Snapshot of NBN Co's Operational Support Systems

Friday 17 September 2010

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Key Principles
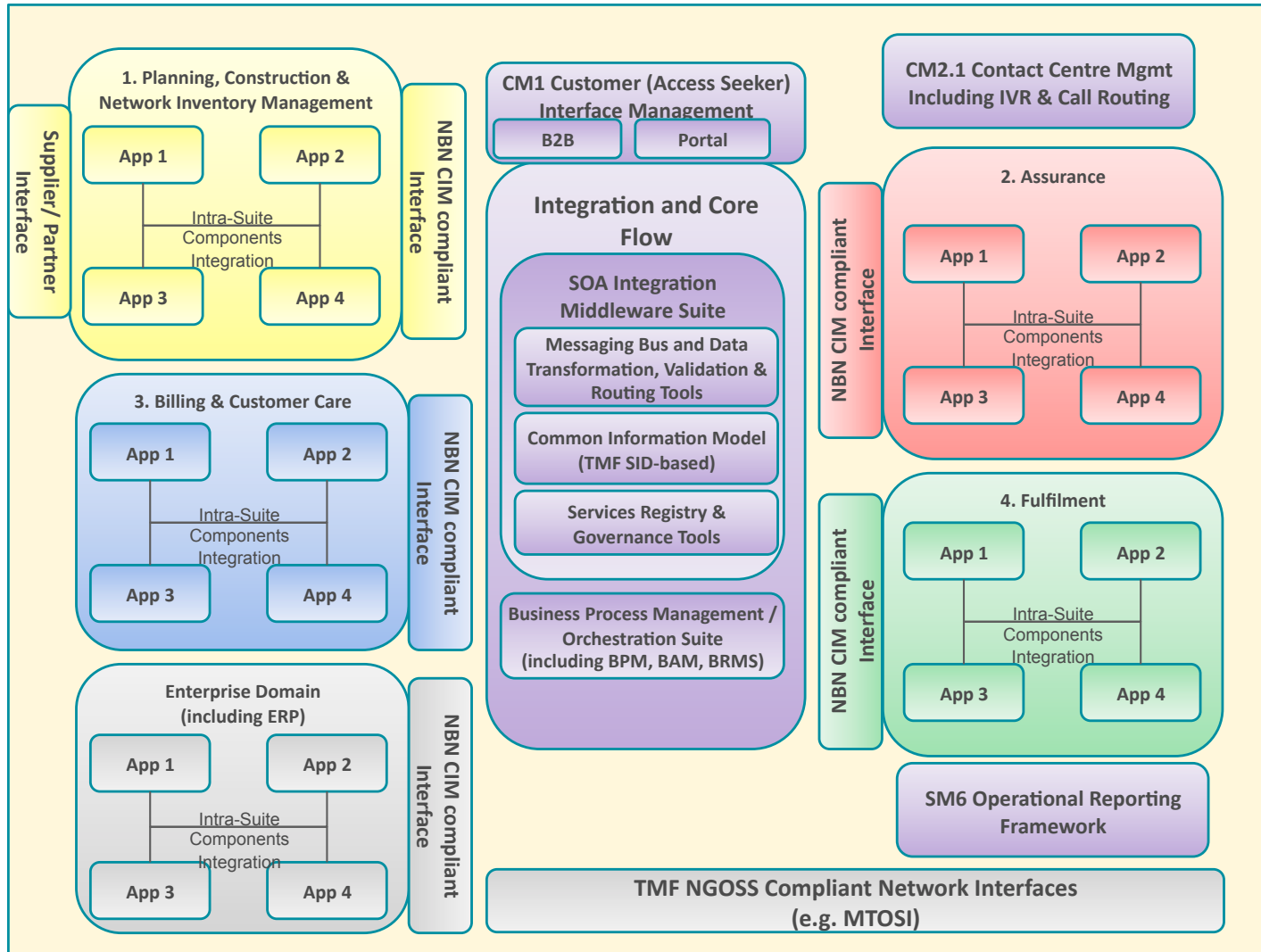
Empower

Automate

NBNCo
Limited

OSS/BSS Solution Overview

Supplier / Partner Interface

1. Planning, Construction & Network Inventory Management

App 1	App 2

Intra-Suite Components Integration

App 3	App 4

NBN CIM compliant Interface

CM1 Customer (Access Seeker) Interface Management

B2B	Portal

CM2.1 Contact Centre Mgmt Including IVR & Call Routing

Integration and Core Flow

SOA Integration Middleware Suite

- Messaging Bus and Data Transformation, Validation & Routing Tools
- Common Information Model (TMF SID-based)
- Services Registry & Governance Tools

Business Process Management / Orchestration Suite (including BPM, BAM, BRMS)

NBN CIM compliant Interface

2. Assurance

App 1	App 2

Intra-Suite Components Integration

App 3	App 4

3. Billing & Customer Care

App 1	App 2

Intra-Suite Components Integration

App 3	App 4

NBN CIM compliant Interface

Enterprise Domain (including ERP)

App 1	App 2

Intra-Suite Components Integration

App 3	App 4

NBN CIM compliant Interface

NBN CIM compliant Interface

4. Fulfilment

App 1	App 2

Intra-Suite Components Integration

App 3	App 4

SM6 Operational Reporting Framework

TMF NGOSS Compliant Network Interfaces (e.g. MTOSI)
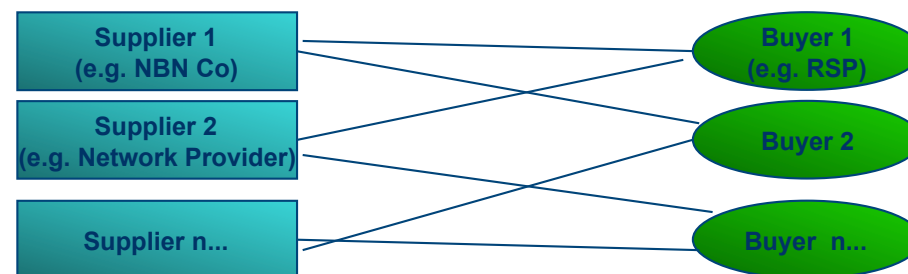
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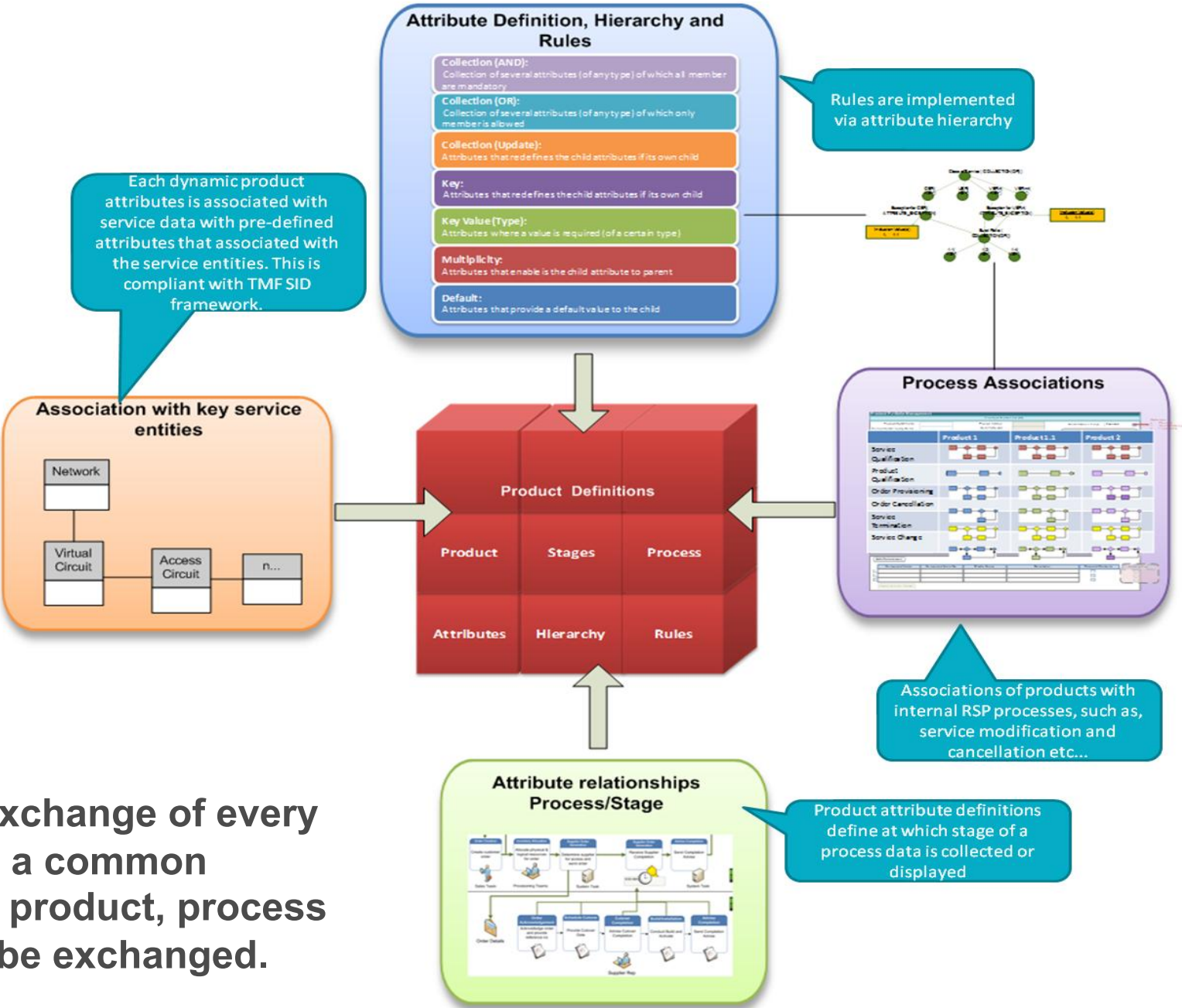
B2B Operating Model

NBN Co wishes to allow Access Seekers will view the NBN as an extension of their own network

The Access Seeker Interface (B2B & Web) is how NBN Co will interact with and expose Fulfilment, Assurance and Billing functionality to Access Seekers

Operating Model

▷ Buyer/Supplier model

▷ Interaction process based on

    – TMForum – NICC B2B Interface Framework

    – ITU-T Recommendation (3340, 3343, 3344, and 3345)

    – TMForum - ETIS framework for Electronic Billing Standard

B2B Context

Attribute Definition, Hierarchy and Rules

Collection (AND):
Collection of several attributes (of any type) of which all member are mandatory

Collection (OR):
Collection of several attributes (of any type) of which only member is allowed

Collection (Update):
Attributes that redefines the child attributes if its own child

Key:
Attributes that redefines the child attributes if its own child

Key Value (Type):
Attributes where a value is required (of a certain type)

Multiplicity:
Attributes that enable is the child attribute to parent

Default:
Attributes that provide a default value to the child

> Rules are implemented via attribute hierarchy

> Each dynamic product attributes is associated with service data with pre-defined attributes that associated with the service entities. This is compliant with TMF SID framework.

Association with key service entities

Network

Virtual Circuit

Access Circuit

n...

Product Definitions

Product	Stages	Process
Attributes	Hierarchy	Rules

Process Associations

> Associations of products with internal RSP processes, such as, service modification and cancellation etc...

Attribute relationships Process/Stage

> Product attribute definitions define at which stage of a process data is collected or displayed

Automating the exchange of every attribute requires a common understanding of product, process and attributes to be exchanged.

Fulfilment Interaction

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Order Management Process
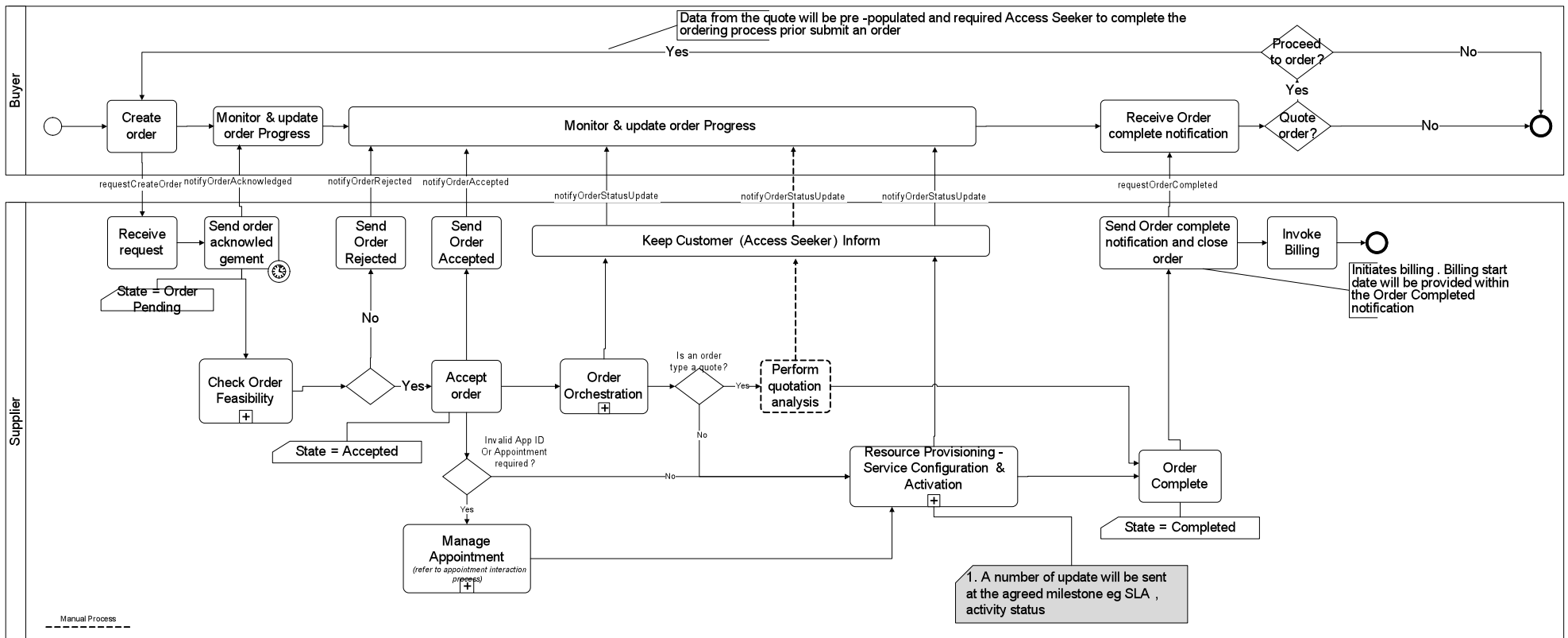
Assurance Interaction

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1. A local fibre is accidentally cut

Fibre Serving Area – Indicative Access Infrastructure
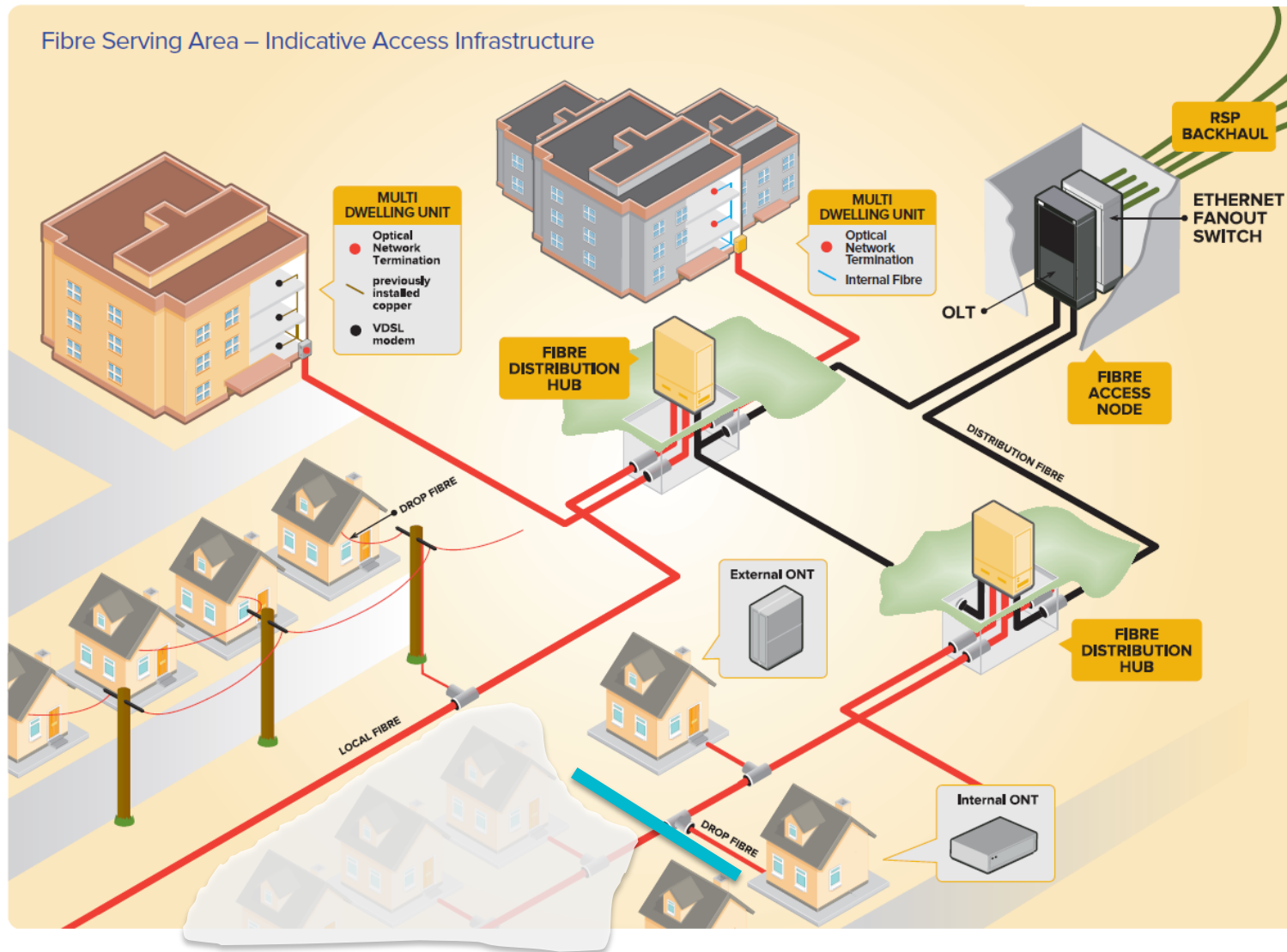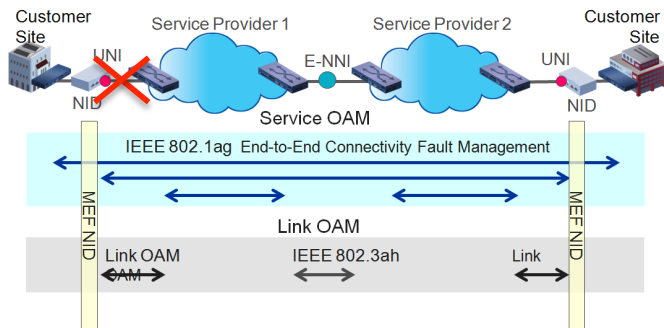
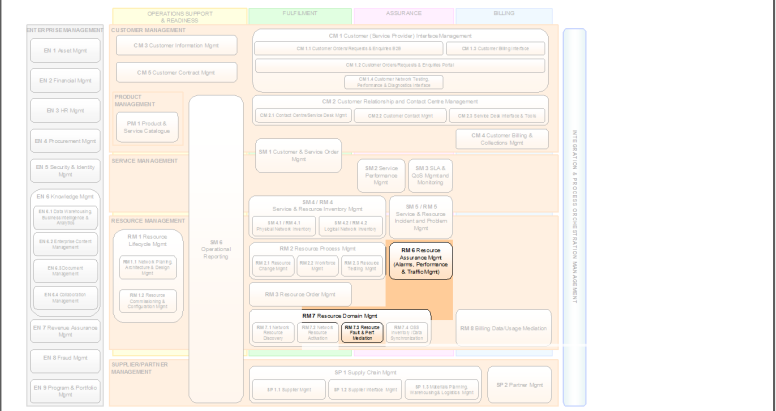# 2. Events start reaching the A&E Manager

Network View
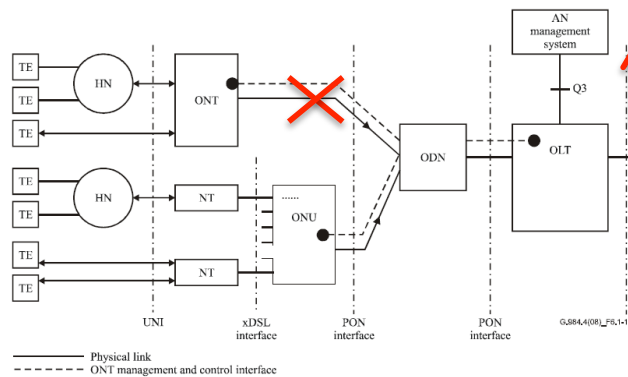
GPON alerts relating to failed ONTs, GEM ports, TCONTs, etc. flow north-bound into the A&E Manager.
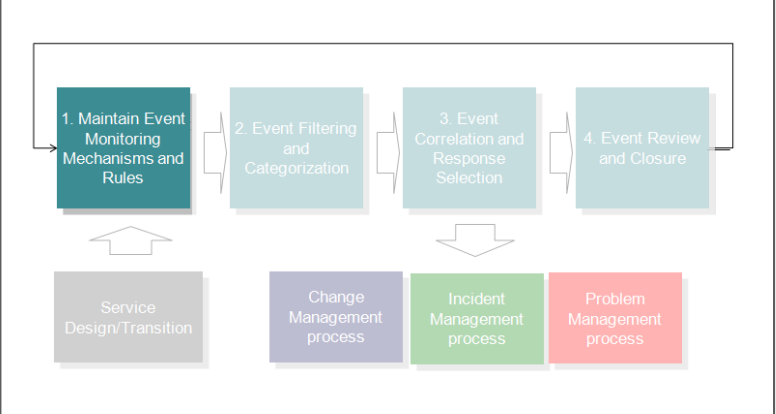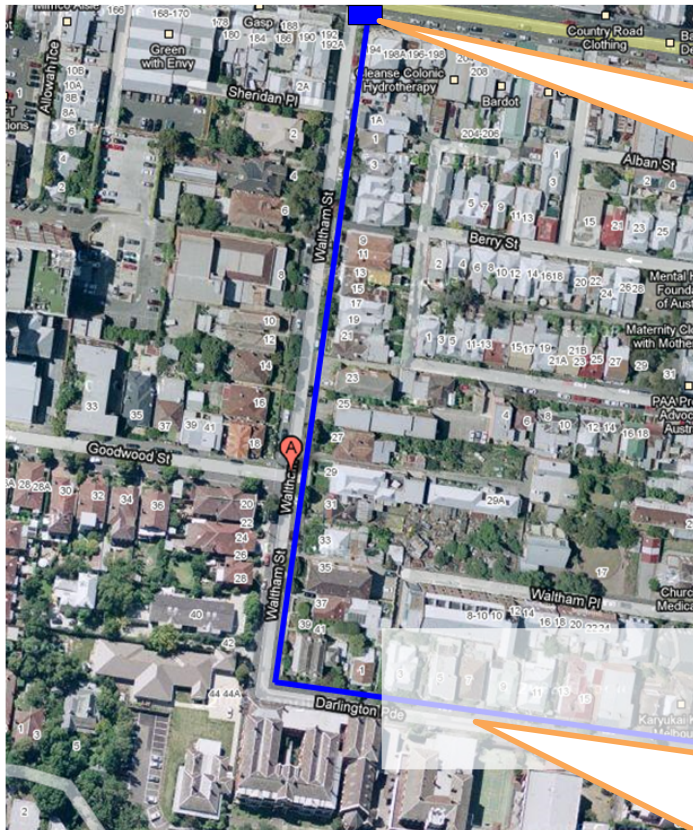

MEN alerts relating to failed UNIs and EVCs flow north-bound into the A&E Manager.

Systems View

Process View

3. RCA Results in a single, master Alarm

We know the order that ONTs break off from the local cable through reference to Inventory.

Here we see a cluster of contiguous ONTs have gone dark.

We presume a single fault pertaining to this local cable, and roll up all further alarms on this cable.

Systems View

Process View

| 1. Maintain Event Monitoring Mechanisms and Rules | 2. Event Filtering and Categorization | 3. Event Correlation and Response Selection | 4. Event Review and Closure |

| Service Design/Transition | | Change Management process | Incident Management process | Problem Management process |

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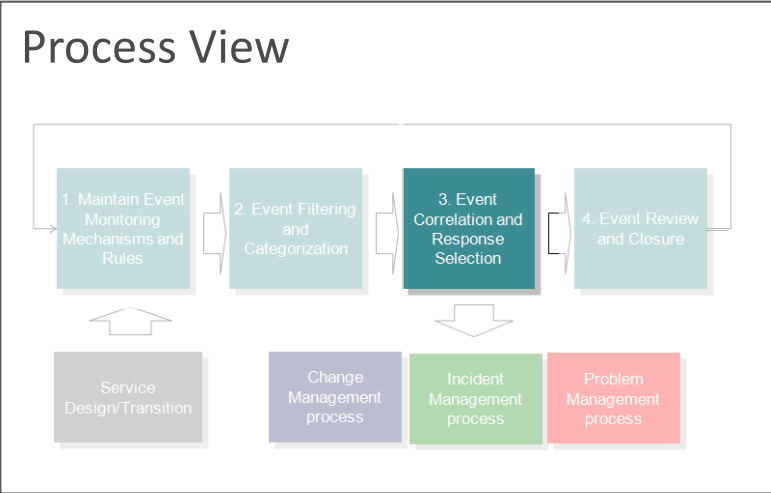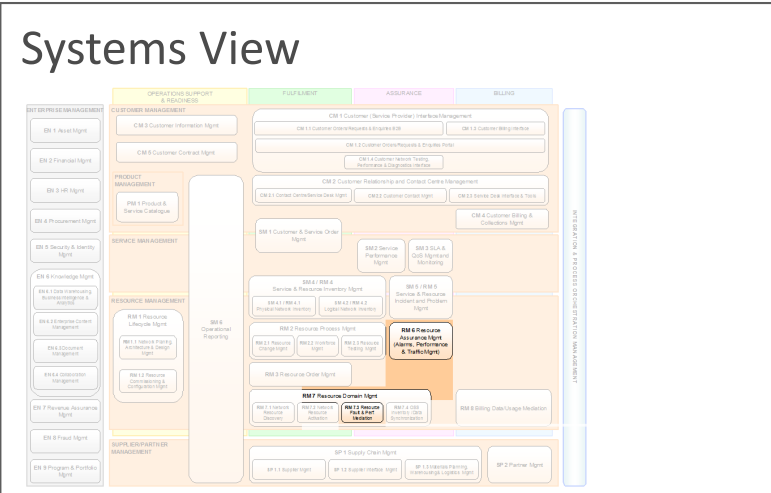
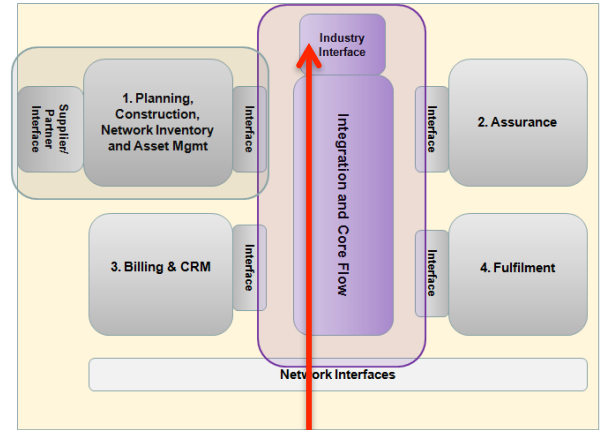# 4. SIA Determines Services Disrupted, creates Tickets
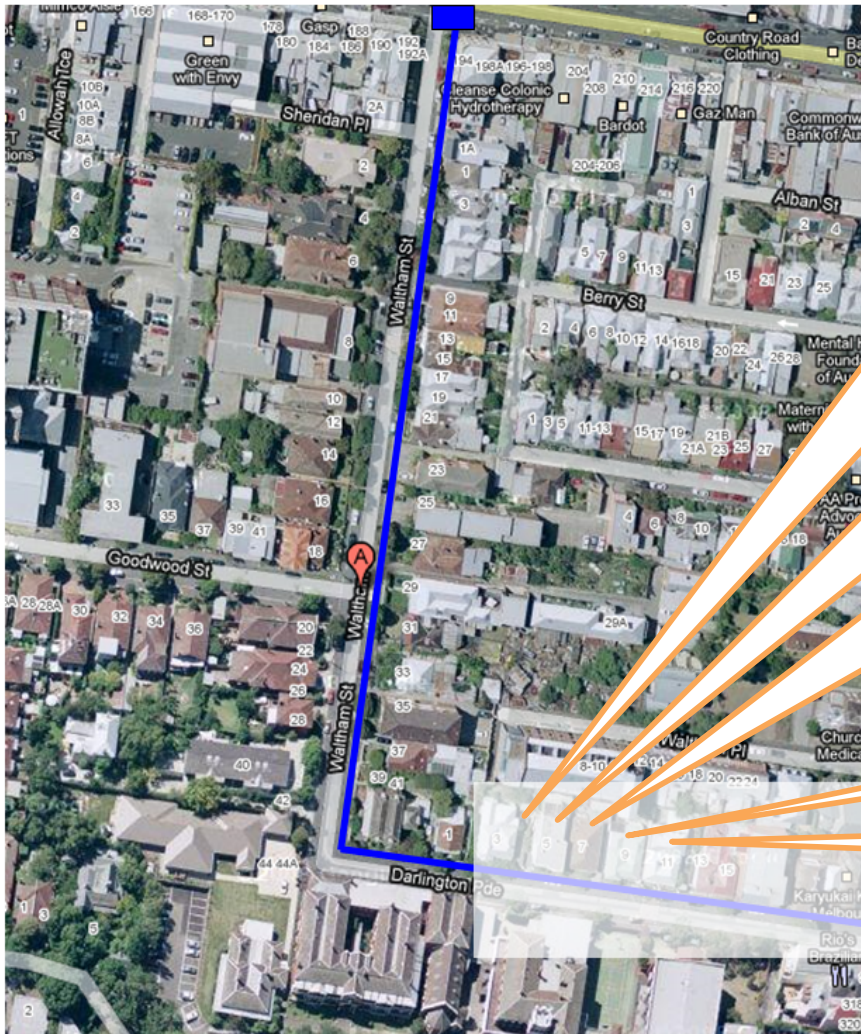
3 Darlington – Peter Wills

UNI1: RSP1 – Voice
UNI2: RSP2– IPTV
UNI3: RSP3 - HSI

5 Darlington – Greg Tilton

UNI1: RSP1 – HSI

7 Darlington – Mark Little

UNI1: RSP2 – Voice
UNI2: RSP1 - HSI

Etc.

Etc.

RSP1 – Services Impacted
• #3, UNI1
• #5, UNI1
• #7, UNI2

RSP2 – Services Impacted
• #3, UNI3
•#7, UNI1

RSP3 – Services Impacted
• #3, UNI3

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5. Further RCA determines the location of the cut

39 Waltham is OK

41 Waltham is OK

1 Darlington is OK

3 Darlington is dead

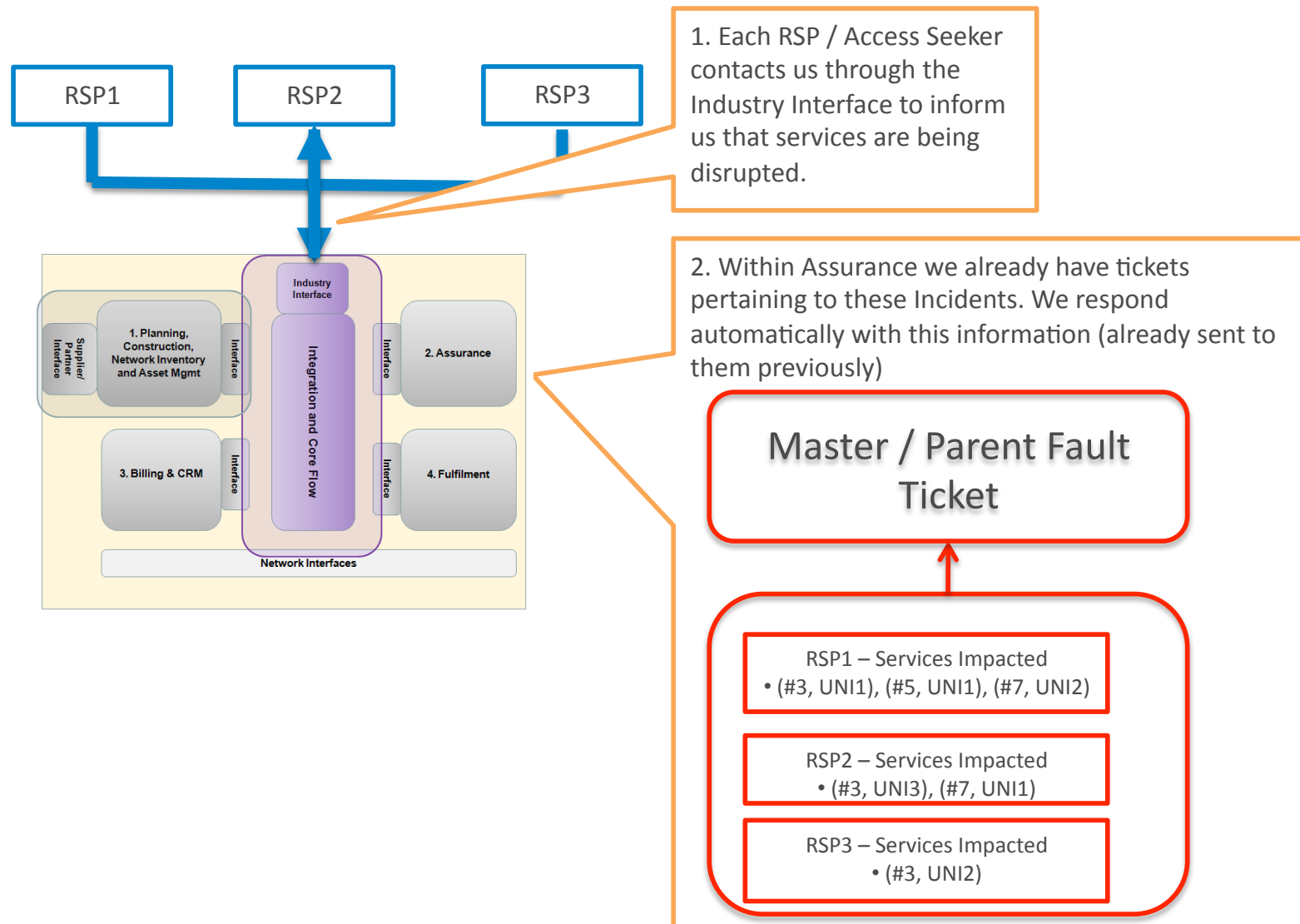5 Darlington is dead

7 Darlington is dead
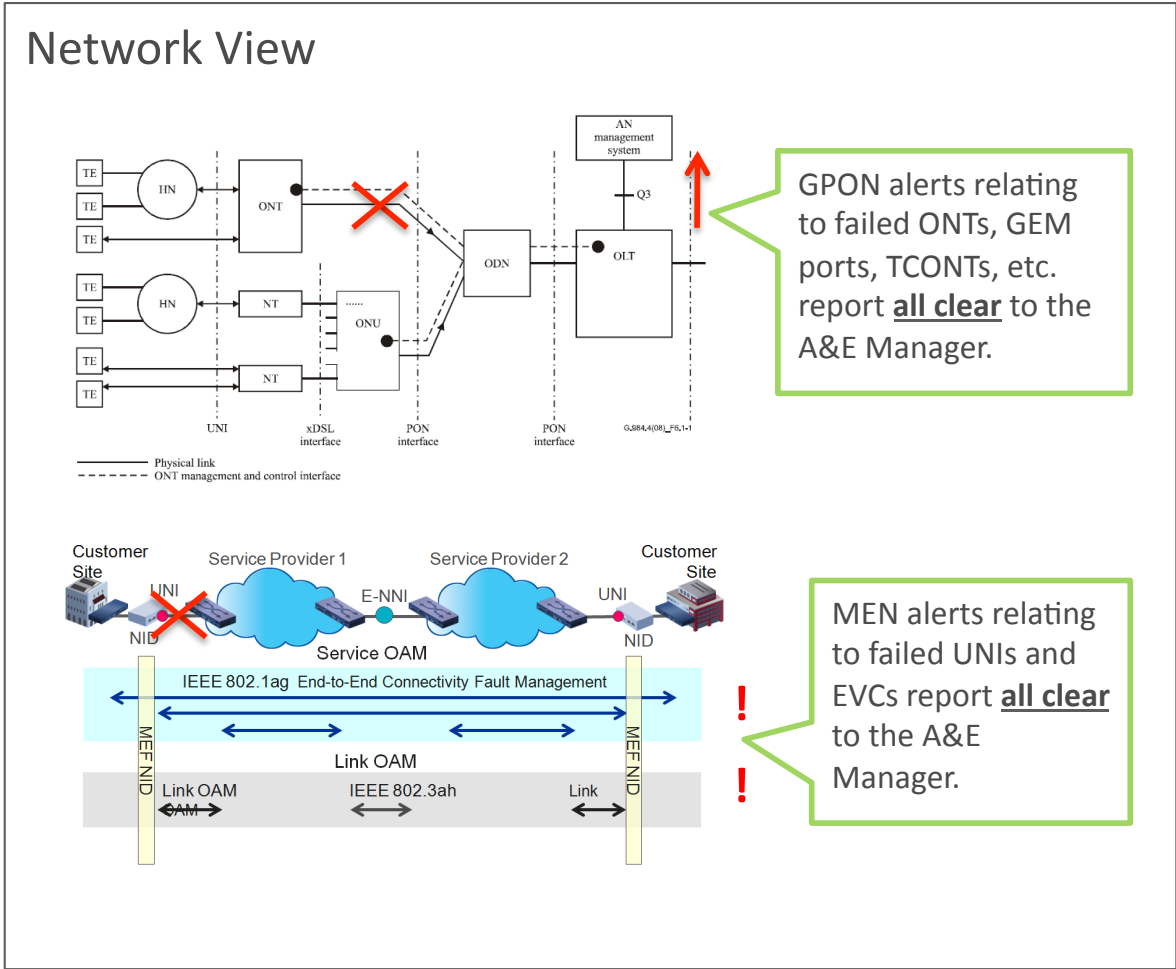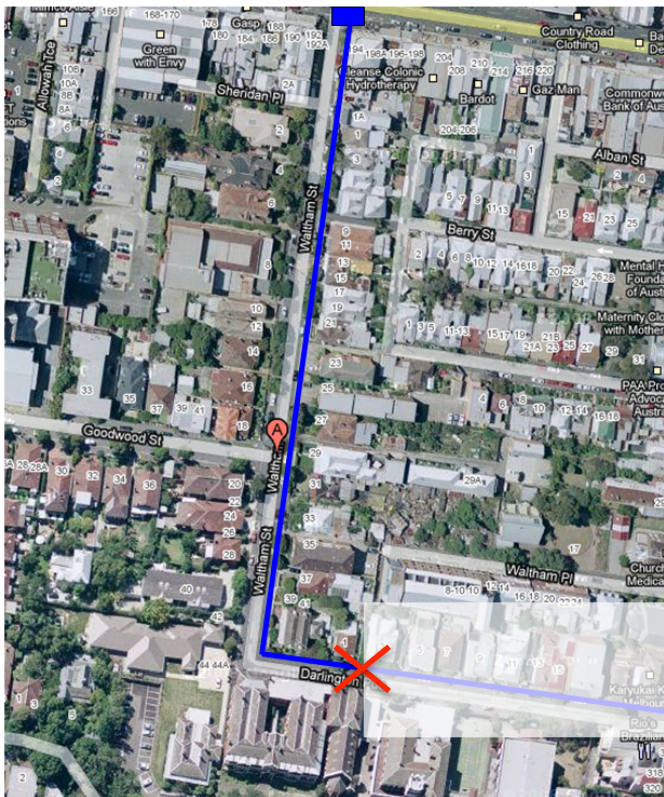
Therefore this is the probable location of the cut.

Master / Parent Fault Ticket

RSP1 – Services Impacted
• (#3, UNI1), (#5, UNI1), (#7, UNI2)

RSP2 – Services Impacted
• (#3, UNI3), (#7, UNI1)

RSP3 – Services Impacted
• (#3, UNI3)

6. Access Seekers begin contacting NBN Co

RSP1

RSP2

RSP3

1. Each RSP / Access Seeker contacts us through the Industry Interface to inform us that services are being disrupted.

2. Within Assurance we already have tickets pertaining to these Incidents. We respond automatically with this information (already sent to them previously)

Supplier/ Partner Interface

1. Planning, Construction, Network Inventory and Asset Mgmt

Interface

Industry Interface

Integration and Core Flow

Interface

2. Assurance

3. Billing & CRM

Interface

Interface

4. Fulfilment

Network Interfaces

Master / Parent Fault Ticket

RSP1 – Services Impacted
• (#3, UNI1), (#5, UNI1), (#7, UNI2)

RSP2 – Services Impacted
• (#3, UNI3), (#7, UNI1)

RSP3 – Services Impacted
• (#3, UNI2)

7. Repair completed, alarms cease

Network View

GPON alerts relating to failed ONTs, GEM ports, TCONTs, etc. report **all clear** to the A&E Manager.

MEN alerts relating to failed UNIs and EVCs report **all clear** to the A&E Manager.

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8. Verification testing

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UNI1: RSP1– Voice
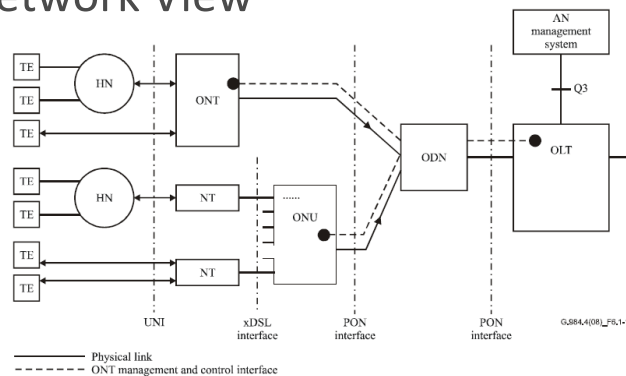UNI2: RSP3 – IPTV
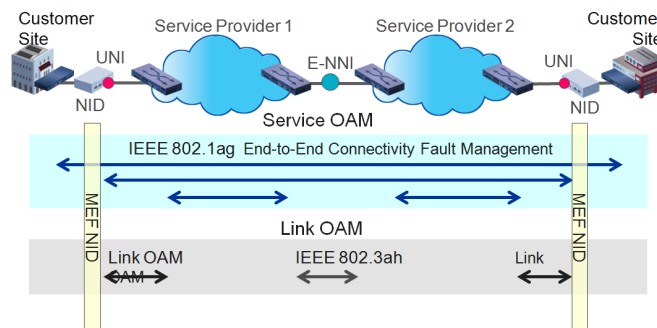UNI3: RSP2 - HSI

5 Darlington – Greg Tilton

UNI1: RSP1– HSI

7 Darlington – Mark Little
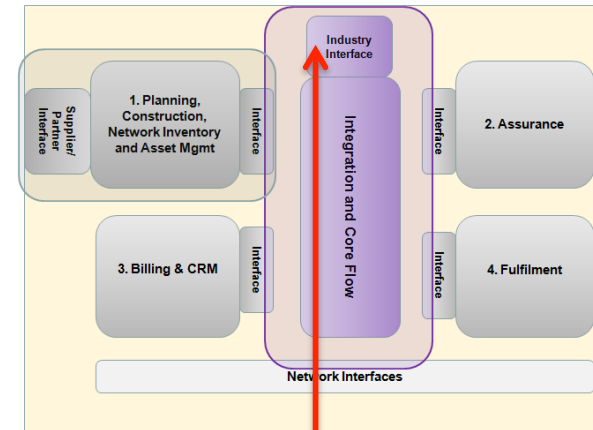
UNI1: RSP2– Voice
UNI2: RSP1 - HSI

Network View

- All ONTs checked with basic diags
- All UNI-Vs get a MLT.
- All UNI-D have are checked for carrier sense.

- All EVCs are checked against their provisioned state.

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9. Ticket closure
10. Alarm closure
11. Scenario ends

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Presentation Ends

Thank You

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