invoicing customers. Wholesale End Users will own the relationship* with the customer. 3 Ireland will provide the NBS network capability, the USIMs required to access the 3 Ireland network, a service provisioning capability and details of customer service usage. Wholesale End Users will raise network provisioning requests to 3 Ireland to activate and subsequently maintain services for the Wholesale End Users registered customers. Wholesale End Users will be responsible for retail rating, invoicing and providing customer services support.

*The Wholesale End Users will own the relationship with the customer and will be responsible for arranging contract agreements.

There will be two main system interfaces between Wholesale End Users and 3 Ireland.

Firstly, a set of web services will be provided by 3 Ireland that will enable the Wholesale End Users to activate, maintain and de-activate service on 3 Ireland's NBS network for their customers. The Wholesale End Users will offer their customers USIMs and MSISDNS, where the MSISDNs have been pre-allocated to each Wholesale End User from 3 Ireland's number range and where the USIMs have not been pre-activated.

Secondly, 3 Ireland will, on a periodic basis, supply batch files of Call Detail Records (CDRs) for all usage events that were recorded on 3 Ireland's network elements as a result of the Wholesale End Users customer service usage activity. There will be no retail rating of Wholesale End Users' customer usage performed by 3 Ireland. There will be no record of Wholesale End Users' customer in 3 Ireland's retail billing application – SingleView or CRM system - Peoplesoft. Wholesale End Users will be responsible for maintaining retail price plans and retail rating. 3 Ireland will simply supply the raw usage data to Wholesale End

Users to support of this activity. 3 Ireland will also make available to each Wholesale End User files containing the PINs and PUKs for the USIMs that have been dispatched to them.

Wholesale End Users customers will be given access to National Broadband Scheme Coverage Areas for data services only. It is understood that any hardware offered by the Wholesale End Users to their customers will be approved for use on the 3 Ireland NBS network. Wholesale End Users can procure hardware from 3 Ireland. The cost of approved hardware is as set out Table 4 below.

There will be no Wholesale End User customer specific details held in any 3 Ireland systems except for details on the Authorised Undertakings' USIMs, MSISDNs and associated services will be known to 3 Ireland wholesale. Wholesale End Users will be required to provide 3 Ireland with relevant customer details as outlined in the Wholesale Contract. The requirement to provide 3 Ireland with customer details is for the sole purpose of verifying that Wholesale End Users' customers' Fixed Residences and Fixed Businesses are located in National Broadband Scheme Coverage Areas.

Operational Expectations

Outlined below are the anticipated areas of activity associated with a Data Mobile Virtual Network Operator (DMVNO) operation and a summary of the responsibilities of each partner within each of the key components.

3 Ireland will provide business processes for all key components to allow Wholesale End User integration with the DMVNO business processes.

Technical Requirements

3 Ireland will expose elements of the NBS network via Application Programme Interfaces (APIs) to Wholesale End User to allow; customer registration, activation of Universal Subscriber Identity Module (USIM), suspension of USIM, reactivation of USIM, termination of USIM, change of USIM, removal of service, blacklisting of devices, un-blacklisting of devices and the ability to check status. These APIs interface with the SPConnect application which 3 Ireland has developed specifically as a DMVNO interface. (Refer to Fig. 1)

Wholesale End User are required to provide sufficient resources to develop the necessary systems, hardware and software to access the API. The cost of maintaining these systems will be covered by Wholesale End Users, 3 Ireland will test and accredit the interface prior to launch of the data service to Wholesale End Users.

A range of SPConnect services are offered to enable Authorised Undertakings to integrate with 3 Ireland in the NBS coverage areas. These services will enable Wholesale End Users to request Service Orders (SOs) to provision service on 3 Ireland's core network and certain IT systems for USIMs and Mobile Station Integrated Services Digital Network (MSISDNs) that have been assigned by 3 Ireland to the Wholesale End Users SPConnect services will include functionality to securely receive, validate, store and initiate processing for service order requests sent from authenticated Wholesale End Users. The SPConnect web services will enable Wholesale End Users to integrate their own IT applications (for example Point of Sale and/or CRM) with 3 Ireland's in order to support a range of service orders for initial activation, maintenance and de-activation of service associated with USIMs and MSISDNs.

SPConnect will consist of a range of real-time synchronous web services. For each service order request, SPConnect will provide a synchronous response. This response will provide acknowledgement of receipt of the request, the results of the initial validation performed and a service order Transaction Id (SO Id). The Authorised Undertakings will be able to use this SO Id to perform subsequent SPConnect enquiry requests.

With the exception of the checkStatus service, all of the SPConnect services detailed in this section require 3 Ireland's core network element provisioning and also updates to certain 3 Ireland IT systems. These back end system updates will occur asynchronously to the initiating SPConnect service request. However, all of the SPConnect services are defined as synchronous messages. The presence of message Output with populated ResultStatus and service order Id will indicate acknowledgment of the request and completion of initial validation respectively. It will not indicate completion of the back end network element and IT system updates required to fully process the request. The checkStatus SPConnect service will enable the Wholesale End Users to enquire upon the current status of a request that has been previously made by the Wholesale End User.

The SPConnect services*, will include common validation to check whether the MSISDN** supplied in the request payload is assigned to the Service Provider. If this relationship is not found then the request will be rejected.

In addition, the activated USIM request will check that the Integrated Circuit Card ID (ICCID) and MSISDN supplied in the request payload are not already part of a pairing and have a status indicating they are available for activation. If these conditions are not met then the request will be rejected.

* With the exception of checkStatus, blacklistdevice, and unblacklistdevice.
** ChangeMSISDN respectively.

3 Ireland will make available, at regular intervals, unrated call Data records (CDRs) for data usage by Wholesale End User's customers. The CDRs will be placed on a secure server for collection by the Wholesale End User via secure FTP.

Fig. 1

Connection to SPConnect System

3 Ireland will provide one Point of Presence (PoP) for those Wholesale End Users that wish to take their Subscriber traffic from the 3 Ireland NBS network onto their own network.

A direct connection is not essential. Wholesale End Users can access the 3 Ireland SPConnect system for service provision and collect CDR's and PINK/UK files via a secure internet connection. If access via direct link to PoP is required 3 Ireland's PoP is located at

HP Global Voice.
4033 Citywest Ave.
Citywest Business Park
Dublin 26.

For resilience purposes Wholesale End Users can access the wholesale service through fully geographically resilient links or via the Internet. Wholesale End Users will need to organise any links to 3 Ireland's PoP and the costs for same are the responsibility of Wholesale End Users.

If Wholesale End Users require that it uses it own ISP this is a straightforward connection to the 3 Ireland NBS network with no development work, except for the configuration of a data connection to be provided by the Wholesale End User. The PoP for this purpose will be a connection to the GGSN. This connection can be achieved through a simple ethernet connection (1Gige -10Gige to be provided by Wholesale End Users) routed through a firewall (border gateway to be provided by 3 Ireland). Wholesale End Users can access the 3 Ireland POP via resilient links to connect to 3 Ireland services. These would include connecting to GGSN or any other service required by Wholesale End Users.

SIM and Number Management

3 Ireland will supply the Wholesale End User with USIMs which will contain software and information that is proprietary to H3G and its licensors and the associated PIN and PUK codes for those USIMs. The USIMs will not be paired to a MSISDN. The software on the SIM relates to profile that is configured on it to ensure it works in NBS coverage areas.

3 Ireland will provide the Wholesale End User with MSISDN number ranges in contiguous blocks. Wholesale End Users will manage the allocation of the numbers as part of their provisioning process. Wholesale End Users will order USIMs as per supply chain logistics process outlined below in Table 1 and Table 2. Approved broadband devices can be ordered by Wholesale End Users.

Provisioning

Wholesale End Users will be responsible for provisioning customer accounts on the network via the interfaces referred to above reference SPConnect.

Supply Chain Logistics

3 Ireland will approve data devices that are not part of 3 Ireland device/CPE portfolio with Wholesale End Users. 3 Ireland and Wholesale End Users will agree relevant costs for testing and approving any such broadband devices.

Wholesale End Users can procure approved devices either directly from manufacturers, distributors or 3 Ireland(as per costs outlined in Table 4.).

It is important to note that 3 Ireland operate a UMTS network and as such all devices requested for approval on the network will need to operate to UMTS specification.

Wholesale End Users can also provide broadband device which 3 Ireland can approve on network at cost to be agreed with Wholesale End Users. Outlined below in Tables 1 and 2 is the Supply Chain Logistics process.

Supply Chain Logistics (SCL)

Outline Scope:
1. Support USIM & MSISDN Management
2. Ability to send USIM PINs/PUKs to Wholesale End Users when USIMs despatched.

The process flow that is expected to be followed for Wholesale End Users USIM fulfilment and the system impacts are summarised in the Table 1 & Table 2 below:

	Process step	Existing/Modified
1.	MSISDN number ranges are pre-allocated to each Wholesale End User in NumerIQ. 1. Identify MSISDN number range for the Wholesale End Users. 2. 'Free up' range from existing declared ranges. 3. Declare Wholesale End User's number range. 4. Create MSISDN number range with status set to as available ('AVAI') and Orgid set to the Wholesale End User's dealer code.	Modified

2.	ICCID number block is assigned with a new Network Provisioning Profile (NPP) in NumerIQ. This is required since there will be no pre-activation steps (see assumptions) for these USIMs. At this stage the USIMs are not yet assigned to a particular Wholesale End Users.
	
	Create IMSI number range with:
	  a. ICCID status of created ('CREA') and
	  b. IMSI with status as available 'AVAI' and
	  c. Org Id cannot be selected at this stage (see process flow above).
	  d. A new NPP Profile ID will be set to a value to indicate single-MSISDN profile and no pre-activation required
		Modified

3.	The Wholesale End Users USIM number block is supplied to the USIM manufacturer.	Existing
4.	The USIM manufacture returns a response file to NumerIQ detailing PINs, PUKs and Auc Keys.	Existing
5.	The USIM stock is delivered to the 3 Ireland warehouse (Sonopress based in swords Dublin) and recorded in the warehouse inventory management system against a specific Product ID. This stock will be held separately from all other USIM stock since it has a Product ID specific to Wholesale End User's USIMs.	Existing
6.	The stock is also registered in 3 Ireland's Oracle Order Management system. Comment this is not visible to the 3 Ireland retail channel	Existing
7.	The 3 Ireland warehouse picks the Wholesale End Users USIMs and ships to the Wholesale End Users.	Modified
8.	The 3 Ireland warehouse supplies a feed to Oracle OM for Wholesale End Users detailing the ICCIDs that have been dispatched for the Wholesale End Users (using Dealer Code/OrgId as the identifier).	Existing

| 9.	Oracle OM outputs a file detailing the ICCIDs that have been dispatched and this file is delivered for upload to NumerIQ. Oracle also produces a shipping report of ICCIDs.	Exiting
10.	NumerIQ uploads the details of shipped USIMs and updates the associated ICCID and IMSI details with the OrgId associated with the Wholesale End Users. (This means for example that SPConnect will be able to validate the USIM is 'owned' by the Wholesale End User as well checking that the MSISDN is 'owned' by the Wholesale End User when validating subsequent activate USIM requests.)	Existing
11.	NumerIQ outputs encrypted list of PINs and PUKs and this is delivered to the Wholesale End Users. Mechanism for delivery is to be automated via FTA/FEST. File moved to the DMZ for Wholesale End Users to collect using same login and file transfer they use for CDRs(Call Data Records). The file name should include: ORGID (to allow FTA/FEST to route to correct Wholesale End Users' DMZ account, Wholesale End Users' Purchase Order & 3 Ireland Supply Order.	Existing

Table 1 SCL Process Flow
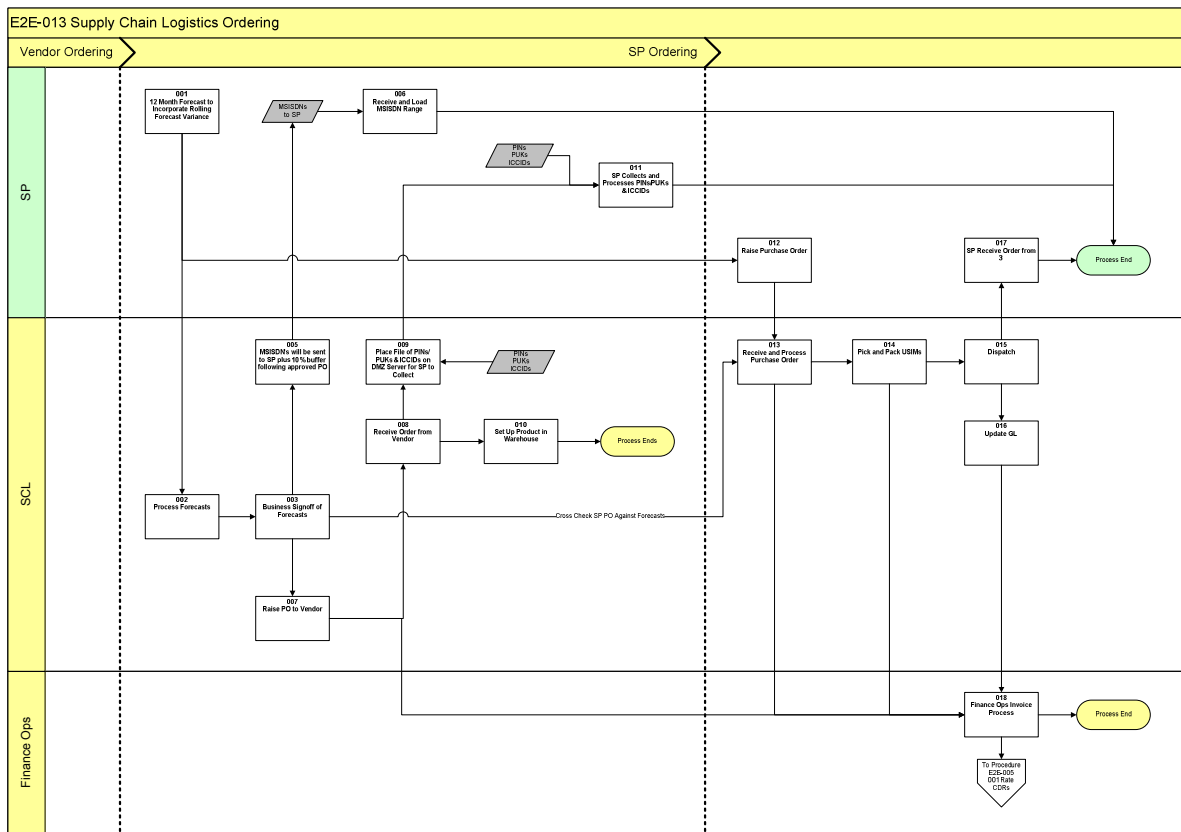
Table 2 Supply Chain Logistics Ordering

CRM and Subscriber Management

Wholesale End Users will be responsible for the contract with the customer. Wholesale End Users will undertake all 1st and 2nd line customer support for its customer base. 3 Ireland will provide 3rd line technical support to customers.

Wholesale End Users will be required to provide support and management of all services changes which are outlined Table 3 below.

Table 3 below summarises the services that will be offered by SPConnect:

	SpConnect Service Name	Description
1	activateUSIM	This service will be used to initially activate service for a single USIM MSISDN pair. The specific services activated will be dependent on the details contained in the request

		message payload. The processing performed for these requests will activate services on 3 Irelands core network elements and certain IT systems.
2	suspendUSIM	To deactivate services associated with a single USIM on 3 Ireland's HLR
3	reactivateUSIM	To re-activate service on 3 Ireland's HLR and Alerts platform for a single USIM. This will re-enable access to services that the USIM/MSISDN was originally provisioned with.
4	terminateUSIM	To terminate service on 3 Ireland's Core Network elements, and certain IT systems for the specified MSISDN/USIM including Port Out processing where applicable.
5	changeUSIM	To update 3 Ireland's core network elements and certain IT systems with details of a new USIM used to swap with an existing USIM.
6	changeMSISDN	To update Core Network elements and certain IT systems with a new MSISDN used to swap with an existing MSISDN.
10	Blacklist device	To blacklist a single Device
11	Unblacklist device	To remove blacklisting for a single device.
12	checkStatus	To check the status of a previous Service Order Request.

Table 3 Services Offered by SPConnect

Processes for communication and escalation between the Wholesale End User and 3 Ireland for customer support will be defined in Wholesale End User Terms and Conditions.

Billing and Collections

3 Ireland will provide unrated CDR extracts for retrieval by the Wholesale End User via FTP. The Wholesale End User will be responsible for extraction to the Wholesale End User billing system, rating and bill production.

The Wholesale End User will also be responsible for all collection activity and fraud management. 3 Ireland will define a list of reports and alerts that will assist Wholesale End Users with fraud and security management and processes will be agreed between both parties. All debt risk will lie with Wholesale End Users.

Service Definitions

The services listed below will be made available under Wholesale End Users wholesale agreement for Wholesale End User subscribers. Please refer to the wholesale agreement for details.

Internet
HTTP (Hypertext transfer protocol)
HTTPS browsing
VPN (Virtual Private Network)
VOIP (Voice over Internet Protocol)

Commercial and Legal Components

Wholesale End User Wholesale Agreement

3 Ireland will provide a Wholesale End User wholesale agreement of an initial 64 month term. The Wholesale legal agreement is outlined in Schedule 3.

Legal and Regulatory Management

It will be the Wholesale End User's responsibility to ensure legal and regulatory compliance.

Wholesale Billing and Reconciliation

3 Ireland will make available, on a daily basis, CDRs for each Wholesale End User customer's usage for retrieval by the Wholesale End User 3 Ireland will endeavour to ensure that all CDRs are up to date.

3 Ireland will invoice Wholesale End Users on a monthly basis for all service and usage charges.

Standard payment terms would be 30 days from invoice.

3 Ireland will provide the Wholesale End User with details of a dispute and escalation process for any queries with wholesale billing.

Service Charges Wholesale End Users

Tariff Type	Tariff
Wholesale Tariff per active SIM per month	€11.08 (Ex VAT)
Wholesale One-Off Charges[1]	€23.97 (Ex VAT)
Wholesale Services Ancillary Charges	2.77cent (Ex VAT) per Mbit used outside of inclusive data bundle

Table 4 Service Charges

The Service and Tariff Charges may be subject to [limited] promotional offers made available at 3 Ireland's sole discretion from time to time. Wholesale End Users should check with 3 Ireland for details of any currently applicable offers.

There are no other Tariffs to be charged by 3 Ireland to Wholesale End Users except for a charge to be agreed for approving the use of Wholesale End User CPE on 3 Ireland's network.

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[1] This charge includes the provision of subscriber CPE