NBNCo Limited

Broadbanding Australia

TECHNICAL SPECIFICATION

B2B Interaction Process Specification

Systems Architecture and Technology

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This specification sets out NBN Co's proposals in respect of certain aspects of the National Broadband Network. The contents of this specification are intended for public consultation and represent NBN Co's preliminary position on the subject matter of this specification. The contents of this Specification should not be relied upon by any person as representing NBN Co's final position on the subject matter of this Specification. The views expressed by NBN Co in this document may change as a consequence of NBN Co finalising formal technical specifications. NBN Co's position on the subject matter of this document may also be impacted by legislative and regulatory developments in respect of the National Broadband Network..

Environment

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Contents

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1 About this document

Who is it for?	This document is intended for use by both internal and external audience: Business Stakeholders Project Managers Project Core Team Solution Architects Development Team Other Project team members.
Purpose	This document provides the high level solution design and message specifications that will implement business-to-business (B2B) interaction processes between NBN Co and Access Seekers to support the delivery of the following services: Fulfilment Assurance Billing.
Important Note	This specification represents the culmination of extensive industry consultation, including NBN Co sessions with the Communications Alliance, and a number of technical 'deep dives' with Access Seekers. The content of this document represents NBN Co's current position on the subject matter and should not be relied upon as representing NBN Co's final position on the subject matter of this document, except where stated otherwise. The views expressed by NBN Co in this document may change.

1.1   In scope

The following is considered to be within the scope of this document:

B2B solution process overview and details of B2B interaction process models to support 'Fulfilment', 'Assurance' and 'Billing' of NBN Co services.

Specification of B2B messages to support the above processes.

1.2   Out of scope

Subject Area	Number	Description
Billing – Tariff/Pricing	OOS-001	Global tariff/pricing changes will be announced as per Industry Engagement channel and is out of B2B transaction scope.
Product Catalogue	OOS-002	Details on the Product Catalogue and Product Definitions will not be covered in this document. This will be covered by the NBN Product Definition Specification.
B2B Technical Specifications	OOS-003	Technical details of the interface will not be covered within this document. This will be covered by the NBN B2B Technical Specification.
B2B Certification	OOS-004	The B2B Certification process will not be covered in this document. It is assumed this process will be covered through the NBN Co onboarding process.
Order Management	OOS-005	The Transfer (churn) process has not been covered within this document. It is expected to be covered in later phases of the B2B implementation process and will be defined in conjunction with Communications Alliance Industry engagement.
General	OOS-006	Any detailed design for these processes (including performance characteristics) will be out scope for this document. It is expected to be covered in subsequent deliverables.

1.3   Context

The diagram below provides the high level context of the B2B Interaction Process.
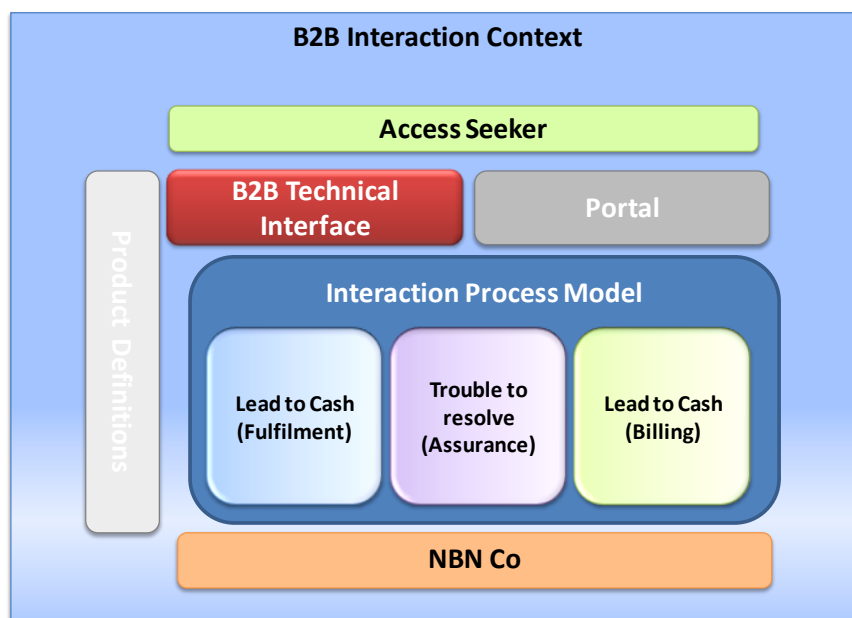
Figure 1 – B2B Interaction Context

1.3.1   Assumptions

Subject Area	Number	Assumption
End-user Authorisation	**ASS-001**	It is assumed that End-user authorisation is a responsibility of the Access Seeker, and that the Access Seeker has an obligation to store authorisations and retrieve them upon request. [Note: To the extent that any personal information about individuals is collected or disclosed by any participant in the B2B arrangements, Privacy Act requirements will need to be met (including in respect of notice to the individual).]

1.3.2   Constraints

Subject Area	Number	Constraint
Business Rules	**CON-001**	The complete set of business rules are yet to be defined or agreed upon.

1.3.3   Dependencies

Subject Area	Number	Dependency
Product	**DEP-001**	Changes to the product constructs are likely to impact processes as defined within this document.
Operational Manual	**DEP-002**	Gap and impact analysis would be required between processes as defined in this document and the NBN Operational Manual.

1.4   Related Documents

Document Number	Document Title	Owner/Link	Date of Issue	Version Number
1.	NBN B2B Technical Specification	NBN Co	18/01/2011	0.12
2.	NBN Product Definition Specification	NBN Co	18/01/2011	0.8
3.	B2B Interaction Process Requirements Specification	Communications Alliance	2010-12	Release 1
4.	NICC Standards	ND1627:2008 ND1626:2007	2008-06 13/11/2007	1.1.1 1.0.1
5.	ITU Standards	M.3340 M.3343	2009-05 2007-01	
6.	B2B Interface Message Specification - Diagnostics	Interface Message Specification - Diagnostics	21/9/2010	1.0
7.	B2B Interface Message Specification - ManageAddress	Interface Message Specification - ManageAddress	21/9/2010	1.0
8.	B2B Interface Message Specification - Billing	Interface Message Specification - Billing.v1.00	21/9/2010	1.0
9.	B2B Interface Message Specification - ManageAppointment	Interface Message Specification - ManageAppointment	21/9/2010	1.0
10.	B2B Interface Message Specification - MTT	Interface Message Specification - MTT.v1.02	21/9/2010	1.0.2
11.	B2B Interface Message Specification - ProductCatalogueEnquiry	Interface Message Specification - ManageProduct	21/9/2010	
12.	B2B Interface Message Specification - ServiceQualification	Interface Message Specification – ServiceQualification	21/9/2010	1.0
13.	B2B Interface Message Specification - Order Management	Interface Message Specification - MPO.v1.04	21/9/2010	1.0
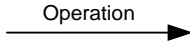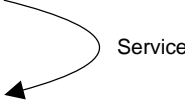
1.5   Document Definitions

This document uses Interface Sequence Diagrams, State Diagrams and B2B Transaction Patterns as defined below.
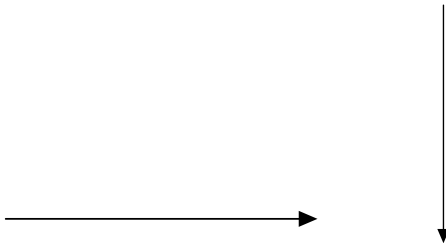
1.5.1   Interface Sequence Diagrams

The primary objective of NBN Co sequence diagrams is to illustrate the sequence of interactions, and the transition from stated requirements to the next level of detail.

Details	Symbol
Lifeline A lifeline represents an individual participant in a sequence diagram, for example: an Access Seeker or NBN Co.	
Message Messages are displayed as arrows, and can be synchronous or asynchronous, for example: Request or Response Publish and Subscribe, or Deferred Response. The specific operation name is specified on the top of the arrow, for example: Operation.	Operation
Service The curved arrow is used to denote the Business Service invoked by that particular operation, for example: Service.	Service

1.5.2   State Diagrams

State diagrams are developed for identified interactions to provide business flows of specialised areas.

Details	Symbol
Initial State This shows the starting point or first activity of the flow. This pseudo state has no variables describing it further and no activities.	
State This represents the state of an object at an instant in time.	State1
Transition An arrow indicating that the object is to transition from one state to another. The actual trigger event and action causing the transition are written beside the arrow. The transition takes place after a required condition occurs or is met. For e.g. once the order is confirmed, it then	

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Details	Symbol
transitions into an in progress state	
Final State This is the end of the state diagram. A final state is a pseudo state because it does not have any variable or action described.	⬤

1.5.3   B2B Transaction Patterns

There are five basic patterns of interactions between NBN Co and Access Seekers:

Number	Type	Description
1.	Submit / Notify	To initiate long running processes within NBN. Non-repudiable.
2.	Request / Response	Idempotent request with no residual obligation. Require some complex processing with complex data structure response. Support near real-time business transactions that are stateless.
3.	Request / Confirm	Idempotent request with no residual obligation. Require limited processing with yes/no answer.
4.	Query / Response	Idempotent request with no residual obligation. Require no complex processing with complex data structure response (e.g. Retrieve static data)
5.	Notification	To notify important events of a long running process.

2 High Level Solution Overview

The assumed high level solution architecture is found within the NBN B2B Technical Specification (See Section 1.4 and/ or refer to relevant sections of the Technical Specification).

2.1   Pre-Order Management Overview

Pre-order management consists of interactions necessary to compose a valid order, but which are carried out prior to the submission of an order. Before NBN Co can provide a service to an Access Seeker for a particular location, it is critical to determine whether the desired service is available at that location. Pre order management functions cover mechanisms to identify a common understanding of a location and then determine serviceability of that location. It comprises enquiries related to an address search, the results from which can be used to determine the product and service availability. The results from the address search are later used for product ordering.

2.1.1   Service Access Point
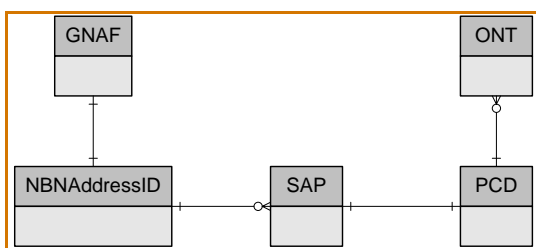
Figure 2 – Service Access Point Model

A Service Access Point (SAP) will describe the finest level of detail that NBN Co will request to identify the place of delivery of service. It is the logical entity describing where a Premise Connection Device (PCD) could exist. There *may* be multiple SAPs at the same NBN Co Address ID, but typically there would be one SAP per NBN Co Address ID.

2.1.2   Query Address method

Arriving at a common understanding of a location is an important part of the pre-order processes. NBN Co will expose address search services to assist in reaching this common understanding.
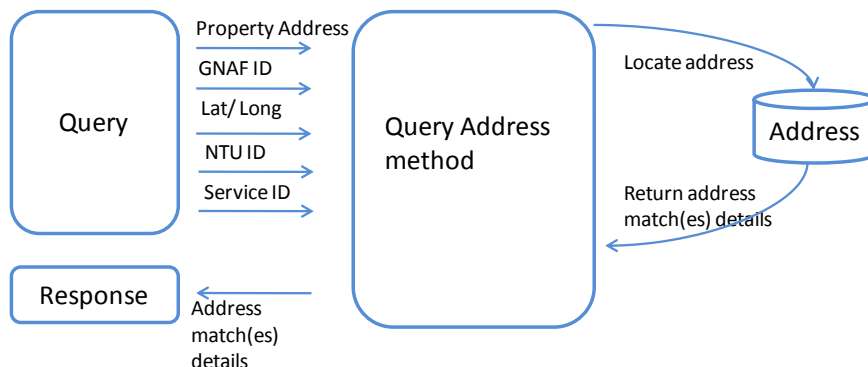
Figure 3 – Address Search Interaction

Serviceable locations fall into a range of categories which include single premises or stand-alone dwellings (small offices or home offices etc), multi dwelling units (MDU) and infrastructure or non-addressable the locations (for example: traffic lights, utility poles, cell sites, etc.). A high level of

address accuracy will provide greater precision of qualification results and minimise process exceptions.

The query address method is a query-response message exchange pattern that returns address details for a given request or close match addresses where an exact match could not found. This can be used for validating an address prior to submission of a qualification or order request. The request may contain any of the following input types:

Input Type	Description
Location	This can be specified as any of the following forms:
	Australian property address / Physical Address: This relates to any identified property or parcel. It contains the street address information and in case of an MDU scenario may also contain the sub address information, for example: unit details, level or building details.
	Geocoded National Address File (GNAF) ID: NBN Co will accept GNAF identifiers as an identification of place.
	Spatial co-ordinates: Local co-ordinate system data (includes latitude, longitude and elevation) that is related to the geographic position of the location.
Network Terminating Unit (NTU) ID	Identifies a specific NBN Co installed NTU at a given the location.
Service ID	Uniquely identifies an NBN Co provisioned service.

NBN Co will continue to investigate the use of widely known and stable identifiers as an acceptable description of place.

The address search method supports submitting partial address details in the request message, which would have a minimum set of data requirements, for example: mandatory street address details, and a maximum number of matches that can be returned.

The service attempts to find a single match by comparing each input address record within NBN Co's address and spatial database. The accuracy of the search result depends in part on the quality of the input. If a single match cannot be found, the response may contain a list of close match addresses found and a confidence rating, or a result of no possible matches found.
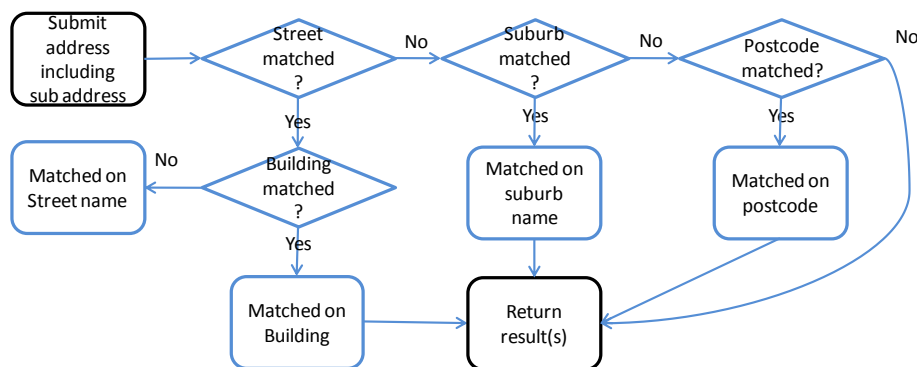
Figure 4 – High Level Address Match Process

Note: The Address Match process as described above is indicative only at this stage.

Identification of a location through the co-incident service ID or NTU ID will provide the greatest certainty of accuracy. Use of GNAF ID, where available, will ensure that a high degree of accuracy is obtained, but may be unable to differentiate between multiple service access points in some situations, for example: multi-storey buildings with access points in a basement distribution frame as well as a rooftop adjacent to a cell site.

Figure 5 – State Model – Address Query

State	Description
In progress	State representing that a query has been submitted and is being processed.
Complete	State representing a completed query. The query response may contain: Details with exact match to submitted request details Details with close match list to submitted request details Details with no match to submitted request details.

2.1.3   Qualification

A two-level service qualification process is provided to allow Access Seekers to accurately and rapidly determine the level of service that can be delivered to an End-user before progressing to the order phase. This ensures that services can be ordered confidently with a greater certainty of delivery.

At this stage, NBN Co anticipates sharing data sets with Access Seekers to allow simple 'homes passed' style qualification to be performed directly by the Access Seeker.

Type: The location only (Full Qualification)

The site qualification method of type 'The location only' is a request-response pattern that determines whether the given location can be connected to the NBN Co network. It consists of an automated inventory search based on the input location to:

- Determine whether the requested End-user location is within the current NBN Co service footprint

- Provide an indication of network capabilities which will be based on the access technology available at that location.

This qualification type does not indicate which products may be delivered to a specified location but provides information to assist Access Seekers to determine which service can be offered to their End-users. It determines which technology the given location is serviced by, infrastructure availability (NTU/ONT), port availability and whether the End-user location is serviceable or not.

It also returns information relative to Peak Information Rate/Committed Information Rate (PIR/CIR) bandwidth provisioned and/or available. If any appointments are required, for example: NTU installation, this would also be advised as part of the response. Alternatively, given the location may not be qualified because the nominated End-user location is not yet served by NBN Co's footprint, an estimated indication of when this location will be served will be returned, along with the proposed access technology. Details of when a location will be served, and proposed access technology, will be subject to change due, for example, to network deployment considerations.

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In order to perform the location-based qualification the Access Seeker must provide details of the End-user the location that can be specified as:

- GNAF ID

- Global Positioning System (GPS) coordinates

- Street address, or

- NTU ID.

Type: The location and Product

The site qualification method of type 'The location and Product' is a request-response pattern that determines whether a given product can be delivered to the required premises. The process is similar to Order Feasibility which includes necessary checks to ensure that the specific solution can be provisioned for the End user. Note that unlike Order Feasibility, no resources are reserved for delivery during this qualification process. It consists of an automated product catalogue and network inventory search based on the desired product capabilities and the End-user premises information to determine whether:

- The given location is serviceable

- The Access Seeker is certified to order the requested product

- The product required to be qualified is evaluated for available spare network capacity and resources within the network to deliver the service in consideration of the request details, for example: Access Virtual Circuit (AVC) and Connectivity Virtual Circuit (CVC), Network to Network Interface (NNI) details supplied by the Access Seeker

Also, if any appointments are required to complete the delivery of a qualified service this is to be advised as part of the response.

This qualification type assists Access Seekers to determine whether the Access Seeker is set up to provide services to the area in question. That is:

- Does the Access Seeker currently have:
  - o NNI and CVC capable of being used for delivering services to the requested the location
  - o Existing UNI port which a new AVC could be delivered on
- Are there any other service components required to deliver a service e.g. CVC.

Alternatively the requested product may not be qualified, in which case the Access Seeker should be advised of the reason, for example: that the requested product is not supported, there is insufficient capacity, or the End-user is not within the service footprint.

In order to perform this qualification type, Access Seekers must provide:

- Product type (specified by using the Access Seeker's defined product codes)

- End user premises location

- Requested date of service.

Qualification Batch

The B2B interface would support the submission of multiple addresses in the form of a batch, for example: Comma-separated Values (CSV) for qualification purposes. NBN Co will proactively send Access Seekers status updates related to the batch processing.

2.1.4   Class Model – The location UML Model
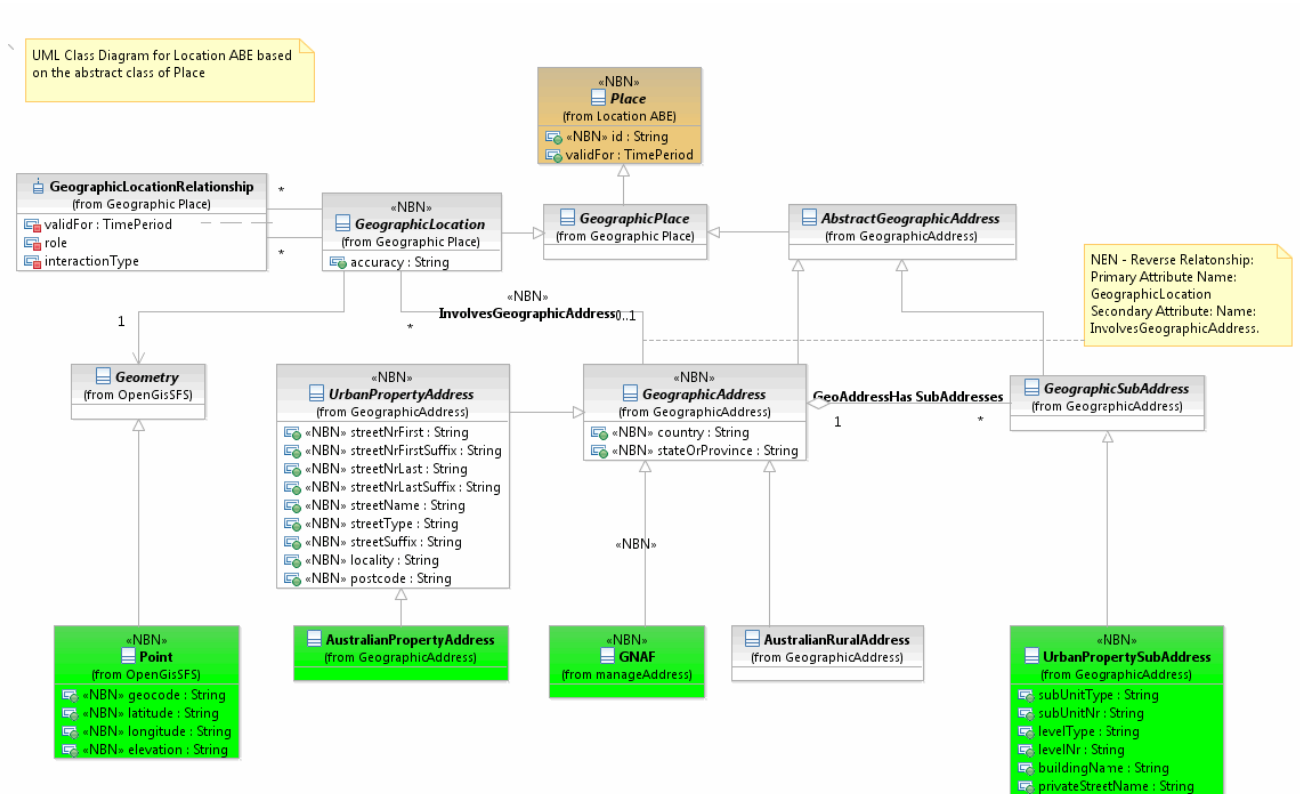
Figure 6 – The Location UML Model

2.1.5   Manage Address UML Model
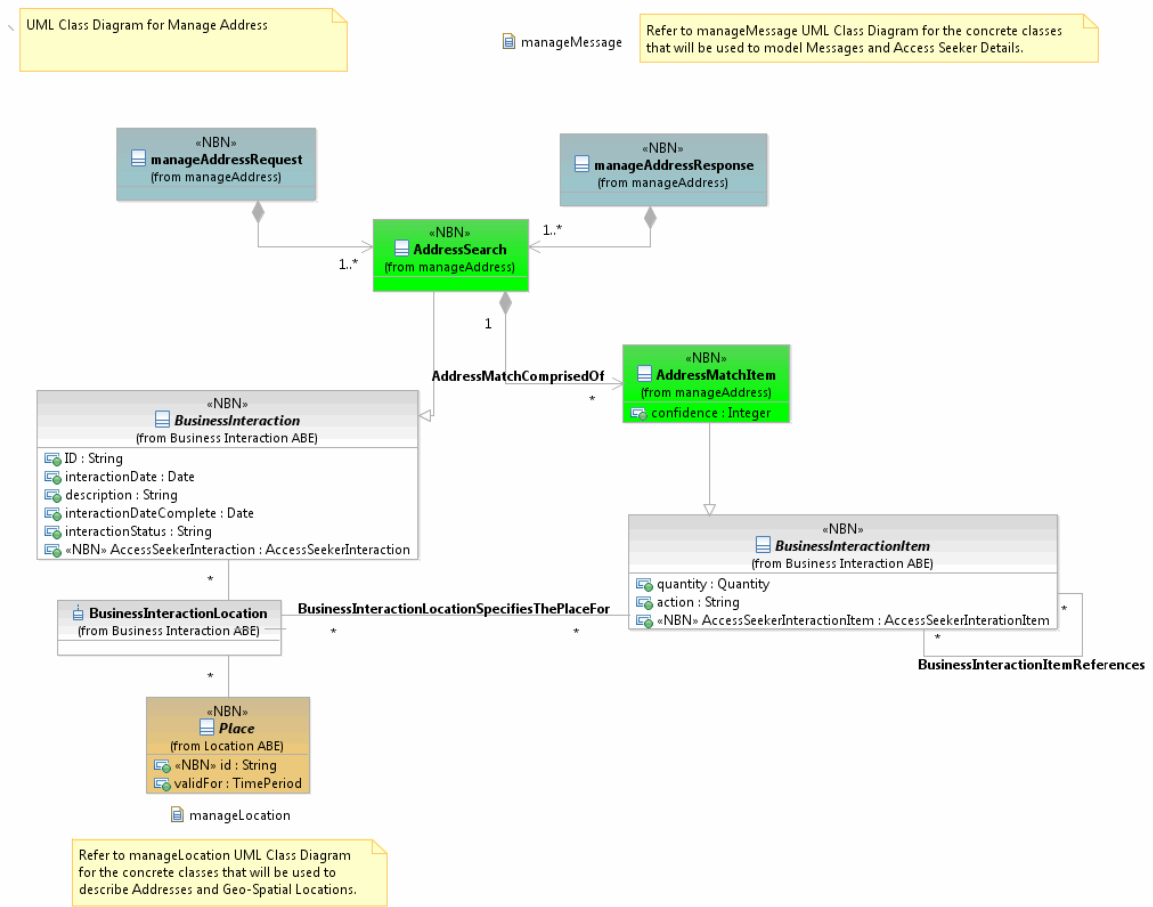
Figure 7 – Manage Address UML Model

2.1.6   Qualification UML Model
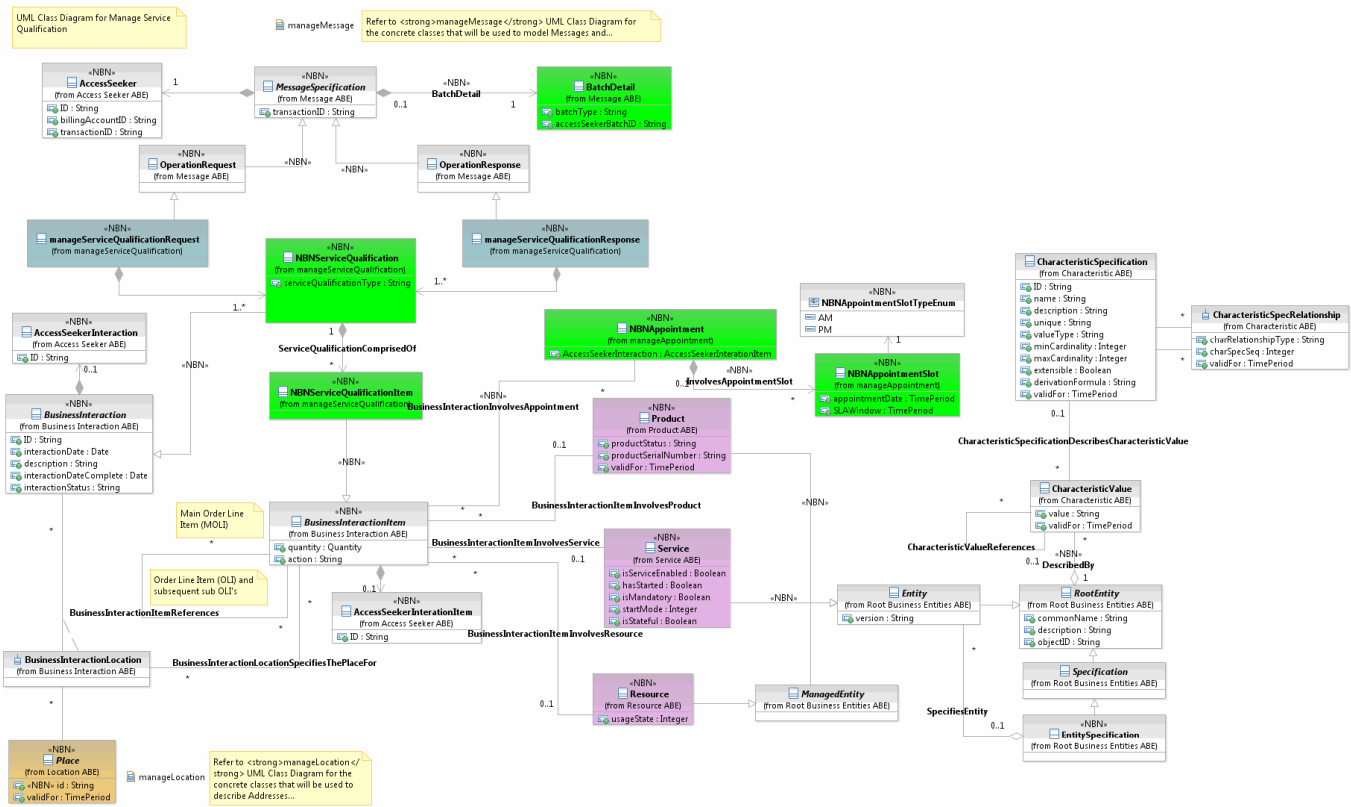
Figure 8 – Qualification UML Model

2.2   Order Management Overview

The NBN Co B2B interface supports order management through a set of functions that enable an Access Seeker order to be created, reported, tracked, and maintained. It comprises a number of transactions to support the following high level business processes:

- **Connect** New Service

- **Modify** Existing Service

- **Disconnect** a Service

- Track and Manage Customer Order Handling:

    o   Amend an In-flight Order

    o   Cancel an In-flight Order

    o   Query Order Status.

- Manage Customer Order status notifications.

Access Seekers will be able to order one or more product offerings to a single location through the B2B interface. Multiple services can be associated with a product. Refer to the Product Catalogue Specification for more information with regards to the Product specifications.

As an extension to the capability to order a product for a single location, Access Seekers will also have the ability to place orders for multiple locations via the one initial transaction through the Bulk Orders capability. NBN Co system will decompose the Bulk Orders into a single order at a single location and fulfil them as per the single order process. This implies that some orders within a Bulk Order may be accepted (if feasible) while others may not (if not feasible.)

NBN Co will proactively send order status updates to the Access Seeker as the order progresses through each key milestone of the order fulfilment process.

Once the order has been fulfilled, a notification is sent to the Access Seeker advising that the service has been activated and billing has started (Note: Billable features and when to initiate billing is driven by product rules which are yet to be confirmed). An order must not be completed until all services associated with an order have been provisioned.

2.2.1   Order Lifecycle

Figure 9– *Order States Flow Diagram* illustrates key milestones of the order lifecycle from a new order request through to the order completion stage. Through these key milestones NBN Co will proactively send order status updates to the Access Seeker. Alternatively Access Seekers can issue ad hoc requests for the current order status through the B2B interface. NBN Co recommends Access Seekers use integration patterns that retain the Keep Customer Informed notifications as a local source of the current order status.
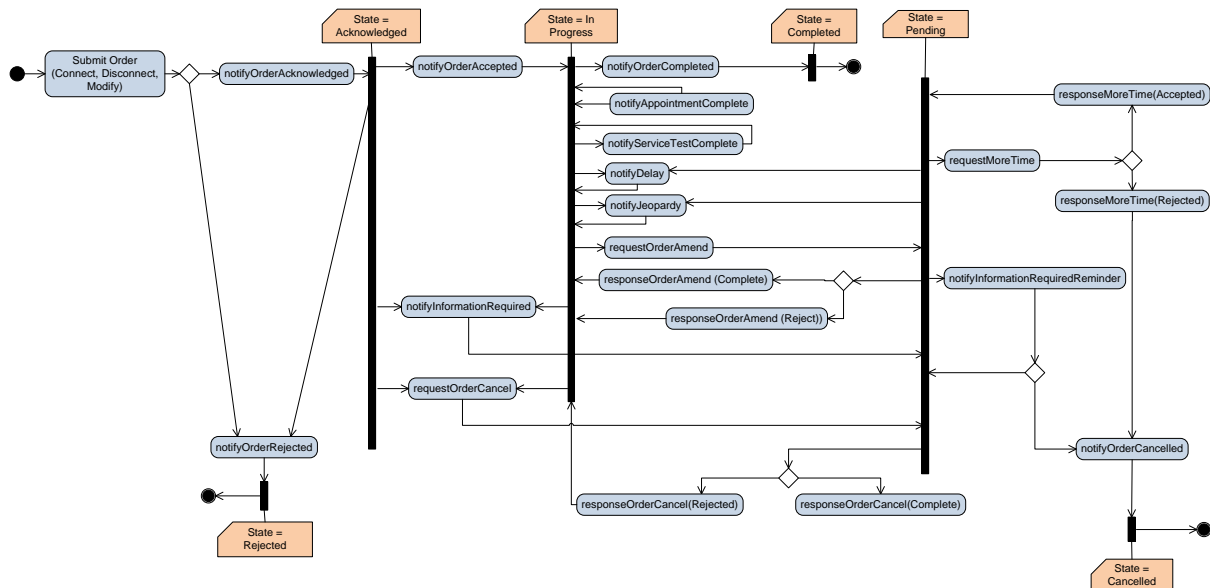
Figure 9 – Order States Flow Diagram

Number	State	Description
1.	Acknowledged	The *Acknowledged* state is where an order has been received by NBN Co and has passed message validation.
2.	In Progress	The *In Progress* state is where an order has passed the NBN Co Order Feasibility check successfully and service delivery has commenced.
3.	Cancelled	The *Cancelled* state is where an in-flight order has been successfully cancelled.
4.	Completed	The *Completed* state is where an order has complete provision and the service is now active.
5.	Pending	The *Pending* state is where an order is currently in a waiting stage for an action/activity to be completed before the order can progress further, pending order amend or cancel assessment. In situations where Access Seeker action is required, an Information Required notification will be issued on transition into this state. A pending stage can lead into auto cancellation of an order, if no action is taken within the NBN Co defined timeframes.
6.	Rejected	The *Rejected* state is where: An order failed the Order Feasibility check Invalid information is provided through the order request The order request fails to meet NBN Co business rules for ordering.
7.	Closed	Order closure when reaches the following end states: Rejected, Cancelled and Completed.

2.2.2   Order Types

Figure 10– *Order Type* illustrates the types of order supported through the request order transaction.
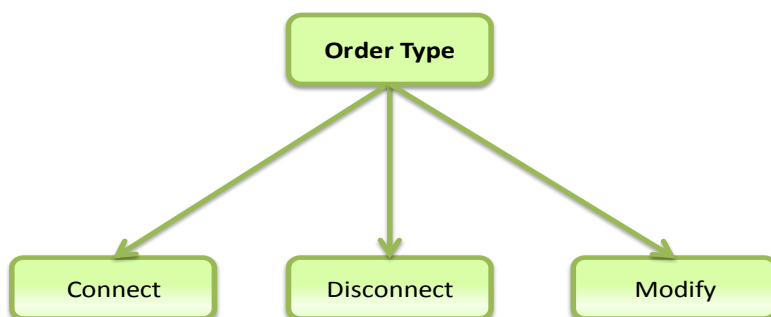
Figure 10 – Order Type

2.2.2.1   Connect Order Type

The **Connect** order type allows Access Seekers to establish a new NBN Co service for the End-user.

2.2.2.2   Disconnect Order Type

The **Disconnect** order type is where the Access Seeker would like to disconnect existing service/s. Disconnections will only be processed for services where there are no other services that depend on the service targeted for disconnection. Therefore, Access Seekers can only disconnect an existing service where there are no cross dependencies with services that are not being cancelled. Disconnect a service can only apply to a single location.

2.2.2.3   Modify Order Type

The **Modify** order type is where the Access Seeker would like to change to an existing (active) service/s. The Modify order supports *Configuration* changes to an existing service, for example: changes to an existing service bandwidth.

Modification to an existing service(s) will be validated against product business rules (i.e. what type of service elements or type can be modified).

Note: Change in the location cannot be requested through the Modify service order request.

2.2.3   Product Order Construction

Product order construction is specified within the NBN Product Definition Specification.

2.2.4   Order SLA Management

Figure 11– *Order SLA Management* illustrates the six key milestones of an order lifecycle. Each key milestone will be associated to a targeted Service Level Agreement (SLA). The standard SLA lead times of an order will be on a per product basis.

There are two types of notification for SLA management, Jeopardy and Delay notifications.

1. Jeopardy Notification
   Each fulfilment task within the order lifecycle will be subject to a target elapsed time to completion. Jeopardy occurs when the target time is about to be breached, or has been breached, at a particular stage of an order. NBN Co will generate an alert at a product-specific interval prior to the target, and a notification will be sent to the Access Seeker with the reason for being in jeopardy. Business Rules will apply on a per product basis.

2.   Delay Notification
     is where NBN Co has identified that the order will not be completed within the agreed overall SLA, and thus impacts on the delivery of an order.
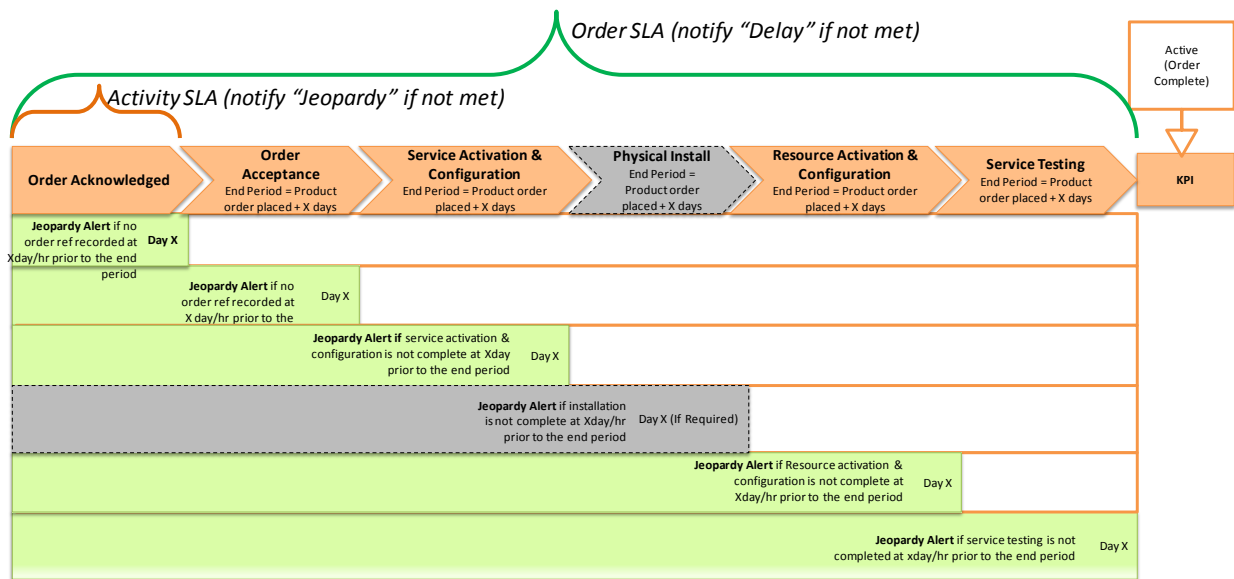
Figure 11 – Order SLA Management

2.2.5   Order Management Class Diagrams

Order Management Class diagrams have been specified in the NBN Product Definition Specification.

2.3   Product Catalogue Enquiry

Access Seekers will be able to access a set of functions across the B2B interface that enables the Access Seeker to query the product catalogue and product specifications. Access Seekers will receive a Product Catalogue based on their contract with NBN Co.

Refer to the NBN Product Definition Specification for details of the product specification.

2.4   Appointment Management

This area is concerned with the B2B public processes for managing the establishment of a mutually acceptable appointment time between the Access Seeker and NBN Co. It is a sub process which forms part of the Fulfilment and Assurance process streams. This may be required for handling visits like gaining access to customer premises to install or repair equipment, locked engineering or other facilities, or for joint testing between the Access Seeker and NBN Co.

Access Seekers can request available appointment slot/s. NBN Co will offer the Access Seeker time slot/s for carrying out activities at the required locale. An available appointment slot can then be booked by the Access Seeker for an order or ticket.

2.4.1   Concepts
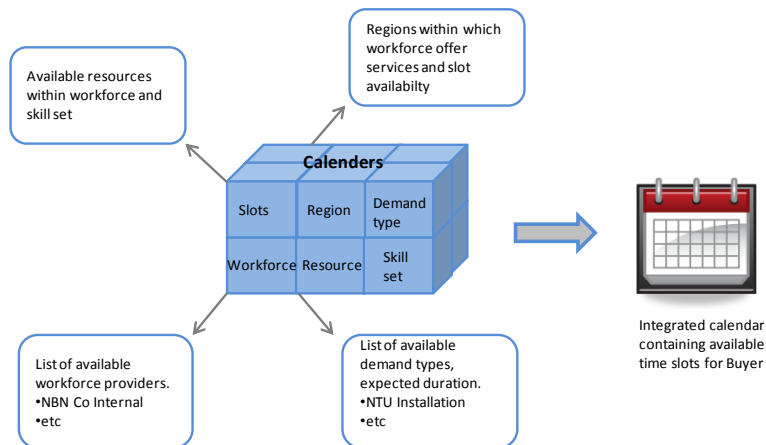
Figure 12 – Appointment Cluster

It is envisaged that there could be multiple calendars maintained internally, classified by region, which can be in turn linked to a workforce manager that provides services in the form of available demand types. These workforces would have associated resources with a given skill set who execute or perform these demand types on request. Workforce managers may commit to a certain volume of demand types within a region to create capacity within the calendar which is then consumed by Access Seekers.

From a web portal or B2B perspective, an integrated calendar will be presented that allows Access Seekers to query for available slots within given criteria. The interface will additionally support Access Seeker preference and/or priority to be sought as part of the request; this may be required to book appointments at the earliest possible opportunity for high priority tickets or escalated orders. Note that such priority appointments may incur additional charges.

Slot requirement can be specified as:

- Date (range) AM/PM, or

- Date (range) and specific time window within the request.

The return response would inform the Access Seeker of available slot/s based on demand type requested. (Note that each demand type will have an average duration (event window) requirement within which the work is to be performed and this will be considered in the return response to represent availability). If the Access Seeker has a preference for a particular workforce, this may also be highlighted as part of the request. The available slot can then be booked or rescheduled by the Access Seeker as required. An appointment represents the demand type to be performed within a linked time slot by a specific workforce. The Demand Type gives an indication of the activity that needs to occur, for example: NTU installation. The appointment will be linked to either an order or a ticket, which is required as part of their completion process.

Note that a request for a reschedule can also be initiated by NBN Co, for example: if there is a resource shortfall or if there is a potential delay, the Access Seeker will be notified that the appointment is required to be rescheduled. The new slot would need to be provided, which would be confirmed and linked to the appointment. The original slot, if valid, would be released back into the availability pool.

If the booked appointment is no longer required, Access Seekers are able to request cancellation. Alternatively, if NBN Co assesses that the appointment is no longer required, the appointment will be cancelled and the Access Seeker notified of the update.
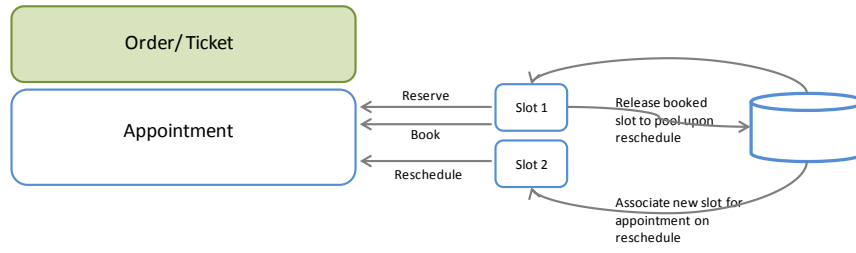
Access Seekers will be notified proactively of key milestones or any updates related to the appointment. In scenarios where appointments are missed, Access Seekers will be required to book a new appointment.

2.4.2   Class Model – Manage Appointment UML Model
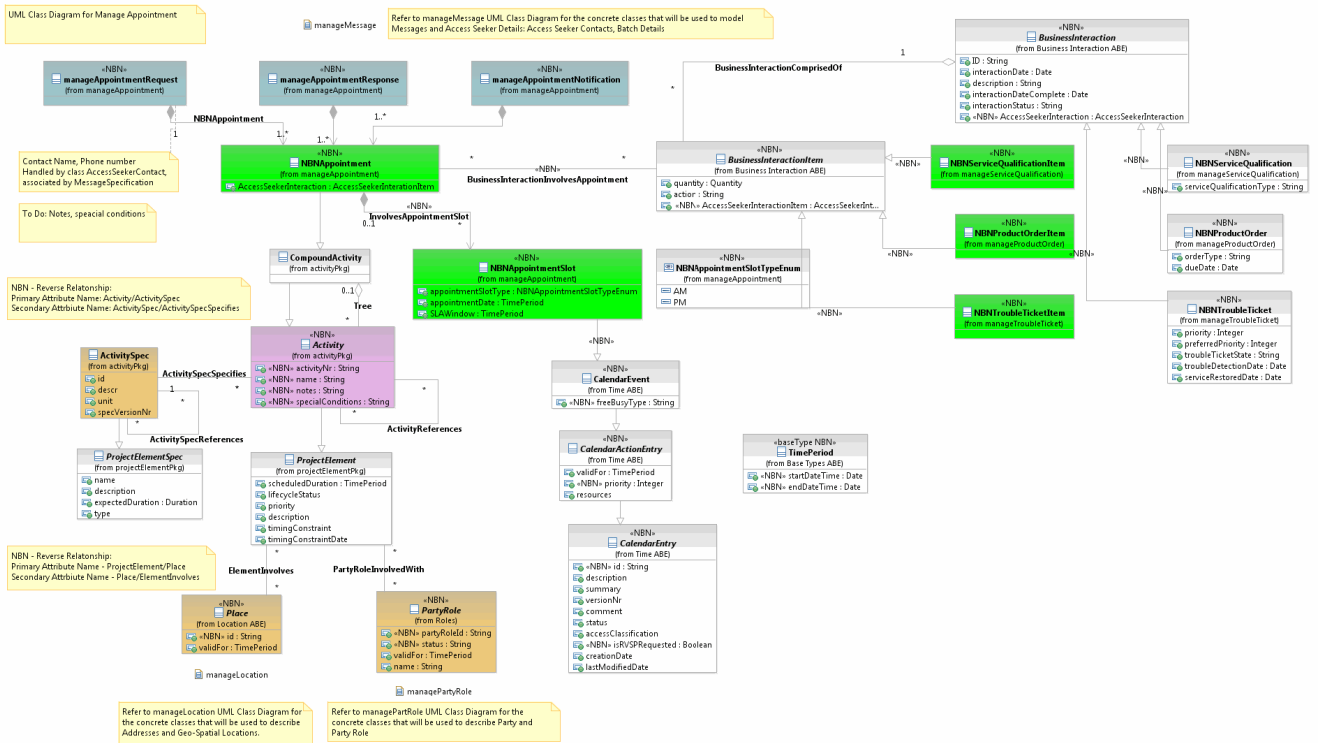
Figure 13 – Manage Appointment UML Model

2.4.3   Appointment State Model
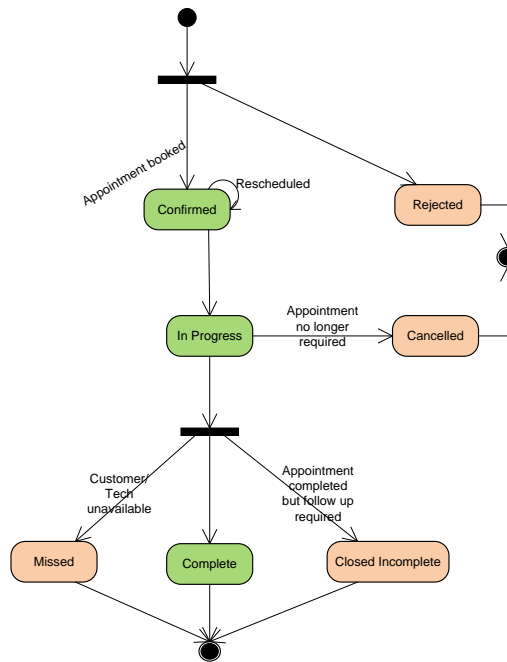
Figure 14 – Appointment State Model

Status	Description
Confirmed	State indicating that an appointment has been confirmed and associated with an existing order or ticket. If the appointment were rescheduled, it would be then associated to its new time slot
Rejected	State indicating that an appointment request has been rejected (for example requested demand type does not match order or ticket requirements)
In Progress	State indicating that the appointment is in progress
Complete	State indicating that the appointment has been completed. Activities and tasks related to appointment have been executed and fulfilled
Cancelled	State indicating that the appointment has been cancelled as it was no longer required. If cancellation occurred but an appointment is still required to complete any fulfilment processes Access Seeker would be required to rebook
Missed	State indicating that an attempt was made but due to some reason, for example: customer not available at premises, could not proceed at required timing or failed to proceed. In such instances the Access Seeker would be required to rebook the required appointment
Closed Incomplete	State representing that appointment was completed however requires further activity and would need a follow up appointment to be booked

2.4.4   Slot State Model
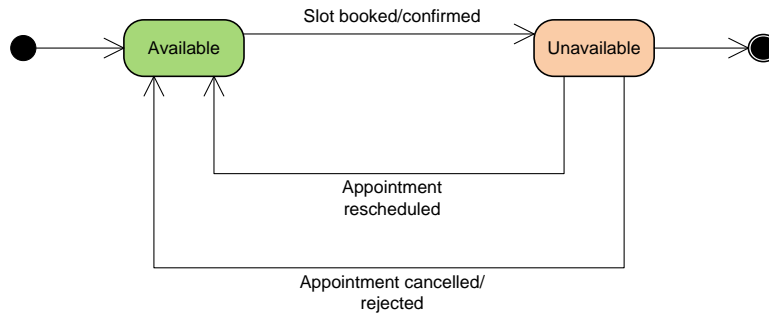
Figure 15 – Slot State Model

Status	Description
Available	State representing that a given time slot has not been taken and is available for booking
Unavailable	State representing that a given time slot has been already booked and cannot be taken

2.5   Assurance

2.5.1   Trouble Resolution

Trouble resolution consists of a set of functions across the B2B interface that enables tickets to be reported, tracked and maintained. The objective of these processes is to support an Access Seeker who receives reports from End Users, resolve them to the End User's satisfaction and provide meaningful status on repair and/or recovery activity back to the End User. The Access Seeker is responsible for End User contact and direct support in relation to any customer affecting problems detected by other processes or through analysis, including informing the customer proactively and resolving problems to the customers' satisfaction.

Tickets may be created or owned by either Access Seeker or NBN Co; there can be scenarios where the Access Seeker raises the ticket and this can be carried out after the Access Seeker has carried out an initial diagnosis through a variety of means, either through internal fault detection procedures, customer contact and/or via using the testing management B2B interactions; alternatively it can be in form of a NBN Co notification of an incident or a planned event/ hazard and hence raised at NBN Co end. The trouble administration interface is used to allow the Access Seeker to report troubles, to enable NBN Co to keep the Access Seeker informed of trouble resolution and to facilitate the cooperation of NBN Co. These processes are concerned with the identification and resolution of total or partial failures of the individual services offered under the Access Seeker's contract.

2.5.2   Ticket Types
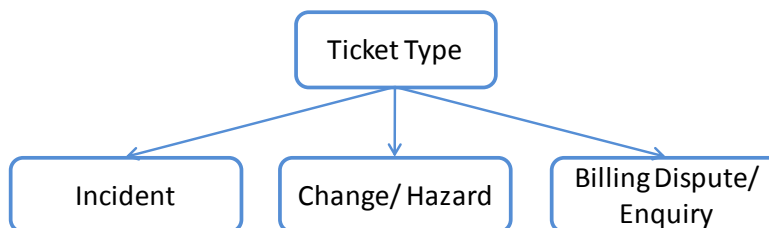
Figure 16 – Ticket Types

Ticket can be categorised as one of the following types:

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Ticket Type	Description
Incident	Any event that is not part of the standard operation of a service and causes or may cause a disruption to that service. Incident covers: Incident Record creation/receipt Assignment Investigation Lifecycle management. Event can be described as any detectable or discernable occurrence that has significance for the management of the IT Infrastructure or the delivery of IT services, and the evaluation of the impact a deviation might cause to the services. Events can also pertain to Exception cases, which may be unusual but are not necessarily service-impacting. Exceptions as well as Warnings go through Event Correlation and Trigger processing before the decision is made to conduct subsequent processing through either the alert management chain or the incident/ change management chain. An Event may be determined on inspection to be manifestly critical by itself and, without reference to any other source of information, it can be concluded that a service disruption is taking place. For example, in a scenario where service disruption has taken place: an NTU sends an Event advising that one of the in-service UNIs is not functioning. Depending on the circumstances, the next process step would be to open either: an Incident Ticket, or link an existing Incident Ticket. Thus, there may be parent-child incident tickets having impacted Access Seekers and their impacted services, which would undergo a clearance process until services were restored and Access Seekers had accepted or confirmed clearance.
Billing Enquiry and Dispute	A ticket type that will allow Access Seekers to dispute selected specific charges within a BEF (Billing Event File) or an invoice, or submit general enquiries.
Change/Hazard	Change Management is the process of planned and unplanned change to the network. Planned Change is expected to involve planning and scheduling with the approval and execution of that change managed through a change process. For unplanned outages, the solution provides an assessment of the impact using Alert and Incident data from Alarm/Event and Access Seekers that are mapped/ correlated against the physical and logical network view as managed by the Inventory. Identified faulty plant/equipment will be assigned to a suitable workgroup for repair and the list of impacted services passed to the relevant Access Seekers.

2.5.3   Ticket SLA Management & Lifecycle

Figure 19 – *Ticket SLA Management* & Lifecycle illustrates the five key milestones of a ticket lifecycle. Each key milestone will be associated to a targeted Service Level Agreement (SLA). The standard SLA of a given ticket may vary based on the ticket priority and/ severity. Access Seekers will be sent notifications proactively, advising progress and the achievement of agreed milestones and statuses.

There are two types of notification for SLA management, Jeopardy and Delay notifications.

1. Jeopardy Notification
   Each ticket milestone within its lifecycle will be subject to a target elapsed time to completion. Jeopardy occurs when the target time is about to be breached, or has been breached, at a particular stage of a ticket. NBN Co will send the jeopardy notification to the Access Seeker with reason specified.

2. Delay Notification
    is where NBN Co has identified that the ticket resolution will not be completed within the agreed overall SLA, and sends the delay notification to the Access Seeker with reason specified.
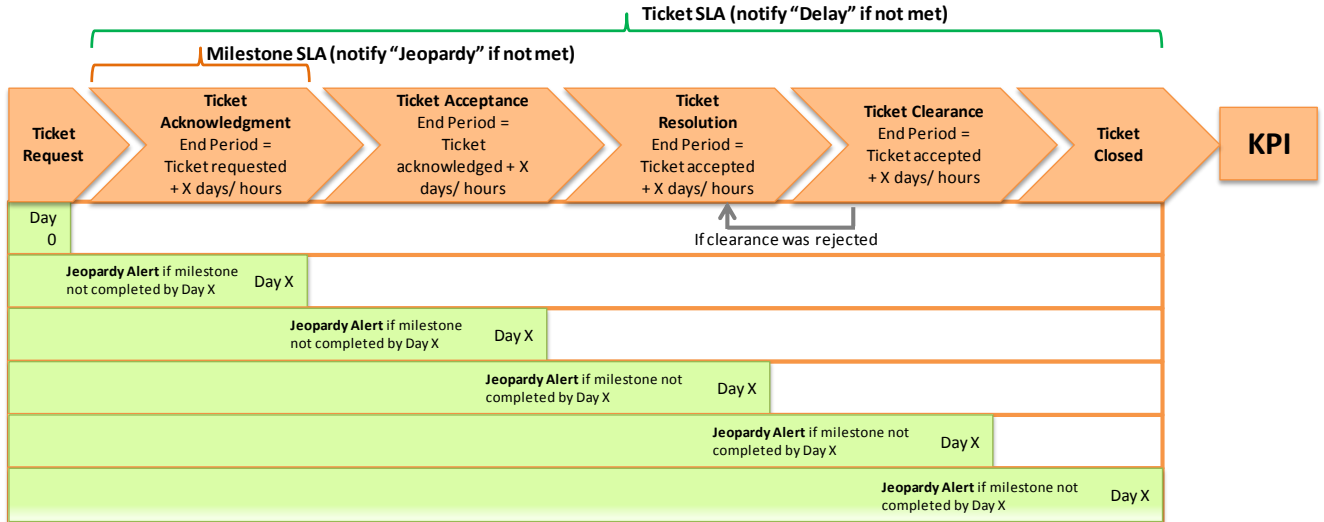
Figure 17 – Ticket SLA Management & Lifecycle

2.5.4   State Model (Ticket)

Pending

New/Pending

Lodged

Open/ Acknowledged

Reject → Closed/Rejected

Accepted

Re Open

Open/ In Progress — Defer → Open/ Deferred

Cleared   Cancellation

Clear Rejected

Cancellation

Open/ Cleared   Closed/Cancelled

Open/ Clear Accepted

Clear Confirmed

Clear accepted or Auto closure

Closed/ Completed
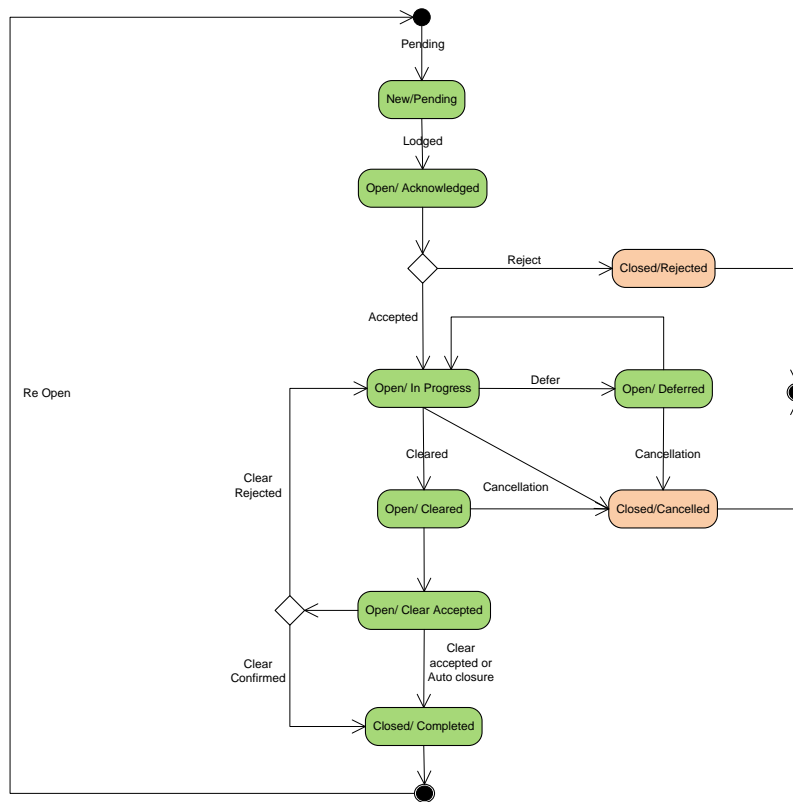
Figure 18 – Ticket State Model

State	Description
New/Pending	State representing the submission of a new ticket that is raised by the Access Seeker.
Open/ Acknowledged	State indicating that a ticket request has been received and lodged by NBN Co.
Open/ In Progress	State indicating that the requested ticket is valid and has been accepted to be progressed further and resolved.
Open/ Deferred	State representing that a ticket has been put on hold or deferred under given circumstances.
Open/ Cleared	State representing that a ticket is deemed to be cleared and to undergo customer acceptance.
Open/ Clear Accepted	State indicating that a ticket clearance has been accepted or accepted to be resolved by the customer and can be closed.
Closed/ Completed	State indicating that a ticket is accepted to be resolved by both the Access Seeker and NBN Co, and is closed. If the Access Seeker does not send a ticket clearance within the defined period, the ticket will be automatically closed/ completed.
Closed/ Cancelled	State representing that a ticket is no longer required and has been cancelled.
Closed/ Rejected	State representing that a ticket is not valid and hence is rejected or cannot be further progressed.

2.5.5   Class Model – Manage Trouble Ticket UML Model
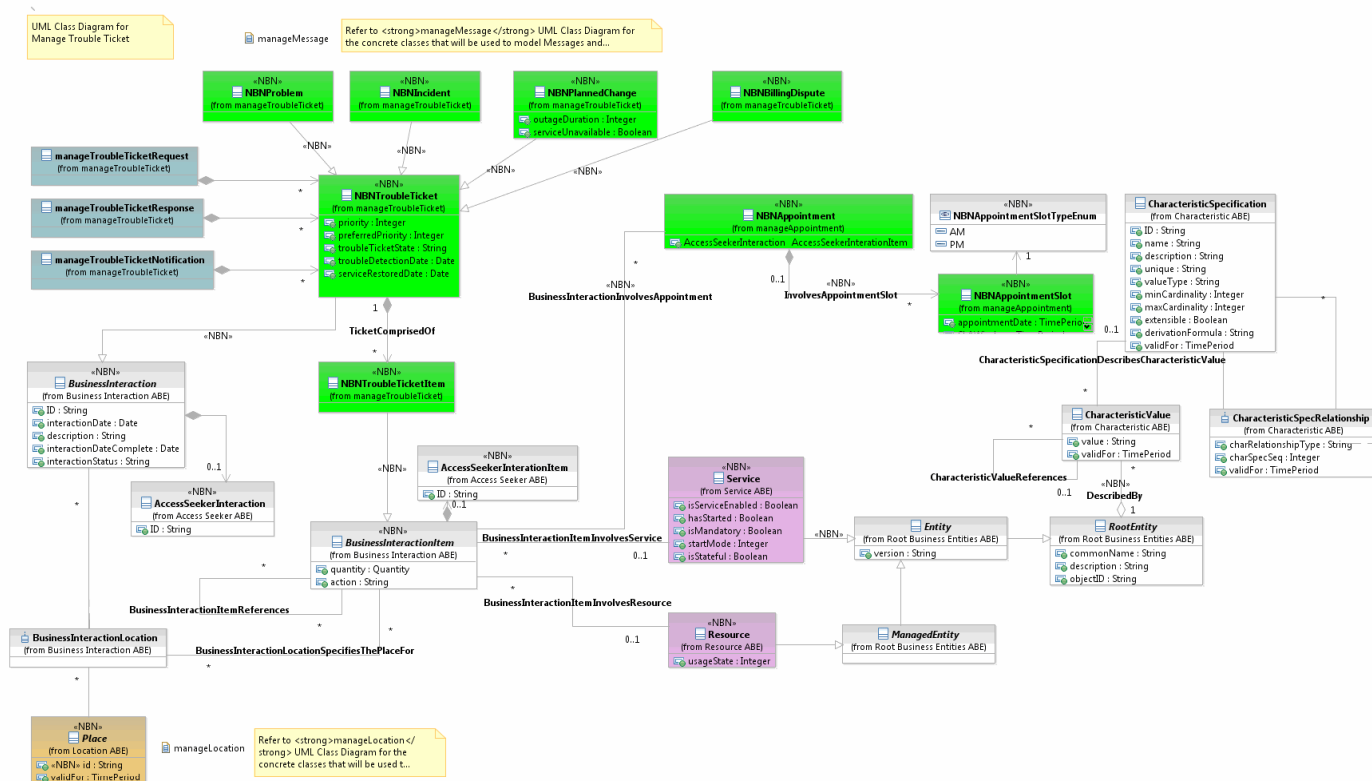
Figure 19 – Manage Trouble Ticket UML Model

2.6   Billing Overview

The ETIS EBG XML electronic billing standard will be used as the mechanism by which billing event data and invoices will be transmitted between the Access Seeker and NBN Co through the B2B interface, as illustrated in Figure 22 – *Access Seeker Billing Interactions*.
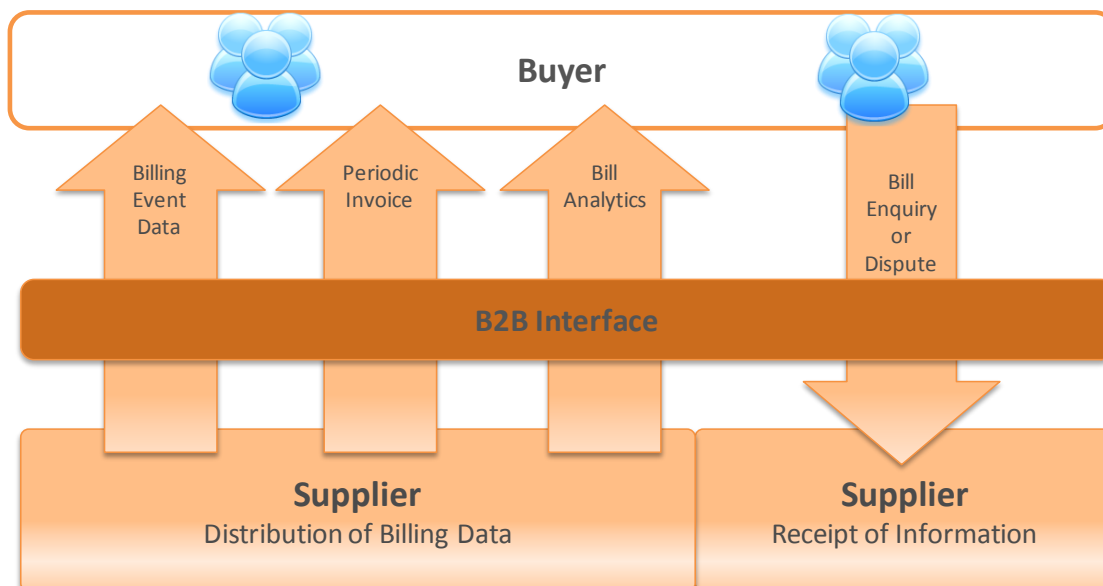
Figure 20 – Access Seeker Billing Interactions

2.6.1   Billing Event File

The Billing Event File (BEF) will be delivered in a configurable approach by individual Access Seekers to suit their operational needs. NBNCo may generate and provide files from several times in one day, daily, weekly, or any other time within the billing cycle. The configuration of the Billing Event File delivery will be managed through the Access Seeker On-boarding process with NBN Co or alternatively, through the Billing Enquiry process. Therefore, the configuration of the BEF cycle will not be available via the B2B.

Access Seekers will have the ability to request that a previously supplied BEF is required to be re-sent, or request a new file where it is required prior to the automated delivery of the next scheduled file. A request for a BEF prior to schedule will collect billing events available from the last generated BEF to the point in time the request is processed.

2.6.2   Billing Invoice

After the production of a billing run, Access Seekers will be provided with an Invoice in summary format. The detailed billing data that aggregates to the summary information will also be made available to Access Seekers along with a reconciliation of the billing event files used to generate the Invoice. Invoices will be generated on a regular basis, probably monthly.

The Billing Invoice will be available in two formats:

1. An ETIS EBG XML format so that the data can be imported into the Access Seeker's billing, financial and / or reporting systems.
2. A PDF format must be available from NBN Co as a Tax Invoice for delivery to the Access Seeker's accounts payable department.

Both Invoice formats will be available for retrieval through the B2B interface.

The following information will be made available within the Invoice:

- A summary invoice from charges at the product level
- Account information
  - Balance brought forward
  - Account level adjustment
  - Payments received)
- Billing Event Files metadata that constitutes the bill amount and will reconcile the totals of the BEFs with the bill amount.

Optionally, Access Seekers will be notified of a new Invoice via email and via the online Web Portal provided by NBN Co. They will be able to view the Invoice in HTML format and download it from the Web Portal; however, this will not be through the B2B interface.

2.6.3   Billing Analytics

Bill Analytics assists a number of business functions within an Access Seeker. This includes financial reconciliation of billing data to NBN-supplied invoices. It also provides information about the cost of NBN Co services that comprise the products the Access Seeker supplies to its customers/end-users.

The following billing reports will made available through the B2B:

- List of past BEFs
- List of past invoices
- Payment history by date range
- List of Billing Accounts per Access Seeker ID
- Billing account position e.g. outstanding billing account
- List of Billing Account level adjustment, rebate and discount
- Dispute/Enquiry information (historical and current).

2.6.4   Billing Enquiry or Dispute

A Billing Enquiry is a type of transaction that will allow Access Seekers to ask generic questions and receive clarifications relating to their bill. A Billing Dispute will enable the Access Seeker to select specific line items, or a group of line items within the bill to formally dispute.

The Billing Enquiry/Dispute capability will be managed via the B2B through the same service specification used for raising a Trouble Ticket. The difference is that the ticket type would be either 'billing enquiry' or 'billing dispute'. A workflow will be initiated and assigned to a specific billing workgroup for resolution, and status updates will be available to Access Seekers at key points along the resolution process as per the ticketing transaction process.

As an extension of Trouble Ticket management process, Access Seekers will have the ability to convert an unresolved Billing Enquiry into a dispute with an appropriate reason, and business rules will be applied.

2.6.5   Manage Billing File Class Diagram
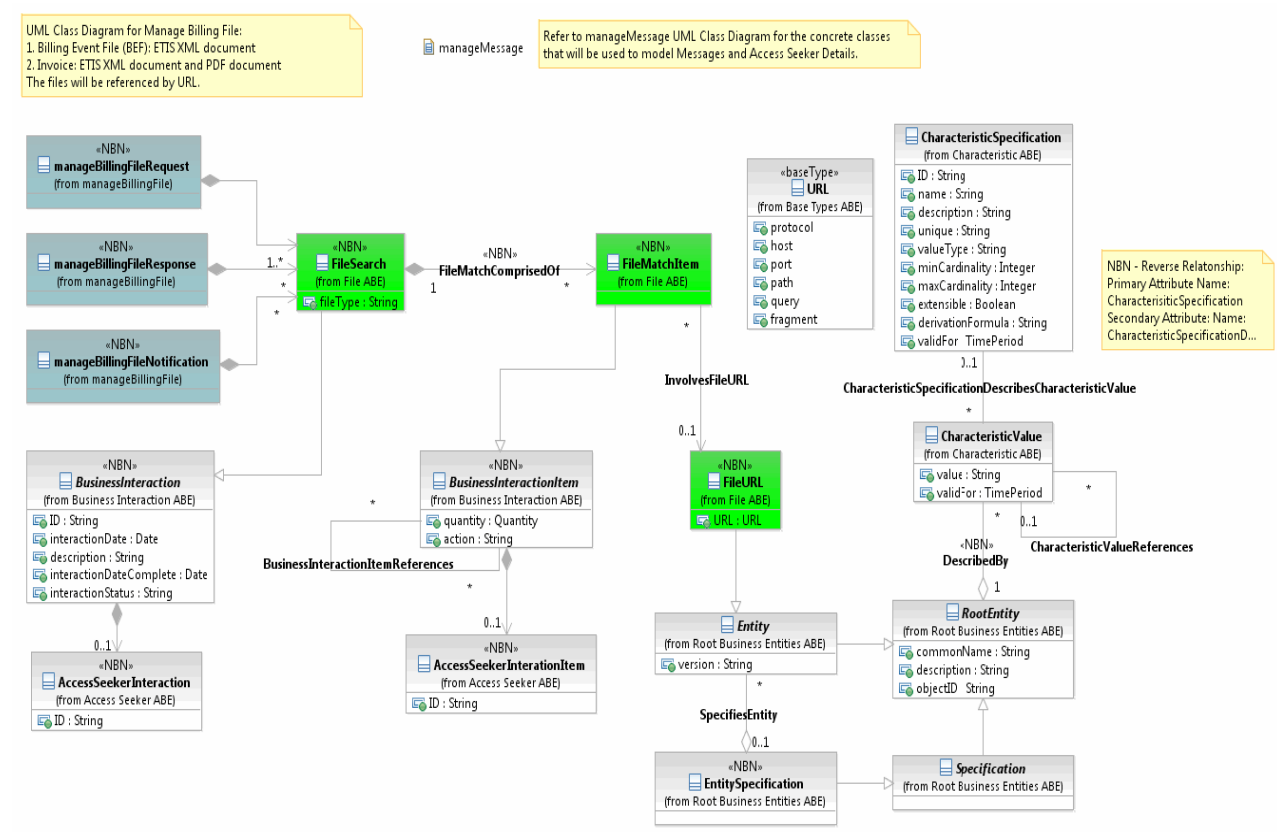
Figure 21 – Manage Billing File Class Diagram

2.7   Network Testing, Performance and Diagnostic Overview

2.7.1   Service Assurance

The goal of Service Assurance is to provide an integrated, efficient toolset for the rapid detection, diagnosis and resolution of network issues. All Access Seekers will have access to a range of Service Assurance capabilities (with commercially-available enhancements), as provided through the B2B interface. This provides the following, in an on-demand and historic fashion:

- Indication of the health and operational status of the Technology Service/s for reactive fault detection

- Service-level metrics for long-term capacity planning

- Diagnostic capabilities for reactive fault resolution.

Figure 22– *Network Testing, Performance and Diagnostics Concept*, illustrates the concept of the Network Testing, Performance and Diagnostics capabilities that will be available to the Access Seeker via the B2B/Portal.
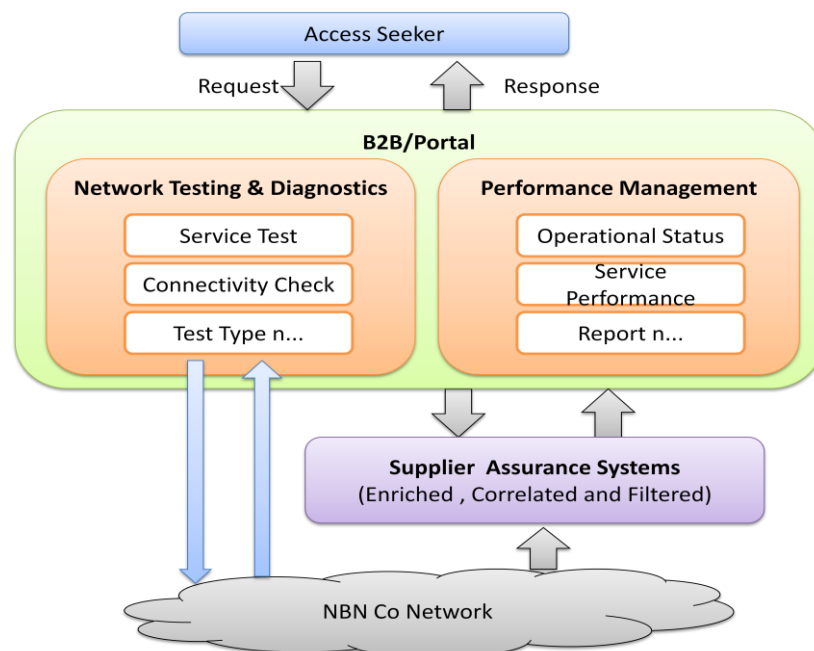
Figure 22 – Network Testing, Performance and Diagnostics Concept

2.7.2   Network Testing and Diagnostics

The Network Testing and Diagnostics tool via the B2B will provide Access Seekers with the following capabilities:

- **Event Diagnosis** - Access Seekers will be able to initiate a request to determine the Operation status of the Service that may be impacted by an Event.

- **Connectivity check** - Access Seekers be able to use the Connectivity Check to detect a service connectivity failure.

- **Service test** - Access Seekers will be able to initiate a request to verify the operation of the EVC, in response to an event.

Access Seekers will be able to request a specific test type or a list of test types through the B2B interface on a specific service. Access Seekers can only request a test type or a list of test types that are published based on the service/s contracted with NBN Co.

2.7.3   Performance Management

Performance Management capability will be made available to Access Seekers via the Portal based tools as well as raw data can be requested through B2B interface. Performance reporting capability supports the Access Seeker's insight into aggregated service components, for example: CVC.

Access Seekers will be able to view and request performance data of the network that is restricted to their particular services; therefore, authentication of users provides a key role in defining the views and data available to a user.

Indicative Performance Management features that are accessible to Access Seekers via the B2B interface are described in the table below.

Category	Feature	Indication	Description
Status	Operational Status Check	On-demand, near-real-time	High-level green/yellow/red indication of service 'health'
			Sample Status Definitions: Green – service is functioning within contracted parameters Yellow – service is functioning but performing under contracted parameters Red – service is not functioning.
	Event Status / History Report	Historic report	An indication of all current/previous alarms and events on that service, with time, severity and resolution data.
Metrics	Basic Metrics	Historic report	Reporting of basic interface and service statistics – throughput.
	Enhanced Metrics	Historic report	Reporting of enhanced interface and service statistics: Throughput Loss Class of Service management.
	Performance Metrics	Historic report	Reporting of Class of Service – level performance parameters.
	Trend Analysis	Historic report	Reporting of longer-term metrics against an Access Seeker's pre-set thresholds, designed to highlight areas where services are approaching the Access Seeker's engineered limits.

2.7.4   Class Diagram – Diagnostics Class Diagram
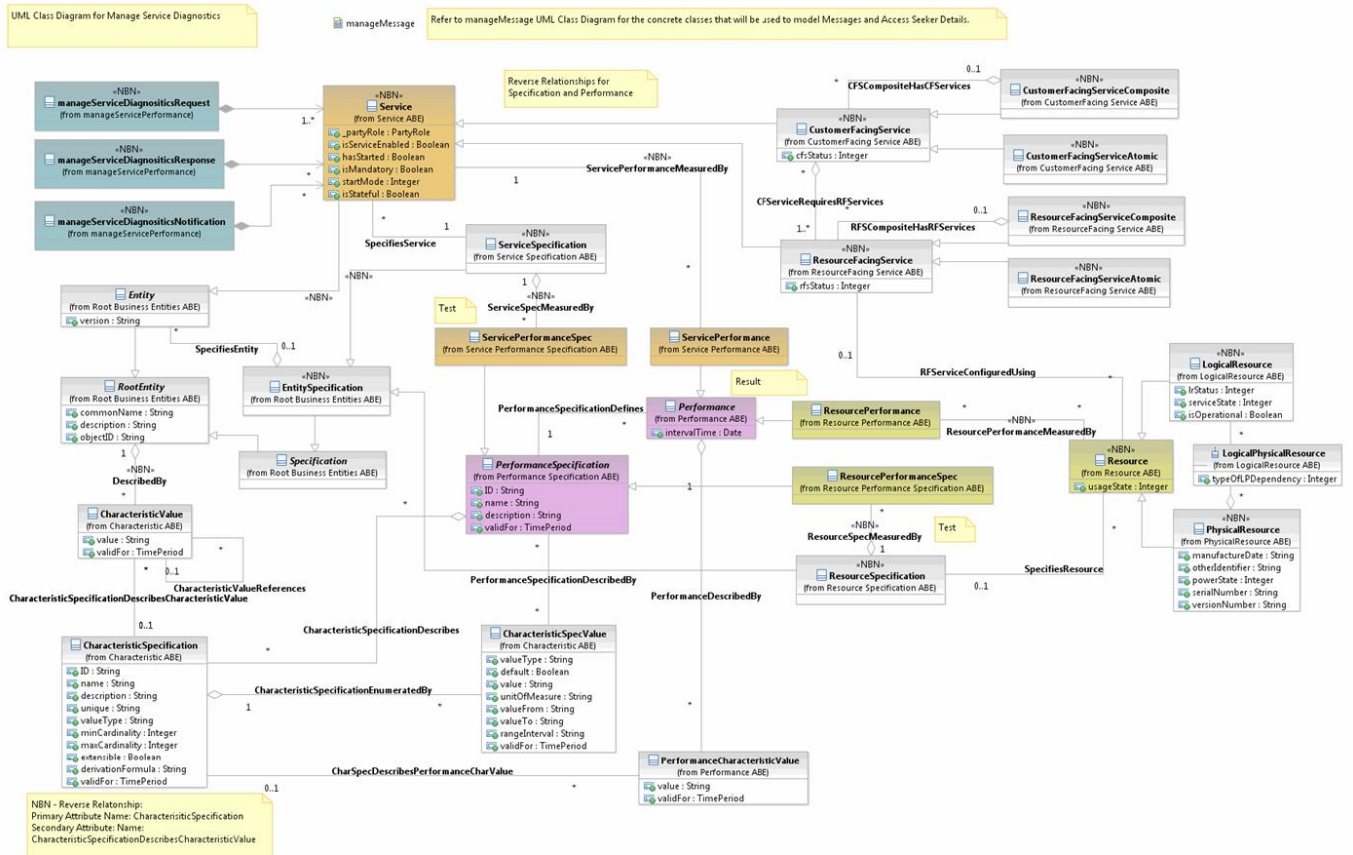
Figure 23 – Diagnostics Class Diagram

2.8   Batch/Bulk Overview

Batch/Bulk will provide the Access Seeker the capability to send a request with consolidated list of orders to be fulfilled, or addresses to be validated or service qualifications to be qualified. NBN Co will decompose the consolidated request into individual requests and manage it as per single requests.

The B2B interface Batch Management will support two types of batch transactions:

Bulk transaction is to be used for long running processes e.g. Orders. This type of transaction is only to be used for bulk load submission and response will be handled and sent individually.

Batch transaction is to be used for immediate processes e.g. Service Qualification and Address Search. This type of transaction will support for batch submission and response handled as a batch.

For a batch request NBN Co will proactively send Access Seekers status updates related to the batch processing. NBN Co Batch Management will also provide the Access Seeker the following capabilities:

CSV file upload of batch data submission via the Access Seeker Web Portal.

Notification of batch status update

View current batch status via the Access Seeker Portal

2.8.1   Batch Lifecycle
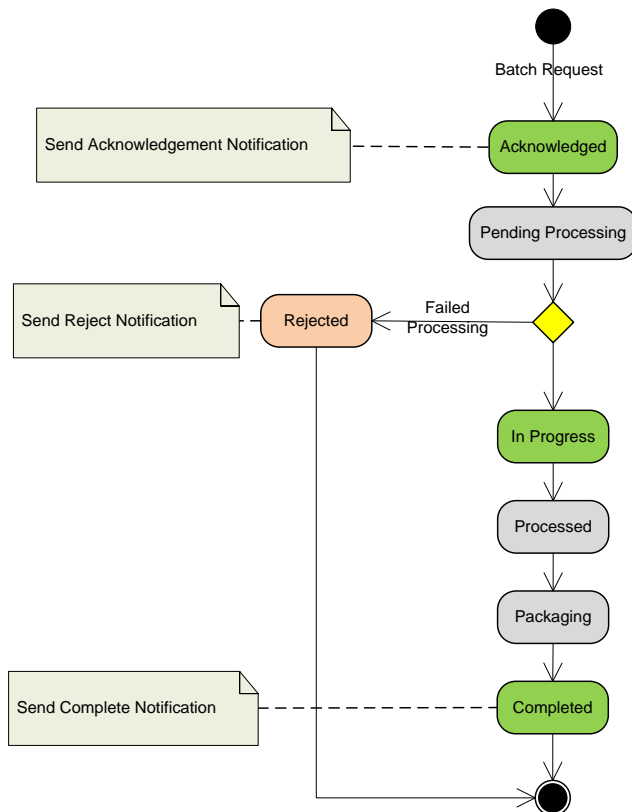
Figure 24 – Batch Lifecycle State Diagram

State	Description
Acknowledged	State indicating that a batch request has been received.
	Request acknowledgement notification will be sent to the Access Seeker.
Pending Processing	State representing a batch request has been accepted and queued for processing. State while decomposition takes place.
In Progress	State representing that batch request is being executed. Each line items is identified, validated and processed individually
Processed	State representing all line items in a batch has been processed
Packaging	State indicating a consolidate results into a single response message activity including a summary of the total successful/unsuccessful count.
Rejected	State indicating that a batch request cannot be accepted for processing
	A "Rejected" notification will be sent to the Access Seeker.
Completed	State representing a completed batch request (all work has been completed).
	A "Completed" notification will be sent to the Access Seeker.

3 Interaction Process Model

Below sections provide details of business process scenarios across L2C and T2R, and demonstrates which touchpoints are used to support these processes.

3.1 Pre-Order Management

3.1.1 PO-BP001: Single Site Qualification

ID	PO-BP001
Name	Single site qualification
Value stream	Fulfilment
Description	Represents an example interaction process where an address is validated using the address search, the details from which can be included in a qualification request submission. Qualification request type 'The location only' to determine whether an access service can be provisioned at a particular location.
Notes/ Assumptions	The Flow does not cover message related errors or exceptions; it assumes a valid XML message and format.
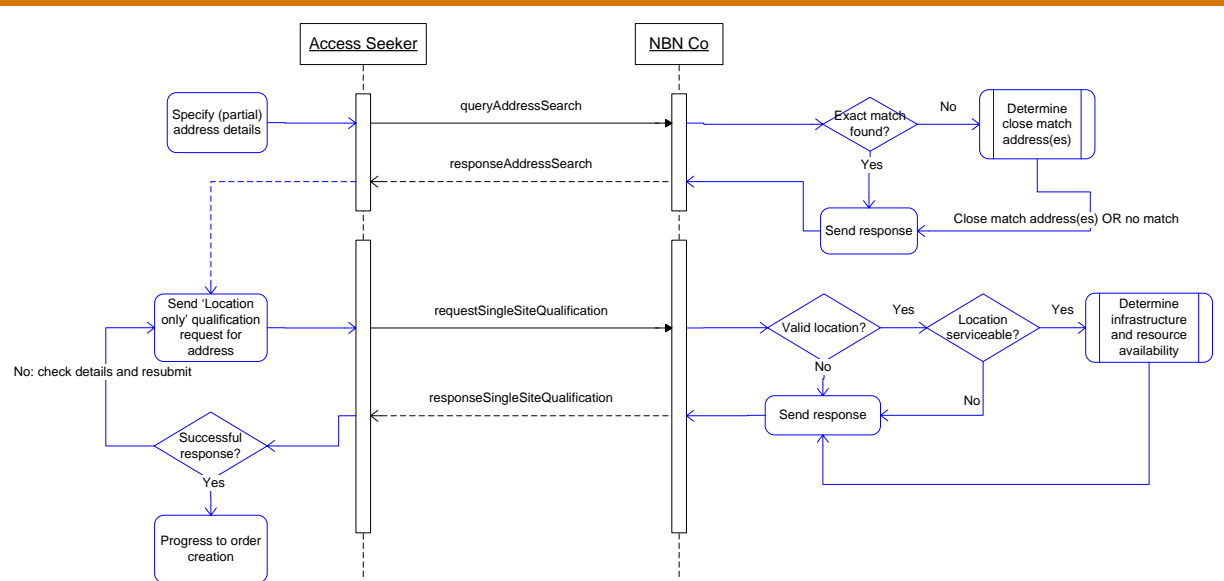
Process Flow

Figure 25 – Single Site Qualification Process Flow

Pre condition/s

Access Seeker has a sent valid message.
Access Seeker should validate the address using the address search query.

Provided:	Post condition:
A valid location is specified as part of the	Determine if the location is serviceable; send a response

request	containing the qualification result details and any appointment requirements.
	If the location is serviceable in future then include planned date.

Main Workflow

Step	Description	Role
1.	Send qualification request of type The location only.	Access Seeker
2.	Receive request and validate the location. If the location is valid and is unique, progress to Step 3 of the main workflow; otherwise refer to the alternate flow.	NBN Co
3.	Determine if the location is serviceable. If so, progress to Step 4 of the main workflow; otherwise refer to the alternate flow.	NBN Co
4.	Determine infrastructure and resource availability at the given location.	NBN Co
5.	Send a response containing qualification result details.	NBN Co
6.	Receive response and progress to order creation as required.	Access Seeker

Alternate Workflow

At Step	Description	Role
2	A valid or unique location is not specified or could not be retrieved – send a rejection/ error response	NBN Co
3	A valid / unique location is specified as part of the request but is not serviceable – send a response containing qualification result details and any appointment requirements.	NBN Co
4, 6	A valid / unique location is specified as part of the request and is serviceable but in future – send a response containing planned date.	NBN Co

Business Rules

	N/A

Touchpoints used in Interaction Model

PO-TP005	queryAddressSearch
PO-TP005.1	responseAddressSearch
PO-TP001	requestSingleSiteQualification
PO-TP001.1	responseSingleSiteQualification

3.1.2   PO-BP002: Multi Site Qualification (Batch)

ID	PO-BP002

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Name	Multi site qualification (Batch)
Value stream	Fulfilment
Description	A Request is initiated from the Access Seeker to submit a batch request containing multiple addresses or the locations for qualification.
Notes/ Assumptions	The Flow does not cover message related errors or exceptions; it assumes a valid XML message format.
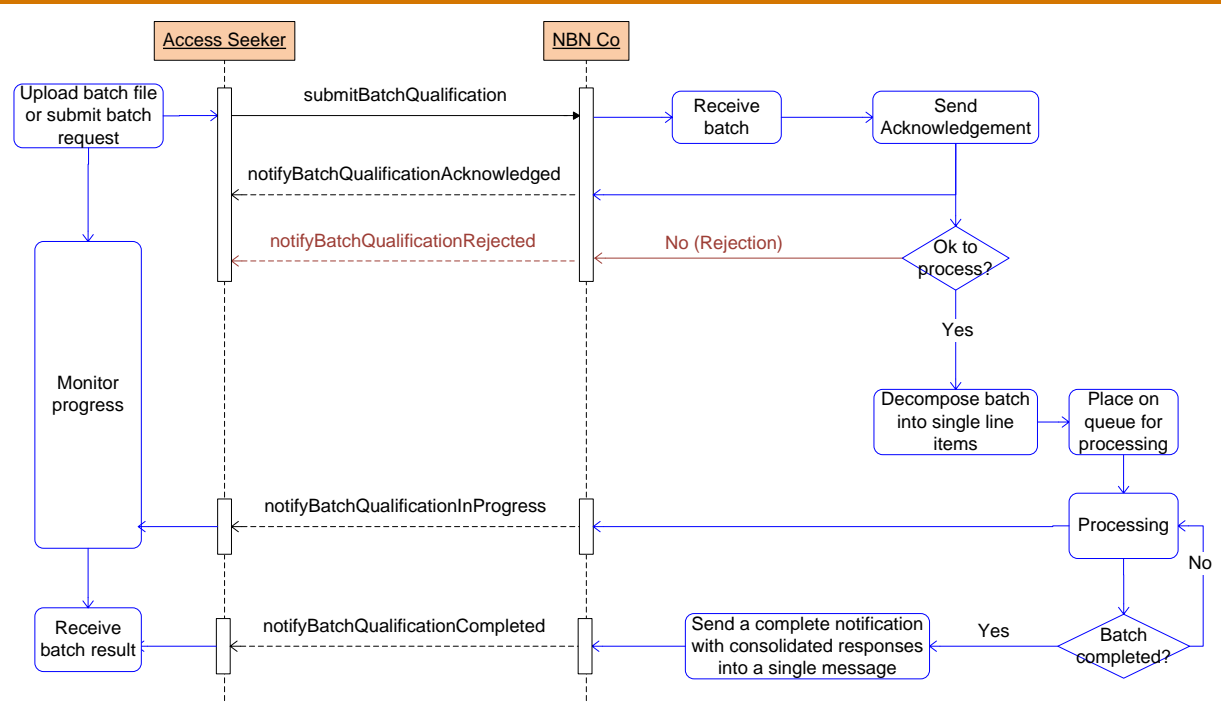
Process Flow

Figure 26 – Multi Site Qualification (Batch) Process Flow

Pre condition/s

Access Seeker has a sent valid message.

Provided:	**Post condition:**
A valid batch file is submitted and can be progressed with.	Upon completion of the batch, send a response containing qualification results for each line item within the batch.

Main Workflow

Step	Description	Role
1.	Batch file is uploaded and/or submitted for qualification request type The location only or The location and Product.	Access Seeker
2.	Batch request received and a notification will be sent to the Access Seeker with Batch ID returned.	NBN Co
3.	Determine if batch is okay to progress. If yes, progress to Step 4 of the main workflow, otherwise refer to the alternative workflow.	NBN Co

4.	Decompose the batch content into individual qualification line items.	NBN Co
5.	Determine the qualification of each line item. A notification will be sent to the Access Seeker when the first line item in the Batch starts processing.	NBN Co
6.	Check if the batch is completed. If yes, progress to Step 7 of the main workflow, otherwise go to Step 5 of the main workflow.	NBN Co
7.	All batch items have been assessed and completed. Consolidate results into a single response message including a summary of the total successful/unsuccessful count.	NBN Co
8.	Send completed batch response containing results.	NBN Co
9.	Batch response received.	Access Seeker

Alternate Workflow

At Step	Description	Role
3	Batch could not be progressed with and hence was rejected. Send a response with a rejection reason	NBN Co

Business Rules

ID	Description
PO-BR01	Rejection of individual line items within the batch would not lead to an overall batch rejection.
PO-BR02	A batch can contain up to X number of line items.

Touchpoints used

ID	Name
PO-TP002	submitBatchQualification
PO-TP006	notifyBatchQualificationAcknowledged
PO-TP007	notifyBatchQualificationCompleted
PO-TP008	notifyBatchQualificationInProgress
PO-TP009	notifyBatchQualificationRejected

3.1.3   PO-BP004: Batch Address Search

ID	PO-BP004
Name	Batch Address Search
Value stream	Fulfilment
Description	A Request is initiated from the Access Seeker to submit a batch request containing multiple addresses for validation.

Notes/ Assumptions	The Flow does not cover message related errors or exceptions; it assumes a valid XML message format.
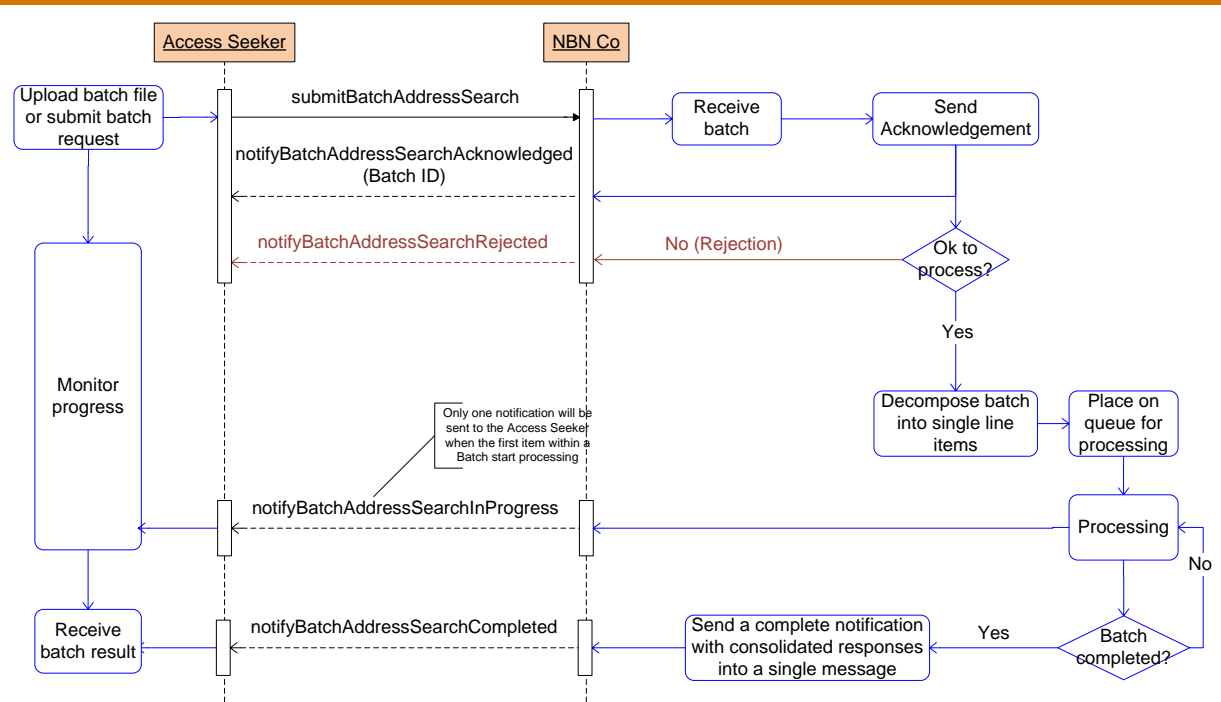
Process Flow

Figure 27 – Batch Address Search Process Flow

Pre condition/s

Access Seeker has a sent valid message.

Provided:	Post condition:
A valid batch file is submitted and can be progressed with.	Upon completion of the batch, send a response containing a consolidated qualification results for each line item within the batch.

Main Workflow

Step	Description	Role
1.	Batch file is uploaded and/or submitted for address validation request.	Access Seeker
2.	Batch request received and an acknowledgement notification will be sent to the Access Seeker	NBN Co
3.	Determine if batch is okay to progress. If yes, progress to Step 4 of the main workflow, otherwise refer to the alternative workflow.	NBN Co
4.	Decompose the batch content into individual qualification line items.	NBN Co
5.	Validate the address of each line item. A notification will be sent to the Access Seeker when the first line item in the Batch starts processing.	NBN Co
6.	Check if the batch is completed. If yes, progress to Step 7 of the main	NBN Co

	workflow, otherwise go to Step 5 of the main workflow.	
7.	All batch items have been assessed and completed. Consolidate results into a single response message including a summary of the total successful/unsuccessful count.	NBN Co
8.	Send completed batch response containing results.	NBN Co
9.	Batch response received.	Access Seeker

Alternate Workflow

At Step	Description	Role
3	Batch could not be progressed with and hence was rejected. Send a response with a rejection reason	NBN Co

Business Rules

ID	Description
PO-BR01	Rejection of individual line items within the batch would not lead to an overall batch rejection.
PO-BR02	A batch can contain up to X number of line items.

Touchpoints used

ID	Name
PO-TP010	submitBatchAddressSearch
PO-TP011	notifyBatchAddressSearchAcknowledged
PO-TP012	notifyBatchAddressSearchCompleted
PO-TP013	notifyBatchAddressSearchInProgress
PO-TP014	notifyBatchAddressSearchRejected

3.2   Order Management

3.2.1   OH-BP001: Request Connect Order

ID	OH-BP001
Name	Request Connect Order
Value stream	Fulfilment
Description	The end-to-end successful path of a new connect order request where the Access Seeker submits an order that is complete and valid.
	NBN Co raises the order and informs the Access Seeker of its receipt and acceptance as valid. NBN Co then ensures that delivery is possible and sends a delivery acceptance to the Access Seeker. Depending on the product/service being supplied one or more informational messages may be sent to the Access Seeker updating the stages of the fulfilment process, for example if physical install is required and an appointment has not been booked by the Access Seeker, NBN Co sends a 'more information required' notification, advising the Access Seeker that they need to arrange an appointment with the End-user.
	Once the order is complete, a final notification will be sent to the Access Seeker advising that the order is complete and the service/s is active.
Notes / Assumptions	Appointment details (e.g. time slot, demand type) have been provided within an order
	The Flow does not cover message related errors or exceptions, and assumes a valid XML message and format.
Process Flow	

Figure 28 – Request Connect Order Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
Order does not exist. Access Seeker is authorised to place the order.	Product/service delivered and is active. Order is complete in both NBN Co and Access Seeker systems.	Order Rejected
Flow of Event		

1. Access Seeker submits an order request.
2. NBN Co receives the XML document and responds to the Access Seeker request with the order request ID returned.
3. NBN Co sets order status to 'Acknowledged'.
4. NBN Co performs basic order validations, including but not limited to the following:

    - Ordered Products against the Product Catalogue based on the Access Seeker's profile or

contract with NBN Co
- Access Seeker Accreditation
- Billing Account that is not in a Suspended state.

If the validation fails, refer for Alternative flow.

5. NBN Co system decomposes the order into Services and initiates the Order Feasibility process to determine whether:

- The requested Products can be provisioned (this may require site survey or additional planning activities) and the committed delivery date is calculated, etc. The necessary Resource is available, and in what time frame.

- An appointment is necessary to complete the Order. The appointment type required for Workforce Management is identified.

- Validate the appointment booked by the Access Seeker e.g. a check is made to ensure that this matches the Demand Type required for provisioning the Product.

- If a Demand Type is incorrect, NBN Co sends an 'information required' notification and requests the Access Seeker to arrange a different appointment (a new appointment slot will be required).

- If a Demand Type is correct, NBN Co confirms the appointment.

- Resource reservation is confirmed.

6. NBN Co accepts the order and sends an order acceptance notification to the Access Seeker
7. NBN Co set the order status to 'In Progress'. This is the point at which the Access Seeker has confirmation that the product/service will be delivered (NBN Co committed date) and all the appropriate SLAs for deliveries apply; until this point only the SLA for time taken from order submission to acceptance has applied.
8. NBN Co provisions the service and sends a status update to the Access Seeker throughout the provisioning process such as delay, appointment failed, physical install completed, service test completed, new appointment required etc.
9. NBN Co completes the order and sets the status to complete.
10. NBN Co starts Billing and Assurance (SLA / Quality of Service [QoS] monitoring) activities.
11. NBN Co sends an order complete notification to the Access Seeker.

Alternative Flow: Rejects Order

At Step 4 and 5:

1. NBN Co rejects the order and sends a notification to the Access Seeker with reasons.

Business Rules

ID	Description
1.	Access Seeker Billing Account must be active and not in a suspended state for NBN Co to accept an order.
2.	Orders will not be rejected due to failure to provide an Appointment ID where one is found to be necessary, or failure to provide an Appointment ID with correct demand type.
3.	An order cannot be closed until all services have been completed and are active.
4.	If one service within an order has failed order feasibility, the whole order will be rejected.
5.	The Access Seeker is only allowed to request a product order for product/s that they are authorised to order.
6.	A product offering will be associated to multiple services (components) and the Billing start date will be equivalent to the overall order completion date. An order complete notification will be sent to the Access Seeker when all services within an order have been activated.

Transaction Touchpoints Used	
ID	**Transaction Name**
OH-TP002	submitOrderConnect
OH-TP009	notifyOrderAcknowledged
OH-TP015	notifyInformationRequired
OH-TP011	notifyOrderAccepted
OH-TP012	notifyOrderComplete
OH-TP008	notifyKeepCustomerInformed: notifyAppointmentCompleted notifyServiceTestComplete
OH-TP013	notifyOrderRejected

3.2.2   OH-BP004: Disconnect a Service

ID	OH-BP004
Name	Disconnect a Service
Value stream	Fulfilment
Description	The Access Seeker is placing an order as one of their activities to cancel an existing service supplied to the End-user. An order can only cancelled for a single location.
Notes / Assumptions	The Flow does not cover message related errors or exceptions, and assumes a valid XML message and format.

Process Flow
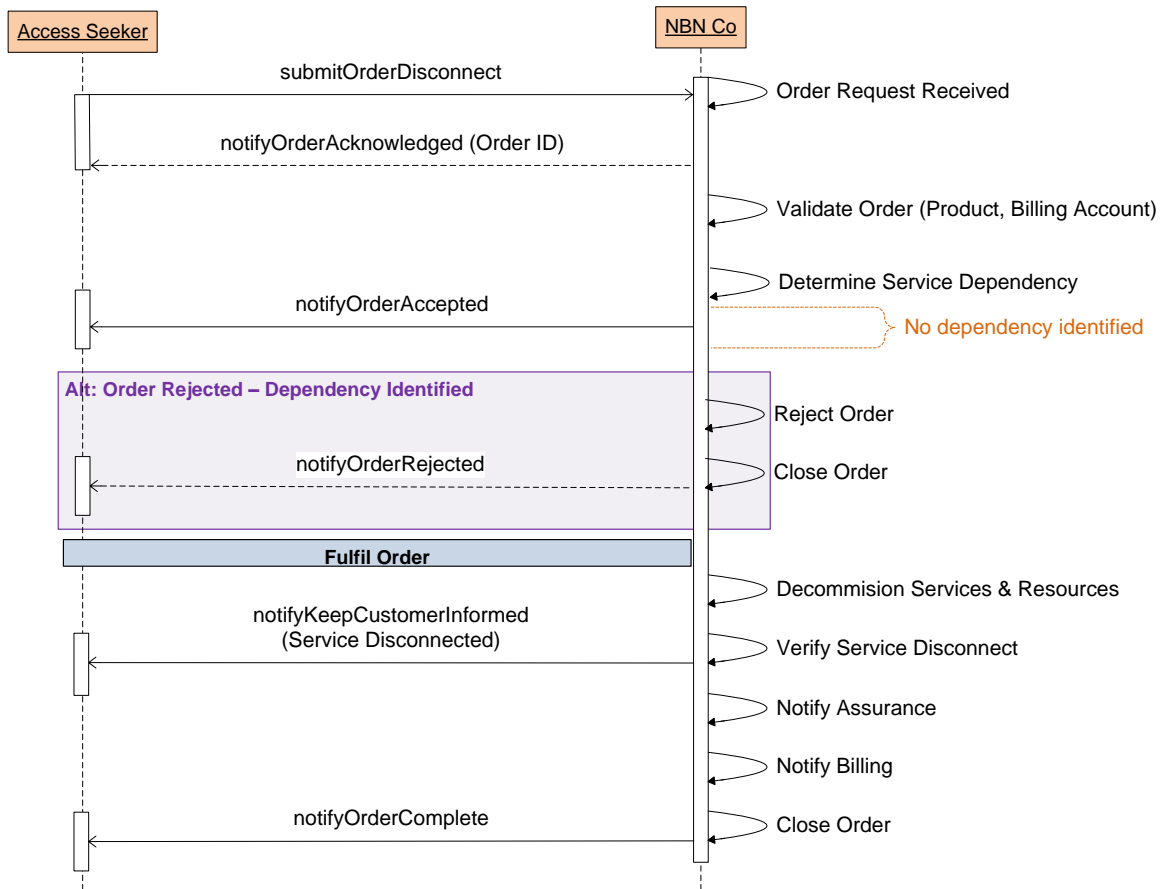
Figure 29 – Request Order: Disconnect Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The Access Seeker has been authenticated and is authorised to order Service exists and is active	The existing service/s has been disconnected. Order complete in both NBN Co and Access Seeker systems.	Order Rejected (refer to Alternative flow).

Flow of Event

1. Access Seeker submits a Disconnect order request.
2. NBN Co receives the XML document and sends an *Order Acknowledged* notification with order request ID.
3. NBN Co sets order status to "Acknowledged".
4. NBN Co performs basic order validations, including but not limited to the following:

    a. Validate if the Access Seeker is authorised to submit a Disconnect request
    b. Validate if the Access Seeker provided a valid Service ID.

5. NBN Co's system decomposes the order into Services and initiates the Order Feasibility process to determine the following:

    a. Check that no dependent services or orders will be compromised by the requested disconnection. A Disconnect Order cannot be accepted while there are other active services or orders reliant on the product instance that the service seeks to disconnect.
    b. If dependency has been identified, then go to Alternative flow
    c. Perform service design planning to release the Service resources.

6. NBN Co accepts the order for orchestration to complete de-provisioning.
7. NBN Co sends an order acceptance notification to the Access Seeker with a confirmed order ID.
8. NBN Co set the order status to "In Progress". This is the point at which the Access Seeker has confirmation that the disconnection will be processed and all the appropriate SLAs for completion are started – until this point only the SLA for time taken from order submission to acceptance has applied.
9. NBN Co orchestrates the order, decommissions the service and sends a status update to the Access Seeker.
10. Once the existing service/s has been decommissioned, the order status is set to "Completed".
11. NBN Co stops Billing and Assurance (SLA/QoS monitoring) activities.
12. NBN Co sends order complete notification to the Access Seeker.

Alternative Flow: Rejects Order

At Step 4 and 5:

1. NBN Co identifies there is a dependency on an order e.g. AVC cannot be disconnected if services are still active.

2. NBN Co rejects the order and sends a notification to the Access Seeker with reasons.

Business Rules

ID	Description
1.	A product instance cannot be disconnected while there are other active and dependent services.
2.	A product instance cannot be disconnected while there are dependent orders outstanding.

Transaction Touchpoints Used	
ID	**Transaction Name**
OH-TP004	submitOrderDisconnect
OH-TP009	notifyOrderAcknowledged
OH-TP011	notifyOrderAccepted
OH-TP012	notifyOrderComplete
OH-TP013	notifyOrderRejected
OH-TP008	notifyKeepCustomerInformed: ServiceDisconnected

3.2.3   OH-BP005: Modify Existing Service

ID	OH-BP005
Name	Modify Existing Service
Value stream	L2C – Fulfilment
Description	The Access Seeker is requesting a modification be made to an active service.
Notes / Assumptions	The Flow does not cover message related errors or exceptions, and assumes a valid XML message and format.
Process Flow	

Access Seeker		NBN Co

submitOrderModify → Order Request Received

notifyOrderAcknowledged ⟵

Validate Order (Product, Billing Account)

ServiceDecomposition

notifyOrderAccepted ⟵ DetermineServiceFeasibility

Alt: Order Rejected

Reject Order

notifyOrderRejected ⟵ Close Order

Fulfil Order

Service Activation & Configuration

Alt: If Demand Install is required

notifyKeepCustomerInformed
(Appointment Complete) ⟵ Perform Physical Install

Resource Configuration & Activation

Test Resource

notifyKeepCutomerInformed
(Service Test Complete) ⟵ Test Service End to End

Order Complete

Initiate Assurance

Initiate Billing

notifyOrderComplete ⟵ Close Order

Figure 30 – Request Order: Modify Existing Service Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
Access Seeker has been authenticated and is authorised to modify a service. Service exists and belongs to the requesting Access Seeker.	The existing service/s has been modified and is active. Order is complete in both NBN Co and Access Seeker systems.	Order Rejected (refer to OH-BP002 for flow).
Flow of Event		
Access Seeker submits a Modify order request. NBN Co receives the XML document and sends a response to the Access Seeker		

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NBN Co performs basic order validation, including but not limited to the following:

That the Access Seeker is authorised to submit a Service modification request.

That the Access Seeker provided a valid Billing Account and is not in a Suspended state.

NBN Co's system decomposes the order into Services and initiates the Service Feasibility process to determine whether:

- The necessary Resource/Inventory is available, and in what time frame.
- An appointment is necessary to complete the Order. The Appointment Type required for Workforce Management is identified.

Where the Access Seeker has an Appointment details in an order request, a check is made to ensure that this matches the Demand Type required for provisioning the Product. If a Demand Type is incorrect, NBN Co sends an information required notification and requests the Access Seeker to arrange a different appointment (a new appointment slot will be required).

If an Appointment details is provided and is valid, NBN Co will confirm the appointment.

Identify whether the modify Order is contingent on any other Orders, or planned construction.

Check that no dependent Orders will be compromised by the requested modification.

Reserve resources.

NBN Co's system accepts for order orchestration to complete provisioning and sends an order accepted notification to the Access Seeker with a confirmed order ID.

NBN Co sets the order status to "In Progress". (This is the point at which the Access Seeker has confirmation that the modification to product/service will be delivered and all the appropriate SLAs for deliveries apply – until this point only the SLA for time taken from order submission to acceptance has applied.)

NBN Co orchestrates the order, provisions the service and sends a status update to the Access Seeker such as delay, appointment failed, new appointment required that are detailed in other patterns, etc.

Once the existing service/s has been decommissioned, the order status is set to "Completed".

NBN Co updates Billing and Assurance (SLA/QoS monitoring) activities.

NBN Co sends Order Complete notification to the Access Seeker.

Alternative Flow: Rejects Order

At Step 4 and 5:

1. NBN Co rejects the order and sends a notification to the Access Seeker with reasons.

Business Rules

ID	Description
1.	Product Business Rules will be applied on a per product basis. Specific Product Business Rules are yet to be defined.

Transaction Touchpoints Used

ID	Transaction Name
OH-TP003	submitOrderModify
OH-TP009	notifyOrderAcknowledged
OH-TP011	notifyOrderAccepted
AM-TP008	notifyKeepCustomerInformed Appointment Complete Service Test Complete
OH-TP012	notifyOrderComplete

3.2.4   OH-BP006: Amend In-flight Order

ID	OH-BP006
Name	Amend In-flight Order
Value stream	Fulfilment
Description	The Access Seeker is requesting amendments be made to an in-flight order that has not yet completed provisioning up to the point of no return in the provisioning workflow.
	This may be a 'correction' or a change to product attributes - what is allowed will depend on the product rules and may differ from product to product. For example, the location cannot be modified for an in-flight order. If a change to the location is required then the current order must be cancelled (charges may be applied depending on what stage the order is at) and a new order submitted.
Notes / Assumptions	The Flow does not cover message related errors or exceptions, and assumes a valid XML message and format.
	Manual exception handling between the Access Seeker and NBN Co after an order amendment request has been rejected is not covered in the flow.

Process Flow
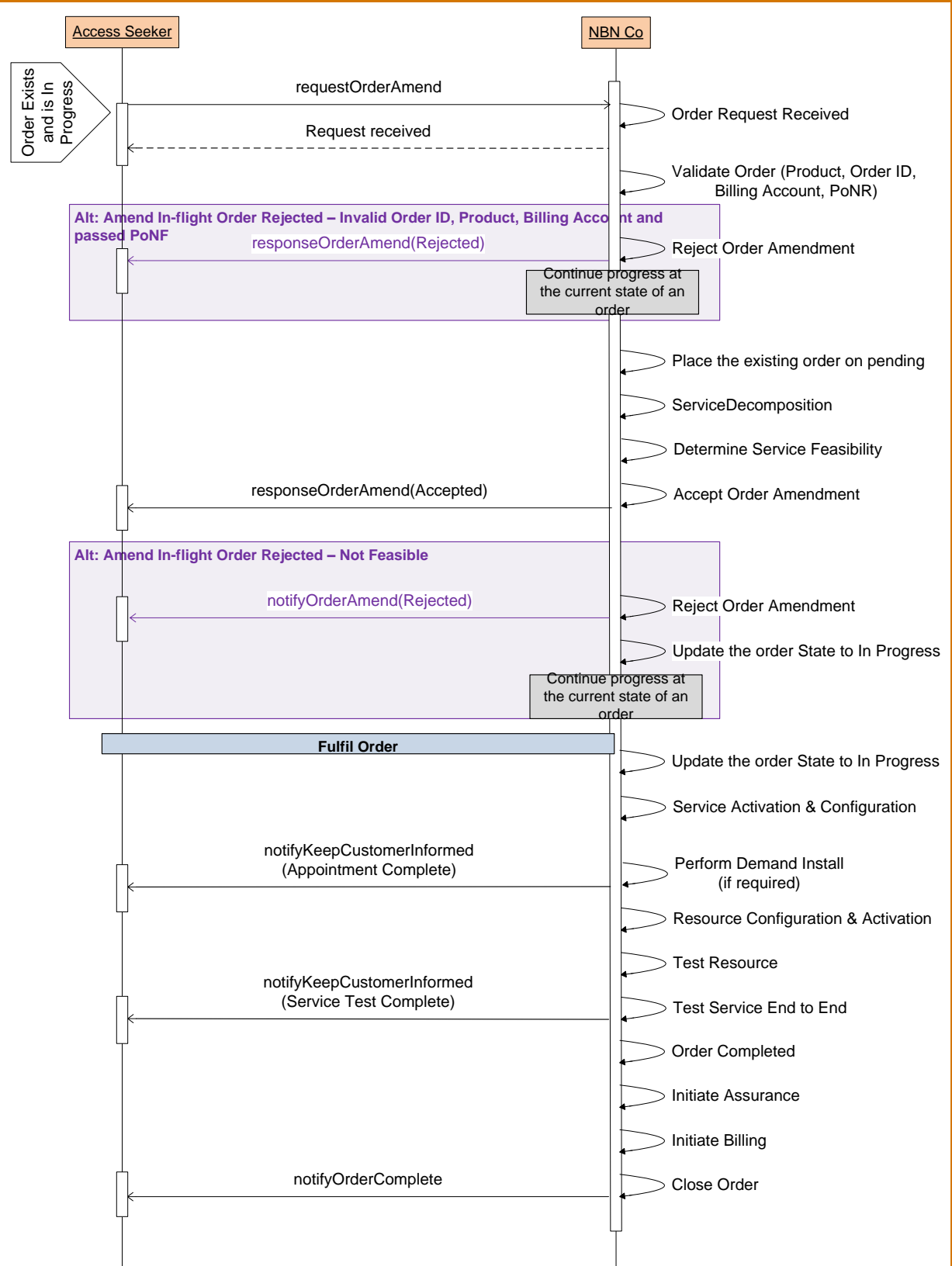
Figure 31 – Amend In-flight Order Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The order exists. The order has not been completed, rejected or cancelled.	The Order has been amended on both the Access Seeker and NBN Co's systems. The order has not been amended but the Access Seeker is aware of the reason and mutual manual processing occurs.	Order Amended Rejected, for example: invalid Order ID, past point of no return (PoNR), etc.

Flow of Event

1. Access Seeker submits an order amendment request *OH-TP005 requestOrderAmend.*
2. NBN Co receives the XML document and sends a response to the Access Seeker.
3. NBN Co performs basic order validation, including but not limited to the following:

   - An existing Order ID and the order not in a Completed state.
   - Validate the type of amendment against product business rules and its PoNR. If the PoNR has been breached the amendment request will be rejected and a reject notification will be sent to the Access Seeker.

If the validation fails, refer to order amend rejected alternative flow.

4. Place the existing order on "Pending" state.
5. NBN Co's system decomposes the order into Services and initiates the Service Feasibility process to determine the following:

   - a. If the amendment type is Product Attributes or Appointment, determine:

The delta between the original and amended designs. This may include roll back of completed steps of the original Order and updating Resource / Inventory management accordingly.
Whether the necessary Resource/Inventory is available, and in what timeframe.
Whether an appointment is necessary to complete the Order. The Appointment Type required for Workforce Management is identified. Where the Access Seeker has provided an Appointment details, a check is made to ensure that this matches the Demand Type required for provisioning the Product.
If a Demand Type is incorrect, NBN Co sends an information required notification and requests the Access Seeker to arrange a different appointment (a new appointment slot will be required).
If a Demand Type is correct, NBN Co confirms the appointment
Identify whether the modify Order is contingent on any other Orders, or planned construction.
Reserve resources.

   - If the amendment type is contact details only (both the Access Seeker and the End-user contact details), then accept the request.

If determine Service Feasibility is failed, refer to the order amend rejected alternative flow.

6. NBN Co accepts the Order Amendment for orchestration to complete provisioning.
7. NBN Co sends an order amends accepted notification to the Access Seeker.
8. NBN Co sets the order status back to "In Progress". An updated SLA will be calculated through the Service Feasibility process and advises of the new delivery date with the Amend Order Accepted notification.
9. NBN Co's system orchestrates the order, provisions the service and sends any status update to the Access Seeker. The orchestration process will include roll-back and/or cancellation of any previously completed steps in the original Service design that are now redundant.
   10. Once the existing service/s has been decommissioned, the order status is set to "Completed".
11. NBN Co updates Billing and Assurance (SLA/QoS monitoring) activities.
12. NBN Co sends an Order Complete notification to the Access Seeker.

Alternative Flow: Order Amend Rejected

At step 3 or 5:

1. NBN Co rejects the order amendment request and sends a notification to the Access Seeker.
2. If an order amendment for product attributes has been rejected, NBN Co will cancel the order and send a notification to the Access Seeker.
3. NBN Co updates the existing order status back to In Progress and continues to order fulfilment process.

Business Rules

ID	Description
1.	The location cannot be modified for an in-flight order.
2.	An order cannot be amended dependant on the amendment type, and it is PoNR.

Amendment Type	Category	Description	PoNR
Hard Amend	Product Attribute	Amend to product attributes on an order, for example: speed changes, etc. Product Business Rules will be applied.	Fixed time prior to Activation
	Demand Type	Changes to the Demand type will be validated against the resource shortfall. Change a demand type will require a new appointment to be booked. The Access Seeker cannot have two confirmed appointments within the same order. Refer to AM-BP005: Appointment Booking for details.	Fixed time prior to Appointment slot
	Non-Standard Install	Change request from the End-user when a contractor is onsite (i.e. external installation to internal installation). Business Rules will be applied for what change is permissible while a contractor is onsite.	Business Rules Apply
	Install Priority	Change request from the Access Seeker to change the standard install to a high priority install.	Fixed time prior to appointment slot and Business Rules Apply
	Contact Information	Update End-user contact details.	Fixed time prior to appointment slot
Soft Amend	Appointment Time Slot	Changes to an existing appointment timeslot. This can be either moving the date forward or backward. Business Rules will be applied.	Fixed time prior to appointment slot

3.	An in-flight order amendment can only be accepted for 'in progress' or 'pending' states.

Transaction Touchpoints Used	
ID	**Transaction Name**
OH-TP005	requestOrderAmend
OH-TP005.1	responseOrderAmend(Accepted or Rejected)
OH-TP008	notifyKeepCustomerInformed: notifyAppointmentComplete (if required) notifyServiceTestComplete
OH-TP015	notifyInformationRequired
OH-TP012	notifyOrderComplete

3.2.5   OH-BP007: Cancel In-flight Oder

ID	OH-BP007
Name	Cancel In-Flight Order
Value stream	Fulfilment
Description	The Access Seeker is placing an in-flight order cancellation request to cancel an order that has not completed provisioning. The point at which there is a billing implication will depend on the product rules and may differ from product to product.
Notes / Assumptions	The Flow does not cover message related errors or exceptions, and assumes a valid XML message and format. Manual exception handling between Access Seeker and NBN Co after order cancellation request has been rejected is not covered in the flow.

Process Flow
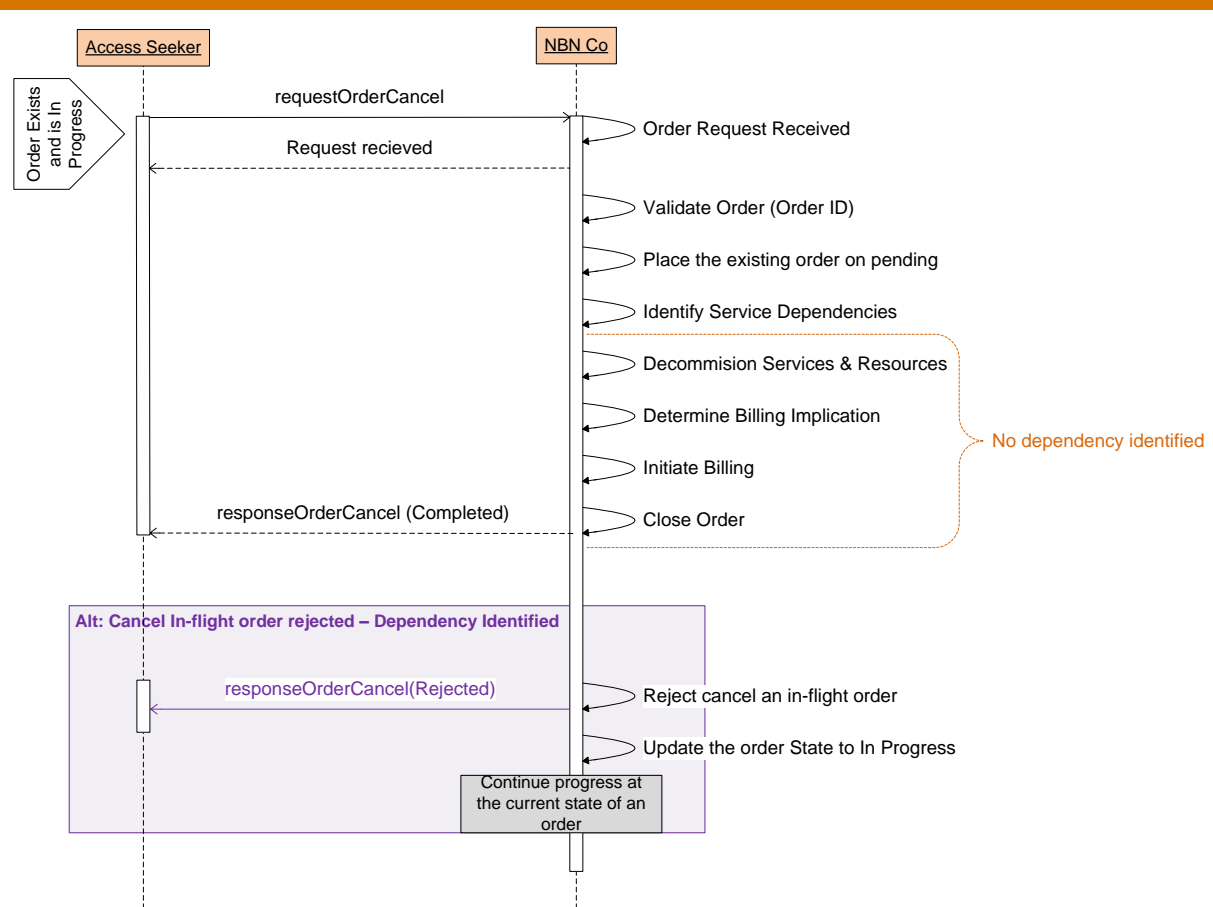
Figure 32 – Cancel In-flight Order Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The order exists. The order has not been completed, rejected or cancelled.	Order has been cancelled.	Rejected as Order is complete. Rejected as Order does not exist. Rejected as Order has past point of no

		return.

Flow of Event

1. Access Seeker submits a request to cancel an in-flight order.
2. NBN Co receives the XML document and sends notification response to the Access Seeker.
3. NBN Co performs basic validation, including but not limited to following:

Valid Order ID is provided.
Checks that the order is not passed the PoNR.

If the validation is failed, refer to the alternative flow.

4. NBN Co places the existing order on "Pending" state.
5. NBN Co identifies Service dependencies.

If Service dependencies have been identified, NBN Co rejects the order cancellation request (refer to alternative flow).

6. NBN Co accepts the order cancel request and sends an order cancellation accepted notification to the Access Seeker.
7. NBN Co performs the order decommission and determines any bill implication.

If there is a bill implication, a Billing event will be initiated and the Access Seeker notified within the order cancel complete notification.

8. NBN Co sends the completion notification.

Alternative Flow: Order Cancel Rejected

At step 3 or 5:

1. NBN Co rejects the order amendment request and sends a notification to the Access Seeker with a reason/s code, for example: order does not exist, order has past point of no return, order has been completed, etc.
2. NBN Co updates the existing order status back to In Progress and continues to the order fulfilment process.

Business Rules

ID	Description
1.	An order cannot be cancelled if dependencies of an order have been identified.
2.	An order can be cancelled up to the PoNR. PoNR business rules will be based on a per product basis. Product business rules are to be defined.

Transaction Touchpoints Used

ID	Transaction Name
OH-TP006	requestOrderCancel
OH-TP006.1	responseOrderCancel (Complete/Rejected)

3.2.6   OH-BP008: Notify Information Required

ID	OH-BP008
Name	Notify Information Required
Value stream	Fulfilment
Description	NBN Co has identified additional information is required from the Access Seeker, who must complete an action before the order can progress or be completed. For instance, an End-user may be identified as necessary, and the Notify Information Required used to request the Access Seeker to arrange an appointment with the End-user. Once the Access Seeker has obtained the information required by NBN Co, the Access Seeker responds to the request by executing the Order Amend operation, which would then follow the standard amend order process. As part of this process the Access Seeker may also request more time to allow for contacting the End-user; this is permitted a maximum number of times to be determined. In addition NBN Co may remind the Access Seeker that information is required if the amendment is not timely (as per the request more time process flow).
Notes / Assumptions	The Flow does not cover message related errors or exceptions, and assumes a valid XML message and format.
Process Flow	

Figure 33 – NBN Co Sends Information Required Notification Sequence Diagram

Success Path		**Alternative Outcomes**
Pre-Conditions	**Post-Conditions**	
The order exists and is incomplete.	The order has been amended to include the additional information to complete processing.	Manual intervention, add the data to the Access Seekers system. The wait times out – see auto cancel flow.

Flow of Event

1. NBN Co identifies additional information required from the Access Seeker for the order to progress.
2. NBN Co sends an *Information Required* notification to inform the Access Seeker that more information is required from them or their End-user to complete the order.
3. NBN Co stops the delivery process SLA and starts an activity timer to wait for the response from the Access Seeker and sets the status to "Pending".
4. The Access Seeker investigates and gathers information requested by NBN Co.

If the requested information can be provided, the Access Seeker submits the Order Amend request and follows as per the order amendment process (OH-BP006).

Business Rules

ID	Description
	N/A

Transaction Touchpoints Used

ID	Transaction Name
OH-TP015	notifyInformationRequired

3.2.7   OH-BP009: Request More Time

ID	OH-BP009
Name	Request More Time
Value stream	Fulfilment
Description	The Access Seeker has been requested to take action from NBN Co and they need more time to respond beyond the standard time period. In cases where the Access Seeker is unable to perform within the applicable timeframe, NBN Co sends a reminder message to the Access Seeker. If no further response is received from the Access Seeker, NBN Co will automatically cancel the order.
Notes / Assumptions	The Flow does not cover message related errors or exceptions, and assumes a valid XML message and format. Manual intervention between the Access Seeker and NBN Co to provide information has not been covered in the flow.
Process Flow	
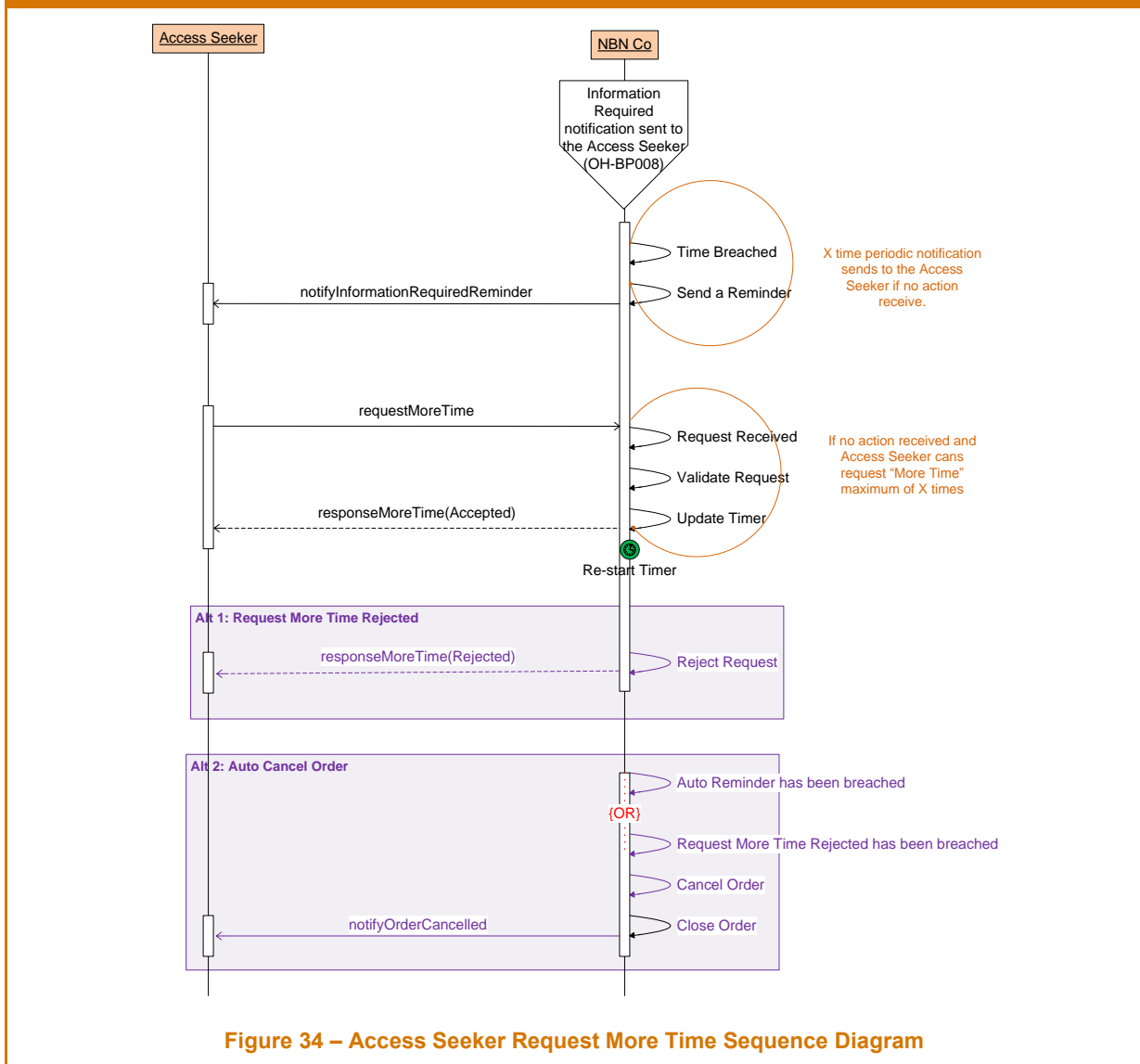
Figure 34 – Access Seeker Request More Time Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The order exists and is incomplete. A request has been sent to the Access Seeker to take action.	The order has been amended to include the additional information to complete processing the order.	Request time rejected Auto-cancel an order.

Flow of Event

1. NBN Co has sent an Information Required notification to the Access Seeker.
2. NBN Co identifies the requested information has not been provided by the Access Seeker and the waiting time has been breached.
3. NBN Co sends a reminder requesting the Access Seeker to perform the action; the details of the action are part of the notification.
4. The Access Seeker performs the necessary action, i.e. amend, cancel or require more time.

The Access Seeker needs more time to perform the action and executes *requestMoreTime* to extend the activity timer with NBN Co. This may be repeated up to the maximum permissible number of times.

5. NBN Co validates the request, updates the timer and sends a 'more time request has been accepted' notification.

Alternative Flow 1: Request More Time Rejected

At Step 5

1. If the Access Seeker requests more time beyond the maximum permissible number of times, NBN Co rejects the request.
2. NBN Co auto-cancels the order if no action is taken by the Access Seeker within a NBN Co determined time after the final request more time has been rejected.

Alternative Flow 2: Auto Cancel Order

At Step 3:

1. The maximum permissible number of Reminder notifications has been sent and no action has been taken by the Access Seeker after the NBN Co determined time from delivery of the last reminder.
2. NBN Co cancels the order and sends a notification to the Access Seeker.
3. NBN Co closes the order.

Business Rules

ID	Description
1.	The request more time can only be extended up to a maximum permissible number of times. An order will be cancelled if no action has been taken by the Access Seeker after an NBN Co determined time after the request more time has been rejected.
2.	A reminder notification will be sent to the Access Seeker up to the maximum permissible number of times. The order will be auto-cancelled if no action or response is received after an NBN Co determined time after the final reminder was sent.
3.	The Access Seeker cannot re-open an order once it has been cancelled. A new order must be created.

Transaction Touchpoints Used	
ID	**Transaction Name**
OH-TP019	requestMoreTime
OH-TP019.1	responseMoreTime(Accepted/Rejected) or responseMoreTime(Rejected)
OH-TP040	notifyInformationRequiredReminder
OH-TP032	notifyOrderCancelled

3.2.8   OH-BP010: Query Order Details

ID	OH-BP010
Name	Query Order Details
Value stream	Fulfilment
Description	The Access Seeker will be able to track the order handling progress of an End-user order by initiating a request to retrieve an order state/status at any time from NBN Co.
Notes / Assumptions	The Flow does not cover message related errors or exceptions, and assumes a valid XML message and format.
Process Flow	
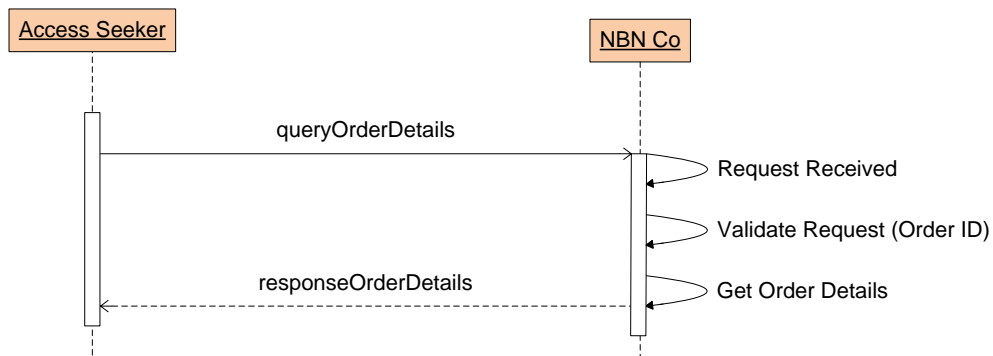
Figure 35 – Request Order Details Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The order exists and, if closed, has not been closed for longer than x months.	The Access Seeker received Order details.	Invalid order ID provided.
Flow Description		

The Access Seeker wishes to know the current state of an order by executing OH-*TP017 queryOrderDetails.*
NBN Co validates the request, gathers order information and sends order details to the Access Seeker.

Business Rules	
ID	**Description**
1.	Query order details apply to a single order only.
Transaction Touchpoints Used	
ID	**Transaction Name**
OH-TP017	queryOrderDetails
OH-TP017.1	responseOrderDetails

3.2.9   OH-BP011: Inform Jeopardy or Delay

ID	OH-BP011
Name	Inform Jeopardy or Delay
Value stream	Fulfilment
Description	NBN Co has identified that the order may not complete (Jeopardy) or will not complete (Delay) within agreed SLA and informs the Access Seeker.
Notes / Assumptions	The Flow does not cover message related errors or exceptions, and assumes a valid XML message and format.

Process Flow
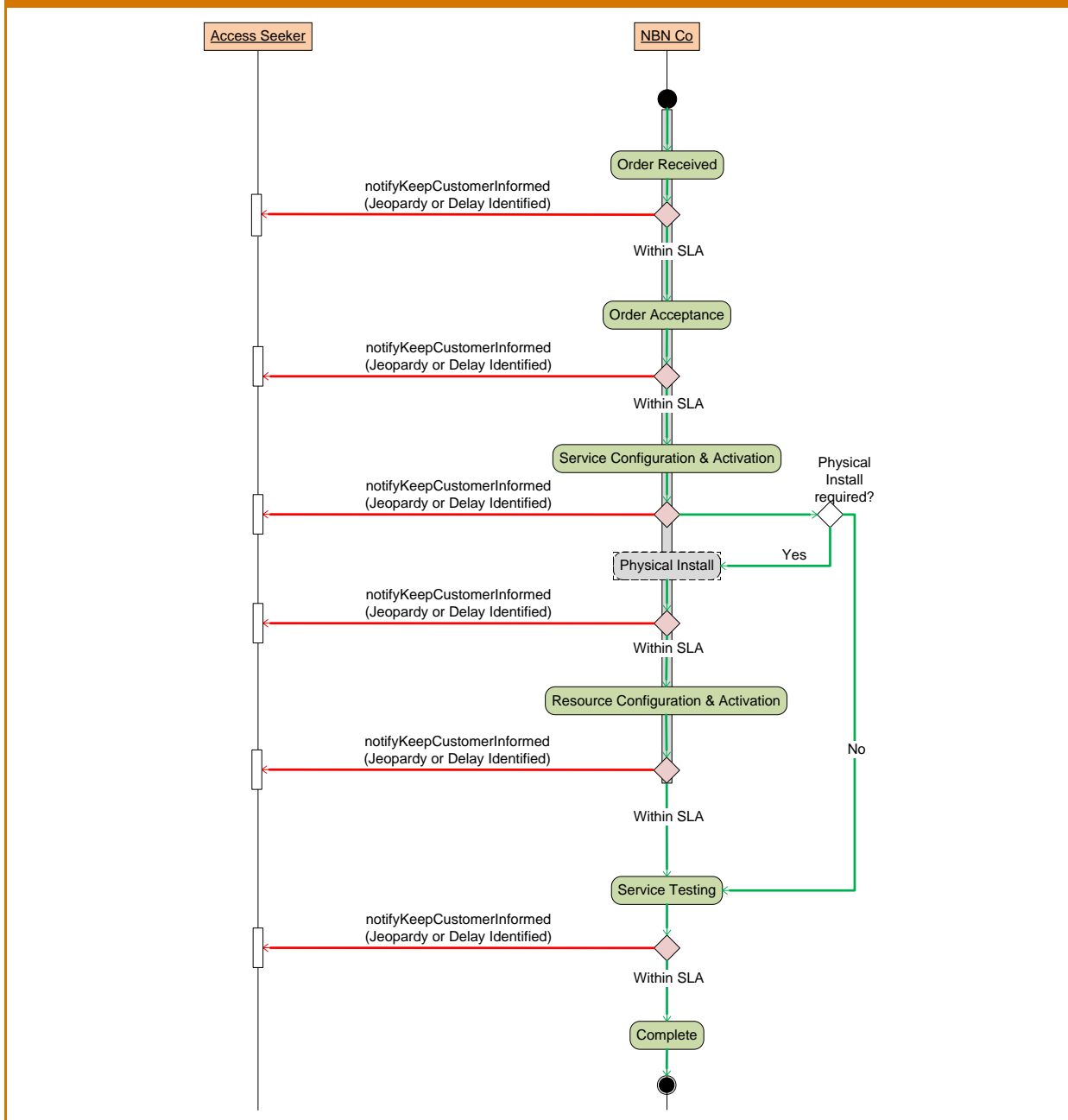
Figure 36 – Jeopardy or Delay Notification Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The order exists and is in progress. NBN Co has identified a jeopardy in progressing the Order which may lead to the delay of an order, or NBN Co has identified the order will not be completed within the agreed SLA.	A notification is sent to the Access Seeker.	N/A

Flow of Event

1. NBN Co identifies the order will not meet the agreed SLA at any stage of an order (notifyOrderDelay) *or*
2. NBN Co identifies the order is about the breach or has breached the activity SLA which may lead to the order not meeting the agreed SLA (notifyOrderJeopardy)
3. The Access Seeker takes necessary action to inform their End-user.

Business Rules

ID	Description
1.	Jeopardy SLA definitions:

Number	From Stage	To Stage	SLA Definition	Action
1.	Order Acknowledged		Day X	Send a notification if the SLA is about (x hr/day) to be breached.
2.	Order Acknowledged	Order Acceptance	Order submitted date + Day X	Send a notification if the SLA is about (x hr/day) to be breached.
3.	Order Acceptance	Service Activation and Configuration		Send a notification if the SLA is about (x hr/day) to be breached.
4.	Service Activation and Configuration	Physical Install (Optional)	Order submitted date +Day X + Install Xday	Send a notification if the SLA is about (x hr/day) to be breached.
5.	Service Activation and Configuration	Resource Activation and Configuration	Order submitted date +Day X	Send a notification if the SLA is about (x hr/day) to be breached.
6.	Physical Install (Optional)	Resource Activation and Configuration	Order submitted date +Day X	Send a notification if the SLA is about (x hr/day) to be breached.
7.	Resource Activation and Configuration	Service Testing	Order submitted date + Day X	Send a notification if the SLA is about (x hr/day) to be breached.
8.	Service Testing	Order Complete	Order submitted date + Day X	Send a notification if the SLA is about (x hr/day) to be breached.

2.	Order delay will be notified when the outcome of the jeopardy has an impact on the overall order delivery SLA.

Transaction Touchpoints Used	
ID	**Transaction Name**
OH-TP008	notifyKeepCustomerInformed: notifyOrderJeopardy, or notifyOrderDelay.

3.2.10   OH-BP012: Bulk Orders

ID	OH-BP012
Name	Bulk Orders
Value stream	Fulfilment
Description	The Access Seeker is placing a bulk order to Modify, Connect or Disconnect multiple products in the one request. There may be multiple locations.
Notes / Assumptions	The Flow does not cover message related errors or exceptions, and assumes a valid XML message and format.

Process Flow
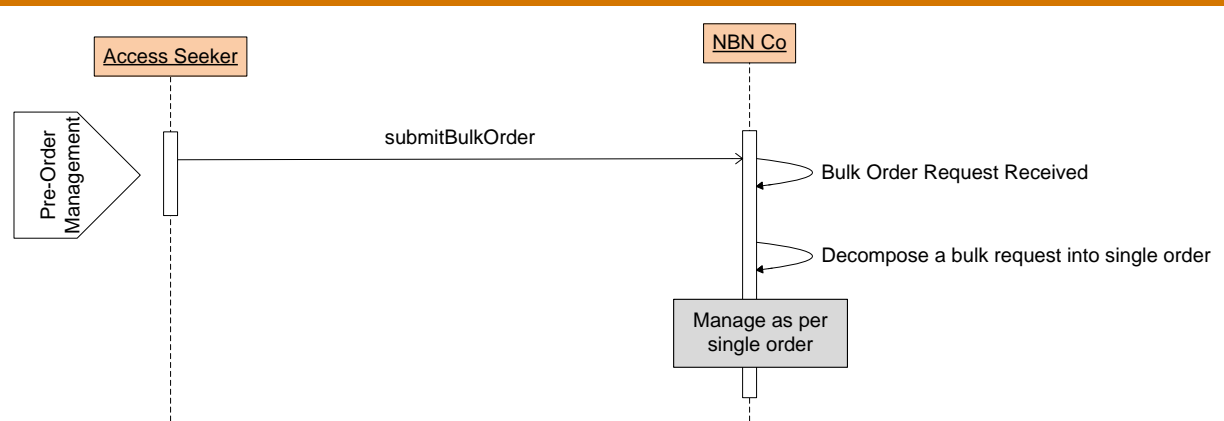
Figure 37 – Bulk Orders Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The Access Seeker is authorised to submit bulk orders.	Bulk orders have been decomposed into single order. NBN Co provision as per single order request.	N/A

Flow of Event

1. Access Seeker submits a bulk order by initiates *OH-TP007 submitBulkOrder.*
2. NBN Co receives a valid XML document
3. NBN Co's system decomposes the bulk request into a single order request and manages as per the single order process.

Business Rules	
1.	The Access Seeker can only submit XXX line items within a bulk request.

Transaction Touchpoints Used	
OH-TP007	submitBulkOrder

3.3   Product Catalogue Enquiry

3.3.1   PC-BP001: Query Product Catalogue

ID	PC-BP001
Name	Query Product Catalogue
Value stream	Product Catalogue
Description	The Access Seeker requests details of their Product Catalogue based on their contract with NBN Co.
Notes / Assumptions	The Flow does not cover message related errors or exceptions, and assumes a valid XML message and format.

Process Flow
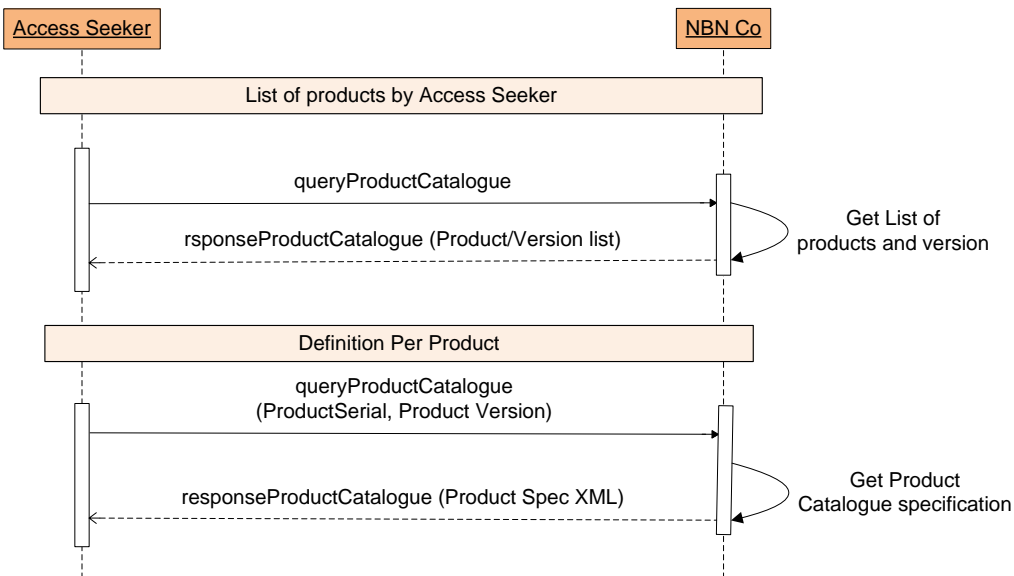
Figure 38 – Query Product Catalogue Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The Access Seeker has certification to sell the service/s. The Access Seeker is authorised to	A list of Products and Product Version provided to the Access Seeker.	Invalid Access Seeker ID. A specific Product definition provided to the Access Seeker.

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query the Product Catalogue.		

Flow of Event: Main Flow

1. The Access Seeker wishes to enquire about the current status of the Product Catalogue by executes *PC-TP001 queryProductCatalogue.*
2. NBN Co validates the request and gets a list of products and product versions associated to the Access Seeker's profile:

If the Access Seeker has not specified the product and version of the product in the request, a list of products and versions associated to the Access Seeker's profile will be returned.
Refer to the alternative flow if the Product ID and version have been provided in the request.

Alternative Flow: Definition Per Product

1. Once a list of products and product versions has been returned to the Access Seeker, the Access Seeker can query a specific Product Definition per product and its version.
2. NBN Co validates the request, gets the Product Definition (in XML) and response to the Access Seeker's request.

Business Rules

ID	Description
1.	NBN Co will only provide Product Catalogue, Product Version and Product Specification information relevant to the Access Seeker as defined by the contract/s and the Access Seeker's profile.

Transaction Touchpoints Used

ID	Transaction Name
PC-TP001	queryProductCatalogue
PC-TP001.1	responseProductCatalogue

3.3.2   PC-BP002: Notify Product Catalogue Update

ID	PC-BP002
Name	Notify Product Catalogue Update
Value stream	Product Catalogue
Description	NBN Co sends a notification to the impacted (contracted) Access Seekers advising of product changes, for example: new product version is available or a price changed).
Notes / Assumptions	Global Product changes, i.e. a new product constructed will be communicated via the Industry Engagement channel. This notification is only apply for changes to existing products.

Process Flow
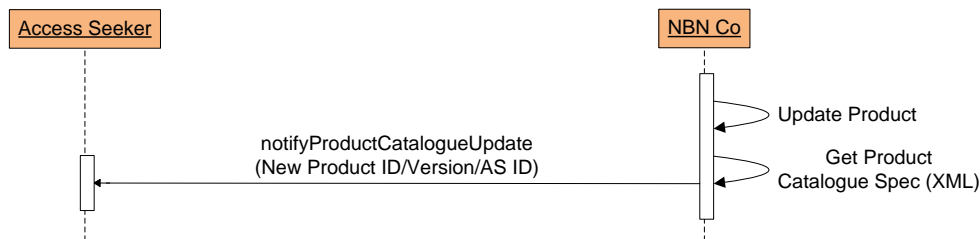
Figure 39 – Notify Product Catalogue Update Sequence Diagram

Success Path		**Alternative Outcomes**
Pre-Conditions	**Post-Conditions**	
The Access Seeker has a 'contract' to sell the service/s. A product has been updated.	A notification is sent to the Access Seeker advising of product changes.	N/A

Flow of Event

1.   The Product has changed within the NBN Co System.
2.   NBN Co sends a notification with the product version and specification (XML format) attached to the impacted Access Seeker/s.

Business Rules

ID	Description
1.	NBN Co will only provide Product Catalogue, Product Version and Product Specification information relevant to the Access Seeker as defined by the contract/s and the Access Seeker's profile.

Transaction Touchpoints Used

ID	Transaction Name
PC-TP002	notifyProductCatalogueUpdate

3.4 Appointment Management

3.4.1 AM-BP002: Cancel an appointment

| ID	AM-BP002
Name	Cancel an appointment
Value stream	Fulfilment Assurance
Description	Access Seeker initiated cancellation request for an existing confirmed appointment that is no longer required.
Notes/ Assumptions	The Flow does not cover message related errors or exceptions; it assumes a valid XML message and format. Alternatively, if NBN Co were to cancel appointment under given circumstances, a notification would be sent to the Access Seeker advising of the update.

Process Flow
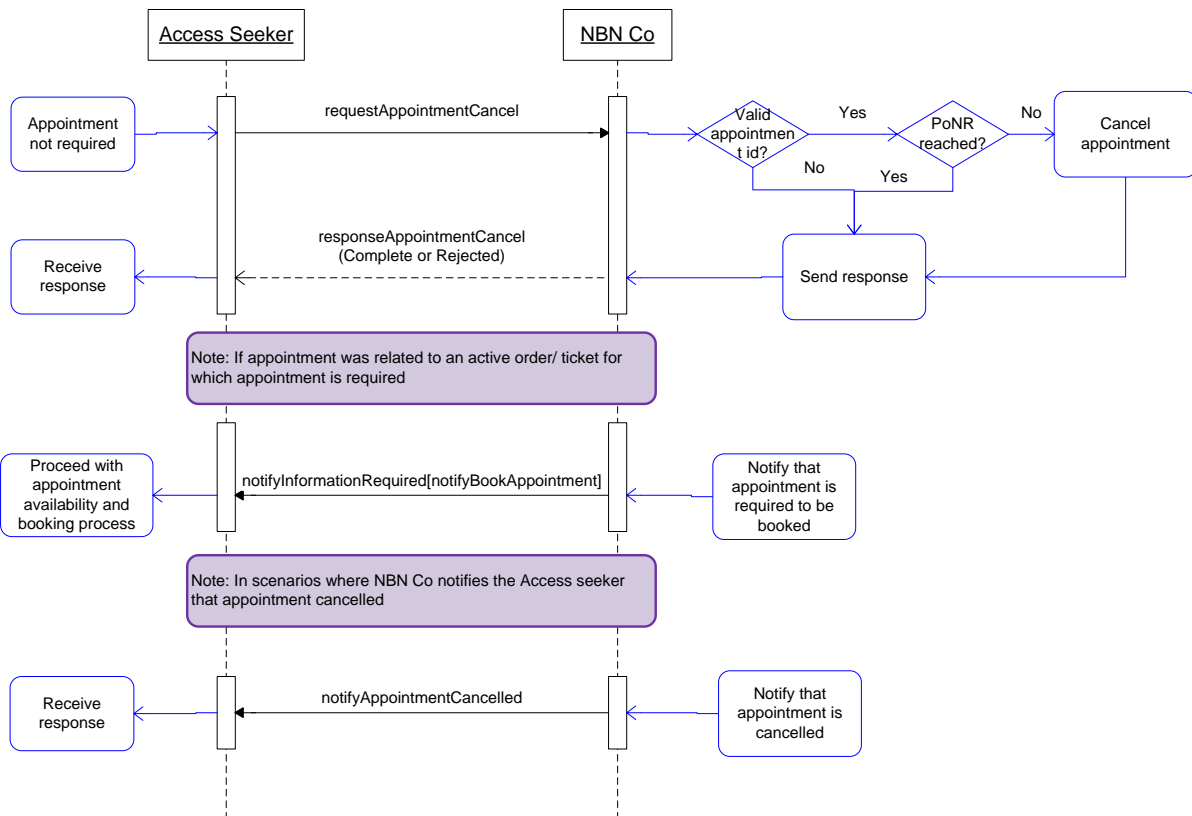
Figure 40 – Cancel an Appointment Process Flow

Pre condition/s

Access Seeker has:

Sent a valid message.

Booked or confirmed the appointment that is required to be cancelled.

Provided:		Post condition:	
A valid appointment ID or reference has been provided and the PoNR has not been reached on the appointment, for example: the NBN Co determined time prior to the appointment slot commencement.		Send a response confirming the cancellation of appointment.	
An appointment is required to complete an order / ticket.		Notify the Access Seeker that an appointment is required to progress further.	

Main Workflow

Step	Description	Role
1.	Advise that the appointment is no longer required and send cancellation request.	Access Seeker
2.	Validate the appointment ID or reference. If valid progress to Step 3 of the main workflow, otherwise refer to the alternate workflow.	NBN Co
3.	Determine if PoNR, for example: NBN Co determined time prior to the appointment slot commencement has been reached for the given appointment. If no, progress to Step 4 of the main workflow; otherwise refer to the alternate workflow.	NBN Co
4.	Send a response confirming the cancellation.	NBN Co
5.	Receive response.	Access Seeker

Alternate Workflow

At Step	Description	Role
2	Invalid appointment reference provided – send rejection / error response.	NBN Co
3	PoNR, for example: NBN Co determined time prior to the appointment slot commencement has been reached and hence the appointment cannot be cancelled.	NBN Co

Business Rules

ID	Description
AM-BR01	An appointment can only be cancelled if the PoNR has not been reached.

Touchpoints used

ID	Name
AM-TP007	requestAppointmentCancel
AM-TP007.1	responseAppointmentCancel(Rejected) or responseAppointmentCancel(Complete)
AM-TP002	notifyInformationRequired (notifyBookAppointment)
AM-TP016	notifyAppointmentCancelled

Uncontrolled when printed.

3.4.2   AM-BP003: Reschedule an Appointment

ID	AM-BP003
Name	Reschedule an appointment
Value stream	Fulfilment Assurance
Description	Access Seeker requests to change the appointment time and a reschedule of the existing confirmed appointment.
Notes / Assumptions	The flow does not cover message related errors or exceptions; it assumes a valid XML message and format. Alternatively NBN Co may require the Access Seeker to reschedule the appointment under given circumstances, for example: resource shortfall, a notification is to be sent to the Access Seeker requesting reschedule action.

Process Flow
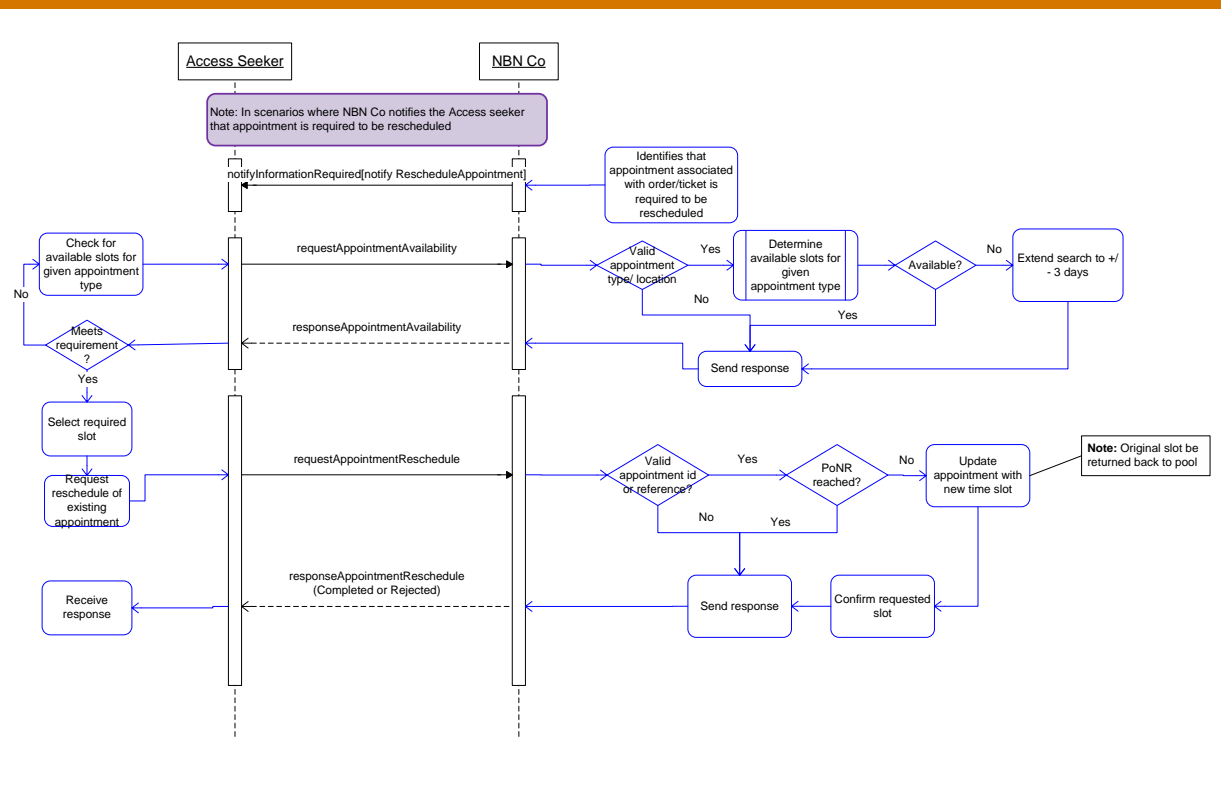
Figure 41 – Reschedule an Appointment Process Flow

Pre condition/s

Access Seeker has:

Sent a valid message.

Booked or confirmed the appointment that is required to be rescheduled.

Provided:	**Post condition:**
A confirmed appointment exists that has not reached its PoNR.	The appointment is rescheduled and associated with a new time slot, and confirmation is sent to the Access Seeker.

Main Workflow

Step	Description	Role
1.	Request to change the timing of an existing confirmed appointment; a reschedule request is submitted.	Access Seeker
2.	Check if a valid appointment ID or reference is provided. If valid, progress to Step 3 of the main workflow; otherwise refer to the alternate workflow.	NBN Co
3.	Check if PoNR has not been reached for the appointment required to be rescheduled. If not, progress to Step 4 of the main workflow; otherwise refer to the alternate workflow.	NBN Co
4.	Update the appointment with a new timeslot and send a confirmation response.	NBN Co
5.	Receive response.	Access Seeker

Alternate Workflow

At Step	Description	Role
2	Invalid appointment ID or reference is provided – send rejection / error response.	NBN Co
3	PoNR has been reached for the appointment and it cannot be rescheduled – send rejection / error response.	NBN Co

Business Rules

ID	Description
AM-BR01	An appointment can only be rescheduled if the PoNR has not been reached.
AM-BR02	Only a confirmed appointment can be rescheduled.
AM-BR04	Reschedule can be requested beyond the SLA if required.

Touchpoints used

ID	Name
AM-TP011	requestAppointmentReschedule
AM-TP011.1	responseAppointmentReschedule
AM-TP003	requestAppointmentAvailability
AM-TP003.1	responseAppointmentAvailability
AM-TP002	notifyInformationRequired notifyRescheduleAppointment

3.4.3   AM-BP004: Query appointment details

ID	AM-BP004
Name	Query an existing appointment
Value stream	Fulfilment Assurance
Description	Access Seeker initiated request to query details of an existing appointment.
Notes/ Assumptions	The Flow does not cover message related errors or exceptions; it assumes a valid XML message and format.
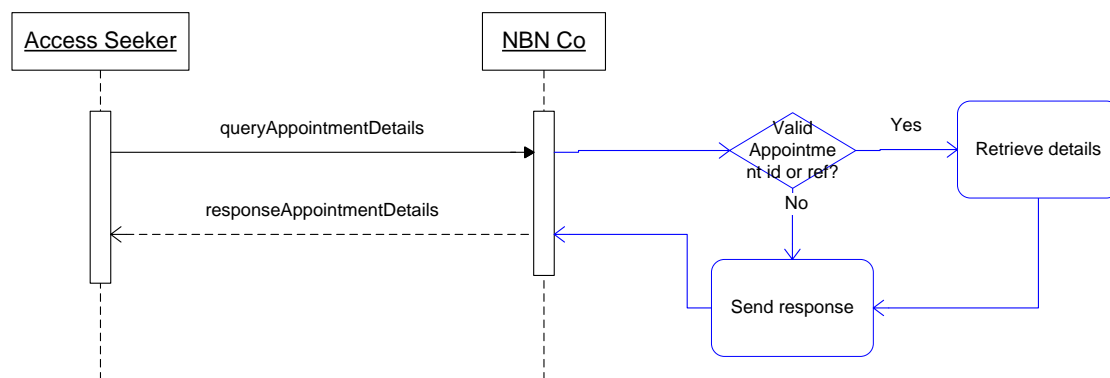
Process Flow

Figure 42 – Query Appointment Details Process Flow

Pre condition/s

Access Seeker has a sent valid message.

Provided:	**Post condition:**
Given appointment exists.	Appointment details are returned.

Main Workflow

Step	Description	Role
1.	Send query for an existing appointment.	Access Seeker
2.	Check if a valid appointment ID or reference is provided. If valid progress to Step 3 of the main workflow, otherwise refer to the alternate workflow.	NBN Co
3.	Retrieve details related to the appointment.	NBN Co
4.	Send a response containing the appointment details.	NBN Co
5.	Receive response.	Access Seeker

Alternate Workflow		
At Step	**Description**	**Role**
2	Invalid appointment ID or reference is provided (or already completed, is in the past) – send rejection/ error response.	NBN Co

Business Rules	
ID	**Description**
AM-BR01	A completed appointment can only be queried X days post its completion (historic records). <mark>TBC</mark>

Touchpoints used	
ID	**Name**
AM-TP006	queryAppointmentDetails
AM-TP006.1	responseAppointmentDetails

3.4.4   AM-BP005: Appointment Booking

ID	AM-BP005
Name	Appointment Booking
Value stream	Fulfilment Assurance.
Description	NBN Co initiated notification where the Access Seeker is required to book an appointment for an order or ticket.
Notes/ Assumptions	The Flow does not cover message related errors or exceptions; it assumes a valid XML message and format.

Process Flow

Figure 43 - Appointment Booking Process Flow
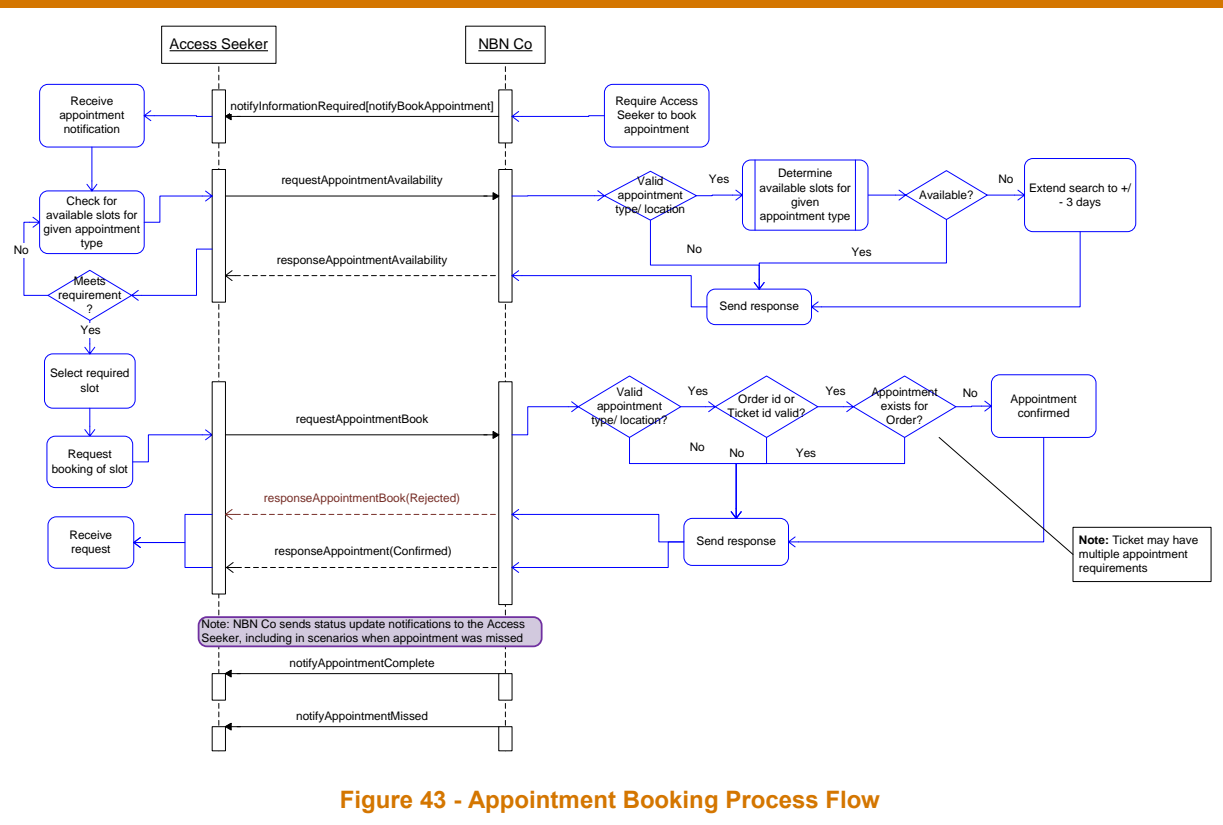
Pre condition/s

Access Seeker has:

A sent valid message.

An existing order or ticket that the appointment is to be associated to and has been advised of the appointment / demand type.

Requested available time slots from NBN Co for the required appointment / demand type.

Provided:	**Post condition:**
A valid location, appointment / demand type and available slot are requested. A valid order/ ticket is given (and no other booked appointment exists on the order).	Send a response confirming the booking of an appointment.

Main Workflow

Step	Description	Role
1.	Select the required slot that meets End-user requirements and request booking	Access Seeker
2.	Validate given the location and appointment / demand type. If valid progress to Step 3 of the main workflow, otherwise refer to the alternate workflow.	NBN Co
3.	Check whether the given order or ticket ID or reference is valid. If yes progress to Step 4 of the main workflow, otherwise refer to the alternate workflow.	NBN Co
4. (for order only)	If booking made for an order, check no other booked appointment exists and demand type is validated against what is required for the referenced order/ ticket. If no other appointment exists progress to Step 5 of the main workflow, otherwise refer to the alternate flow	NBN Co
5.	Send a response to Access Seeker confirming the appointment booking	NBN Co
6.	Send appointment status update notifications to Access seeker	NBN Co

Alternate Workflow

At Step	Description	Role
2	Invalid location, appointment / demand type provided. Or slot has already expired. Send rejection/error response	NBN Co
3	Invalid order or ticket ID or reference provided. Send rejection/ error response	NBN Co
4	A booked appointment already exists for the given order. Send rejection or error response	NBN Co

Business Rules

ID	Description
AM-BR01	An order can have at most one booked customer appointments at the any single given time.
AM-BR02	An appointment can only be booked for a given referenced order or ticket.
AM-BR03	A ticket can have multiple booked appointments at a given time. TBC

Touchpoints used

ID	Name
AM-TP004	requestAppointmentBook
AM-TP014	responseAppointmentBook(Rejected) or responseAppointmentBook(Confirmed)

Uncontrolled when printed.

AM-TP002	notifyInformationRequired
	notifyBookAppointment
AM-TP003	requestAppointmentAvailability
AM-TP003.1	responseAppointmentAvailability
AM-TP017	notifyAppointmentMissed
AM-TP018	notifyAppointmentComplete

3.4.5   AM-BP006: Update details of existing appointment

ID	AM-BP006
Name	Update details of existing appointment
Value stream	Fulfilment, Assurance
Description	Access Seeker initiated request where they wish to modify specific details of a confirmed appointment, for example: contact details or add comments
Notes/ Assumptions	The flow does not cover message related errors or exceptions; it assumes a valid XML message and format.
	Demand type related to an appointment cannot be updated by the Access Seeker. A different demand type would be treated as a different appointment
	Slot duration cannot be reduced or extended on an existing appointment by the Access Seeker. Slot duration or event window would be as defined by NBN Co

Process Flow
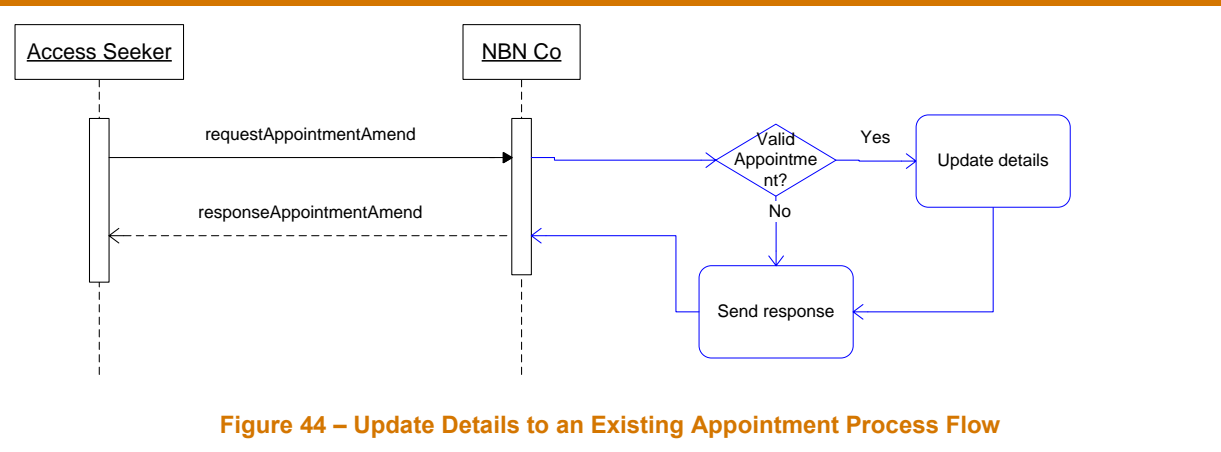
Figure 44 – Update Details to an Existing Appointment Process Flow

Pre condition/s

Access Seeker has:

A sent valid message.
An existing appointment.

Provided:	Post condition:
A valid appointment ID or reference is provided.	Send a response confirming the update.

Main Workflow		
Step	**Description**	**Role**
1.	Request to update contact details of existing appointment.	Access Seeker
2.	Validate given appointment ID or reference. If valid progress to Step 3 of the main workflow, otherwise refer to the alternate workflow.	NBN Co
3.	Update appointment details.	NBN Co
4.	Send a response to the Access Seeker confirming the update.	NBN Co

Alternate Workflow		
At Step	**Description**	**Role**
2	Invalid appointment ID or reference provided – send rejection/error response.	NBN Co

Business Rules	
ID	**Description**
AM-BR01	Details related to a completed or cancelled appointment cannot be updated.
AM-BR02	Category of possible updates to an existing appointment.

Update type	Description
Customer contact	Details related to customer premises contact, for example: Name, Mobile, Phone number, etc.
Comments	Addition of textual comments to an existing confirmed appointment to provide trail.

Touchpoints used	
ID	**Name**
AM-TP010	requestAppointmentAmend
AM-TP010.1	responseAppointmentAmend (completed or Rejected)

3.5   Assurance

3.5.1   TT-BP001: Assurance Ticket Process (Main Flow)

| ID	TT-BP001
Name	Assurance Ticket Process (Main Flow)
Value stream	Assurance
Description	Access Seeker has performed a level 1 test on service and identifies a fault or incident. Access Seeker raises a trouble ticket with NBN Co. NBN Co validates the ticket, accepts and then progresses with resolution, reporting progress updates. NBN Co reports the problem is cleared. Access Seeker accepts clearance and the ticket is closed by NBN Co.
Notes/ Assumptions	The Flow does not cover message related errors or exceptions; it assumes a valid XML message and format. The Interaction model can be re-used for Ticket type 'Billing dispute' request.

Process Flow
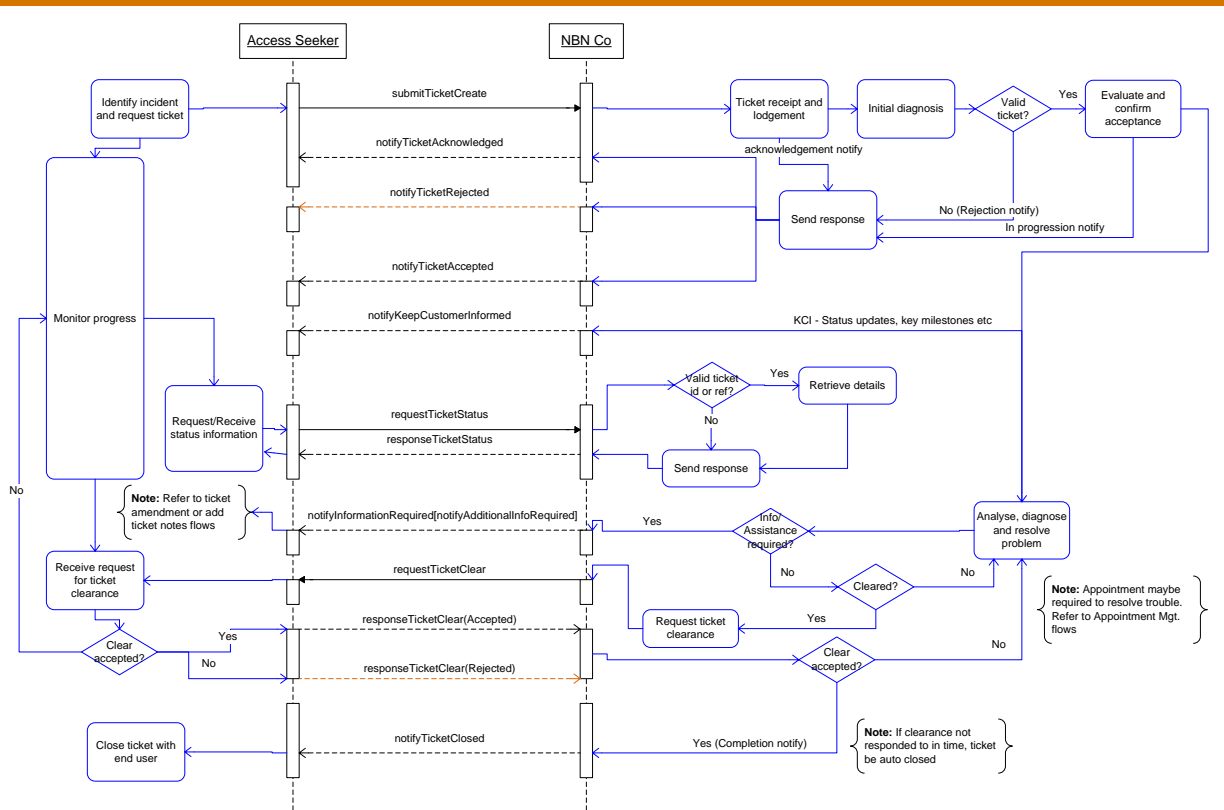
Figure 45 – Ticket Process (Main Flow)

Pre condition/s

Access Seeker has:

A sent valid message.

Performed all prior required set of tests in order to report an incident which is affecting a given service.

Provided:	Post condition:
A valid ticket is lodged by the Access Seeker and is accepted to be progressed within NBN Co's domain. (Valid service instance/s and/ or resource information is provided).	Access Seeker accepts clearance and ticket is closed by NBN Co.

Main Workflow

Step	Description	Role
1.	Incident is identified and trouble ticket is submitted for resolution (containing test results).	Access Seeker
2.	Ticket request received and lodged within assurance domain.	NBN Co
3.	Send an acknowledgement notification.	NBN Co
4.	Perform an initial diagnosis of ticket and assess whether a valid request. If yes progress to Step 5 of the main workflow, otherwise refer to the alternate workflow.	NBN Co
5.	Send state progress update notification.	NBN Co
6.	Investigate the accepted incident further, analyse and progress to resolution.	NBN Co
7.	Send regular updates to Access Seeker as a Trouble Ticket progresses through to resolution including but not limited to escalation, Trouble Ticket category changes, status updates, milestone updates, etc.	NBN Co
8.	If more information or assistance is required send notification to Access Seeker requesting for information or type of assistance required.	NBN Co
9.	Provides required information or engages in required assistance (also refer to Add/ Amend Trouble Ticket flows).	Access Seeker
10.	Once resolved, send request to Access Seeker for ticket clearance.	NBN Co
11.	Receive request. Access Seeker test with End-user and confirm that the issue has been restored. If incident is cleared progress to Step 10 of the main workflow, otherwise refer to the alternate workflow.	Access Seeker
12.	Send ticket clearance acceptance.	Access Seeker
13.	Receive clearance, close ticket.	NBN Co
14.	Send completion notification to Access Seeker.	NBN Co

Alternate Workflow

At Step	Description	Role
4	Assessed not a valid ticket or incident not in NBN Co domain, and rejection / error response sent to the Access Seeker containing the rejection reason.	NBN Co

Uncontrolled when printed.

| 11 | Assessed that incident not cleared, hence clearance rejected. NBN Co receives rejection of clearance; go to Step 5 of the main workflow. | Access Seeker and NBN Co |
| 7 | Access Seeker may request for ticket status updates during the resolution process. Given a valid ticket ID is provided, a response will be sent to the Access Seeker notifying ticket progress. If a valid ticket ID or reference is not provided send a rejection / error response to the Access Seeker. | Access Seeker |

Business Rules

ID	Description
TT-BR01	Access Seeker to prove that the initial diagnostics have been performed prior to raising a Trouble Ticket with NBN Co by providing test results.
TT-BR02	NBN Co will notify the Access Seeker if more information or assistance is required to resolve the ticket. If the Access Seeker does not respond within the defined timeframe, this may adversely affect the ticket, for example: jeopardy, possible delays, or change of priority or ticket closure/ cancellation, and the SLA will be paused (TBC) until the Access Seeker responds to the request.

Touchpoints used

ID	Name
PH-TP001	requestTicketCreate
PH-TP004	notifyKeepCustomerInformed
PH-TP005	notifyTicketAcknowledged
PH-TP006	notifyTicketAccepted
PH-TP007	notifyTicketRejected
PH-TP014	requestTicketClear
PH-TP015	responseTicketClearance
PH-TP020	notifyInformationRequired notifyAdditionalInfoRequired
PH-TP010	requestTicketStatus
PH-TP010.1	responseTicketStatus
PH-TP002	queryTicketDetails
PH-TP002.1	responseTicketDetails
PH-TP022	notifyTicketClosed

3.5.2   TT-BP002: T2R Ticket Cancellation

ID	TT-BP002
Name	T2R Ticket Cancellation
Value stream	Assurance
Description	Access Seeker decides to cancel the ticket as it is no longer required and does not need any further investigation
Notes/ Assumptions	The flow does not cover message related errors or exceptions; it assumes a valid XML message and format.
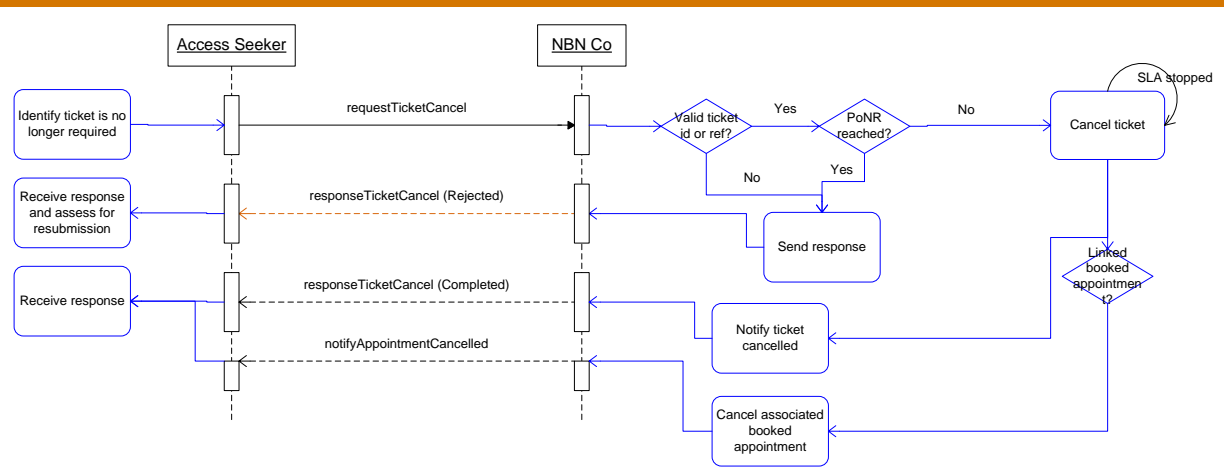
Process Flow

Figure 46 – Ticket Cancellation Process Flow

Pre condition/s

Access Seeker has:

A sent valid message
A valid accepted ticket that is required to be cancelled.

Provided:	Post condition:
A valid ticket ID or reference has been provided and the ticket is not completed.	Send a response confirming the cancellation of the ticket.
Ticket required to be cancelled is associated to a booked appointment/s.	Send notification that linked appointment/s has been cancelled.

Main Workflow

Step	Description	Role
1.	Identified that the incident is resolved and the ticket is no longer required. Send ticket cancellation request.	Access Seeker
2.	Validate the ticket ID or reference. If valid progress to Step 3 of the main workflow, otherwise refer to the alternate workflow.	NBN Co
3.	Check whether the ticket can be cancelled, for example: ticket not completed, or the PoNR has not been reached. If okay to cancel, progress to Step 4 of the main workflow, otherwise refer to the alternate workflow.	NBN Co
4.	Cancel the required ticket, stop the associated SLA and send a cancellation confirmation response.	NBN Co
5.	Verify for any linked booked appointment/s. If appointment/s exist, cancel the appointment and send a notification to the Access Seeker confirming the cancellation.	NBN Co
6.	Receive response and proceed as required.	Access Seeker

Alternate Workflow

At Step	Description	Role
2	Invalid ticket ID or reference provided, send rejection / error response.	NBN Co
3	Required ticket cannot be cancelled, send rejection / error response containing reason, for example: ticket already completed.	NBN Co

Business Rules

ID	Description
	N/A

Touchpoints used

ID	Name
PH-TP012	requestTicketCancel
PH-TP012.1	responseTicketCancel (Completed or Rejected)
AM-TP016	notifyAppointmentCancelled

3.5.3 TT-BP003: Query Ticket History or Details

ID	TT-BP003
Name	Query ticket history or details
Value stream	Assurance
Description	Access Seeker sends query to request history or details of an existing ticket.
Notes/ Assumptions	The flow does not cover message related errors or exceptions; it assumes a valid XML message and format.

Process Flow
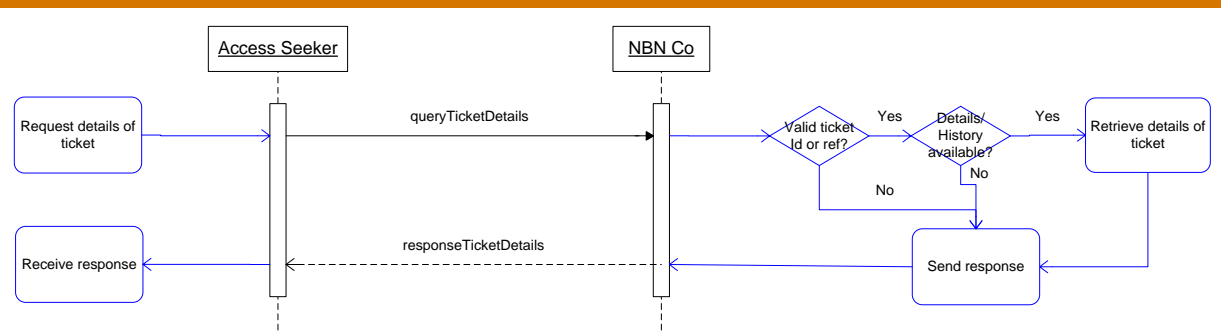
Figure 47 – Query Ticket History or Details

Pre condition/s

Access Seeker has a sent valid message

Provided:	**Post condition:**
A valid ticket ID or reference has been provided and details/ history is available for query	Send a response containing ticket details/ history

Main Workflow		

Step	**Description**	**Role**
1.	Requires details / history of an existing ticket; sends query.	Access Seeker
2.	Validate the ticket ID or reference. If valid progress to Step 3 of the main workflow, otherwise refer to the alternate workflow.	NBN Co
3.	Check whether history / details are available to be queried. If yes progress to Step 4 of the main workflow, otherwise refer to the alternate workflow.	NBN Co
4.	Send a response containing ticket details / history.	NBN Co
5.	Receive response.	Access Seeker

Alternate Workflow		
At Step	**Description**	**Role**
2	Invalid ticket ID or reference provided – send rejection / error response.	NBN Co
3	Required ticket history is no longer available – send rejection / error response.	NBN Co

Business Rules	
ID	**Description**
TT-BR01	Access Seeker will have the ability to request details / history on a Trouble Ticket within a configurable limited date and business rules will be applied. This can be X days post ticket completion.

Touchpoints used	
ID	**Name**
PH-TP002	queryTicketDetails
PH-TP002.1	responseTicketDetails

3.5.4   TT-BP004: Escalate Open Ticket

ID	TT-BP004
Name	Escalate open ticket
Value stream	Assurance
Description	Access Seeker sends request to escalate existing open ticket. Severity can be re-elected due to a change in state, or to raise attention with the NBN Co domain, and have the Trouble Ticket resolved accordingly.
Notes/ Assumptions	The flow does not cover message related errors or exceptions; it assumes a valid XML message and format.
Process Flow	

Figure 48 – Escalate Open Ticket

Pre condition/s

Access Seeker has:

A sent valid message
An existing open ticket that has to be escalated.

Provided:	Post condition:
A valid ticket ID or reference has been provided and an open ticket exists.	Send a response confirming ticket escalation.

Main Workflow

Step	Description	Role
1.	Requires to escalate open ticket and sends request.	Access Seeker
2.	Validate the ticket ID or reference. If valid progress to Step 3 of the main workflow, otherwise refer to the alternate workflow.	NBN Co
3.	Determine whether the escalation request is acceptable within the given circumstances. If yes progress to Step 4 of the main workflow, otherwise refer to the alternate workflow.	NBN Co
4.	Ticket priority raised and re-calculate or apply new SLA as applicable.	NBN Co
5.	Send confirmation response to the Access Seeker with revised details.	NBN Co
6.	Receive response.	Access Seeker

Alternate Workflow

At Step	Description	Role
2	Invalid ticket ID or reference provided, send rejection / error response.	NBN Co
3	Ticket escalation request cannot be accepted – send rejection / error response containing reason.	NBN Co

Business Rules

ID	Description
	N/A

Touchpoints used

ID	Name
PH-TP021	requestEscalateTicket
PH-TP021.1	responseEscalateTicket (Completed or Rejected)

3.5.5 TT-BP005: Ticket Amendment: Add comments to an open ticket

ID	TT-BP005
Name	Ticket Amendment: Add comments to an open ticket
Value stream	Assurance
Description	NBN Co sends notification to the Access Seeker to provide more information on an open ticket to assist with resolution. Access Seeker requests to add comments (Amend ticket) to provide required information and progress with ticket. This might include test results, etc.
Notes/ Assumptions	The flow does not cover message related errors or exceptions; it assumes a valid XML message and format. There may be scenarios where an appointment is required to be booked by the Access Seeker in order to resolve the incident. The Access Seeker will be notified via notifyInformationRequired[BookAppointment].

Process Flow

Figure 49 – Ticket Amendment: Add comments to open ticket Process Flow
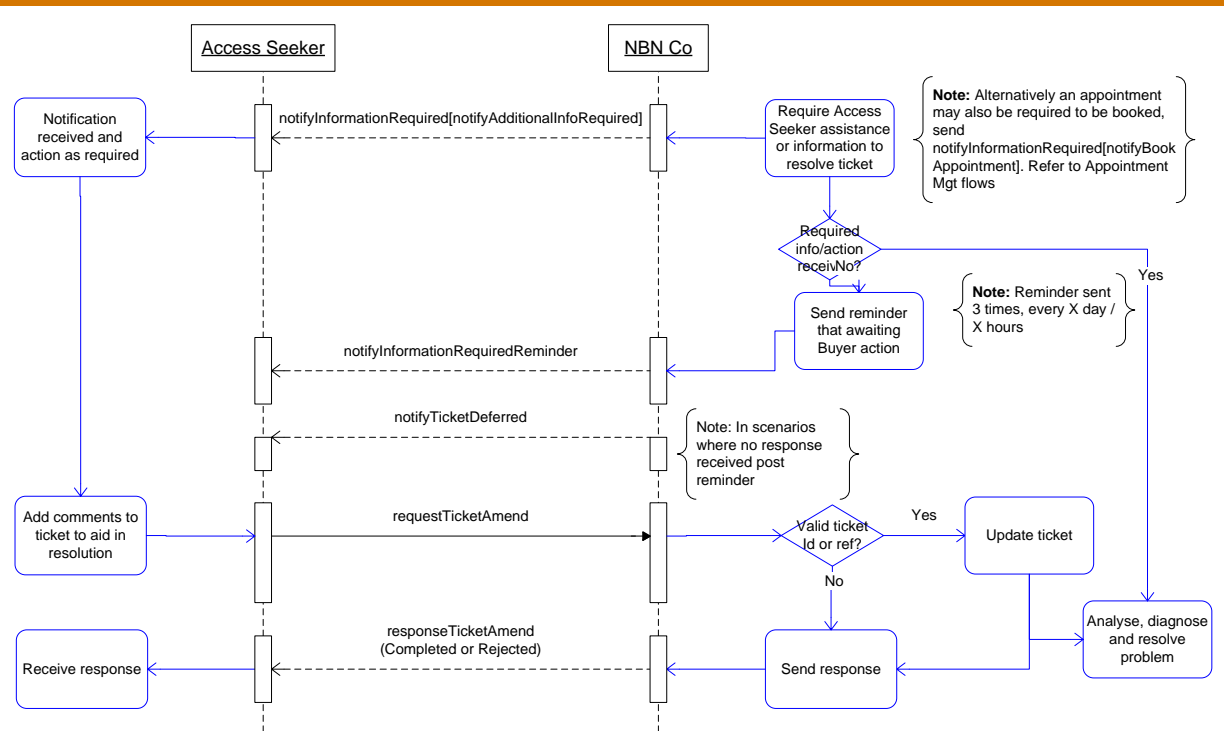
Pre condition/s

Access Seeker has a sent valid message

Open ticket exists within the NBN Co domain.

Provided:	**Post condition:**
A valid ticket ID or reference has been provided and open ticket exists.	Send a response containing updated ticket details.

Main Workflow

Step	Description	Role
1.	Requires Access Seeker assistance or more information to resolve an open ticket, and sends notification.	NBN Co
2.	Receives notification and actions as required.	Access Seeker
3.	Amends existing ticket with added notes to aid in resolution, and sends request.	Access Seeker
4.	Determine if a valid ticket ID or reference is provided. If yes progress to Step 5 of the main workflow, otherwise refer to the alternate workflow.	NBN Co
5.	Update the ticket with amendment and send a confirmation response.	NBN Co
6.	Continue analysis and diagnosis of open ticket to resolution.	NBN Co

Alternate Workflow

At Step	Description	Role
2	Invalid ticket ID or reference provided – send rejection / error response.	NBN Co
4	If response or update is not received within the given timeframe, the Access Seeker will be sent a reminder (Y times) every X day or every X hours.	NBN Co

Business Rules

ID	Description
TT-BR01	NBN Co will notify the Access Seeker if more information or assistance is required to resolve the ticket. If the Access Seeker does not respond within the defined timeframe, this may adversely affect the ticket resolution SLA, for example: jeopardy, possible delays, or change of priority or ticket closure/ cancellation). TBD.

Touchpoints used

ID	Name
PH-TP011	requestTicketAmend
PH-TP011.1	responseTicketAmend
PH-TP020	notifyInformationRequired notifyAdditionalInfoRequired
PH-TP025	notifyTicketDeferred
PH-TP026	notifyInformationRequiredReminder
PH-TP004	notifyKeepCustomerInformed

3.5.6 TT-BP006: Ticket Jeopardy/ Delay

| ID	TT-BP006
Name	Ticket jeopardy/ delay
Value stream	Assurance
Description	NBN Co sends notification to the Access Seeker where a specific SLA within a process, (for example: key milestone) was not met, or the SLA was not met.
Notes/ Assumptions	The flow does not cover message related errors or exceptions; it assumes a valid XML message and format.
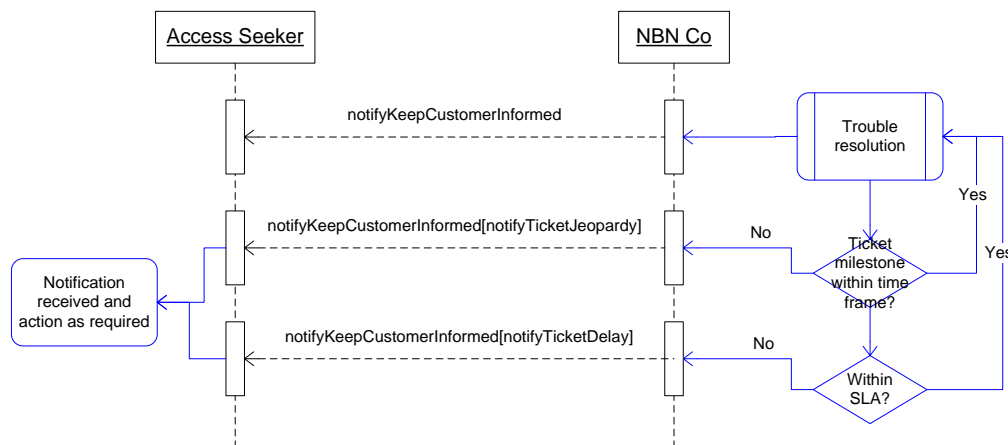
Process Flow

Figure 50 – Ticket Jeopardy Process Flow

Pre condition/s

N/A

Provided:	Post condition:
A given milestone within the process was not met or was delayed.	Send notification to the Access Seeker advising of jeopardy or delay.

Main Workflow

Step	Description	Role
1.	Send 'key status / milestone reached' updates to the Access Seeker at defined events within a process.	NBN Co
2.	Check if the given milestone / ticket is within the SLA. If no, progress to Step 3 of the main workflow, otherwise progress with trouble resolution.	NBN Co
3.	Send a jeopardy notification to the Access Seeker.	NBN Co
4.	Receive notification and actions as required.	Access Seeker

Business Rules	
ID	**Description**
	N/A
Touchpoints used	
ID	**Name**
B2B-TP001	notifyKeepCustomerInformed
	notifyTicketJeopardy
	notifyTicketDelay

3.5.7   TT-BP007: Planned change or hazard

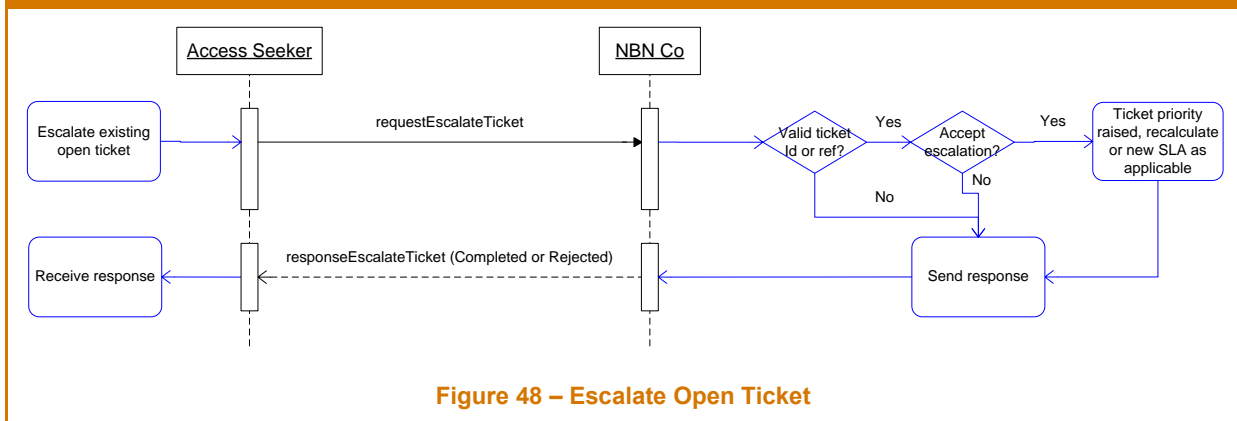| ID	TT-BP007
Name	Planned change or hazard
Value stream	Assurance
Description	NBN Co sends a notification to the Access Seeker where a planned change / hazard is required to resolve an existing issue or incident. NBN Co notifies the affected Access Seeker/s in order for them to manage their End-users.
Notes/ Assumptions	The flow does not cover message related errors or exceptions; it assumes a valid XML message and format. The required change has undergone an approval process and has been approved.
Process Flow	
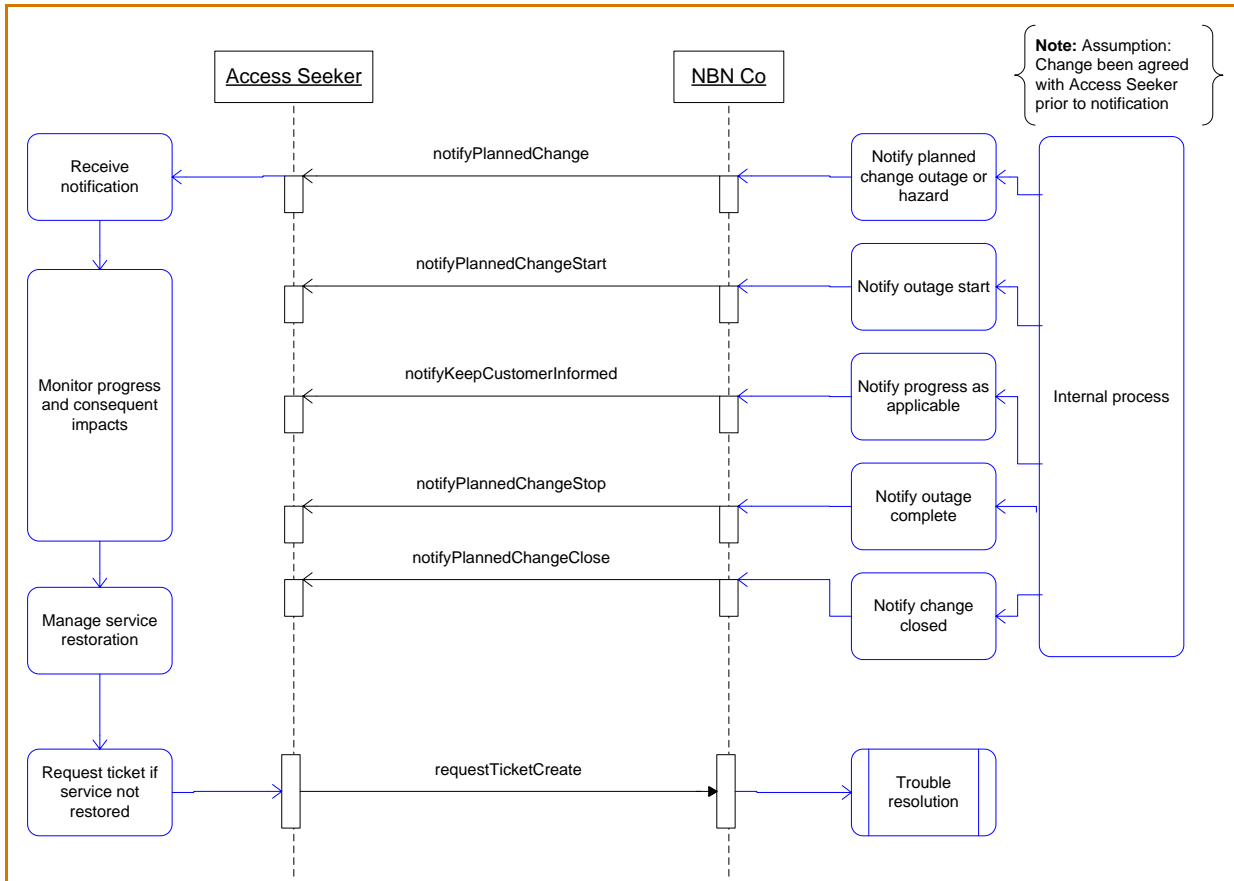
Figure 51 – Planned Change or Hazard Process Flow

Pre condition/s

Affected Access Seeker/s have been determined and have agreed to the change.

Provided:	Post condition:
The change / hazard process has been managed internally and affected Access Seeker/s have been determined.	Send a notification of the planned change / hazard to affected Access Seeker/s.

Main Workflow

Step	Description	Role
1.	Identified the need for a planned change / hazard which may impact Access Seeker/s. Planned change / hazard has been scheduled and agreed upon.	NBN Co
2.	Send notification of the planned change / hazard to all affected Access Seekers.	NBN Co
3.	Receives notification and monitors progress and any consequent impact.	Access Seeker
4.	Notify Access Seeker of any updates related to the planned change / hazard, for example: status updates (start/stop).	NBN Co
5.	Upon completion, the Access Seeker manages service restoration.	Access Seeker

| 6. | If service/s cannot be restored post completion, request trouble ticket creation from NBN Co. | Access Seeker |

Business Rules

ID	Description
TT-BR01	Outage may go beyond the scheduled completion; NBN Co will notify the Access Seeker of any related status updates of the outage situation.

Touchpoints used

ID	Name
CM-TP001	notifyPlannedChange
CM-TP004	notifyKeepCustomerInformed notifyOutageStart notifyOutageComplete
CM-TP005	notifyPlannedChangeStart
CM-TP006	notifyPlannedChangeCompleted
CM-TP007	notifyPlannedChangeClose
PH-TP001	requestTicketCreate

3.5.8   TT-BP008: Event as Incident

ID	TT-BP008
Name	Event as incident
Value stream	Assurance
Description	NBN Co sends notification to the Access Seeker/s of a trouble ticket generated from an Alarm and Event affecting their network and their End-users. The Alarm and Event management system indicates that an incident is required to be resolved via the trouble ticket management process. NBN Co raises a trouble ticket and notifies the affected Access Seekers.
Notes/ Assumptions	The flow does not cover message related errors or exceptions; it assumes a valid XML message and format.
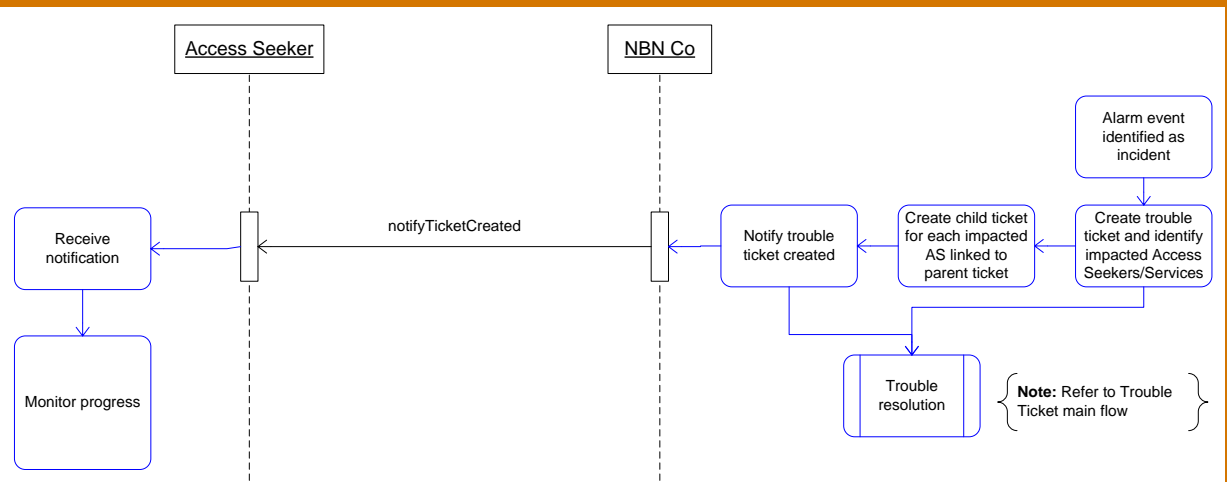
Process Flow

Figure 52 – Event as Incident Process Flow

Pre condition/s

Affected Access Seekers and/ or services have been determined.

Provided:	Post condition:
An event has been raised by the Alarm and Event management system and the relevant trouble ticket has been created.	Notify affected Access Seekers that a trouble ticket has been created and is being resolved.

Main Workflow

Step	Description	Role
1.	An event has been raised and identified as an incident by the Alarm and Event management system.	NBN Co
2.	Create trouble ticket and determine affected Access Seekers and services. Create child trouble ticket per Access Seeker affected and attach it to the single parent ticket created in response to the incident.	NBN Co
3.	Notify affected Access Seekers that the relevant trouble ticket been created.	NBN Co
4.	Receives notification and monitors the progress of the ticket.	Access Seeker
5.	Refer to TT-BP001: Assurance Ticket Process (Main Flow)	

Business Rules

ID	Description
1.	Refer to the Trouble Ticket main flow process.

Touchpoints used

ID	Name
PH-TP003	notifyTicketCreated

3.5.9 TT-BP009: Request Service Information

| ID	NPD-BP004
Name	Request Service Information
Value stream	Trouble to Resolve (Assurance)
Description	The Access Seeker will be able to request service information including the resource facing elements such as NTU ID, UNI-V and UNI-V Port ID.
Notes / Assumptions	The flow does not cover message related errors or exceptions, and assumes a valid XML message and format.

Process Flow
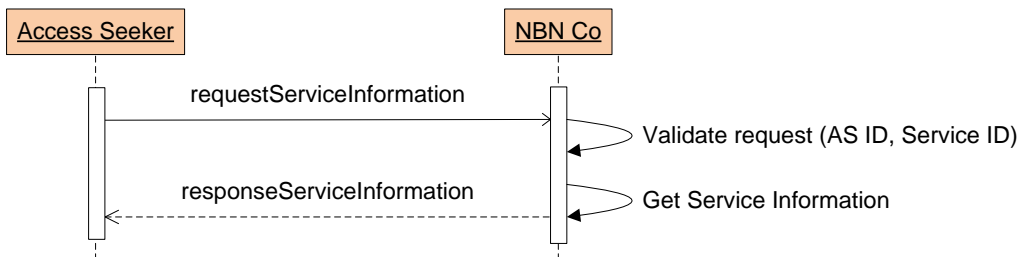
Figure 53 – Request Service Information Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The Access Seeker has a number of services with NBN Co. The Access Seeker is authorised to perform the test.	Service Information is provided.	Fail message response, for example: Invalid Service ID.

Flow of Event

1. Access Seeker requests service information by executing *QS-TP003 requestServiceInformation.*
2. NBN Co validates if the Service ID is valid and the Access Seeker is authorised to request.
3. NBN co gets service information and sends a response to the Access Seeker.
   If the Service ID is invalid, NBN Co sends a failed response to the Access Seeker.

Business Rules	
ID	**Description**
1.	The Access Seeker can only request service information related to the Access Seeker.
2.	Only a single service can be requested.

Transaction Touchpoints Used	
ID	**Transaction Name**
PH-TP019	requestServiceInformation

PH-TP019.1	responseServiceInformation

3.6 Billing

3.6.1 BI-BP003: Request Billing Event File

ID	BI-BP003
Name	Request Billing Event File
Value stream	Billing
Description	The Access Seeker will have the ability to request, ad-hoc, a previously generated BEF or a new BEF prior to the scheduled event.
Notes / Assumptions	The flow does not cover message related errors or exceptions, and assumes a valid XML message and format.

Process Flow
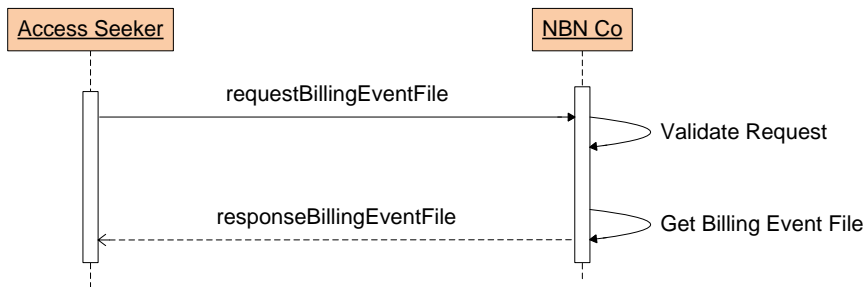
Figure 54 – Request Billing Invoice Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The Access Seeker has at least one active billing account.	Correct Billing Event Files have been provided to the requesting Access Seeker in ETIS EBG XML format.	Invalid Billing Account ID or BEF ID is provided.

Flow of Event

1. The Access Seeker wishes to request:

    - a. Current BEF prior to the scheduled event, or
    - b. Re-send BEF by providing an existing BEF ID.

2. NBN Co receives and validates the request:

    - a. If the Access Seeker requests a new BEF prior to the scheduled cycle, NBN Co will collect billing events from the point of generation of the last BEF up to the current date/time.
    - b. If the Access Seeker requests to have the previous generated BEF re-sent, NBN Co will retrieve the BEF based on the ID that has been provided.

If information provided by the Access Seeker is invalid, a failure response will be sent to the Access

Seeker.

3.   NBN Co sends the BEF (in ETIS EBG XML format) to the Access Seeker on the successful outcome of the validation.

Business Rules	
ID	**Description**
1.	Request BEF prior to schedule will collect billing events from the point of generation of the last BEF up to the current date/time. Similarly, the scheduled BEF will generate from the last generated BEF to the scheduled file creation date/time.
2.	The Access Seeker must currently be active within the billing system and able to operate as a reseller, i.e. is not deleted or suspended.
3.	The Access Seeker must provide a BEF ID when requesting to have a previously generated BEF re-sent.
4.	The Access Seeker can only request one previous BEF per request.
5.	A previously generated BEF will not be available after an NBN Co determined period of time has elapsed.

Transaction Touchpoints Used	
ID	**Transaction Name**
BEF-TP001	requestBillingEventFIle
BEF-TP001.1	responseBillingEventFile

3.6.2   BI-BP004: Notify Billing Event File

ID	BI-BP004
Name	Notify Billing Event File
Value stream	Billing
Description	NBN Co sends a Billing Event File to the Access Seeker on a scheduled event, for example: daily, weekly, fortnightly or monthly.
Notes / Assumptions	N/A

Process Flow
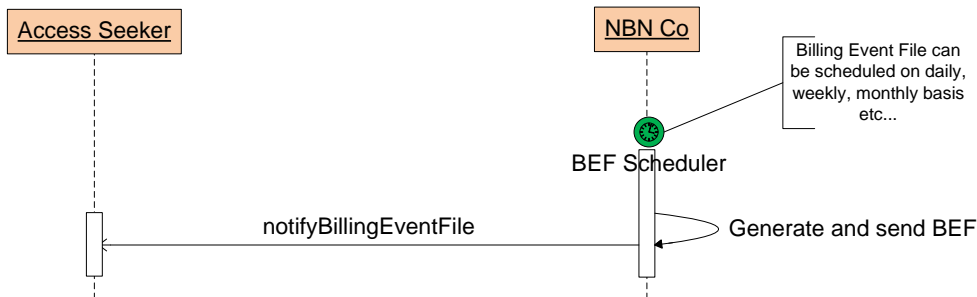
Figure 55 – Notify Billing Event File Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The Access Seeker has at least one active Billing Account.	The new Billing Event File is sent to the Access Seeker in ETIS EBG XML format.	N/A

Flow Description

1. New BEF has been generated on schedule.
2. NBN Co sends a notification to the Access Seeker advising of the new BEF by executing *BEF-TP002 notifyBillingEventFile*

Business Rules

ID	Description
1.	A Billing Event will be found in precisely one Billing Event File.
2.	A single Billing Event File will be associated to a single Access Seeker Billing Account.
3.	The BEF will not include the Access Seeker payments and Customer Account level discounts and adjustments.
4.	Amounts on the billing events are exclusive of GST. There will be an indication of tax eligibility.
5.	A Billing Event File sequence will be associated with each billing account.

6.	The Access Seeker will be notified of the availability of a new Billing Event File only once.

Transaction Touchpoints Used	
ID	**Transaction Name**
BEF-TP002	notifyBillingEventFile

3.6.3   BI-BP005: Request Previous Billing Invoice

ID	BI-BP005
Name	Request Previous Billing Invoice
Value stream	Billing
Description	The Access Seeker will have the ability to make ad-hoc requests a previously generated Billing Invoice.
Notes / Assumptions	The flow does not cover message related errors or exceptions, and assumes a valid XML message and format.
Process Flow	
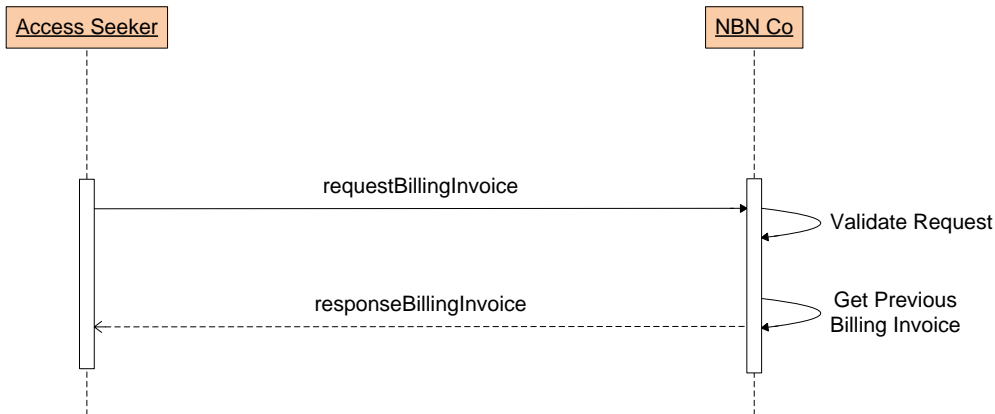
Figure 56 – Request Billing Invoice Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The Access Seeker has at least one active Billing Account.	The correct Billing Invoice has been provided to the requesting Access Seeker in both PDF and ETIS EBG XML formats.	Invalid Billing Account ID or Invoice ID is provided.

Flow of Event

1. The Access Seeker wishes to request a previous Billing Invoice by executing *BIN-TP001 requestBillingInvoice.*
2. NBN Co receives and validates the request. NBN Co retrieves previous Billing Invoice in both PDF and ETIS EBG XML formats and sends them to the Access Seeker.

If information provided by the Access Seeker is invalid, for example: incorrect Invoice ID or Billing Account ID, a

failure response will be sent to the Access Seeker.

Business Rules

ID	Description
1.	Limited to invoices available within the configurable retention period (13 months).
2.	The Access Seeker cannot request billing invoice outside of the billing cycle.
3.	Both XML and PDF versions need to be returned within the response message.

Transaction Touchpoints Used

ID	Transaction Name
BIN-TP001	requestBillingInvoice
BIN-TP001.1	responseBillingInvoice

3.6.4   BI-BP006: Notify Billing Invoice

ID	BI-BP006
Name	Notify Billing Invoice
Value stream	Billing
Description	NBN Co sends a Billing Invoice to the Access Seeker on a scheduled cycle, for example: monthly, etc.
Notes / Assumptions	N/A

Process Flow
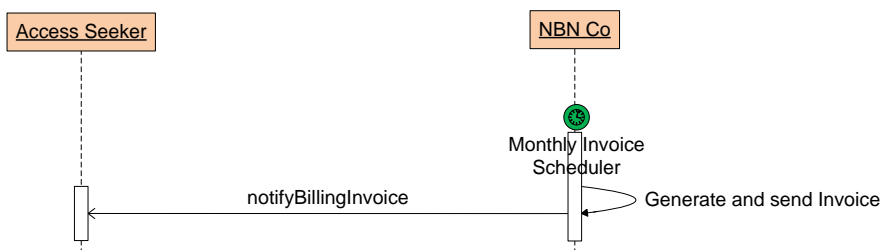
Figure 57 – Notify Billing Invoice Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The Access Seeker has at least one active Billing Account.	The new Billing Invoice is sent to the Access Seeker in both PDF and ETIS EBG XML formats.	N/A

Flow of Event
NBN Co sends a notification to the Access Seeker advising of the new billing invoice by executing *BIN-TP002 notifyBillingInvoice.*

Business Rules	
ID	**Description**
1.	The Billing Invoice will be sent to the Access Seeker in both PDF and ETIS EBG XML formats.

Transaction Touchpoints Used	
ID	**Transaction Name**
BIN-TP002	notifyBillingInvoice

3.6.5   BI-BP007: Query Bill Reporting

ID	BI-BP007
Name	Query Bill Reporting
Value stream	Billing
Description	The Access Seeker submits a billing report query criteria to generate a report.
Notes / Assumptions	The flow does not cover message related errors or exceptions, and assumes a valid XML message and format.

Process Flow
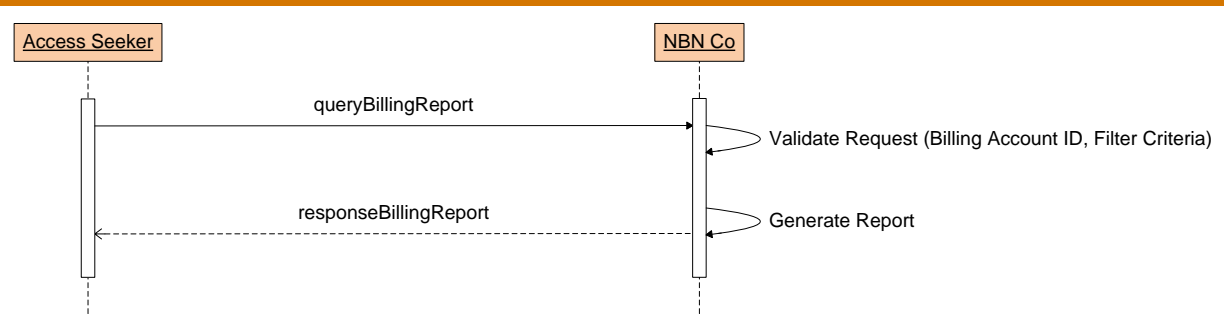
Figure 58 – Query Billing Report Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The Access Seeker has at least one active Billing Account. The Access Seeker is authorised to query bill reporting.	A report is generated based on the query criteria.	Invalid Billing Account ID or invalid Access Seeker ID Access Seeker is not authorised Invalid report information provided.

Flow of Event

1. The Access Seeker submits a query request to generate a billing report by executing *BRE-TP001 queryBillingReport.* The Access Seeker can submit a query for the following report types:

   - a. List of past BEFs
   - b. List of past Invoices
   - c. Payment history by date range
   - d. List of Billing Accounts per Access Seeker ID
   - e. Billing Account position
   - f. List of Billing Account level adjustment, rebate and discount
   - g. Dispute/Enquiry information (historical and current).

2. NBN Co receives and validates the request. If the information provided is invalid, a failure message will be returned.
3. NBN Co generates a report and sends it to the Access Seeker on the successful completion of the request validation.

Business Rules

ID	Description
1.	The Access Seeker can only request their own information in a billing report.
2.	All billing data for reporting is to be available for a configurable period of time, after which it will be archived. Retention period = XXmonths.

Transaction Touchpoints Used

ID	Transaction Name
BRE-TP001	queryBillingReport
BRE-TP001.1	responseBillingReport

3.6.6   BI-BP008: Raise Billing Dispute or Enquiry

ID	BI-BP008
Name	Raise Billing Dispute or Enquiry
Value stream	Billing
Description	The Access Seeker sends generic questions, and receives clarifications relating to their bill or requests to raise a Billing Dispute to specific line items, or a group of line items within the bill to formally dispute.
Notes / Assumptions	A Billing Dispute or Enquiry ticket will re-use transactions from the Ticketing process. The flow does not cover message related errors or exceptions, and assumes a valid XML message and format. Manual intervention between the Access Seeker and NBN Co will be used to resolve if a rejected ticket clearance is out of the automated process scope.

Process Flow
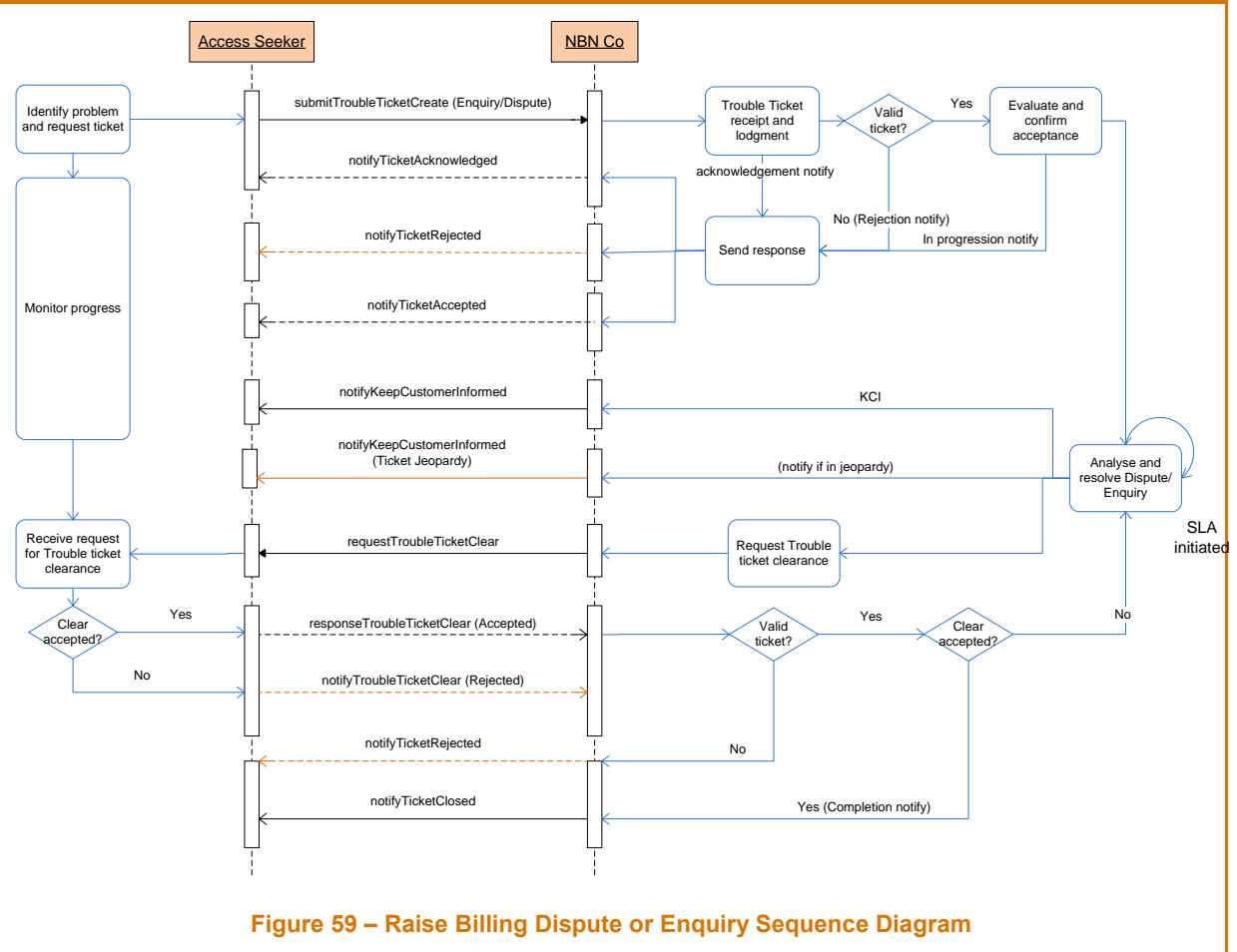
Figure 59 – Raise Billing Dispute or Enquiry Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The Access Seeker has at least one active Billing Account.	The Billing Enquiry or Dispute ticket is created in the NBN Co system. The Billing Enquiry or Dispute ticket has been resolved.	Invalid Billing Account ID or invalid Access Seeker ID.

Flow of Event

1. Access Seeker submits a Billing Enquiry or Dispute by executing *PH-TP001 submitTicketCreate.*
2. NBN Co validates the request and sends a notification advise the Access Seeker the ticket has been lodged.
   If the ticket raised is invalid, NBN Co sends a reject notification with a reason code.
3. NBN Co evaluates and confirms acceptance of the Ticket.

   - a. If the Ticket raised is related to a Billing Enquiry or Dispute, NBN Co sends a notification advising the Ticket has been accepted and performs analysis to resolve the Ticket.
   - b. If the Ticket raised is not billing-related, NBN Co sends a notification advising of Ticket rejection with reason code/s.

4. NBN Co investigates and resolves the Ticket.
5. NBN Co sends a ticket clearance request to the Access Seeker for acceptance of the resolution.
6. Access Seeker responds to the request:

   - a. If the clearance request has been accepted, NBN Co closes the Ticket and sends a notification advising the ticket is now closed.
   - b. If the clearance request has been rejected, NBN Co continues to resolve the ticket with the Access Seeker.

Business Rules

	N/A

Transaction Touchpoints Used	
ID	**Transaction Name**
PH-TP001	submitTicketCreate
PH-TP014	requestTicketClear
PH-TP015	responseTicketClear (Accepted or Rejected)
PH-TP020	notifyInformationRequired notifyAdditionalInfoRequired
PH-TP010	requestTicketStatus
PH-TP010.1	responseTicketStatus
PH-TP005	notifyTicketAcknowledged

Uncontrolled when printed.

PH-TP006	notifyTicketAccepted
PH-TP007	notifyTicketRejected
PH-TP022	notifyTicketClosed

3.6.7   BI-BP009: Convert Billing Enquiry to Dispute

ID	BI-BP010
Name	Convert Billing Enquiry to Dispute
Value stream	Billing
Description	Access Seeker raises an existing Billing Enquiry ticket to convert into a Dispute ticket for several reasons, for example: does not resolve the enquiry within the SLA.
Notes / Assumptions	Convert a Billing Enquiry into a Dispute will be reused Trouble Ticket Amendment transaction to update the Ticket category from 'Enquiry' to 'Dispute', and will manage it as per the Dispute process. The flow does not cover message related errors or exceptions, and assumes a valid XML message and format.

Process Flow
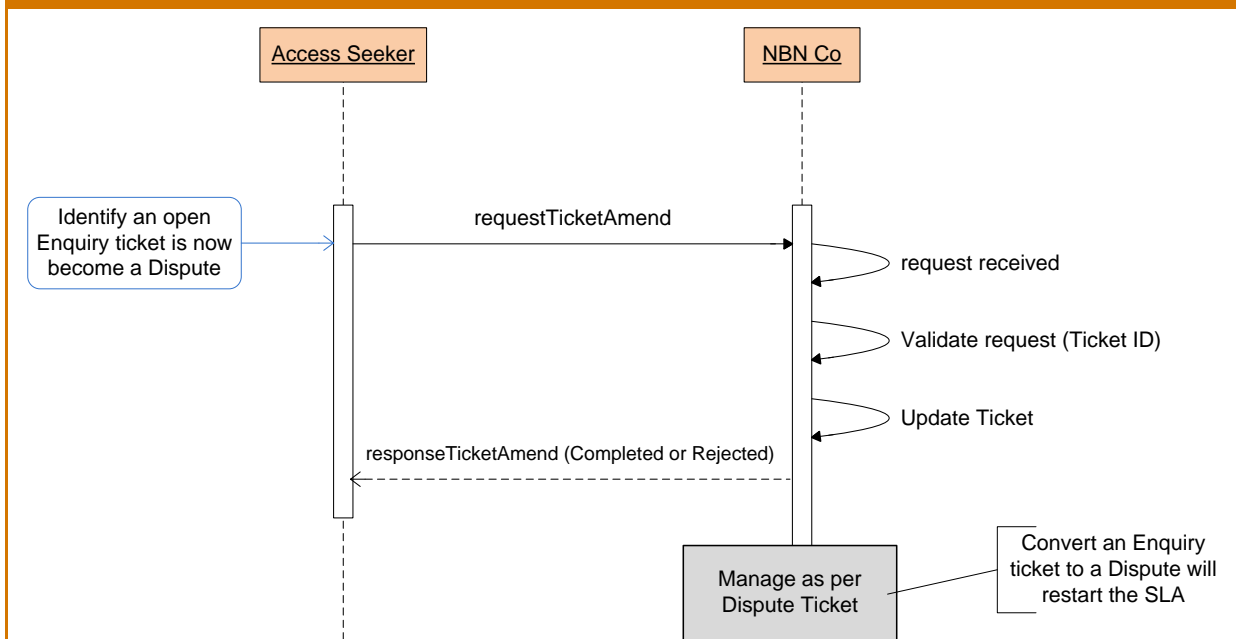
Figure 60 – Convert Billing Enquiry into Dispute Ticket Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The Access Seeker has at least one active Billing Account. A Billing Enquiry ticket exists.	The Billing Enquiry ticket has been converted into a dispute. The dispute has been resolved by NBN Co.	Reject Ticket.

Flow of Event

1. Access Seeker submits a request to convert an existing Billing Enquiry ticket to a Dispute by executing *PH-TP011 requestTicketAmend.*
2. NBN Co validates the request:
    • a. If the Ticket ID is invalid, NBN Co sends a reject response with a reason code.
    • b. If the Ticket ID is valid, NBN Co updates the Ticket to a Dispute and re-starts the SLA.

Business Rules	
ID	**Description**
1.	The SLA will be re-started after a Billing Enquiry has been converted into a Dispute ticket.

Transaction Touchpoints Used	
ID	**Transaction Name**
PH-TP011	requesTicketAmend
PH-TP011.1	responseTicketAmend

3.6.8   BI-BP010: Cancel Billing Enquiry or Dispute

Refer to TT-BP002: T2R Ticket Cancellation for details.

3.6.9   BI-BP011: Query Billing Enquiry or Dispute Ticket Details

Refer to TT-BP003: Query Ticket History or Details for details.

3.7 Network Testing, Performance and Diagnostics

3.7.1 NPD-BP001: Request Test

ID	NPD-BP001
Name	Request Test
Value stream	Trouble to Resolve (Assurance)
Description	The Access Seeker will be able to request a specific test type or a list of test types on a specific service to identify if there is any issue or to confirm the successful resolution of a Trouble Ticket.
	A test will be performed automatically by the system with a defined set of test procedures. Test procedures will be grouped by Service Impacting and Non-Service Impacting that is only available to the Access Seeker based on their service contract/s with NBN Co.
Notes / Assumptions	The flow does not cover message related errors or exceptions, and assumes a valid XML message and format.

Process Flows
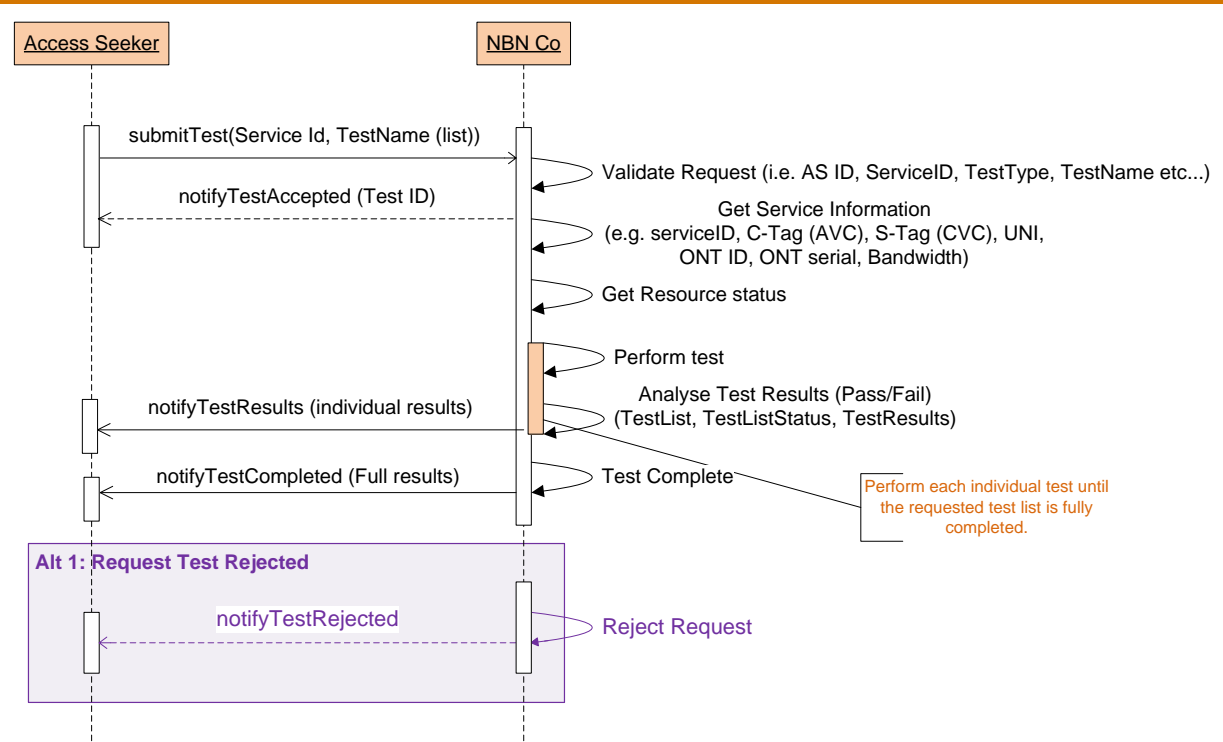
Figure 61 – Request Test Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The Access Seeker has an active Service/s. The Access Seeker is authorised to perform the test.	Test results are provided.	Invalid Test response, for example: an Invalid Service ID is provided by the Access Seeker.

Flow of Event

1. Access Seeker requests a Test by executing *TE-TP001 submitTest.*
2. NBN Co validates the request:

   - a. If the Service ID is valid and the Access Seeker is authorised to request a particular Test Name (i.e. MLT, MAC Ping, etc) and Type (i.e. Service Impacting, Non-Service Impacting, etc), refer to step 3.
   - b. If the Service ID or Test Name (i.e. MLT, MAC Ping, etc) and Type (i.e. Service Impacting, Non-Service Impacting, etc) are invalid, NBN Co sends a failed response to the Access Seeker.

3. NBN Co performs a test based on the requested Test Type and Name and sends the test results to the Access Seeker.
4. If the Access Seeker requests a list of Test Names to be run, NBN Co perform the test individually based on the Test Name and may return partial test results where possible. A final test result will be returned once all tests have been completed.

Alternative Flow: Invalid Test Request

At Step 2

1. NBN Co validates the request and is invalid.

2. NBN Co rejects the request and sends a reject notification to the Access Seeker

Business Rules

ID	Description
1.	The Access Seeker can only request a Test Type or a list of Test Types that are published based on the service/s contracted with NBN Co.

Transaction Touchpoints Used

ID	Transaction Name
TE-TP001	submitTest
TE-TP002	notifyTestResults
TE-TP003	notifyTestAccepted
TE-TP004	notifyTestRejected
TE-TP005	notifyTestCompleted

3.7.2   NPD-BP002: Request Performance Data

ID	NPD-BP002
Name	Request Test
Value stream	Trouble to Resolve (Assurance)
Description	The Access Seeker will be able to send a request for a survive performance report.
Notes / Assumptions	The flow does not cover message related errors or exceptions, and assumes a valid XML message and format.

Process Flow
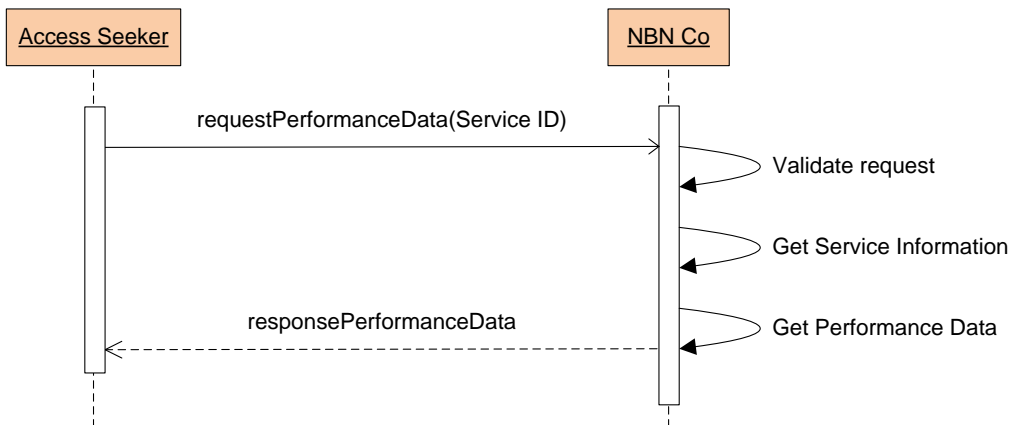
Figure 62 – Request Performance Data Sequence Diagram

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The Access Seeker has a number of services with NBN Co. The Access Seeker is authorised to perform the test.	Performance data is provided.	N/A

Flow of Event

1. Access Seeker requests performance data (i.e. performance reports) by executing *QS-TP002 requestPerformanceData.*
2. NBN Co validates the Service ID is valid and the Access Seeker is authorised to request.
3. NBN Co gets performance data and sends a response to the Access Seeker.
   If the Service ID is invalid, NBN Co sends a failure response to the Access Seeker.

Business Rules

ID	Description
1.	The Access Seeker can only request performance data related to their Service/s.

Transaction Touchpoints Used	
ID	**Transaction Name**
PH-TP001	requestPerformanceData
PH-TP001.1	responsePerformanceData

3.7.3 NPD-BP003: Request Minor Service Indicator

ID	NPD-BP003
Name	Request Minor Service Indicator
Value stream	Trouble to Resolve (Assurance)
Description	The Access Seeker will be able to request service information to identify any minor service indicator that occur on the Service, for example: NTU power status.
Notes / Assumptions	The flow does not cover message related errors or exceptions, and assumes a valid XML message and format.

Process Flow
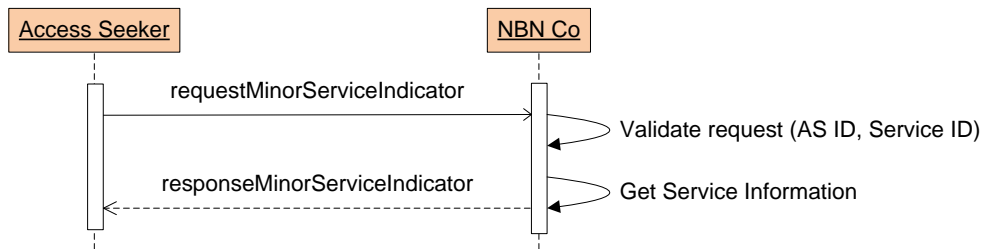
**Figure 63 – Request Minor Service Indicator Sequence Diagram**

Success Path		Alternative Outcomes
Pre-Conditions	**Post-Conditions**	
The Access Seeker has a service/s with NBN Co. The Access Seeker is authorised to perform the test.	Service warning data is provided.	Fail message response, for example: Invalid Service ID.

Flow of Event

1. Access Seeker requests Minor Service indicator by executing *QS-TP004 requestMinorServiceIndicator.*
2. NBN Co validates if the Service ID is valid and the Access Seeker is authorised to request.
3. NBN Co gets service information and sends a response to the Access Seeker.
   If the Service ID is invalid, NBN Co sends a failed response to the Access Seeker.

Business Rules	
ID	**Description**
1.	The Access Seeker can only request minor service indicator information related to their service/s.
Transaction Touchpoints Used	
ID	**Transaction Name**
QS-TP004	requestMinorServiceIndicator
QS-TP004.1	responseMinorServiceIndicator

4 B2B Message Specifications

This section sets out the NBN Co's B2B Interaction messages that are grouped into Business Services to support business processes exchange between NBN Co and Access Seekers. The interaction messages will expose a set of NBN Co CIM based assurance services and operations that will be consumed through B2B interface.

The following B2B Business Services have been identified:

1. Manage Address
2. Manage Service Qualification
3. Manage Batch
4. Manage Product Order
5. Manage Product Catalogue
6. Manage Appointment
7. Manage Ticket
8. Manage Planned Change
9. Manage Diagnostics
10. Manage Service Performance
11. Manage Billing

4.1   Service: Manage Address

The below sub-sections are transactions to be used for supporting the Address management functions through the B2B interface. Message specifications for these transactions have been specified in ***B2B Interface Message Specification – ManageAddress.xls'.***

4.1.1   queryAddressSearch

ID	PO-TP005
Name	queryAddressSearch
Description	1. Access Seeker wishes to obtain address information from NBN Co based on given request type. 2. Enables them to identify possible addresses that relate to their End-users in the location.
Sequence Diagram	PO-BP001
Pattern	Query-Response
Direction	Access Seeker-NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Yes

4.1.1.1   responseAddressSearch

ID	PO-TP005.1
Name	responseAddressSearch
Description	NBN Co response to Access Seeker address search request
Sequence Diagram	PO-BP001
Pattern	Query-Response
Direction	NBN Co - Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N/A

4.2   Service: Manage Service Qualification

The below sub-sections are transactions to be used for supporting the Service Qualification management functions through the B2B interface. Message specifications for these transactions have been specified in *'B2B Interface Message Specification – ServiceQualification.xls.*

4.2.1   requestSingleSiteQualification

ID	PO-TP001
Name	requestSingleSiteQualification
Description	Access Seeker to determine whether an access / service can be provisioned at a particular location. This interaction supports the following qualification types: 1. Location only 2. Location and product.
Sequence Diagram	PO-BP001
Pattern	Request-Response
Direction	Access Seeker-NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Yes

4.2.1.1   responseSingleSiteQualification

ID	PO-TP001.1
Name	responseSingleSiteQualification
Description	NBN Co response to Service Qualification requested by the Access Seeker
Sequence Diagram	PO-BP001
Pattern	Request-Response
Direction	NBN Co-Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N/A

4.3   Service: Manage Batch

4.3.1   submitBatchQualification

ID	PO-TP002
Name	requestBatchQualification
Description	As per PO-TP002 but supports multiple addresses in the form of a batch request.
Sequence Diagram	PO-BP002
Pattern	Submit-Notify
Direction	Access Seeker-NBN Co
Synchronous/ Asynchronous	Asynchronous
Response required	N/A

4.3.2   notifyBatchQualificationAcknowledged

ID	PO-TP006
Name	notifyBatchQualificationAcknowledged
Description	Informs the Access Seeker that their batch qualification request has been received.
Sequence Diagram	PO-BP002
Pattern	Notification
Direction	NBN Co-Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.3.3   notifyBatchQualificationCompleted

ID	PO-TP007
Name	notifyBatchQualificationCompleted
Description	Informs the Access Seeker that their batch qualification request has been completed
Sequence Diagram	PO-BP002
Pattern	Notification
Direction	NBN Co-Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.3.4   notifyBatchQualificationRejected

ID	PO-TP009
Name	notifyBatchQualificationRejected
Description	Informs the Access Seeker that their batch qualification request has been rejected
Sequence Diagram	PO-BP002
Pattern	Notification
Direction	NBN Co-Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

Uncontrolled when printed.

4.3.5   submitBatchAddressSearch

ID	PO-TP010
Name	requestBatchAddressSearch
Description	As per PO-TP005 but supports multiple addresses in the form of a batch request.
Sequence Diagram	PO-BP004
Pattern	Submit-Notify
Direction	Access Seeker-NBN Co
Synchronous/ Asynchronous	Asynchronous
Response required	N/A

4.3.6   notifyBatchAddressSearchAcknowledged

ID	PO-TP011
Name	notifyBatchAddressSearchAcknowledged
Description	Informs the Access Seeker that their batch address search request has been received.
Sequence Diagram	PO-BP004
Pattern	Notification
Direction	NBN Co-Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.3.7   notifyBatchAddressSearchCompleted

ID	PO-TP012
Name	notifyBatchAddressSearchCompleted
Description	Informs the Access Seeker that their batch address search request has been completed
Sequence Diagram	PO-BP004
Pattern	Notification
Direction	NBN Co-Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.3.8   notifyBatchAddressSearchRejected

ID	PO-TP014
Name	notifyBatchAddressSearchRejected
Description	Informs the Access Seeker that their batch address search request has been rejected
Sequence Diagram	PO-BP004
Pattern	Notification
Direction	NBN Co-Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

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4.4   Service: Manage Product Order

The below sub-sections are transactions to be used for supporting the Order management functions through the B2B interface. Message specifications for these transactions have been specified in ***B2B Interface Message Specification – MPO.v1.01.***

4.4.1   submitOrderConnect

ID	OH-TP002
Name	submitOrderConnect
Description	The Access Seeker is placing an order as one of their activities to provide a product to their End-user. The order will be for one or more product-instances to a single location. Multiple product-instances may be grouped together so that they are either all delivered or all not delivered.
Sequence Diagram	OH-BP001
Pattern	Submit-Notify
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Asynchronous
Response required	N/A

4.4.2   submitOrderModify

ID	OH-TP003
Name	submitOrderModify
Description	The Access Seeker is placing an upgrade/downgrade to an active service. The change service request will modify the services for the End-user.
Sequence Diagram	OH-BP005
Pattern	Submit-Notify
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Asynchronous
Response required	N/A

4.4.3   submitOrderDisconnect

ID	OH-TP004
Name	submitOrderDisconnect
Description	Access Seeker is placing an order as one of their activities to cancel an existing service supplied to the End-User. A cancel order can only apply to a single location. Possible scenarios: Buyer cancels an existing service where there are no cross dependencies of services that are not being cancelled
Sequence Diagram	OH-BP005
Pattern	Submit-Notify
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Asynchronous
Response required	N/A

4.4.4   requestOrderAmend

ID	OH-TP005
Name	requestOrderAmend
Description	Access Seeker wishes to make changes to the order currently in progress. Changes to an in-flight order will be dependant on PoNR for each type of order amendment. The following amendment type have been identified (including but not limited to): - Delivery date - Product Attributes - Appointment
Sequence Diagram	OH-BP006
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.4.4.1   responseOrderAmend

ID	OH-TP005.1
Name	responseOrderAmend
Description	NBN Co response to AS on the amend request. A response can be either order amend Rejected or Completed (order has been amended).
Sequence Diagram	OH-BP006
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous

Response required	N

4.4.5   requestOrderCancel

ID	OH-TP006
Name	requestOrderCancel
Description	Access Seeker asks supplier to cancel the order in progress. The point at which there is a billing implication will depend on the product rules and may differ from product to product.
Sequence Diagram	OH-BP007
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.4.5.1   responseOrderCancel

ID	OH-TP006.1
Name	responseOrderCancel
Description	NBN Co response to AS that cancel request. A response can be either order amend Rejected or Completed (order has been amended).
Sequence Diagram	OH-BP007
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.4.6   submitBulkOrder

ID	OH-TP007
Name	submitBulkOrder
Description	The Access Seeker is placing a bulk order to change multiple products in the one request. There may be multiple customers and/or multiple locations.
Sequence Diagram	OH-BP012
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	N/A

4.4.7   queryOrderDetails

ID	OH-TP017
Name	queryOrderDetails
Description	Access seeker wishes to know the current status of an order and details
Sequence Diagram	OH-BP010
Pattern	Query-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.4.7.1   responseOrderDetails

ID	OH-TP017.1
Name	responseOrderDetails
Description	NBN Co responses to the Access Seeker for order details request.
Sequence Diagram	OH-BP001
Pattern	Query-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.4.8   requestMoreTime

ID	OH-TP019
Name	requestMoreTime
Description	Access seeker needs more time to complete an activity than is allowed in the standard process for the product ordered.
Sequence Diagram	OH-BP009
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.4.8.1   responseMoreTime

ID	OH-TP019.1
Name	responseMoreTime
Description	NBN Co responses to the Access Seeker for more time request. A request can be either accepted or rejected.
Sequence Diagram	OH-BP009
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.4.9 notifyKeepCustomerInformed

ID	OH-TP008
Name	notifyKeepCustomerInformed
Description	A notification from NBN Co of change of state (see State Diagram), progress milestone, attribute, action required, or information on an Order. The following notification will be sent as part of notifyKeepCustomerInformed mesage: - Order Jeopardy - Order Delay - Order Pending - Service Test Complete - Appointment Complete - Service Disconnected
Sequence Diagram	OH-BP001
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.4.10 notifyOrderAcknowledged

ID	OH-TP009
Name	notifyOrderAcknowledged
Description	Inform the Access Seeker that their order has been received and passed XML validation
Sequence Diagram	OH-BP001, OH-BP004, OH-BP005
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.4.11 notifyOrderAccepted

ID	OH-TP011
Name	notifyOrderAccepted
Description	Inform the Access Seeker that their order has been accepted with a committed delivery date.
Sequence Diagram	OH-BP001, OH-BP004, OH-BP005
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.4.12   notifyOrderComplete

ID	OH-TP012
Name	notifyOrderComplete
Description	Inform the Access Seeker that their order has been successfully completed
Sequence Diagram	OH-BP001, OH-BP004, OH-BP005
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.4.13   notifyOrderRejected

ID	OH-TP013
Name	notifyOrderRejected
Description	NBN Co informs the Access Seeker the order has been rejected with a reason(s)
Sequence Diagram	OH-BP001, OH-BP004, OH-BP005
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.4.14   notifyInformationRequired

ID	OH-TP015
Name	notifyInformationRequired
Description	NBN Co requires more information or action required from the Access Seeker and possibly the End-user via the Access Seeker.
Sequence Diagram	OH-BP008
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.4.15   notifyOrderCancelled

ID	OH-TP032
Name	notifyOrderCancelled
Description	NBN Co informs the Access Seeker that the order has been cancelled.
Sequence Diagram	OH-BP009
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.4.16   notifyInformationRequiredReminder

ID	OH-TP040
Name	notifyInformationRequiredReminder
Description	NBN Co sends a notification to remind the Access Seeker to provide the required information
Sequence Diagram	OH-BP009
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.5   Service: Manage Product Catalogue

The below sections are transactions to be used for supporting the Product Catalogue management functions through the B2B interface. Message specifications for these transactions have been specified in *B2B Interface Message Specification – ProductCatalogueEnquiry v0.1.xls.*

4.5.1   queryProductCatalogue

ID	PC-TP001
Name	queryProductCatalogue
Description	The Access Seeker requests details of their Product Catalogue based on their contract with NBN Co.
Sequence Diagram	PC-BP001
Pattern	Query-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.5.1.1   responseProductCatalogue

ID	PC-TP001.1
Name	responseProductCatalogue
Description	NBN Co response to the Access Seeker request for a product catalogue.
Sequence Diagram	PC-BP001
Pattern	Query-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.5.2   notifyProductCatalogueUpdate

ID	PC-TP002
Name	notifyProductCatalogueUpdate
Description	Inform the Access Seeker of product changes and new product version is available.
Sequence Diagram	PC-BP002
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.6   Service: Manage Appointment

The below sub-sections are transactions to be used for supporting the Appointment Management functions through the B2B interface. Message specifications for these transactions have been specified in *B2B Interface Message Specification – ManageAppointment.xls.*

4.6.1   notifyKeepCustomerInformed

ID	AM-TP001
Name	notifyKeepCustomerInformed
Description	A notification from NBN Co of change of state [Refer to state model], progress milestone, attribute or information on an Appointment Order or Trouble Ticket. Attribute can be e.g. appointment contact details, Information can be e.g. textual notes
Sequence Diagram	AM-BP001
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.6.2   notifyInformationRequired

ID	AM-TP002
Name	notifyInformationRequired
Description	NBN Co has an outstanding activity awaiting Access Seeker activity/action (e.g. waiting for information, appointment to be made, acceptance of timescales) and reminds the Access Seeker that no updated has been received. This may prompt the user to send the update, request more time or repeat a previous transmission
Sequence Diagram	AM-BP002, AM-BP003, AM-BP004, AM-BP005
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.6.3   requestAppointmentAvailability

ID	AM-TP003
Name	requestAppointmentAvailability
Description	A request from Access Seeker to check the availability of engineering appointment slots in NBN Co domain
Sequence Diagram	AM-BP003, AM-BP004
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.6.3.1   responseAppointmentAvailability

ID	AM-TP003.1
Name	responseAppointmentAvailability
Description	NBN Co response to the Access Seeker request for appointment availabilities
Sequence Diagram	AM-BP003, AM-BP004
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.6.4   requestAppointmentBook

ID	AM-TP004
Name	requestAppointmentBook
Description	A request from the Access Seeker to book an appointment
Sequence Diagram	AM-BP005
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.6.4.1   responseAppointmentBook

ID	AM-TP014
Name	responseAppointmentBook
Description	A response from NBN Co to confirm an appointment has been booked or an appointment cannot be booked.
Sequence Diagram	AM-BP005
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.6.5 queryAppointmentDetails

ID	AM-TP006
Name	queryAppointmentDetails
Description	A request from Access Seeker to confirm an appointment reservation.
Sequence Diagram	AM-BP004
Pattern	Query-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.6.5.1 responseAppointmentDetails

ID	AM-TP006.1
Name	responseAppointmentDetails
Description	NBN Co responses to the Access Seeker for appointment details request.
Sequence Diagram	AM-BP004
Pattern	Query-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.6.6 requestAppointmentCancel

ID	AM-TP007
Name	requestAppointmentCancel
Description	A request from Access Seeker to cancel an existing appointment
Sequence Diagram	AM-BP002
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.6.6.1 responseAppointmentCancel

ID	AM-TP007.1
Name	responseAppointmentCancel
Description	NBN Co response to Access Seeker that the appointment cancellation request has been accepted and is cancelled.
Sequence Diagram	AM-BP002
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.6.7   requestAppointmentAmend

ID	AM-TP010
Name	requestAppointmentAmend
Description	A request from Access Seeker where circumstances change eg, (the contact details of the End-user for the appointment), the Access Seeker will notify NBN Co
Sequence Diagram	AM-BP006
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.6.7.1   responseAppointmentAmend

ID	AM-TP010.1
Name	responseAppointmentAmend
Description	NBN Co responses to Access Seeker of appointment details have been updated or details are unable to updated.
Sequence Diagram	AM-BP006
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.6.8   requestAppointmentReschedule

ID	AM-TP011
Name	requestAppointmentReschedule
Description	A request from Access Seeker where circumstances change it may be necessary for an appointment to be rescheduled with an End-user.
Sequence Diagram	AM-BP003
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.6.8.1   responseAppointmentReschedule

ID	AM-TP011.1
Name	responseAppointmentReschedule
Description	NBN Co responses to the Access Seeker for reschedule an appointment request. A response can be either Rejected or Completed (appointment has been rescheduled)
Sequence Diagram	AM-BP003
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.6.9 notifyAppointmentCancelled

ID	AM-TP016
Name	notifyAppointmentCancelled
Description	A notification from NBN Co to confirm an appointment has been cancelled.
Sequence Diagram	AM-BP002
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.6.10 notifyAppointmentMissed

ID	AM-TP017
Name	notifyAppointmentMissed
Description	A notification from NBN Co to confirm an appointment has been missed.
Sequence Diagram	
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.6.11 notifyAppointmentComplete

ID	AM-TP018
Name	notifyAppointmentComplete
Description	A notification from NBN Co to confirm an appointment has been completed.
Sequence Diagram	OH-BP001
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.7 Service: Manage Ticket

The below sub-sections are transactions to be used for supporting the Ticket management functions through the B2B interface. Message specifications for these transactions have been specified in *B2B Interface Message Specification -MTT.v1.02.xls.*

4.7.1   submitTicketCreate

ID	PH-TP001
Name	submitTicketCreate
Description	A request from the Access Seeker to raise a ticket for a specified NBN Co service instance(s) owned by that Access Seeker. Types include: 1.) Incident 2.) Billing Enquiry 3.) Billing Dispute.
Sequence Diagram	TT-BP001
Pattern	Submit-Notify
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Asynchronous
Response required	N/A

4.7.2   queryTicketDetails

ID	PH-TP002
Name	queryTicketDetails
Description	A request from the Access Seeker to provide an existing ticket history or details
Sequence Diagram	TT-BP003
Pattern	Query-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.7.2.1   responseTicketDetails

ID	PH-TP002.1
Name	responseTicketDetails
Description	NBN Co responses to the Access Seeker for query ticket details.
Sequence Diagram	TT-BP003
Pattern	Query-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.7.3 notifyTicketCreated

ID	PH-TP003
Name	notifyTicketCreated
Description	NBN CO Alarm & Event Mangement system has indicated that an incident is needed to be resolved via Trouble Ticketing Mangement. NBN Co system will automatically raise a Ticket and notify affected Access Seeker(s)
Sequence Diagram	TT-BP008
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.7.4 notifyKeepCustomerInformed

ID	PH-TP004
Name	notifyKeepCustomerInformed
Description	A notification from NBN Co of change of state (see PR State Diagram), progress milestone, attribute, action required, or information on a ticket. Attribute can be e.g. Contact details. Action can be e.g. reappoint required. Information can be e.g. textual notes. The following notification will be covered as part of keep customer informed: - notifyTicketJeopardy - notifyTicketDelay
Sequence Diagram	TT-BP001
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.7.5 notifyTicketAcknowledged

ID	PH-TP005
Name	notifyTicketAcknowledged
Description	A notification from NBN Co to notify Access Seeker that their ticket has been successfully raised and/received
Sequence Diagram	TT-BP001
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.7.6   notifyTicketAccepted

ID	PH-TP006
Name	notifyTicketAccepted
Description	A notification from NBN Co advising Access Seeker that their ticket has been accepted and is under investigation.
Sequence Diagram	TT-BP001
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.7.7   notifyTicketRejected

ID	PH-TP007
Name	notifyTicketRejected
Description	A notification from NBN Co advising the Access Seeker that their ticket has been rejected.
Sequence Diagram	
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	asynchronous
Response required	N

4.7.8   notifyTicketDeffered

ID	PH-TP025
Name	notifyTicketDeferred
Description	A notification from NBN Co advising the Access Seeker that their ticket has been deferred - or put on hold (due to circumstances e.g no response received from AS in given time, required additional information not provided by Access Seeker etc).
Sequence Diagram	
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.7.9 queryTicketStatus

ID	PH-TP010
Name	queryTicketStatus
Description	A request from the Access Seeker or NBN Co to provide the ticket status update at any time through out the resolution process.
Sequence Diagram	TT-BP003
Pattern	Query-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.7.9.1 responseTicketStatus

ID	PH-TP010.1
Name	responseTicketStatus
Description	NBN Co responses to the Access Seeker for ticket status request.
Sequence Diagram	TT-BP003
Pattern	Query-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.7.10 requestTicketAmend

ID	PH-TP011
Name	requestTicketAmend
Description	A request from the Access Seeker to amend the ticket with an attribute or information. 12. Attribute can be e.g. new contact details. 13. Information can be e.g. textual notes
Sequence Diagram	TT-BP005
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.7.10.1 responseTicketAmend

ID	PH-TP011.1
Name	responseTicketAmend
Description	NBN Co responses to the Access Seeker for ticket admendment request. A response can be either accepted or rejected ticket amendment request.
Sequence Diagram	TT-BP005
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.7.11   requestTicketCancel

ID	PH-TP012
Name	requestTicketCancel
Description	A request from the Access Seeker to cancel a ticket.
Sequence Diagram	TT-BP002
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.7.11.1   responseTicketCancel

ID	PH-TP012.1
Name	responseTicketCancel
Description	NBN Co responses to the Access Seeker for ticket cancellation request. A response can be either accepted or rejected ticket cancellation request.
Sequence Diagram	TT-BP002
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.7.12   notifyTicketCancel

ID	PH-TP013
Name	notifyTicketCancelled
Description	A notification from NBN Co advising the Access Seeker that their ticket has been cancelled.
Sequence Diagram	TT-BP002
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.7.13   requestTicketClear

ID	PH-TP014
Name	requestTicketClear
Description	A request from NBN Co to get a ticket clear acceptance from the Access Seeker.
Sequence Diagram	TT-BP001
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.7.13.1   responsetTicketClear

ID	PH-TP015
Name	responseTicketClear
Description	A request from the Access Seeker, accepting the ticket is Cleared, and that it can now be closed. A response can be either accepted or rejected ticket clear request.

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Sequence Diagram	TT-BP001
Pattern	Notification
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.7.14 requestServiceInformation

ID	PH-TP019
Name	requestServiceInformation
Description	A request from the Access Seeker to provide the details of a specified NBN Co service instance (owned by that Access Seeker).
Sequence Diagram	TT-BP009
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.7.14.1 responseServiceInformation

ID	PH-TP019.1
Name	responseServiceInformation
Description	NBN Co responses to the Access Seeker for Service Information request.
Sequence Diagram	TT-BP009
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.7.15 notifyInformationRequired

ID	PH-TP020
Name	notifyInformationRequired
Description	A notification from NBN Co, requesting that additional information or assistance is required from the Access Seeker/End user in order to progress the ticket.
Sequence Diagram	TT-BP001
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.7.16   requestEscalateTicket

ID	PH-TP021
Name	requestEscalateTicket
Description	A request from the Access Seeker to raise the priority of a ticket.
Sequence Diagram	TT-BP004
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.7.16.1   responseEscalateTicket

ID	PH-TP021.1
Name	responseEscalateTicket
Description	NBN Co responses to the Access Seeker for escalate a ticket request.
Sequence Diagram	TT-BP004
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.7.17   notifyTicketClosed

ID	PH-TP022
Name	notifyTicketClosed
Description	A notification from NBN Co advising the Access Seeker that their ticket has been closed.
Sequence Diagram	TT-BP001
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.7.18   requestMoreTime

ID	PH-TP025
Name	requestMoreTime
Description	Access Seeker needs more time to complete an activity than is allowed in the standard process for the product ordered.
Sequence Diagram	
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.7.18.1 responseMoreTime

ID	PH-TP025.1
Name	responseMoreTime
Description	NBN Co responses to the Access Seeker for more time request. A response can be either accepted or rejected.
Sequence Diagram	
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.7.19   notifyInformationRequiredReminder

ID	PH-TP026
Name	notifyInformationRequiredReminder
Description	Reminds the Access Seeker that no update has been received. This may prompt the user to send the update request more time or repeat a previous transmission.
Sequence Diagram	
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.8   Service: Manage Planned Change

The below sub-sections are transactions to be used for supporting the Ticket Management functions through the B2B interface. Message specifications for these transactions have been specified in **B2B Interface Message Specification -MTT.v1.02.xls.**

4.8.1   notifyPlannedChange

ID	CM-TP001
Name	notifyPlannedChange
Description	A notification from NBN Co that a service outage on a number of services owned by the Access Seeker is necessary to resolve the ticket (e.g. change-out of a piece of common equipment, planned engineering work - upgrade or major service outages etc...), and requesting authorisation from the Access Seeker.
Sequence Diagram	TT-BP007
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.8.2   notifyPlannedChangeStart

ID	CM-TP005
Name	notifyPlannedChangeStart
Description	A notification from NBN Co advising the Planned Outage activity has been started
Sequence Diagram	TT-BP007
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.8.3   notifyPlannedChangeStop

ID	CM-TP006
Name	notifyPlannedChangeStop
Description	A notification from NBN Co advising the Planned Outage activity has been stopped
Sequence Diagram	TT-BP007
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.8.4   notifyPlannedChangeClose

ID	CM-TP007
Name	notifyPlannedChangeClose
Description	A notification from the NBN Co advising the Planned Outage activity has been closed
Sequence Diagram	TT-BP007
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.8.5   notifyKeepCustomerInformed

ID	CM-TP009
Name	notifyKeepCustomerInformed
Description	A notification from NBN Co of status/progress with a Planned Change or Hazard (e.g. progress update)
Sequence Diagram	
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.9   Service: Manage Billing

The below sub-sections are transactions to be used for supporting the Billing functions through the B2B interface. Message specifications for Tariff/Pricing Information, Billing Event File, Billing Invoice and Bill Reporting have been specified in *Interface Message Specification – Billing.xls.* Billing Enquiry or Dispute message specifications have been specified in *Interface Message Specification – MTT v1.02.xls.*

4.9.1   requestBillingEventFile

ID	BEF-TP001
Name	requestBillingEventFile
Description	The Access seeker request previously generated BEF or new BEF prior to the scheduled cycle.
Sequence Diagram	BI-BP003
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.9.1.1   responseBillingEventFile

ID	BEF-TP001.1
Name	responseBillingEventFile
Description	NBN Co response to the Access Seeker request for previously generated BEF or new BEF prior to the scheduled cycle.
Sequence Diagram	BI-BP003
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.9.2   notifyBillingEventFile

ID	BEF-TP002
Name	notifyBillingEventFile
Description	A notification from NBN Co to the Access Seeker of new scheduled BEF (XML) generated and made available to appropriate Access Seeker.
Sequence Diagram	BI-BP004
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.9.3   requestBillingInvoice

ID	BIN-TP001
Name	requestBillingInvoice
Description	The Access Seeker request previously generated Invoice.
Sequence Diagram	BI-BP005
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.9.3.1   responseBillingEventInvoice

ID	BIN-TP001.1
Name	responseBillingInvoice
Description	NBN Co response to the Access Seeker request for previously generated Invoice.
Sequence Diagram	BI-BP005
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.9.4   notifyBillingInvoice

ID	BIN-TP002
Name	notifyBillingInvoice
Description	A notification from NBN Co to the Access Seeker of new Invoice generated and made available in two formats PDF and XML.
Sequence Diagram	BI-BP006
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.9.5 queryBillingReport

ID	BRE-TP001
Name	queryBillingReport
Description	The Access Seeker sends as report query to NBN Co. The following report will be available for the request: a. List of past BEFs b. List of past Invoices c. Payment history by date range d. List of Billing Accounts per Access Seeker ID e. Billing account position f. List of Billing Account level adjustment, rebate and discount g. Dispute/Enquiry information (historical and current)
Sequence Diagram	BI-BP007
Pattern	Query-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y

4.9.5.1 responseBillingReport

ID	BRE-TP001.1
Name	responseBillingReport
Description	NBN Co response to the Access Seeker request for billing reports
Sequence Diagram	BI-BP007
Pattern	Query-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N

4.10 Service: Manage Diagnostics

The below sub-sections are transactions to be used for supporting the Network Testing and Diagnostics functions through the B2B interface. Message specifications for Test requests have been specified in *Interface Message Specification – Diagnostics.xls'*.

4.10.1 requestTest

ID	TE-TP001
Name	submitTest
Description	Request to test a specified service instance. types may include: [EventDiagnosis], [CheckConnectivity], [TestService (UNI<->NNI)]
Sequence Diagram	NPD-BP001
Pattern	Submit-Notify
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Asynchronous or Synchronous
Response required	N

4.10.2   notifyTestResults

ID	TE-TP002
Name	notifyTestResults
Description	This notification will be provided to Access Seeker on completion of their tests milestone. Multiple notification may have to be sent for test request depending on the request type from AS.
Sequence Diagram	NPD-BP001
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.10.3   notifyTestAccepted

ID	TE-TP003
Name	notifyTestAccepted
Description	Notifications to Access Seeker advising the test request is valid
Sequence Diagram	NPD-BP001
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.10.4   notifyTestRejected

ID	TE-TP004
Name	notifyTestRejected
Description	Notifications to Access Seeker advising the test request is invalid
Sequence Diagram	NPD-BP001
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.10.5   notifyTestCompleted

ID	TE-TP005
Name	notifyTestCompleted
Description	Notifications to Access Seeker advising the full or consolidated a list of tests results.
Sequence Diagram	NPD-BP001
Pattern	Notification
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Asynchronous
Response required	N

4.11   Service: Manage Service Performance

The below sub-sections are transactions to be used for supporting the Performance management functions through the B2B interface. Message specifications for Performance Data and Service Warning Indicator requests have been specified in *Interface Message Specification – ManageMinorServiceIndicators.xls and Interface Message Specification – ManagePerformanceData.xls.*

4.11.1   requestPerformanceData

ID	QS-TP002
Name	requestPerformanceData
Description	Request from Access Seeker to provide a service performance report.
Sequence Diagram	NPD-BP002
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y
Message Specification	Interface Message Specification – ManagePerformanceData.xls

4.11.1.1   responsePerformanceData

ID	QS-TP002.1
Name	responsePerformanceData
Description	NBN Co responses to Access Seeker of serice performance information request.
Sequence Diagram	NPD-BP002
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N
Message Specification	Interface Message Specification – ManagePerformanceData.xls

4.11.2   requestMinorServiceIndicators

ID	QS-TP004
Name	requestMinorServiceIndicators
Description	The Access Seeker requests NBN Co to provide any minor service indicator information that occur on the Service, for example: NTU power status. This includes real time data.
Sequence Diagram	NPD-BP003
Pattern	Request-Response
Direction	Access Seeker to NBN Co
Synchronous/ Asynchronous	Synchronous
Response required	Y
Message Specification	Interface Message Specification – ManageMinorServiceIndicators.xls

4.11.2.1   responseMinorServiceIndicator

ID	QS-TP004.1
Name	responseMinorServiceIndicators
Description	NBN Co responses to the Access Seeker for minor service indicator request.
Sequence Diagram	NPD-BP003
Pattern	Request-Response
Direction	NBN Co to Access Seeker
Synchronous/ Asynchronous	Synchronous
Response required	N
Message Specification	Interface Message Specification – ManageMinorServiceIndicators.xls

5 Appendix A – Key Terms

Term	Description
Access Seeker/s	The term to jointly refer to Retail Service Providers (RSP) and Wholesale Service Providers (WSP). All entities that connect a Message Service Handler (MSH) to the NBN Co gateway in order to transact with NBN Co.
Access Virtual Circuit	An Access VC is a single, logical Ethernet Virtual Circuit (EVC), operating across the PON access network between an OLT and a single UNI.
Assurance	The functional area that performs assurance for Services and Resources and covers: 14. Incident Management and Performance Management 15. Incident Management and Alarming.
AVC	See Access Virtual Circuit
B2B	Business-to-Business
B2B Transaction Patterns	See Patterns
BEF	Billing Event File
Billing	Current and future (if any) prices as defined and released from NBN Co.
Billing Account	The entity within the customer hierarchy to which charges are applied and at which level invoices are produced.
Billing Dispute	A Billing Dispute is a type of transaction that will enable the Access Seeker to dispute selected specific charges within a BEF or Invoice. A Billing Dispute will enable the Access Seeker to select specific line items, or a group of line items within the bill to formally dispute.
Billing Enquiry	A Billing Enquiry is a type of transaction that will allow Access Seekers to ask generic questions and receive clarifications relating to their bill.
Billing Event File	The billing event file contains details of any charges or credits applied to an Access Seeker billing account within the Access Seeker nominated timeframe.
Billing Invoice	See Invoice.
Business Transactions	An atomic unit of communication between two parties. It reflects the state of a binary collaboration. Refers to an operation that is a request, response or notification.
CIM	Common Information Model
CIR	Committed Information Rate
Communications Alliance	The peak body for the Australian communications industry - taking a leadership role in coordinating the industry's response to the National

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Term	Description
	Broadband Network implementation.
Connectivity Virtual Circuit	A connection oriented communication service that is delivered by means of packet mode communication.
CoS	Class of Service
COTS	Commercial Off-the-Shelf
C-TAG	Customer VLAN tag
CVC	Connectivity Virtual Circuit
Demand Type	NBN Co will specify different appointment types for the various activities required to facilitate delivery of a service, or to correct a fault.
End-user	The end-user to whom the Access Seeker supplies (or proposes to supply) a carriage service or content service for final consumption by that end-user.
	The customers of Access Seekers have no direct commercial relationship with NBN Co.
End-user Premises	The premises of an End-user to which a carriage service or content service is or will be supplied.
ETIS	The global IT association for telecommunications (http://www.etis.org).
ETIS EBG XML	ETIS EBG XML electronic billing standard will be used as the mechanism by which billing event data and invoices.
Event	Any detectable or discernable occurrence that has significance for the management of the IT Infrastructure or the delivery of IT services, and the evaluation of the impact a deviation might cause to the services.
Event Diagnosis	Access Seekers will be able to initiate a request to determine the Operation status of the Service that may be impacted by an Event.
GNAF ID	Geocoded National Address File.
	The authoritative address index for Australia, produced by PSMA Australia Limited.
GPS	Global Positioning System
HTML	Hypertext Mark-up Language
HTTP/S	Hypertext Transfer Protocol
Incident	Any event that is not part of the standard operation of a service and causes or may cause a disruption to that service.
In-Flight Order	An order that has been accepted for orchestration but has not reached completion.
Idempotent request	A property of certain operations that they can be applied multiple times without changing the result

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Term	Description
Invoice	The document issued by NBN Co to an Access Seeker that contains a summary of all the products purchased by the Access Seeker, the value of those products and the amount that NBN Co is requesting the Access Seeker to pay NBN Co for the supply of those products.
Jeopardy Management	The ability to track against established/configurable SLAs/milestones for Fulfilment activities.
Jeopardy Notification	Each fulfilment task within the order lifecycle will be subject to a target elapsed time to completion. Jeopardy occurs when the target time is about to be breached, or has been breached, at a particular stage of an order.
KCI	Keep Customer Informed
KPI	Key Performance Indicator
L2C	Lead to Cash is a stage in the NBN Co End-To-End Value Stream Business Model.
Lifecycle Management	Outlines the L2C Process that are bound Products and susceptible to change.
Lifeline	A lifeline represents an individual participant in a sequence diagram, for example: an Access Seeker or NBN Co.
Message Exchange Pattern	A number of request and response messages that describe a collaboration toward an outcome.
Messaging Specification	ebXML messaging specification (ebMS) is an open standard for messaging that enables a secure, reliable and non- repudiable exchange of messages between two parties. It is independent of the transport protocol and payload being used and re-uses a number of existing standards and protocols.
NBN Co	The provider of the B2B Gateway and related infrastructure, NBN Co is responsible for administration, support, maintenance and future planning.
nbnXML	Transaction validation and/or acknowledgment as per relevant process.
nbnXML validation	Submit an nbnXML document and have it validated against the authoritative nbnXML schema.
Network Terminating Unit	A generic term for network equipment at the End-user Premises which provides a point for network demarcation. The NTU is an active device that terminates the signal from the NBN and then provides one or more Service Delivery Points (SDPs) as physical interfaces and sub-interfaces on the NTU.
Network to Network Interface	The NNI is a physical, aggregated Ethernet interface, directly accessed by the Access Seeker within the Point of Interconnect (PoI), and used to interface NFAS services to an Access Seeker's backhaul network.
NFAS	NBN Fibre Access Service

Term	Description
NICC	UK interoperability standards group.
NNI	Network to Network Interface
NSAS	NBN Satellite Access Service
NTU	Network Terminating Unit
NWAS	NBN Wireless Access Service
OAM	Operations, Administration and Maintenance
OLT	Optical Line Termination unit
ONT	Optical Network Termination unit
Optical Line Termination unit	The terminal equipment to provide the Gigabit Passive Optical Network (GPON) signals to each of the FDAs as per ITU-T G.984.1.
Optical Network Termination unit	The NBN Co termination point on each premises, for residential service providing (typically) 4 Ethernet, 1 telephone and 1 co-axial interface.
Order Feasibility	The initial step of Order Fulfilment, it decomposes Services and ensures the Service design can be met by the installed and installable Resources, and reserves the necessary network Resources then accepts the Order for Orchestration.
Order Orchestration	Takes accepted Orders decomposed Services then manages provisioning of dependent Orders and sub-Orders. This process will manage Service and Resource configuration and activation, any Workforce Management (WFM) appointments and updating Service and Resource Inventory then closing Orders once completed
Order SLA Management	Order SLA Management illustrates the six key milestones of an order lifecycle.
Order Type Constructions	Order Type Constructions illustrates the types of order supported through the request order transaction.
Outage	A stoppage in the functioning of a machine or mechanism due to a failure in the supply of power or electricity.
PCD	Premise Connection Device
PDF	Portable Document Format
Performance Management	Performance Management capability will be made available to Access Seekers via the Portal based tools as well as raw data can be requested through B2B interface.
Performance reporting capability	Supports the Access Seeker's insight into aggregated service components, for example: CVC.
PIR	Peak Information Rate
Planned change / hazard	Planned change / hazard is required to resolve an existing issue or incident. NBN Co sends a notification to the Access Seeker where NBN

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Term	Description
	Co notifies the affected Access Seeker/s in order for them to manage their End-users.
POI	Point of Interconnect
Point of Interconnect	The connection point that allows Retail and Wholesale Service Providers (RSP, WSP) to connect to the NBN Co access capability.
Point of No Return	Past this point changes cannot be accepted in a workflow, or a defined point within a Business Process that once passed will not allow Roll Backs.
PoNR	Point of No Return
Pre-Order Management	Pre-order management consists of interactions necessary to compose a valid order, but which are carried out prior to the submission of an order.
Problem handling process	The problem handling processes area is responsible for the management of problems reported by customers and associated with purchased product offerings.
Product	NBN Co Products sold to Access Seekers by customer facing systems. Multiple Services can be associated with a Product.
Product Catalogue	A repository (and single point of entry) of all current and historical Product Definitions that are available to NBN Co channels and customer sets.
Product Definition	Used to create Product Instances it defines the overall Product structure and possible configuration items that includes: 16. Attributes 17. Dependencies 18. Component Services 19. Transaction Types and workflow 20. Business rules 21. Priority 22. Pricing 23. PoNR 24. SLAs, and 25. Access Seeker accreditation.
Product Fulfilment	See Fulfilment.
PSMA	Power Sources Manufacturers Association - a not-for-profit multinational power electronics association.
QoS	Quality of Service
RFS	Ready for Service
RSP	Retail Service Providers - Referred to as Access Seekers.
SAP	Service Access Point

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Term	Description
SAP	Service Access Point will describe the finest level of detail that NBN Co will request to identify the place of delivery of service. It is the logical entity describing where a Premise Connection Device (PCD) would exist.
Service	NBN Co Services sold to Access Seekers from an NBN Co operational support systems perspective. The Service layer is used in the Fulfilment stack to provide a link between the customer facing system's product model and the operations' service model. Multiple Resources are associated with a Service.
Service Assurance	The goal of Service Assurance is to provide an integrated, efficient toolset for the rapid detection, diagnosis and resolution of network issues.
Service Binding	NBN Co will use a CPA as the primary tool to facilitate the role of service binding in design time. Conceptually, a Business-to-Business (B2B) server at each party's site implements the CPA and Process Specification document.
Service Level Agreement	Provides specific measures and targets against which performance can be assessed (also provides thresholds for escalation).
Service Publication	NBN Co will communicate services supported by the B2B gateway by publishing CPA templates. This could constitute the primary form of service publication supported.
Service Qualification	Identify whether NBN Co infrastructure can serve an End-user location, via which Access Technology, whether infrastructure currently exists in the End-user's location, and optionally whether a particular Product can be serviced at the location.
Service test	Access Seekers will be able to initiate a request to verify the operation of the EVC, in response to an event. Note that this test function is expected to rely on ITU-T Y.1731 Performance Operations, Administration and Maintenance (OAM) functional capabilities for its implementation.
SLA	Service Level Agreement
S-TAG	Service VLAN Tag
T2R	Trouble to Resolve
Transaction	A number of request and response messages that form a transaction to determine an outcome
Transaction Patterns	See Patterns.
UML	Unified Modeling Language is a standardised general-purpose modeling language in the field of software engineering.
UNI	User Network Interface
URL	Uniform Resource Locator, the global address of documents and other

Term	Description
	resources on the World Wide Web.
VC	Virtual Circuit
WFM	Workforce Management
WSP	Wholesale Service Providers
XML	Extensible Mark-up Language

6 Document Control

Major changes to this document are listed in the table below for each version of the document distributed.

Date	Version	Author	Description/Section Revised	Reviewed By
18/01/2011	V0.10	Kathy Bui & Savita Bhoria	Public draft for comment	Roger Venning

Approvers

This section lists the individuals who need to approve this document before the project can proceed to the next stage.

Approvers are responsible for ensuring that the document content has undergone all the relevant reviews, and is complete and accurate, or accept any risks inherent in not having content reviewed prior to approval.

Once approved the content of this document will be baselined and any changes that will impact the scope, time, cost or resources of the project will need to be requested via the Change Management Process.

Date	Version	Name	Organisational Role	Project Role	Signature
18/01/2011	V0.9	Roger Venning	Manager - Integration and Architecture	Overall design	*Insert approval email*

Distribution List

First Distribution <insert date>		
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