Frameworx 14.0 Product Conformance

Certification Report

Intraway

Real-Time Universal Service Activator (RTUSA)

Version 15.2

April 2015

Version 1.0

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1 Introduction

1.1 Executive Summary

This document provides details of Intraway's self-assessment and TM Forum's Conformance Assessment of the **Intraway RTUSA** product, against the following Frameworx 14.0 components:

- Business Process Framework Version 14.0

- Information Framework Version 14.0

The assessment included a review of:

- The methodology approach to process modeling against the TM Forum's Business Process Framework Release 14.0 according to the specific processes submitted in scope for the Assessment.

- Conformance to the Information Framework Release 14.0 Domains/Aggregate Business Entities according to the specific ABEs submitted in scope for the Assessment.

2 Product Functionality/Capability Overview

2.1 Intraway RTUSA – Product Overview

Service Activation is a major issue for CSP's who must both activate and manage multi-protocol / multi-vendor equipment across mobile, wireless and wireline networks.

This challenge has been magnified by the lack of comprehensive management tools able to handle the complex ecosystem from a single platform. The absence of a scalable management platform has been a factor that makes activation processes a complicated issue proven to be time consuming, impractical and expensive.

Intraway's Real-Time Universal Service Activator (RTUSA) **provides CSPs with the business agility** required to succeed in the digital world by providing **Real-Time Catalog-Driven Service Fulfillment and Resource Provisioning**.

CSPs partner with Intraway to **reduce the order-to-activate cycle time** and **decrease time to market** for new products and services. The activation platform **supports wireline, wireless, and mobile services for consumers and businesses** regardless of the underlying network technologies.

RTUSA is a **productized solution that can be quickly deployed and updated to support existing services and new technologies,** such as SDN/NFV, 5G and Ethernet to the Home.
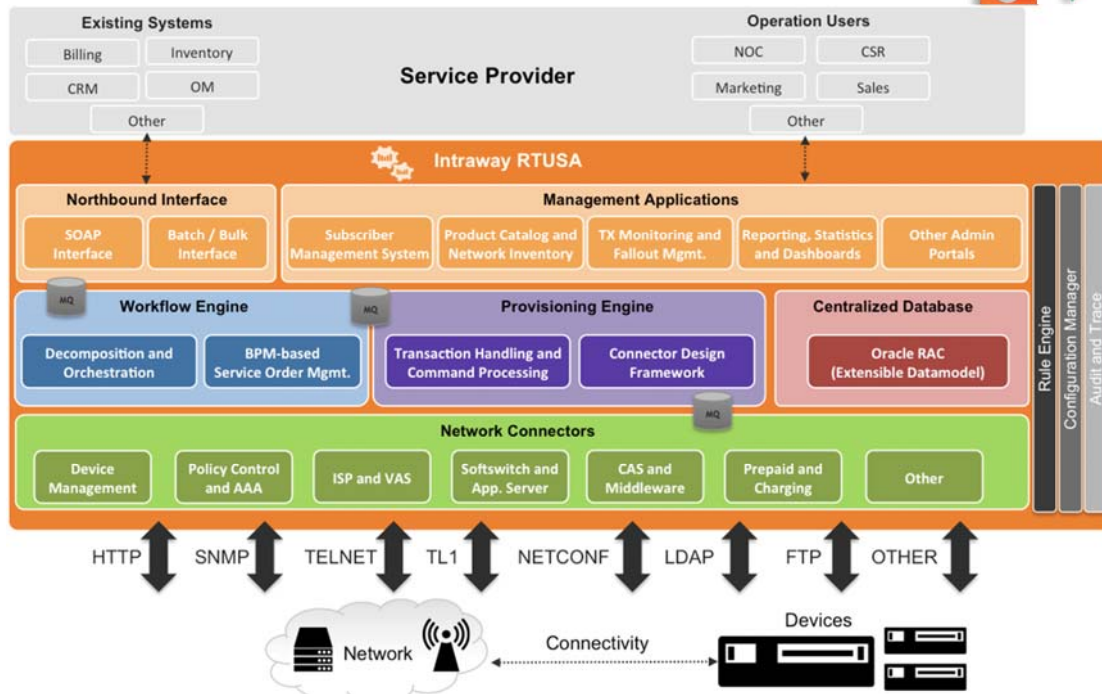
Key Benefits:

- **Fortifies the multi-play** business strategy and lowers operational costs by supporting activation of all relevant services, for both mobile and fixed networks, from a single, convergent platform.
- **Accelerates time-to-market** ensuring rapid deployment of new products and services even in those cases where new complex network interfaces are required.
- **Reduces costs** generated by integration efforts and staff training on a multi-vendor, multi-technology network.
- **Streamlines IT architecture and optimizes operations processes** by providing a single universal activation platform that assists to avoid silos and the need to develop ad-hoc systems and processes.
- **Enhances customer experience** by supporting Real-Time service management.

Key Features:

- **Single interface to northbound systems,** which abstracts complex southbound network protocols.
- **Highly configurable solution** that relies on a standard-oriented modular architecture with a powerful **rule engine** and an **extensible data model**.
- A real-time, **catalog-driven BPM-based workflow engine** that decomposes complex service orders and orchestrates the activation process within multiple network elements and systems.
- **Connector design framework** that makes it easy to design, develop, test and deploy interfaces with network devices using different protocols, such as Web Services, SNMP, TL1, Telnet, SSH, FTP, LDAP, CORBA, SQL, Netconf, among others.
- **Stateful design**, which provides detailed information about customers and subscriptions. This information is recorded in the system database to provide **consistent end-to-end data integrity and to feed powerful reporting and BI tools**.
- **Real-time and asynchronous order processing** support with load-balancing and priority-based queues.
- **Product catalog and network topology management** to support the service order decomposition and activation process.
- **Automatic rollback and fallout management** with support of partial and complete order resend.
- **Highly scalable carrier-grade architecture** with load balancing and failover support in all the system components.
- **SOA principles and guidelines from the industry-standard TM Forum Frameworx are followed** to provide a tight integration with existing systems and applications (such as OSS/BSS) while providing a stateful, policy-based, real-time activation of high-volume fixed and mobile services.
- **Web-based configuration and management applications with multi-tenant support,** enabling different business models such as: wholesale, MVNO and cloud-based.

3 Business Process Framework Assessment Overview

3.1 Mapping Technique Employed

Business Process Framework Level 4 descriptions are analyzed by looking for implied tasks. (This is similar to how process decomposition can use Semantic Analysis). Each Business Process Framework process is supported by descriptive text. In many cases, each process is aligned and mapped to appropriate company documentation references solution, methodology or modeling material.

Note that when a Level 3 process has not been decomposed to Level 4 processes, the implied tasks for the given Level 3 process are analyzed.

The Business Process Framework Level 4 descriptions (or Level 3 if appropriate) are analyzed by looking for implied tasks. Color coded text as highlighted below is used as part of the process mapping whereby highlighted text indicates the level of support for a Level 4 process implied task:

- GREEN is used to highlight key words or key statements that are fully supported
- YELLOW is used to highlight key words/key statements that are partially supported
- GREY is used to highlight key words/key statements that are not supported
- No highlighting is used for words/statements that are irrelevant, just for reference or needed to complete the sentence.

Manual and Automated Support
It is important to determine whether the implied task is supported by manual steps, automated steps, or a combination of both. In this document, "A", "M", or "AM" is used for each task to indicate that the step or steps is/are automated (A), manual (M), or both (AM).

TM Forum Note 1: When process mappings are presented against Level 4 processes, the mappings are provided against the text in the "Mandatory" field for the process. In the event of the Mandatory field not being used, the process mappings are in that case provided against the Level 4 Brief/Extended descriptions.

TM Forum Note 2: Note that if a Level 3 process has not been decomposed to Level 4 processes in the Business Process Framework, in such cases the process mapping support is provided against the Level 4 process descriptions (Brief & Extended).

3.2   Business Process Framework Level 2 Process Scope

The following figures represent the Business Process Framework Level 2 processes (high-lighted in blue) that were presented in scope for the assessment and that were assessed and support the corresponding Business Process Framework processes according to the results in Chapter 6 Frameworx Conformance.

Business Process Framework Level 2 Processes (OPS) – Intraway RTUSA v15.2 Scope
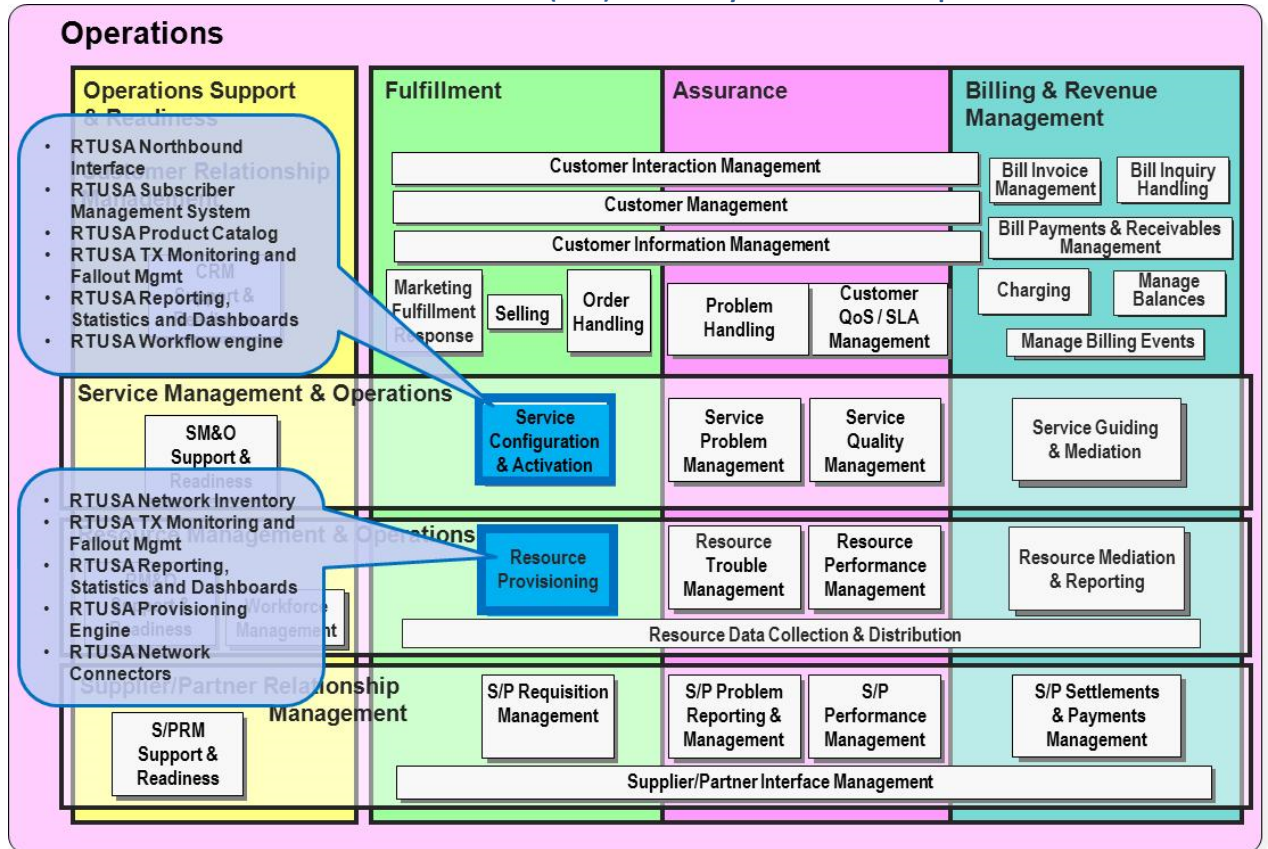
Figure 3-1 Operations Level 2 process coverage for Intraway RTUSA Assessment

The following diagram identifies the number of Level 3 processes that were submitted for assessment, for each Level 2 process that was submitted in scope for the Assessment.
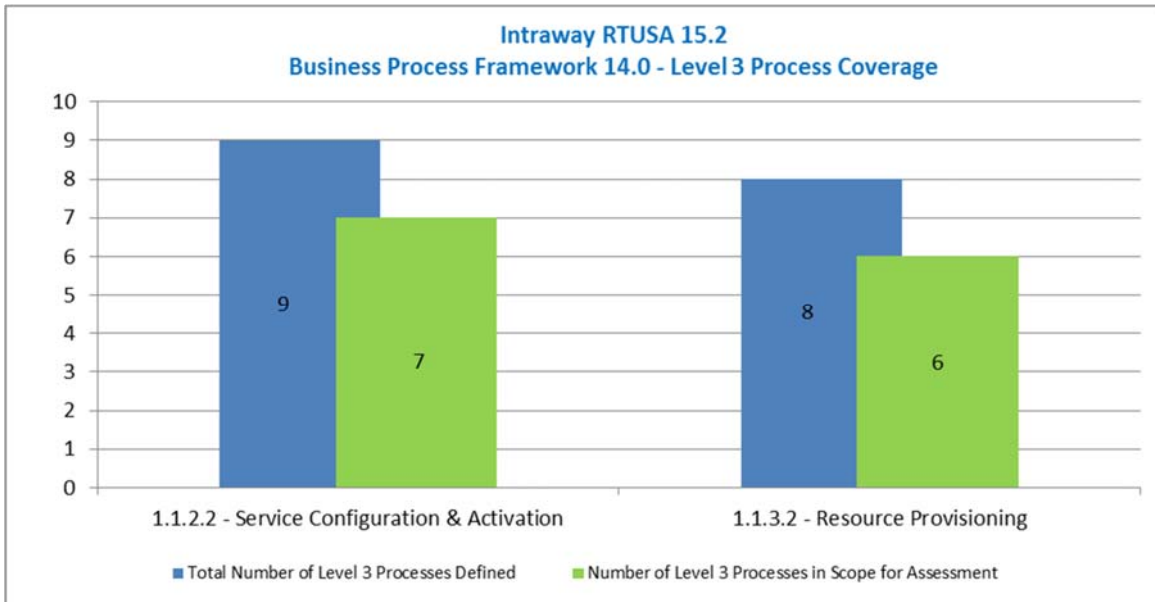
Figure 3-2 Level 3 process coverage for Intraway RTUSA Assessment

3.3   Product Scope

This diagram represents the Intraway RTUSA product.
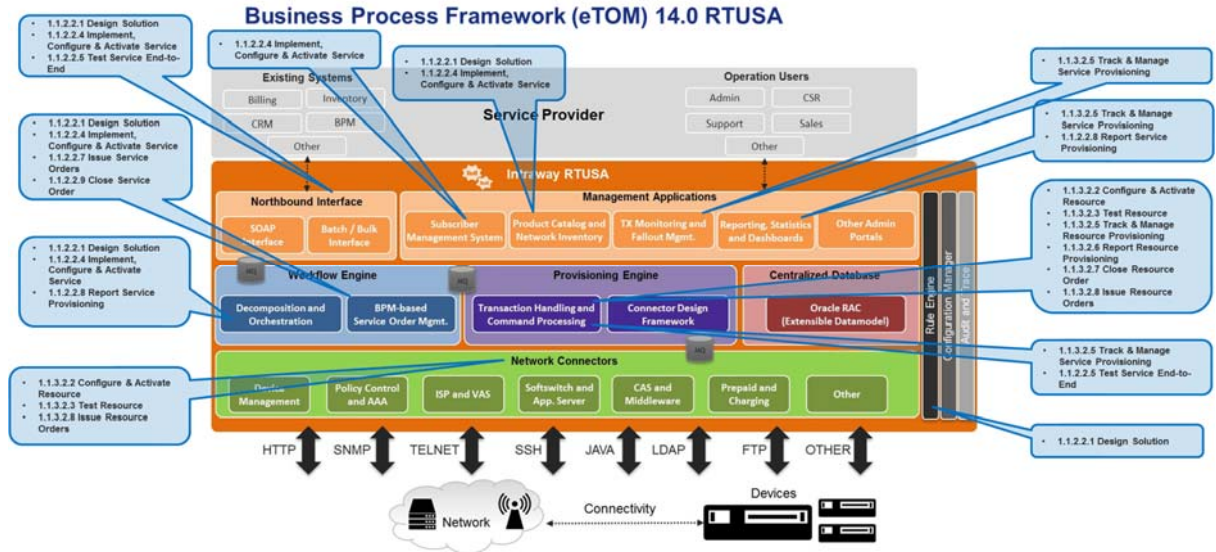
Figure 3-3 Intraway RTUSA Product Scope

4 Business Process Framework – Process Mapping Descriptions

This section provides the Process Mapping output from Intraway's Self-Assessment, which was reviewed by TM Forum Subject Matter Experts alongside supporting documentation for Intraway RTUSA.

4.1 L2: 1.1.2.2 Service Configuration & Activation Mapping Details

4.1.1 L3: 1.1.2.2.1 - Design Solution

4.1.1.1 *L4: 1.1.2.2.1.1 Develop Overall Service Design*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.2.2.1.1 Develop Overall Service Design
Brief Description
Develop an overall service solution design for a particular customer, including customer premises equipment, operational methods, resource assignments and pre-order feasibility; **M**
A service represents the way that a product is realized and delivered to a customer.
A service solution is designed in RTUSA Management Portal. The service solution is realized through the Service Catalog and Service Catalog Configuration specifications.
In RTUSA Management Service specification it is possible to configure customer premises equipment, operational methods, resource assignments and pre-order feasibility.

4.1.1.2 *L4: 1.1.2.2.1.2 Develop Service Implementation Plan*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.2.2.1.2 Develop Service Implementation Plan
Brief Description
Develop an implementation plan considering training and operational support measures and needs, such as the proper parameter information for the Service Quality Management process. **M**
RTUSA (Connector Design Framework) supports the development of an implementation plan for items such as resource specification and resource order type specification for Service Quality Management (SQM).
(Prov_order_type, Prov_order_param, prov_order_vendor, prov_order_item, prov_cmmand) "Órdenes de conector"
It is possible to configure service quality parameters for a particular type of equipment and configure attributes that describe vendor-specific features of the equipment.

LEVEL 4 PROCESS MAPPING DETAILS
1.1.2.2.1.3 Develop Detailed Service Design

Brief Description

Develop a detailed design identifying the relevant service orders to be issued to the Implement,

Configure & Activate Service process and the Allocate Specific Service Parameters to Services processes. **A**

RTUSA WE (Workflow Engine) supports this process. It receives service orders and decomposes those orders into network resources required for service provisioning

It verifies inventory of network resources and service catalog for validation and decomposition rules.

Finally, resource order provisioning is orchestrated by sending the necessary commands to the activation module

4.1.2 L3: 1.1.2.2.2 - Allocate Specific Service Parameters to Services (Not Assessed)

This process was not submitted for assessment.

4.1.3 L3: 1.1.2.2.3 - Track & Manage Service Provisioning

4.1.3.1 *L4: 1.1.2.2.3.1 – Assign Service Provisioning Activity*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.2.2.3.1 - Assign Service Provisioning Activity

Brief Description

Schedule, assign and coordinate service provisioning related activities. **A**

RTUSA has scheduling capabilities at NBI (Northbound Interface) level and at Connector design level. NBI service order support requested delivery date based on order parameter.

WE Executes and manages the life cycle of an order and manage the fulfillment of the services.

RTUSA WE is capable of registering the raw request from the BSS through NBI or the Web Portal, and the way in which the service orders are provisioned by assigning and coordinating related service provisioning activities to the appropriate connector.

WE decomposes the service order into small resource orders based on Catalogs and business rules and generates an orchestration plan.

4.1.3.2 *L4: 1.1.2.2.3.2 – Track Service Provisioning Activity*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.2.2.3.2 - Track Service Provisioning Activity

Brief Description

Undertake necessary tracking of the execution process. Monitor the jeopardy status of service orders, and escalating service orders as necessary. **A**

RTUSA Activity Monitor & Tracking generates alerts notifications.

It provides dashboards that display configured metrics and sets critical and warning threshold. It provides a consolidated view of critical aspects of a service such as availability, performance and status of any transaction.

Activity Monitor & Tracking supports alarms notification by sending SNMP trap to third-party centralized alarm systems.

AM&T has Fallout management capabilities which can send automatic notifications for escalating attention.

Ref.: RTUSA - Fallout Management.doc

L4: 1.1.2.2.3.3 – Manage Service Provisioning Activity

LEVEL 4 PROCESS MAPPING DETAILS
1.1.2.2.3.3 - Manage Service Provisioning Activity

Brief Description

Responsibilities of this processes include, but are not limited to:

- Generating the respective resource order creation request(s) to Issue Resource Orders based on specific service orders. **A**

RTUSA WE (Workflow Engine) supports this process. It receives service orders and decomposes those orders into resources orders required for service provisioning.

Finally, resource order provisioning is orchestrated by sending the necessary commands to the activation module

· Escalating status of service orders in accordance with local policy; · Undertaking necessary tracking of the execution process. **A**

RTUSA Activity Monitor & Tracking has jeopardy management capabilities which can generates alerts notifications.

AM&T has Fallout management capabilities which can send automatic notifications for escalating attention.

Notifications can be monitored and attended with manual tasks.

· Adding additional information to an existing service order;
· Modifying information in an existing service order. **AM**

There are a few ways to add or modify information to an existing service order:

Setup a manual task through Management Portal (UI).

External system (CRM, Portals, Order management, etc.) can submit a request order for update existing service order.

· Modifying the service order status; **AM**

The transition of order status are triggered by both implicit order processing (e.g. order completes) and explicit actions – such as submitting an order revision, or canceling or suspending or aborting an

order.

It is possible to cancel service order through Management Portal manual task or by submitted cancel order request.

· Canceling a service order when the initiating customer order is cancelled; **AM**

It is possible to cancel service order through Management Portal manual task.

External system (CRM, Portals, Order management, etc.) can submit a request order for cancel existing service order.

· Indicating completion of a service order by modifying the service order status. **A**

The status of the service order is automatically transitioned ("Completed") once all of its activities are completed

Interactions

Note that some specific service components may be delivered by suppliers/partners. In these cases the Track & Manage Service Provisioning process is responsible for initiating requests, through S/P Requisition Management for the delivery by the supplier/partner of the specific service components

4.1.4   L3: 1.1.2.2.4 - Implement, Configure & Activate Service

4.1.4.1   *L4: 1.1.2.2.4.1 – Configure Service*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.2.2.4.1 – Configure Service

Brief Description

Assess and plan the approach to be undertaken for configuration.

Re-use standard configuration and processes applicable to specific services. **AM**

RTUSA is capable of planning the configuration based on a Service order using the Connector Design Framework and this design can be re-use for similar specific services that are implemented in the network.

Configure and reconfigure specific services, including customer premises equipment if part of the service provider offering. **M**

New Services can be created and existing services can be changed according to the customer requirement. If new Equipment has to be added they can be added to the data model or extend the existing ones. Equipment is an important part in the SMS entity hierarchy.

Provide notifications as required if the configuration activity requires a planned outage or is likely to initiate false specific service alarm event notifications. **AM**

The Notification Management feature is flexible in order to create new event notifications during the execution of a WFE instance. Planned outages can be also supported by the Network Element Block/Resume capability provided by RTUSA.

Update the information contained in the service inventory as to the configuration of specific services and their status. **AM**

Service inventory information can be modified from the Management Portal manually and the refresh of these values is automatically or can be forced as well.

4.1.4.2   *L4: 1.1.2.2.4.2 – Implement Service*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.2.2.4.2 – Implement Service

Brief Description

Assess and plan the approach to be undertaken for implementation.

Re-use standard implementation processes applicable to specific services.

Implement specific services, including customer premises equipment if part of the service provider offering.

Provide notifications as required if the implementation activity requires a planned outage or is likely to initiate false specific service alarm event notifications. **M**

Similar to the planning this part resembles the implementation on what we defined in the previous configuration.

4.1.4.3 *L4: 1.1.2.2.4.3 – Activate Service*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.2.2.4.3 – Activate Service

Brief Description

Assess and plan the approach to be undertaken for activation.

Re-used standard activation processes applicable to specific services.

Provide notifications as required if the activation activity requires a planned outage or is likely to initiate false specific service alarm event notifications.

At the successful conclusion of this activity, the status of the specific services will be changed from allocated to activated, which means they are in-use. **AM**

Activation is finally done when the connector send the activation commands to the Network and the Services assigned to a Subscription is Activated, which means the birth certificate was successfully, created passing the SLA Quality Test. The Service is first allocated in the RTUSA and then automatically or on demand it is activated in the CSP network.

4.1.5 L3: 1.1.2.2.5 - Test Service End-to-End

4.1.5.1 *L4: 1.1.2.2.5.1 – Test Service*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.2.2.5.1 – Test Service
Brief Description
Test specific services to ensure all components are operating within normal parameters, and that the service is working to agreed performance levels before its activation for the customer. M   *RTUSA Management Portal has capability to test service end-to-end manually.*

4.1.5.2 *L4: 1.1.2.2.5.2 – Develop Service Test Plan*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.2.2.5.2 – Develop Service Test Plan
Brief Description
This process is responsible for developing appropriate test plans. M   *RTUSA supports the development of new test plans according to the services that have to be added to the platform. It consists on declaring new test methods created for particular Equipment Types and their associated Services and Products. Input and output parameters have to be defined in order to configure the test plans.*

4.1.5.3 *L4: 1.1.2.2.5.3 – Capture Service Test Results*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.2.2.5.3 – Capture Service Test Results
Brief Description
Capture and store the test results for historical and downstream testing comparison purposes. M   *RTUSA Management Portal registers all service end-to-end tests results for analytical reports.*

4.1.6 L3: 1.1.2.2.7 - Issue Service Orders

4.1.6.1 *L4: 1.1.2.2.7.1 – Assess Service Request*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.2.2.7.1 – Assess Service Request

Brief Description

This process assesses the information contained in the customer order, through a service order request, relating to the purchased product offering, initiating service process or supplier/partner initiated request, to determine the associated service orders that need to be issued. **A**

RTUSA Management Portal has capability to configure Product/Service catalog mapping the BSS product catalog.

NBI is the interface for external systems such as BSS/CRM or Web Portals.

Each BSS/OSS request order is online validated and analyzed. Then WE decomposes and orchestrates service order based on catalogs and business rules. Each order is evaluated on runtime based on context information and network inventory.

4.1.6.2 *L4: 1.1.2.2.7.2 – Create Service Order*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.2.2.7.2 – Create Service Order

Brief Description

Where, the initiating request or the purchased product offering has a standard set of associated service orders this process is responsible for issuing the service orders, and for creating a record of the relevant initiating request or customer order information and the associated service orders. **A**

RTUSA support extensible data model named EAV (Entity attribute values) in order to extend behavior of business entities .It enables Customer Orders information and any additional data can be stored.

Where the initiating request or the purchased product offering has special or unusual requirements, and a specific feasibility assessment and/or service design has been previously created, this process is responsible for issuing the service orders, and for creating a record of the relevant initiating request or customer order information and the associated service orders. **A**

This process is well handled by decomposition and orchestration features which break down the requested order items in several service orders based on workflow (BPM). Workflow instance process

orders according to priorities and processing types (Sync/Async)
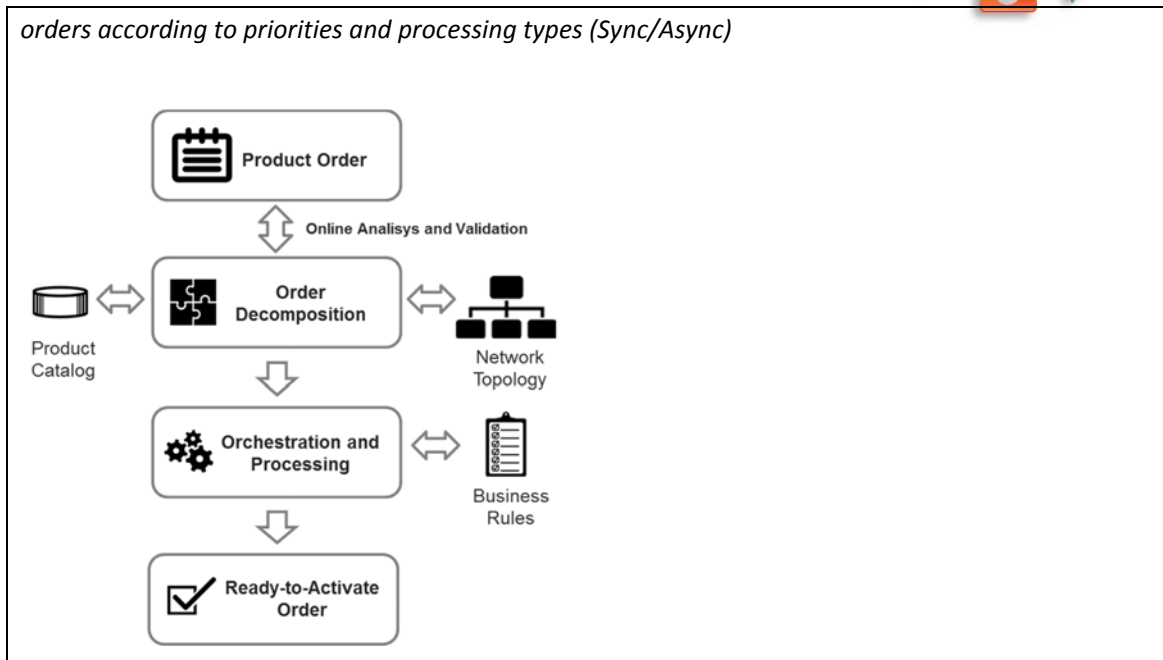
4.1.6.3 *L4: 1.1.2.2.7.3 – Mark Service Order for Special Handling*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.2.2.7.3 – Mark Service Order for Special Handling

Brief Description

Where the purchased product offering has special or unusual requirements, and a specific feasibility assessment and/or specific service design has not been previously created, this process marks the issued service order as requiring special handling. **AM**

This process is supported by RTUSA Fallout Management feature.

Fallout Management is responsible for management of manual steps within

a flow of an order within fulfillment process thereof. These manual steps could

caused due to errors, exceptions, or just a planned manual step.at the fallout event, workflow can be configured to take the following actions:

Notify fallout.

Management Portal able recovery status and reprocess the order marked as fallout.

4.1.7   L3: 1.1.2.2.8 - Report Service Provisioning

4.1.7.1   *L4: 1.1.2.2.8.1 – Monitor Service Order Status*

LEVEL 4 PROCESS MAPPING DETAILS 1.1.2.2.8.1 – Monitor Service Order Status

Brief Description

<mark>Responsible for continuously monitoring the status of service orders; record, analyze and assess the service order status changes.</mark> **A**

RTUSA Real-Time Monitor provide dashboards to monitor status of service orders in real time. It is possible to configure alarms in order to notify number of error transactions and other configurable threshold.

RTM provides a dashboard with a complete information about   status of service orders, number of orders in progress, complete with errors and number of orders per minute.

Real-Time Monitor also provides dashboards with status of each resource order (connector activity) related to one service order request.

Historical data is stored in database for further analytics reports.
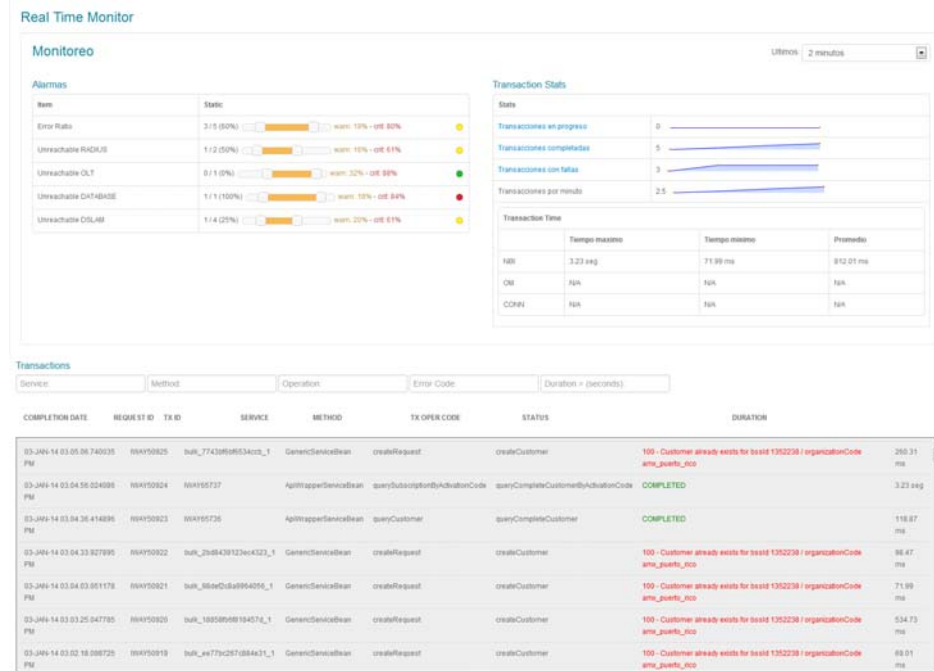
4.1.7.2   *L4: 1.1.2.2.8.2 – Distribute Service Order Notification*

LEVEL 4 PROCESS MAPPING DETAILS 1.1.2.2.8.2 – Distribute Service Order Notification
Brief Description Provide notifications of any changes the status of service orders. **A**   *WE provides capability to configure notifications events by status changes of service order at either the order item level or fulfillment state level.*

4.1.7.3   *L4: 1.1.2.2.8.3 – Distribute Service Provisioning Reports*

LEVEL 4 PROCESS MAPPING DETAILS 1.1.2.2.8.3 – Distribute Service Provisioning Reports
Brief Description Provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Service Configuration & Activation process. **AM**   *RTUSA Management Portal has management report capability. It is based on a Engine Report so it can be flexibly adapted to the CSP needs.*

LEVEL 3 PROCESS MAPPING DETAILS
1.1.2.2.9 Close Service Order

Brief Description

The objective of the Close Service Order processes is to close a service order when the service provisioning activities have been completed. These processes monitor the status of all open service orders, and recognize that a service order is ready to be closed when the status is changed to completed. **A**

In RTUSA, the order is considered "closed" when all processing tasks are complete. The final state of the order is "Completed"

4.1.9   L3: 1.1.2.2.10 - Recover Service (Not Assessed)

This process was not submitted for assessment.

4.1.10 Supporting Evidence References (Works Cited)

RTUSA – Connector Design Framework

RTUSA – MGMT Portal User Manual

RTUSA – Fallout Management

RTUSA – Provisioning Framework

RTUSA – Resource Configuration Guide

Abbreviations References:
CDF   Connector Design Framework
NBI   Northbound Interface
NE   Network Element
RTM   Real-Time Monitor
RTUSA   Real-Time Universal Service Activator
WE   Workflow Engine

4.1.11 Service Configuration & Activation (1.1.2.2) – Conformance Scores

Table 4-1 Service Configuration & Activation (1.1.2.2) – Conformance Scores

Level 2: 1.1.2.2 - Service Configuration & Activation (07/09)		
Level 3 Process	Level 4 Process	L4/L3 Process Score
1.1.2.2.1 - Design Solution		5
	1.1.2.2.1.1 - Develop Overall Service Design	100%
	1.1.2.2.1.2 - Develop Service Implementation Plan	100%
	1.1.2.2.1.3 - Develop Detailed Service Design	100%
1.1.2.2.2 - Allocate Specific Service Parameters to Services		
1.1.2.2.3 - Track & Manage Service Provisioning		5
	1.1.2.2.3.1 - Assign Service Provisioning Activity	100%
	1.1.2.2.3.2 - Track Service Provisioning Activity	100%
	1.1.2.2.3.3 - Manage Service Provisioning Activity	100%
1.1.2.2.4 - Implement, Configure & Activate Service		5
	1.1.2.2.4.1 - Configure Service	100%
	1.1.2.2.4.2 - Implement Service	100%
	1.1.2.2.4.3 - Activate Service	100%
1.1.2.2.5 - Test Service End-to-End		5
	1.1.2.2.5.1 - Test Service	100%
	1.1.2.2.5.2 - Develop Service Test Plans	100%
	1.1.2.2.5.3 - Capture Service Test Results	100%
1.1.2.2.7 - Issue Service Orders		5
	1.1.2.2.7.1 - Assess Service Request	100%
	1.1.2.2.7.2 - Create Service Orders	100%
	1.1.2.2.7.3 - Mark Service Order for Special Handling	100%
1.1.2.2.8 - Report Service Provisioning		5
	1.1.2.2.8.1 - Monitor Service Order Status	100%
	1.1.2.2.8.2 - Distribute Service Order Notification	100%
	1.1.2.2.8.3 - Distribute Service Provisioning Reports	100%
1.1.2.2.9 - Close Service Order		5
1.1.2.2.10 - Recover Service		

4.2 L2: 1.1.3.2 - Resource Provisioning

4.2.1 L3: 1.1.3.2.1 - Allocate & Install Resource (Not Assessed)

This process was not submitted for assessment.

4.2.2 L3: 1.1.3.2.2 - Configure & Activate Resource

4.2.2.1 L4: 1.1.3.2.2.1 – Configure Resource

LEVEL 4 PROCESS MAPPING DETAILS
1.1.3.2.2.1 – Configure Resource

Brief Description

This process assesses and plans the approach to be undertaken for configuration. It configures and reconfigures specific resources, including customer premises equipment if part of the resource provider offering.   It provides notifications as required if the configuration activity requires a planned outage or is likely to initiate false specific resource alarm event notifications. It update the information contained in the resource inventory as to the configuration of specific resources and their status. **AM**

WE is in charge of decompose and orchestrate service orders.
The orchestration plan specifies the activities required to fulfill the order.
Intraway WE is a business process executor based on Business Process Model and Notation (BPMN) and some specific extensions. WFE executes a group of Orders Each Order has only one Order Type. Each Order Type has only one Process Definition. Each Order executes a Process Instance, based on the Process Definition (defined in Order Type).
The input of a Process Instance is the input of the Order. For each order item in the customer order, WE determines the process and tasks to fulfill them, handles the sequence, priorities and dependencies between them.
We decompose service orders into resource orders required for service provisioning and verify network resources and service catalog. Then RTUSA resource provisioning process each resource order and transforms them into provisioning scripts, based on network resource inventory and resource catalog, for necessary network elements.
Finally, resource order provisioning is orchestrated by executing the necessary commands to the NE. Connectors are components generated by CDF in order to orchestrate resource orders, generate provisioning scripts and execute commands to the NEs. CDF is able to easily design, develop, test and deploy interfaces with network devices using different protocols. It handles different network interfaces for specific NE type and/or specific vendor-model-version and technologies. These Interfaces allow the platform to share the same group of provisioning commands according to the defined granularity. E.g.: we can create a DSL interface for an exclusive vendor and all commands for that type and vendor will be shared within network elements that support DSL for that particular vendor. This example shows how the platform can reuse provisioning configuration among different network elements.

4.2.2.2 *L4: 1.1.3.2.2.2 – Implement Resource*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.3.2.2.2 – Implement Resource

Brief Description

It implements specific resources, including customer premises equipment if part of the resource provider offering. It provides notifications as required if the implementation activity requires a planned outage or is likely to initiate false specific resource alarm event notifications. **A**

WE define the fulfilment process workflow for specific product type.

A Fulfilment Provisioning workflow provides implementation of all the actions on a specific resource which is re-usable in many service order specification processes

It provides notifications as required if the implementation activity requires a planned outage or is likely to initiate false specific resource alarm event notifications. **AM**

Task can be added in the service order specification process workflow (WE) to notify an external system that a planned outage is required or the generation of false alarm may be produced. This task can be re-used in other service order specification workflow.

4.2.2.3 *L4: 1.1.3.2.2.3 – Activate Resource*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.3.2.2.3 – Activate Resource

Brief Description

This process assesses and plans the approach to be undertaken for activation. It provides notifications as required if the activation activity requires a planned outage or is likely to initiate false specific resource alarm event notifications.   At the successful conclusion of this activity, the status of the specific resources will be changed from allocated to activated, which means they are in-use. **AM**

WE is in charge of decompose and orchestrate service orders. The orchestration plan specifies the activities required to fulfill the order. Intraway WE is a business process executor based on Business Process Model and Notation (BPMN) and some specific extensions. WFE executes a group of Orders Each Order has only one Order Type.
Each Order Type has only one Process Definition. Each Order executes a Process Instance, based on the Process Definition (defined in Order Type).

WE handles service order process workflow and services and resources are configured in the service and resource catalogs.

When a resource is activated its status change to "Activated" and the Activation Date related to it is updated as well. Notifications for service activation are informed, notified and registered for future

analysis.
It is possible to send a notification through the NBI module in order to schedule a Network Element block request to fulfill an outage plan request.

4.2.3 L3: 1.1.3.2.3 - Test Resource

4.2.3.1 *L4: 1.1.3.2.3.1 – Test Specific Resources*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.3.2.3.1 – Test Specific Resources
Brief Description
This process tests specific resources against supplier/partner defined test plans, or against test plans developed by the service provider. **AM**
Before service activation is completed a birth certificate is created. This process executes a resource quality test and its results are stored for future analytics reports. The birth certificate can be executed on demand.

4.2.3.2 *L4: 1.1.3.2.3.2 – Develop Test Plans*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.3.2.3.2 – Develop Test Plans
Brief Description
Where appropriate test plans are not available this process is responsible for developing appropriate test plans. **M**
If required, test plan can be configured as a new task in an existing activation workflow.

4.2.3.3 *L4: 1.1.3.2.3.3 – Capture Test Results*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.3.2.3.3 – Capture Test Plans
Brief Description
Capture and store the test results for historical and downstream testing comparison purposes. **A**
Birth Certificate is a resource quality test and its results are stored for future analytics reports. This task is required for service activation process. The output results of this task are required for SLA conformance.

4.2.4   L3: 1.1.3.2.5 - Track & Manage Resource Provisioning

4.2.4.1   *L4: 1.1.3.2.5.1 – Coordinate Resource Provisioning Activity*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.3.2.5.1 – Coordinate Resource Provisioning Activity

Brief Description

This process schedules, assigns and coordinates resource provisioning related activities. **A**

Scheduling, Coordination and assigning of this scheduling is done by the WE. WE is in charge of decomposing and orchestrating service orders. The orchestration plan specifies the activities required to fulfil the order. Intraway WE is a business process executor based on Business Process Model and Notation (BPMN) and some specific extensions. WFE executes a group of Orders each Order has only one Order Type.
Each Order Type has only one Process Definition. Each Order executes a Process Instance, based on the Process Definition (defined in Order Type).
WE handles service order process workflow and services and resources are configured in the service and resource catalogs.

Scheduling is managed by NBI by indicating a particular attribute called "Scheduled Date". When this attribute species a date in the future the WE realizes that this service order has to wait for the schedule date to be executed.

4.2.4.2   *L4: 1.1.3.2.5.2 – Track Resource Provisioning Activity*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.3.2.5.2 – Track Resource Provisioning Activity

Brief Description

This process tracks the order execution process. **A**

RTUSA is capable of tracking execution process through monitoring tools. Service and Resource Orders are tracked through the Historical Transaction module and the Real-Time Monitor application. At any time they report Service and Resource Order Status, as well as inputs, outputs and trace logs for each of them.

4.2.4.3 *L4: 1.1.3.2.5.3 – Manage Resource Provisioning Activity*

LEVEL 4 PROCESS MAPPING DETAILS **1.1.3.2.5.3 – Manage Resource Provisioning Activity**

Brief Description

This process escalates resource orders in accordance with local policy, adds information to an existing resource order, modifies information in an existing resource order, cancels a resource order when the initiating service order is cancelled, and also modifies the resource order status, including setting it to complete when the resource order has been fulfilled. **A**

Resource order management is handled by RTUSA Connector module. It manages all resource orders sent by WE. The connector is a fully configurable software component that allows Intraway to quickly develop orders to be able to execute commands on different network elements. This is possible since the support large number of protocols.
Orders are the main connector configuration item, the concept of an order is "something to execute on one network element", it can be for example "configure a dslam port", "add a radius subscriber", "query a router version". Orders may include one or many commands, as you may guess from the samples provided, "configure a dslam port" can include more than one telnet command while "query a router version" maybe can be solved with only one telnet command.
When NBI receives the order, it Validates the order data, Order is then assessed by WE which decomposes it into small resource orders based on catalogs and business rules and those are orchestrated.

RTUSA supports the capability to send Resource Orders to Fallout State in case the Order completes with warnings (no major errors, no rollbacks involved). When a Resource Order is sent to Partial Fallout it can be managed and escalated in order to take two actions: it can be manually cancelled by appropriate roles or it can be executed again by modifying some parameters related to it. After cancelling or executing the Order it will be set to completed status.

4.2.4.4 *L4: 1.1.3.2.5.4 – Update Resource Repository*

LEVEL 4 PROCESS MAPPING DETAILS **1.1.3.2.5.4 – Update Resource Repository**

Brief Description

Update resource state and status. **A**

RTUSA is capable of updating the Resource Catalog by receiving modification Orders for Resources and Enabling/Disabling Entities related to them. RTUSA is in charge of blocking and resuming Network Resources, Physical and Logical.

4.2.5   L3: 1.1.3.2.6 - Report Resource Provisioning

4.2.5.1   *L4: 1.1.3.2.6.1 – Monitor Resource Order Status*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.3.2.6.1 – Monitor Resource Order Status
Brief Description
This process is responsible for continuously monitoring the status of resource orders. **A**
RTUSA can monitor Resource Orders through the Real-Time Monitor Application where the Resource Orders are listed by Network Element and Status. Details on each Order can be verified in the Network Operations Application.

4.2.5.2   *L4: 1.1.3.2.6.2 – Resource Order Notification*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.3.2.6.2 – Resource Order Notification
Brief Description
This process is responsible for managing notifications to processes and other parties registered to receive notifications of any status changes. **A**
RTUSA has a Notification Manager module that can be configured in order to send notifications to registered parties (pre-configured) that need to be aware of certain activities that occur at Resource Order level.

4.2.5.3   *L4: 1.1.3.2.6.3 – Distribute Resource Provisioning Reports*

LEVEL 4 PROCESS MAPPING DETAILS
1.1.3.2.6.3 – Distribute Resource Provisioning Reports
Brief Description
This process records, analyzes and assesses the resource order status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Resource Provisioning process, including specific reports required by specific audiences. **A**
RTUSA provides a reporting server that allows to easily configure the reports that need to be informed for strategic decisions. All Resource Order changes are registered and they can be part of a report in order to be aware of the effectiveness and efficiency of the process.

LEVEL 3 PROCESS MAPPING DETAILS
1.1.3.2.7– Close Resource Order

Brief Description

The objective of the Close Resource Order processes is to close a resource order when the resource provisioning activities have been completed. **A**

When a Resource Order is fully completed the Connector sets the Status to PASS or ERROR, PASS and ERROR are similar to CLOSED.

These processes monitor the status of all open resource orders, and recognize that a resource order is ready to be closed when the status is changed to completed. **A**

When a Resource Order is fully completed the WFE gathers the information regarding each individual transaction, analyses their results and set Service Order Status to COMPLETED (CLOSED) as a final status for the Service Order.

4.2.7 L3: 1.1.3.2.8 - Issue Resource Orders

4.2.7.1 . L4: 1.1.3.2.8.1 – Assess Resource Request

LEVEL 4 PROCESS MAPPING DETAILS
1.1.3.2.8.1 – Assess Resource Request

Brief Description
This process assesses the information contained in the service order, through a resource order request, initiating resource process request or supplier/partner initiated request, to determine the associated resource orders that need to be issued. **A**   *WE is responsible for creating the necessary commands and information to send to the Connector module. The Service Order is transformed into a Resource Order and begins the resource provisioning process.*

4.2.7.2 . L4: 1.1.3.2.8.2 – Create Resource Orders

LEVEL 4 PROCESS MAPPING DETAILS
1.1.3.2.8.2 – Create Resource Orders

Brief Description
Where the initiating request or the purchased product offering has a standard set of associated resource orders this process is responsible for issuing the resource orders, and for creating a record of the relevant initiating request or customer order information and the associated resource orders. Where the initiating request or the purchased product offering has special or unusual requirements, and a specific feasibility assessment and/or resource design has been previously created, this process is responsible for issuing the resource orders, and for creating a record of the relevant initiating request or customer order information and the associated resource orders. **A**   *WE is responsible for creating the necessary commands and information to send to the Connector module. The Service Order is transformed into a Resource Order and begins the resource provisioning process.*   *WE also register relevant information regarding the initial request that triggers the Resource Order creation. These orders registration can be verified in the Historical Transaction application.*

LEVEL 4 PROCESS MAPPING DETAILS 1.1.3.2.8.3 – Mark Resource Order for Special Handling
Brief Description Where the purchased product offering has special or unusual requirements, and a specific feasibility assessment and/or specific resource design has not been previously created, this process marks the issued resource order as requiring special handling, and passes management for further processing to the Track & Manage Resource Provisioning process. **AM** *Special Handling is taken when a resource order reaches a particular status. If the order fails due to lack of information it can be rejected or treated in fallout status. Sending an order to Fallout is the way RTUSA marks an Order for Special Handling.* If special requirements are requested through the purchase of a product this can be modelled through new attributes received by the NBI and new behavior can be added to the NBI and the WFE to react accordingly.

4.2.8   L3: 1.1.3.2.9 - Recover Resource (Not Assessed)

This process was not submitted for assessment.

4.2.9 Supporting Evidence References (Works Cited)

RTUSA – Connector Design Framework

RTUSA – MGMT Portal User Manual

RTUSA – Fallout Management

RTUSA – Provisioning Framework

RTUSA – Resource Configuration Guide

Abbreviations References:
CDF   Connector Design Framework
NBI   Northbound Interface
NE   Network Element
RTM   Real-Time Monitor
RTUSA   Real-Time Universal Service Activator
WE   Workflow Engine

4.2.10 Resource Provisioning (1.1.3.2) – Conformance Scores

Table 4-2 Resource Provisioning (1.1.3.2) – Conformance Scores

Level 2: 1.1.3.2 - Resource Provisioning (06/08)		
Level 3 Process	**Level 4 Process**	**L4/L3 Process Score**
1.1.3.2.1 - Allocate & Install Resource		
1.1.3.2.2 - Configure & Activate Resource		5
	1.1.3.2.2.1 - Configure Resource	100%
	1.1.3.2.2.2 - Implement Resource	100%
	1.1.3.2.2.3 - Activate Resource	100%
1.1.3.2.3 - Test Resource		5
	1.1.3.2.3.1 - Test Specific Resources	100%
	1.1.3.2.3.2 - Develop Test Plans	100%
	1.1.3.2.3.3 - Capture Test Results	100%
1.1.3.2.5 - Track & Manage Resource Provisioning		5
	1.1.3.2.5.1 - Coordinate Resource Provisioning Activity	100%
	1.1.3.2.5.2 - Track Resource Provisioning Activity	100%
	1.1.3.2.5.3 - Manage Resource Provisioning Activity	100%
	1.1.3.2.5.4 - Update Resource Repository	100%
1.1.3.2.6 - Report Resource Provisioning		5
	1.1.3.2.6.1 - Monitor Resource Order Status	100%
	1.1.3.2.6.2 - Distribute Resource Order Notification	100%
	1.1.3.2.6.3 - Distribute Resource Provisioning Reports	100%
1.1.3.2.7 - Close Resource Order		5
1.1.3.2.8 - Issue Resource Orders		5
	1.1.3.2.8.1 - Assess Resource Request	100%
	1.1.3.2.8.2 - Create Resource Orders	100%
	1.1.3.2.8.3 - Mark Resource Order for Special Handling	100%
1.1.3.2.9 - Recover Resource		

5 Information Framework Assessment Overview

5.1 Mapping Technique Employed

The certification scope defines the list of Information Framework (SID) ABEs (Aggregate Business Entities) for which mapping support is reviewed during the assessment. For each of the ABEs defined in scope for the assessment, the organization undergoing the assessment must map their information model to the core entities and dependent entities and the required & optional attributes for each entity, as defined in the SID model, according to what is supported for the product/solution under assessment.

5.2 Information Framework Assessment - ABE Scope

The diagram in Figure 5-1 illustrates the Information Framework Level 1 ABEs (as highlighted in blue) that were presented in scope for the Assessment.
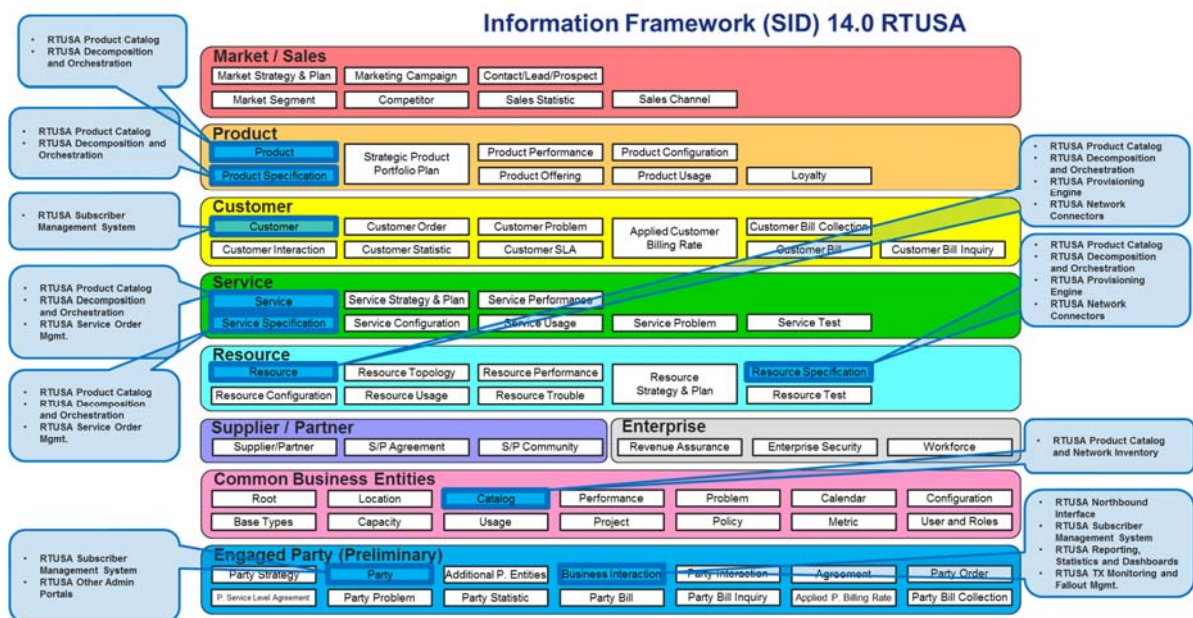

Figure 5-1 Level 1 ABEs in scope for Intraway RTUSA Assessment

5.3 Product Scope

The diagram in Figure 5-2 represents the mapping of Intraway RTUSA to the Information Framework ABEs in scope for the assessment.
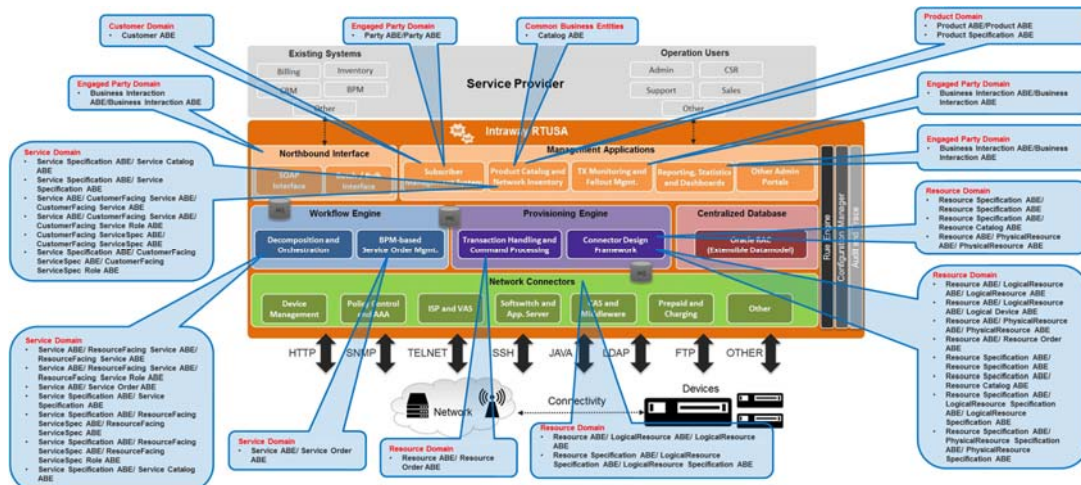

Figure 5-2 Intraway RTUSA Footprint: Product Scope for SID Assessment

6   Frameworx Conformance Result

This section details the Scores awarded to reflect Conformance of Intraway RTUSA 15.2 to the Business Process Framework & Information Framework components of Frameworx 14.0.

6.1   Business Process Framework – Scoring Rules

The conformance scores granted were based on the following TM Forum scoring rules:

Frameworx 14.0 Conformance Certification (Product/Solution/Implementation)		
Business Process Framework (eTOM) - Conformance Score Methodology		
Process Level	Conformance Score	Qualifier
Level 1 Process	Not applicable	Conformance Assessment shall not be carried out at this process level.
Level 2 Process	Not applicable	A conformance level is not awarded to Level 2 processes in Frameworx Certification. The Certification Report shall highlight the coverage within a Level 2 process submitted in scope for an Assessment, in terms of number of Level 3 processes submitted for assessment out of the total number defined in the Business Process Framework for the Level 2 process.
Level 3 Process	Conformance Score is awarded between 3.1 & 5.0	The Conformance Score is awarded for each Level 3 process submitted in scope for the Assessment. The Conformance Score awarded can be a value between 3.1* & 5 depending on the level of coverage & conformance to the Level 3 process based on the alignment to the level 3 Implied Tasks as decomposed in the Level 4 process definitions. If a Level 3 process has not been decomposed to Level 4 processes, the Level score is awarded according to alignment to the Level 3 defined Implied Tasks.
Level 4 Process	Level of conformance is calculated as input to parent Level 3 Process Score	Levels of conformance are calculated for Level 4 processes according to alignment to the individual implied tasks. Level 4 scores are summed and averaged to given an overall score for the parent Level 3 process.
* In earlier Conformance Assessments, scores were awarded to Level 1 & Level 2 processes using values 1 through to 3. For this reason, the Level 3 scores start from > 3.		

Figure 6-1 TM Forum Business Process Framework: Conformance Scoring Rules

Additional Notes

1. *Level 1 processes shall be presented to define the assessment scope only. i.e. they shall not be assessed as self-contained processes since the level of detail is not considered sufficient. A conformance level shall not be awarded for Level 1 processes.*

2. *Level 2 processes shall be presented to define the assessment scope only. i.e. they shall not be assessed as self-contained processes since the level of detail is not considered sufficient. A conformance level shall not be awarded for Level 2 processes. However, the Certification Report shall provide good indication of the coverage of the Level 2 process in terms of number of contained Level 3 processes submitted in scope for the Assessment.*

3. *The Conformance Assessment shall be carried out at process level 3. For each Level 3 process, conformance shall be deduced according to the support for the process implied tasks, as decomposed and described in the underlying Level 4 process descriptions. The score awarded for a Level 3 process, is deduced according to the support mapped to the Level 4 processes/Implied Tasks. This provides finer granularity of scoring than in Assessment prior to Frameworx 12.0 based Assessments.*

4. *In evaluating conformance to the standards, manual intervention shall not impact the conformance score granted. However, any level of manual support shall be noted in the Conformance Report and Detailed Results Report. This note specifically applies to Product & Solution Assessments.*

5. *Processes that are supported via manual implementation only, are not considered in scope for the Assessment. This note specifically applies to Product & Solution Assessments.*

6.2 Business Process Framework – Conformance Result Summary

The graphs in this section provide an overview of the conformance levels granted to the Level 3 Processes presented in scope for the Intraway RTUSA. Each Level 3 process was measured using a Business Process Framework (eTOM) conformance score according to level of Conformance – Full Conformance or Partial Conformance as described in section 6.1 Business Process Framework – Scoring Rules.
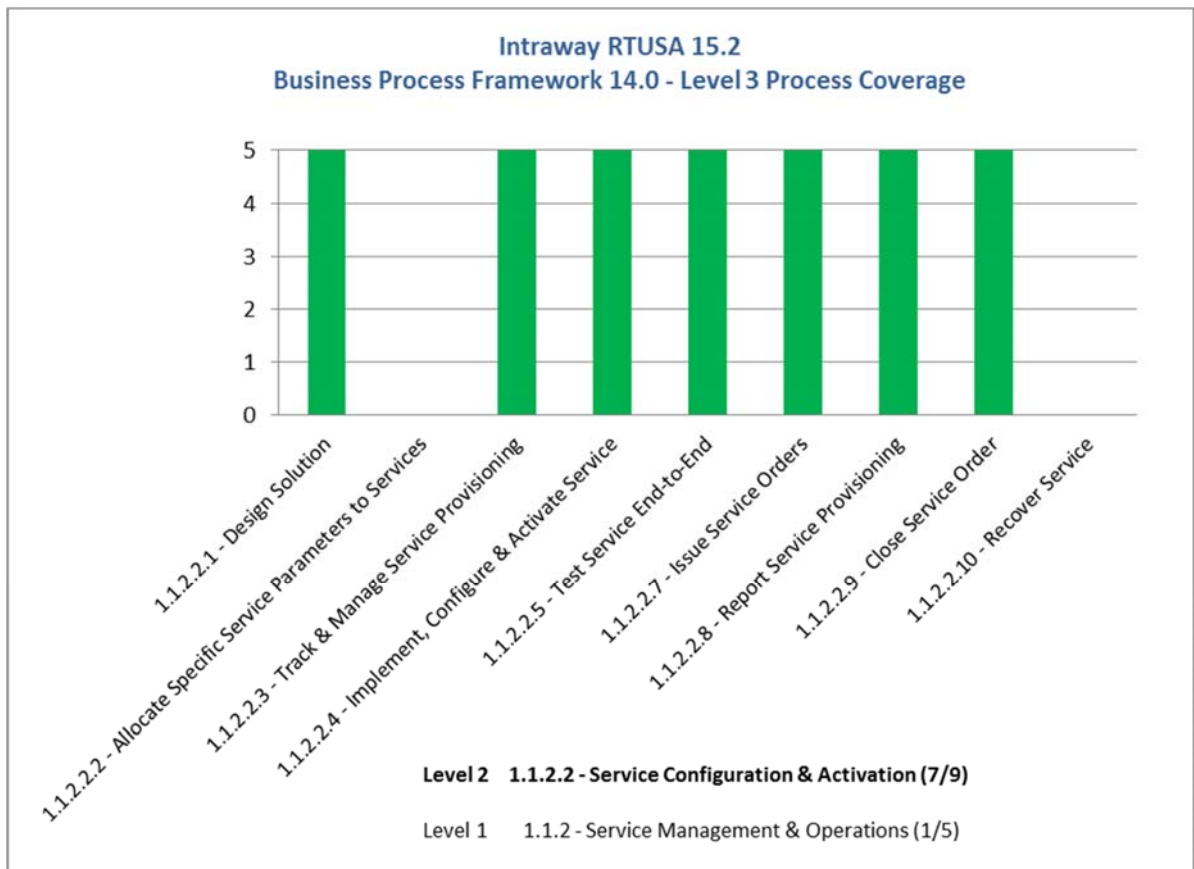
Figure 6-2 Business Process Framework: Conformance Result Summary [1/2]

Intraway RTUSA 15.2
Business Process Framework 14.0 - Level 3 Process Coverage

Level 1.1.3.2 - Resource Provisioning (6/8)

Level 1 1.1.3 - Resource Management & Operations (1/7)
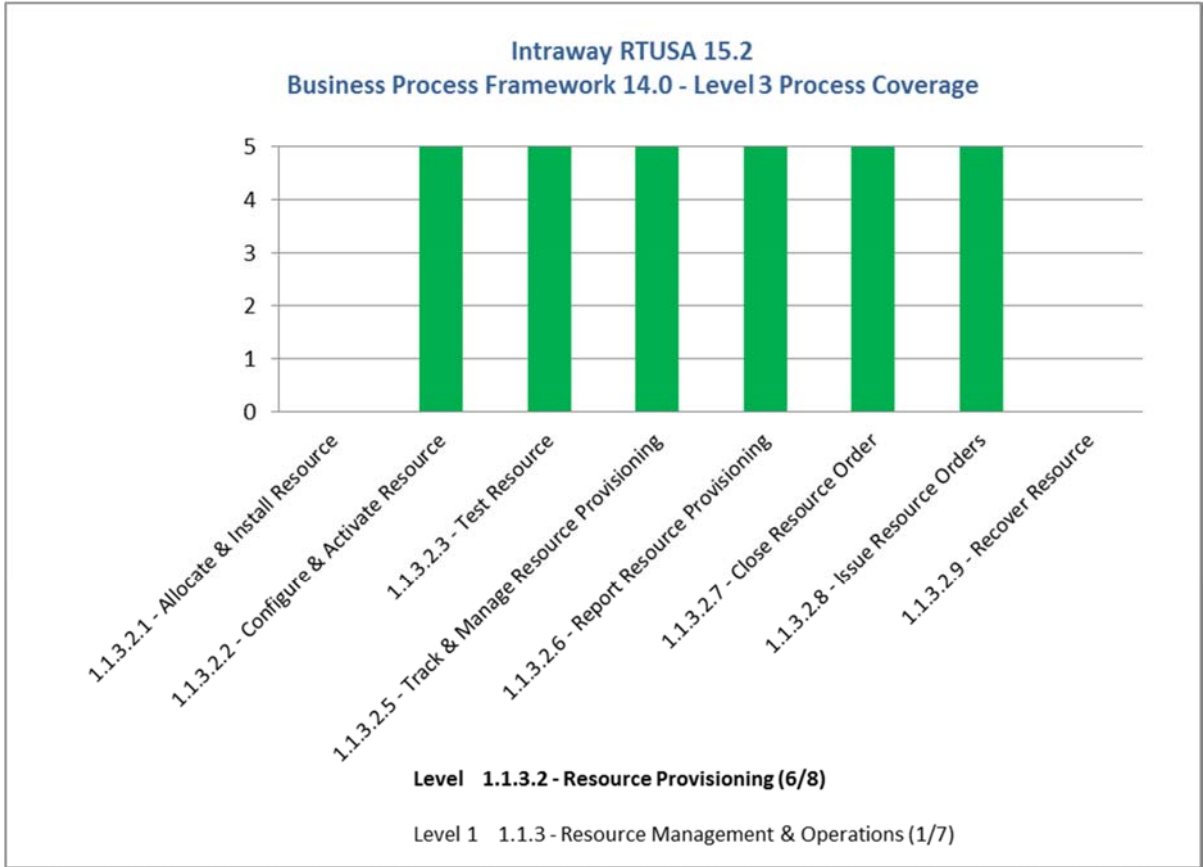
Figure 6-3 Business Process Framework: Conformance Result Summary [2/2]

6.3 Business Process Framework – Detailed Conformance Results

The following table provides a more detailed breakdown of the scores awarded with some additional commentary

Table 6-1 Business Process Framework: Detailed Conformance Results

Intraway RTUSA v15.2 Business Process Framework v14.0 - Conformance Results			
Level 1: 1.1.2 - Service Management & Operations			
Level 2: 1.1.2.2 - Service Configuration & Activation [7/9]			
	1.1.2.2.1 - Design Solution	**5.0**	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
	1.1.2.2.2 - Allocate Specific Service Parameters to Services	*N/A*	*This process was not submitted for assessment.*
	1.1.2.2.3 - Track & Manage Service Provisioning	**5.9**	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM)**.**
	1.1.2.2.4 - Implement, Configure & Activate Service	**5.0**	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM)**.**
	1.1.2.2.5 - Test Service End-to-End	**5.0**	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM)**.**
	1.1.2.2.7 - Issue Service Orders	**5.0**	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM)**.**
	1.1.2.2.8 - Report Service Provisioning	**5.0**	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM)**.**

	1.1.2.2.9 - Close Service Order	**5.0**	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
	1.1.2.2.10 - Recover Service	*N/A*	*This process was not submitted for assessment.*
Level 1: 1.1.3 - Resource Management & Operations
Level 2: 1.1.3.2 - Resource Provisioning [6/8]
	1.1.3.2.1 - Allocate & Install Resource	*N/A*	*This process was not submitted for assessment.*
	1.1.3.2.2 - Configure & Activate Resource	**5.0**	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
	1.1.3.2.3 - Test Resource	**5.0**	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM)**.**
	1.1.3.2.5 - Track & Manage Resource Provisioning	**5.0**	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM)**.**
	1.1.3.2.6 - Report Resource Provisioning	**5.0**	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
	1.1.3.2.7 - Close Resource Order	**5.0**	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).

	1.1.3.2.8 - Issue Resource Orders	**5.0**	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
	1.1.3.2.9 - Recover Resource	*N/A*	*This process was not submitted for assessment.*

6.4 Information Framework – Scoring Rules

As of Frameworx 14.0 Conformance Assessments, TM Forum award two categories of conformance scoring to the Information Framework assessment as follows:

- **Information Framework Maturity** Conformance Levels
- **Information Framework Adoption** Conformance Scores

This section describes the basis of scoring for each of these categories.

6.4.1 Information Framework Maturity Conformance Scoring Methodology

The Information Framework Maturity Conformance scores are granted based on the detailed scoring guidelines outlined in
Table 6-2.

Maturity conformance is based on a progressive scoring system - i.e. a lowest level ABE must conform completely to the conformance criteria at one score level before proceeding to the next level.

For example, to achieve a score of 3 there must be equivalence to all the required attributes of the ABE's core entity.

A decimal scoring system is utilized to show the per cent achievement towards the next level.

With the Information Framework Maturity Conformance scoring, no further contribution to the score is made for equivalence to the ABE's remaining dependent entities and other SID components. For example, no further contribution to the score is made even if there is equivalence to 8 of the ABE's 10 dependent entities.

As of Frameworx 14.0 based Conformance Assessments, to recognize the overall adoption of the Information Framework SID Information model, the Information Framework Adoption Scoring system is applied. See 6.4.2 Information Framework Adoption Conformance Scoring Methodology for details of this Conformance category.

Information Framework R14.0: Maturity Conformance Scoring Guidelines	
Maturity Conformance Level	**Progressive Scoring Qualifiers**
Non Conformance [Score = 1]	The content of the model is compatible with a subset of the Information Framework (SID) ABEs that define its domain coverage. This provides two interacting components/solutions with a common vocabulary and model structure. The subset represents the scope of the model, expressed in Information Framework (SID) domains and ABEs.
Non Conformance [Score = 2]	The model has passed level 1 conformance and the content of the ABE, part of the domain coverage and defined in the model, contains the ABE's core business entity or entities. A core business entity is an entity upon which other entities within the ABE are dependent. E.g. Service in the Service ABE. A core entity is also an entity whose absence in the ABE would make the ABE incomplete.
Very Low Conformance [2.0 < Score <= 3.0]	The model has passed level 2 conformance and *a percentage of the required attributes of the ABE's core entity or entities are defined in the model.
Low Conformance [3.0 < Score <= 4.0]	The model has passed level 3 conformance and *a percentage of the dependent entities within the ABE are defined in the model. A dependent entity is one whose instances are dependent on an instance of a core entity. For example, a ServiceCharacteristic instance within the Service ABE is dependent upon an instance of the Service entity.
Medium Conformance [4.0 < Score <= 5.0]	The model has passed level 4 conformance and *a percentage of the required attributes of the ABE's dependent entities are defined in the model.
High Conformance [5.0 < Score <= 6.0]	The model has passed level 5 conformance and *a percentage of all attributes of the ABE's core entities are defined in the model.
Very High Conformance [6.0 < Score < 7.0]	The model has passed level 6 conformance and *a percentage of all attributes of the ABE's dependent entities are defined in the model.
Full Conformance [Score = 7.0]	The model has achieved Level 7 conformance (Full Conformance) and all attributes of the ABE's core & dependent entities are defined in the model.

55

Additional Notes on Maturity Level scoring:

1. *For each level, according to what is required, a value is calculated based on the percentage of entities/attributes supported - as appropriate. This will result in a decimal figure (rounded to one decimal place).*

2. *Maturity Level versus Adoption Score: Using the progressive scoring schema for Maturity Level, an assessed ABE for which there is equivalence to 2/3 required core attributes and 8/10 dependent entities would be awarded Maturity Level Score = 2.5 (Very Low Conformance) & Adoption Conformance score = 5.2 (Medium Conformance). For the Maturity Level, because not all required attributes of the Core Entity are supported, the Maturity Level score does not progress to the next level, regardless of conformance to other components of the ABE.*

3. *A **core business entity** is an entity upon which other entities within the ABE are dependent. For example, Service in the Service ABE. A model should strive to attain as high a level of Information Framework (SID) conformance as possible. A core entity is also an entity whose absence in the ABE would make the ABE incomplete.*

4. *A **dependent entity** is one whose instances are dependent on an instance of a core entity. For example, a ServiceCharacteristic instance within the Service ABE is dependent upon an instance of the Service entity.*

6.4.2　Information Framework Adoption Conformance Scoring Methodology

As of Frameworx 14.0 based Conformance Assessments, to recognize the overall adoption of the Information Framework SID Information model, the Information Framework Adoption Scoring system is introduced to complement the Maturity Levels that have been used since the launch of the Frameworx Conformance Program.

Information Framework Adoption scores are granted based on the detailed scoring guidelines outlined in Table 6-3.

Adoption conformance is based on an accumulative scoring system - i.e. scores are awarded for each element of an ABE to give an overall total Adoption score for the ABE – with elements in this context defined by core & dependent entities and required & optional attributes for both category of entity.

The scores for each element are calibrated according to relative weightings, according to the significance of each element e.g. core entity having higher weighting than dependent entities and required attributes having higher weighting than optional attributes. The relative weightings for each ABE 'element' are indicated in Table 6-3.

Table 6-3 TM Forum Information Framework Adoption Conformance - Scoring Rules

Information Framework R14.0: Adoption Conformance Scoring Guidelines	
SID Component	**Weighted Scoring Calculation**
Lowest Level ABE	Equivalent – 1 score point
Core Entity	Equivalent – 2 score points
Core Entity Required Attribute	% equivalent * 2 [See note 2]
Dependent Entity	% equivalent * 1.5
Dependent Entities – Required Attributes	% equivalent * 1.5
Core Entity – Optional Attributes	% equivalent * 1.2
Dependent Entity – Optional Attributes	% equivalent * 0.8

Adoption Conformance Score Graduation						
Non Conformance [Score=1-3]	Very Low Conformance [3.0 < Score <= 4.0]	Low Conformance [4.0 < Score <= 5.0]	Medium Conformance [5.0 < Score <= 6.0]	High Conformance [6.0 < Score <= 8.0]	Very High Conformance [8.0 < Score < 10.0]	Full Conformance [Score = 10.0]

Additional Notes on Adoption scoring:

1. *The score values for each SID component are added together to get the overall Adoption Conformance score.*
2. *If 50% of the required attributes of Core entities are not supported, scores for following categories are not applied as Adoption Conformance requires conformance to 50% of the required attributes of Core entities.*
3. *Adoption Score versus Maturity Level: Using the scoring category to recognize SID adoption, an assessed ABE for which there is equivalence to 2/3 required core attributes and 8/10 dependent entities would be awarded Maturity Level Score = 2.5 (Very Low Conformance) & Adoption Conformance score = 5.2 (Medium Conformance).*

6.5 Information Framework – Conformance Result Summary

The following sections provide the summary results of the Information Framework Maturity Levels & Information Framework Adoption scores granted to the ABEs presented in scope for the Intraway RTUSA Frameworx Assessment.

Each ABE was measured using the Information Framework (SID) conformance scoring guidelines as described in sections 6.4.1 & 6.4.2.

6.5.1 Information Framework Maturity - Conformance Result Summary
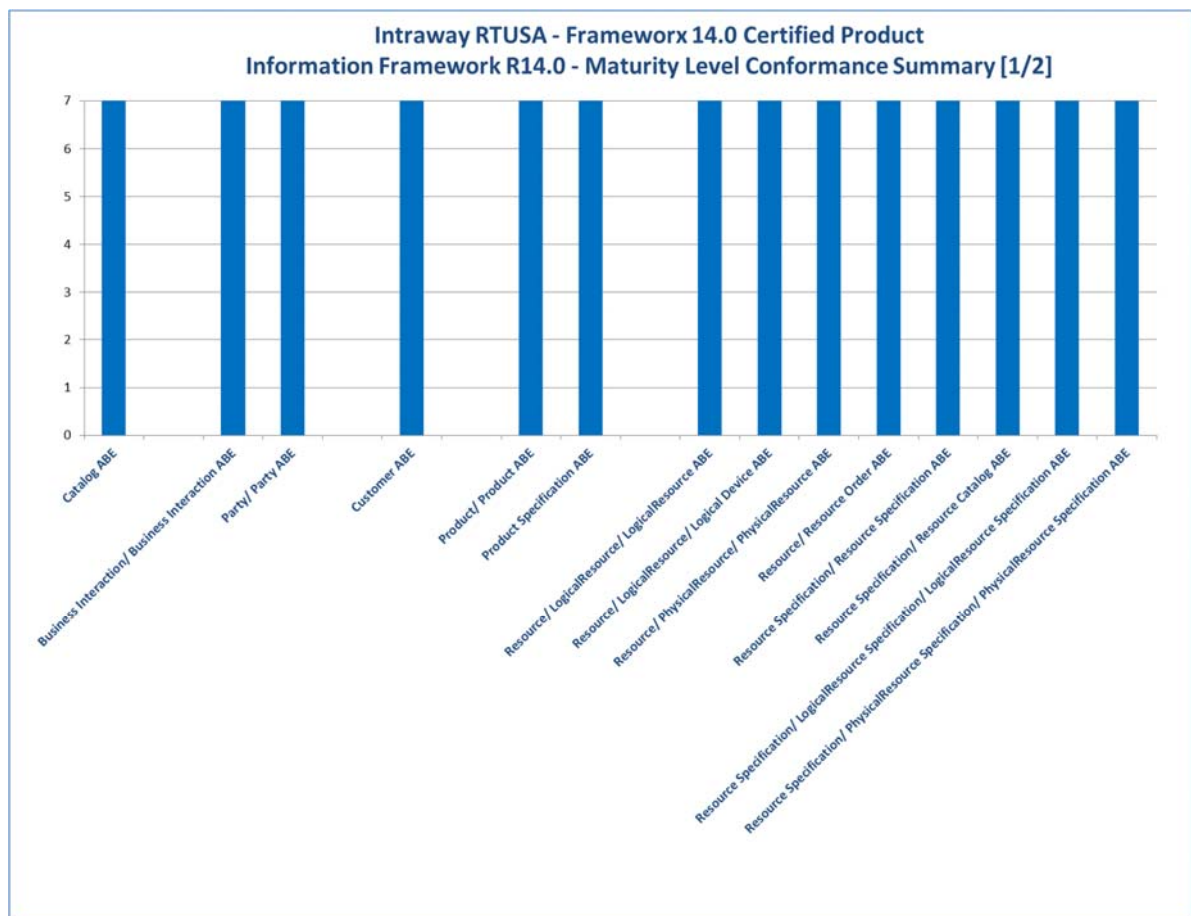
Figure 6-4 Information Framework Maturity Levels - CBE, Engaged Party, Customer, Product & Resource Domains
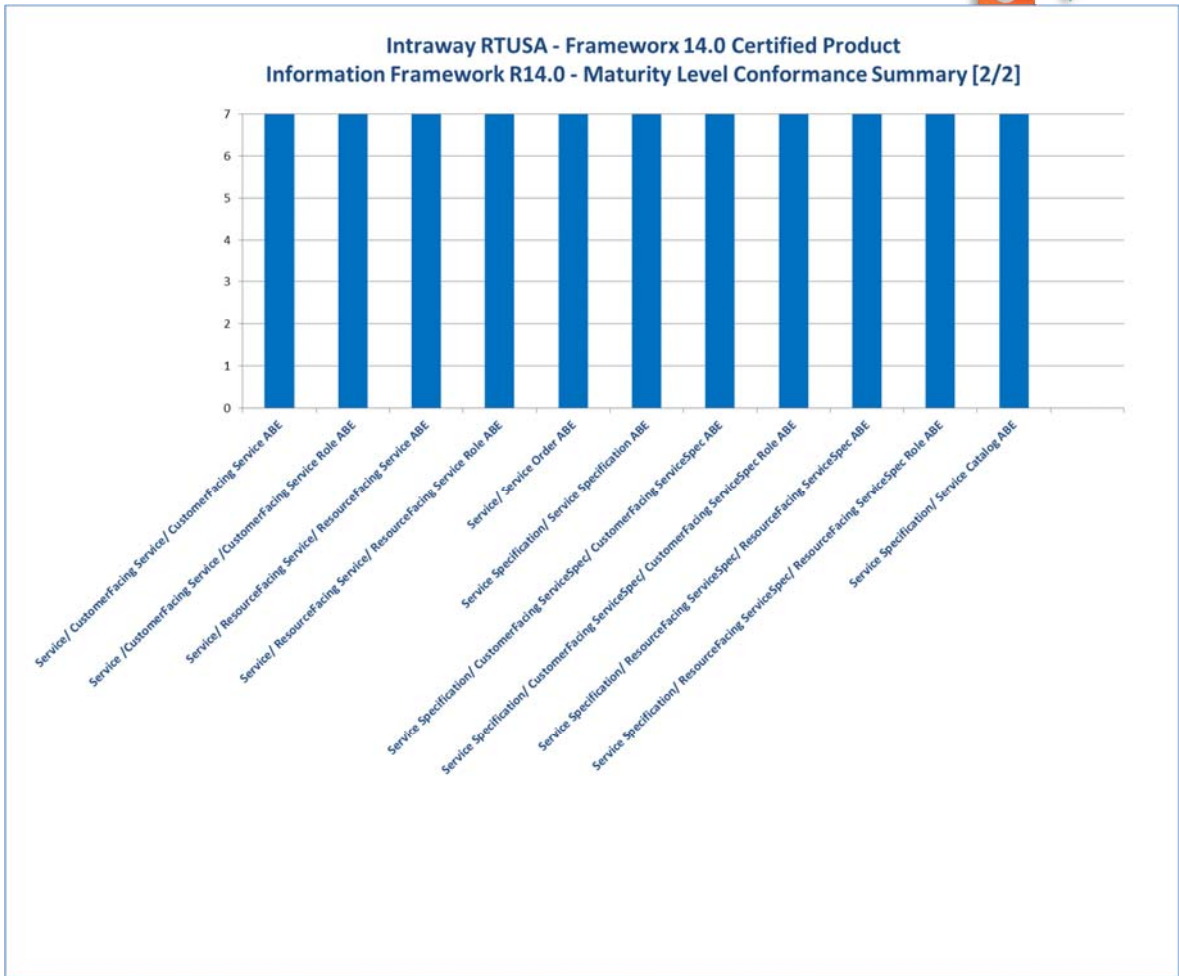
Figure 6-5 Information Framework Maturity Levels - Service Domain

6.5.2   Information Framework Adoption - Conformance Result Summary

Intraway RTUSA - Frameworx 14.0 Certified Product
Information Framework R14.0 - Adoption Conformance Summary [1/2]
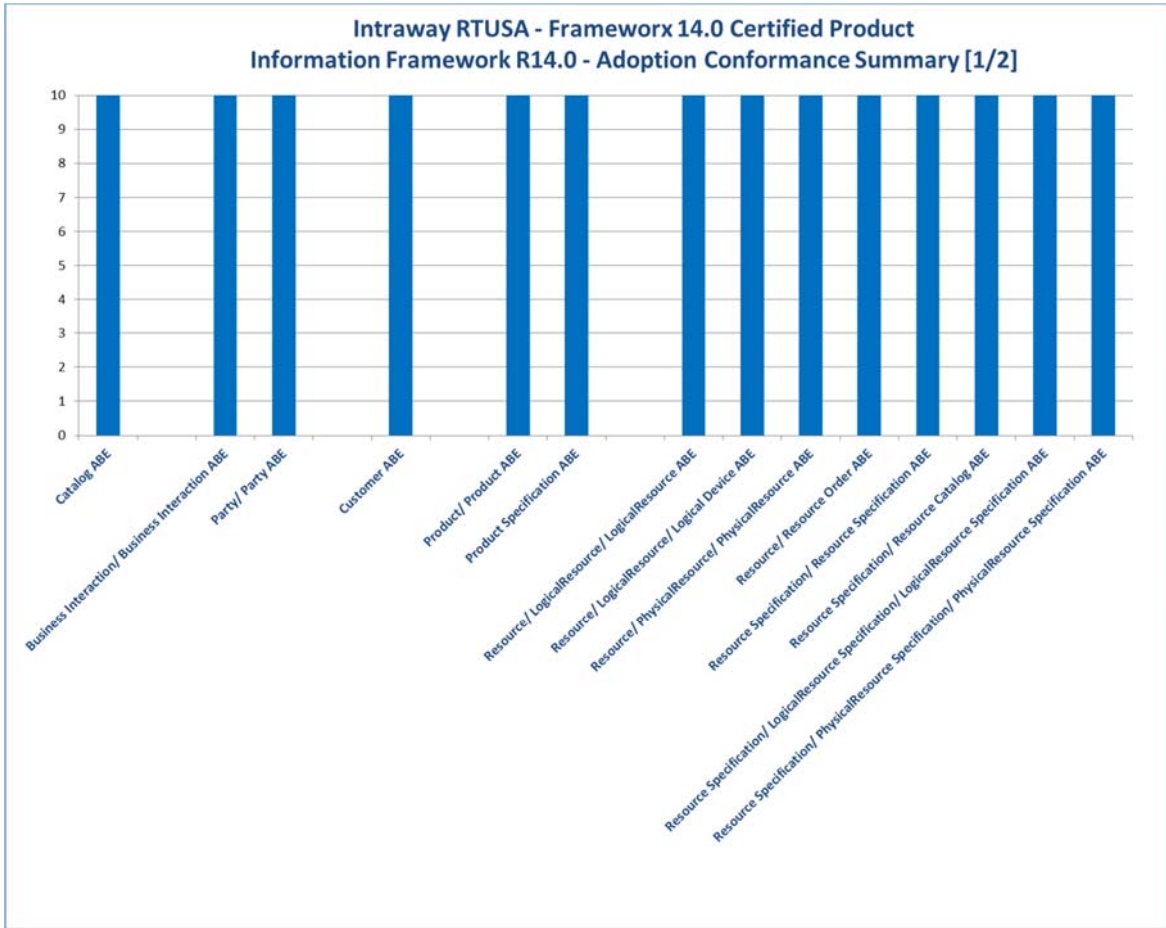
Figure 6-6 Information Framework Adoption - CBE, Engaged Party, Customer, Product & Resource Domains

Intraway RTUSA - Frameworx 14.0 Certified Product
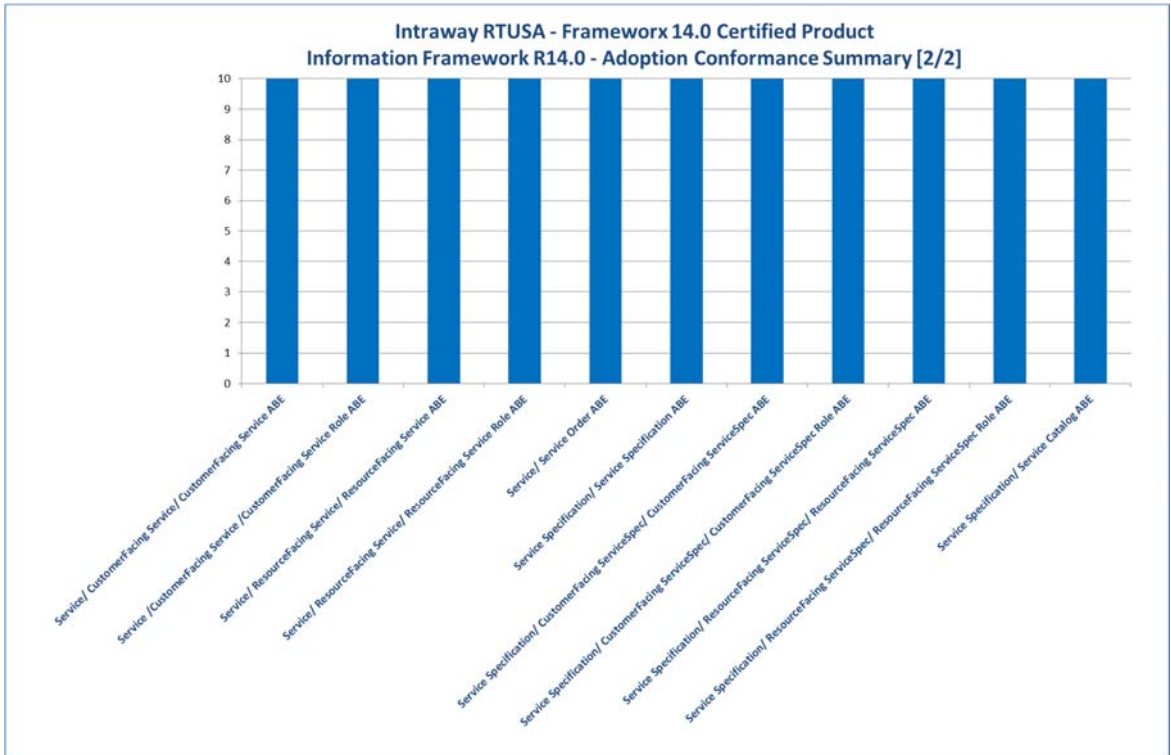**Information Framework R14.0 - Adoption Conformance Summary [2/2]**

Figure 6-7 Information Framework Adoption - Service Domain

6.6   Information Framework – Detailed Conformance Result

The following table provides a more detailed breakdown of the scores awarded with some additional commentary.

Table 6-4 Information Framework: Detailed Conformance Result

Domain/ABE	Maturity Conformance Level (1-7)	Assessment Comments	Adoption Conformance Score (1-10)	Assessment Comments
TM Forum Frameworx 14.0 Information Framework (SID) - Conformance Scores **Intraway RTUSA**				
CBE Domain				
Catalog ABE	7	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	10	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Engaged Party Domain				
Business Interaction ABE/ Business Interaction ABE	7	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	10	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Party ABE/ Party ABE	7	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	10	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Customer Domain				

Customer ABE	7	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	10	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Product Domain				
Product ABE/ **Product ABE**	7	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	10	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Product **Specification ABE**	7	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	10	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Resource Domain				
Resource ABE/ **LogicalResource** **ABE/** **LogicalResource** **ABE**	7	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	10	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Resource ABE/ **LogicalResource** **ABE/ Logical** **Device ABE**	7	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	10	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.

Resource ABE/ PhysicalResource ABE/ PhysicalResource ABE	**7**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	**10**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Resource ABE/ Resource Order ABE	**7**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	**10**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Resource Specification ABE/ Resource Specification ABE	**7**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	**10**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Resource Specification ABE/ Resource Catalog ABE	**7**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	**10**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Resource Specification ABE/ LogicalResource Specification ABE/ LogicalResource Specification ABE	**7**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	**10**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.

Resource Specification ABE/ PhysicalResource Specification ABE/ PhysicalResource Specification ABE	**7**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	**10**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Service Domain
Service ABE/ CustomerFacing Service ABE/ CustomerFacing Service ABE	**7**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	**10**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Service ABE/ CustomerFacing Service ABE/ CustomerFacing Service Role ABE	**7**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	**10**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Service ABE/ ResourceFacing Service ABE/ ResourceFacing Service ABE	**7**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	**10**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Service ABE/ ResourceFacing Service ABE/ ResourceFacing Service Role ABE	**7**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	**10**	**Full Conformance** Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.

Service ABE/ Service Order ABE	7	Full Conformance Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	10	Full Conformance Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Service Specification ABE/ <u>Service Specification ABE</u>	7	Full Conformance Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	10	Full Conformance Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Service Specification ABE/ CustomerFacing ServiceSpec ABE/ <u>CustomerFacing ServiceSpec ABE</u>	7	Full Conformance Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	10	Full Conformance Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Service Specification ABE/ CustomerFacing ServiceSpec ABE/ CustomerFacing ServiceSpec Role ABE	7	Full Conformance Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	10	Full Conformance Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Service Specification ABE/ ResourceFacing ServiceSpec ABE/ <u>ResourceFacing ServiceSpec ABE</u>	7	Full Conformance Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	10	Full Conformance Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.

Service Specification ABE/ ResourceFacing ServiceSpec ABE/ ResourceFacing ServiceSpec Role ABE	7	Full Conformance Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	10	Full Conformance Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Service Specification ABE/ Service Catalog ABE	7	Full Conformance Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.	10	Full Conformance Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.