

Solution Conformance Certification Report

Business Process Framework (eTOM)
&
Information Framework (SID)

For:

Jio Platforms Limited

JIO B2C System - ODA-C
JIO Subscription Engine (JioSE)

October 2024

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1 Introduction

1.1 Executive Summary

This document provides details of JIO B2C System for JIO Subscription Engine, against the following ODA Core Frameworks:

- Business Process Framework (eTOM) version 24.0
- Information Framework (SID) version 24.0

The assessment included a review of the methodology approach to process and information modeling, respectively against the TM Forum's Business Process Framework (eTOM) and the Information Framework (SID) according to the specific processes and entities submitted in scope for the Assessment.

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For any additional information on this ODA Conformance Certification Report, please contact TM Forum at: conformance@tmforum.org.

2 Solution Overview

2.1 About JIO

Reliance Jio Infocomm Limited (Jio) is India's largest telecom operator with over 470 Mn subscribers. Jio's advanced 4G network is future ready and can be easily upgraded to support advanced technologies of 5G, 6G and beyond.

Jio has revolutionized the telecommunication sector by democratizing access to high-speed internet and digital services. This empowered millions of people across India and bridged the digital divide and fostered inclusive growth. Jio has brought transformational changes in the Indian digital services space to enable the vision of Digital India for 1.3 billion Indians and propel India into gloSEI leadership in the digital economy.

Jio has been focused on developing in-house applications spanning various technology domains to support all industry verticals from education to healthcare, are designed to streamline processes, enhance efficiency, and improve accessibility. These carefully crafted strategic plans to leverage digital transformation for the benefit of the Indian population at large have been, alongside company growth, proactively addressing societal needs.

Jio has created an eco-system comprising of network, devices, applications and content, service experience and affordable tariffs for everyone to live the Jio Digital Life. Since launch of its commercial operations in 2016, it has been redefining benchmarks, setting new milestones, inspiring unprecedented adoption, usage, and service metrics that are among the best in the industry.

For more information on our products and services, visit our website at: www.jio.com

2.2 Solution Functionality / Capability

The **Jio Subscription Engine (JioSE)** is a comprehensive system designed to manage product subscriptions, service usage, billing, and rating for both prepaid and postpaid customers. It facilitates the entire lifecycle of a subscription, from activation and usage tracking to billing and planning renewals while ensuring the accurate assignment of charges for various services. It is a platform designed for seamless and efficient management of dynamic subscription plans across various business segments, including Mobility, Fiber and Enterprise. JioSE is engineered to meet the needs of customers, delivering a robust and scalable solution for large-scale subscription handling. JioSE seamlessly integrates with external systems to offer services, manage customer data and support billing processes.

2.2.1 Key Features:

Key Features of Jio Subscription Engine (JioSE) as a product:

- 1. Subscription Management:**
 - a. Handles a wide range of subscription types, including standalone, bundled, and add-on plans.
 - b. Manages customer subscriptions dynamically, allowing for real-time service activations, renewals, and terminations.
- 2. Product Rating and Charging:**
 - a. Supports rating of services (monetary or otherwise) based on the type of product usage and customer plan.
 - b. Distinguishes between prepaid and postpaid customers, applying charges either upfront (for prepaid) or post-usage (for postpaid).
 - c. Rates services using predefined service types according to the business for accurate billing.
- 3. Offline Charging:**
 - a. Primarily uses offline charging for subscription services, meaning billing is processed after the service is rendered.
 - b. Generates billing data at the end of service validity or subscription cycle, rather than in real-time.
- 4. Usage Tracking and Management:**
 - a. Tracks product usage in real-time or periodically, ensuring accurate billing based on service consumption.
 - b. Aggregates usage data across multiple services, ensuring comprehensive billing for all active subscriptions.
- 5. Billing and Invoice Generation:**
 - a. Generates billing data (BITS) for both prepaid and postpaid customers, detailing service usage, charges, taxes, and refunds.
 - b. Transmits billing data to external systems for invoice creation and customer notifications.
- 6. Data Enrichment and Mediation:**
 - a. Enriches customer and usage data by integrating details such as plan specifications, service status, and customer profiles.
 - b. Mediates data between JioSE and external systems, ensuring that information is formatted correctly for billing, provisioning, and reporting.
- 7. Reporting and Analytics:**
 - a. Generates comprehensive reports on product usage, customer review processes, and in-depth analysis of billing records.

- b. Supports both pre-billing and post-billing reports to help in identifying any anomalies or customer disputes.

8. Integration with External Systems:

- a. Interacts with provisioning platforms, billing systems (e.g., SAP CI) and notification engines, ensuring seamless delivery and billing of services.
- b. Synchronizes plan and service data from external systems (e.g., EPC) to keep customer offerings up-to-date.

2.2.2 Architecture

The Jio Subscription Engine acts as the backbone for managing customer services, providing an end-to-end solution for product rating, usage tracking, and billing while ensuring accuracy and flexibility for both customers and service providers.

JIO B2C System for Subscription Engine Component Level Architecture

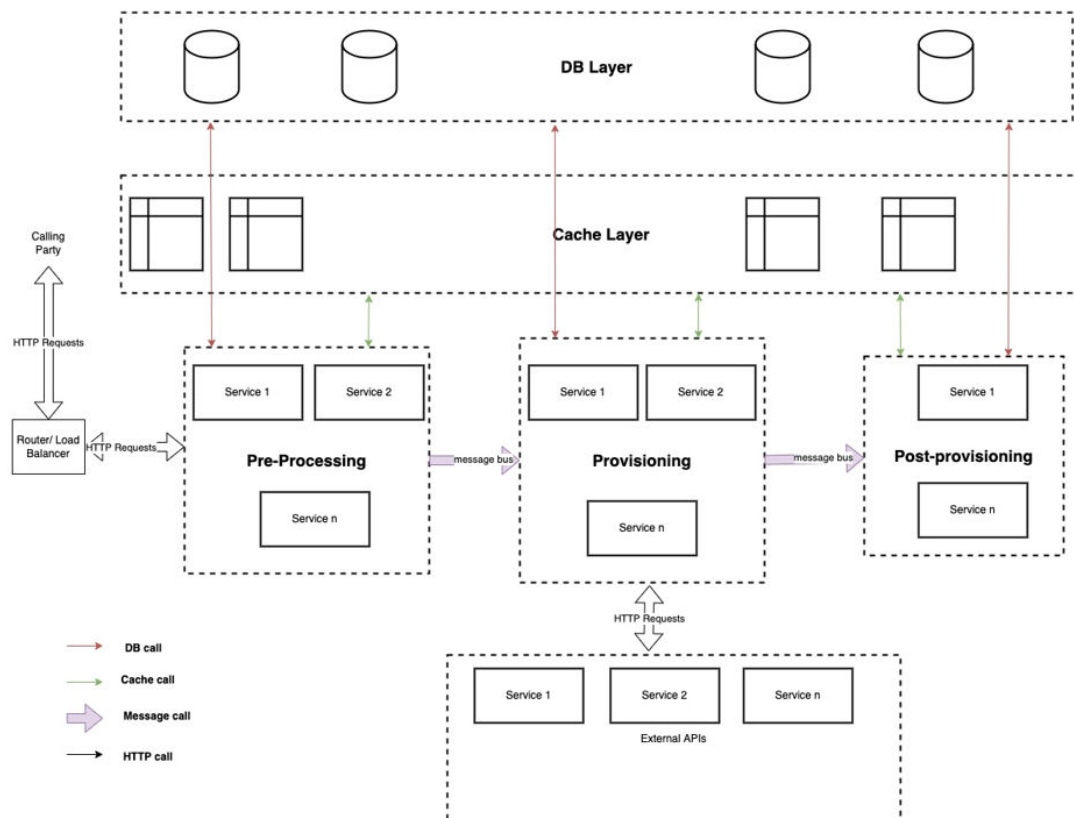


Figure 1 – JIO B2C System for JIO Subscription Engine –Architecture Diagram

2.3 JIO B2C System for Subscription Engine – Benefits

JioSE Architecture

1. **Open-Source Framework:** JioSE is built on an open-source architecture, allowing independent development and deployment of its various features. The use of open-source tools ensures flexibility and promotes continuous improvement through community-driven enhancements. The platform supports seamless integration with scheduling and monitoring utilities, providing a unified system for managing operations and facilitating smooth oversight.
2. **Zero Downtime for Updates:** The platform's architecture separates the business logic from technical operations, allowing the deployment of updates without any service interruptions. This modular structure ensures that audits or changes can be implemented instantly, without affecting the system's availability. The version control mechanism supports the management of audit objects, enabling users to revert to previous versions if required.
3. **Scalability and Resilience:** JioSE is engineered to scale efficiently and remain resilient under heavy loads. The system's design ensures elasticity as demand grows, ensuring consistent performance regardless of customer volume. Its resilient infrastructure minimizes downtime and service disruptions through redundant data centers, backup systems, and robust failover mechanisms.
4. **Data Management and Reporting:** The platform features powerful data import and export capabilities, supporting essential business functions such as regulatory compliance and performance analytics. The data aggregation module consolidates information from various sources, enabling detailed analysis, reporting, and regulatory submissions.
5. **Operational Efficiency:** JioSE's architecture is enhanced by a dedicated operational process that streamlines the workflow for managing subscriptions, billing, and reporting. It facilitates real-time monitoring and oversight of system processes, offering tools to manage operations, schedule tasks, and generate comprehensive reports on subscription activities.

Overall, the Jio Subscription Engine is a modern, robust, and highly scalable platform that caters to the subscription management needs of millions of customers across various services, ensuring flexibility, scalability, and efficiency.

Business Process Framework v24.0 – JIO B2C System for Subscription Engine – Conformance Scope

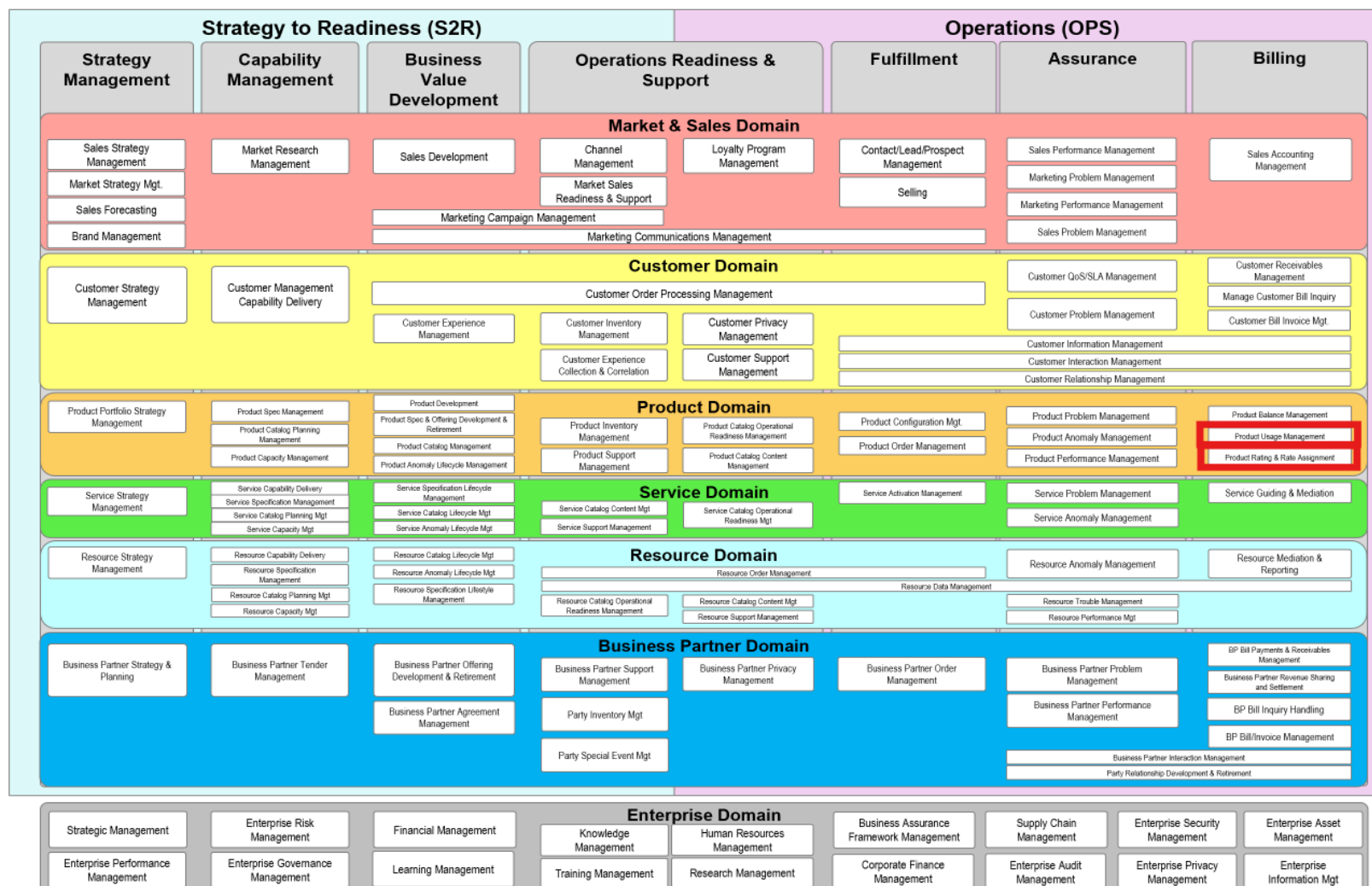
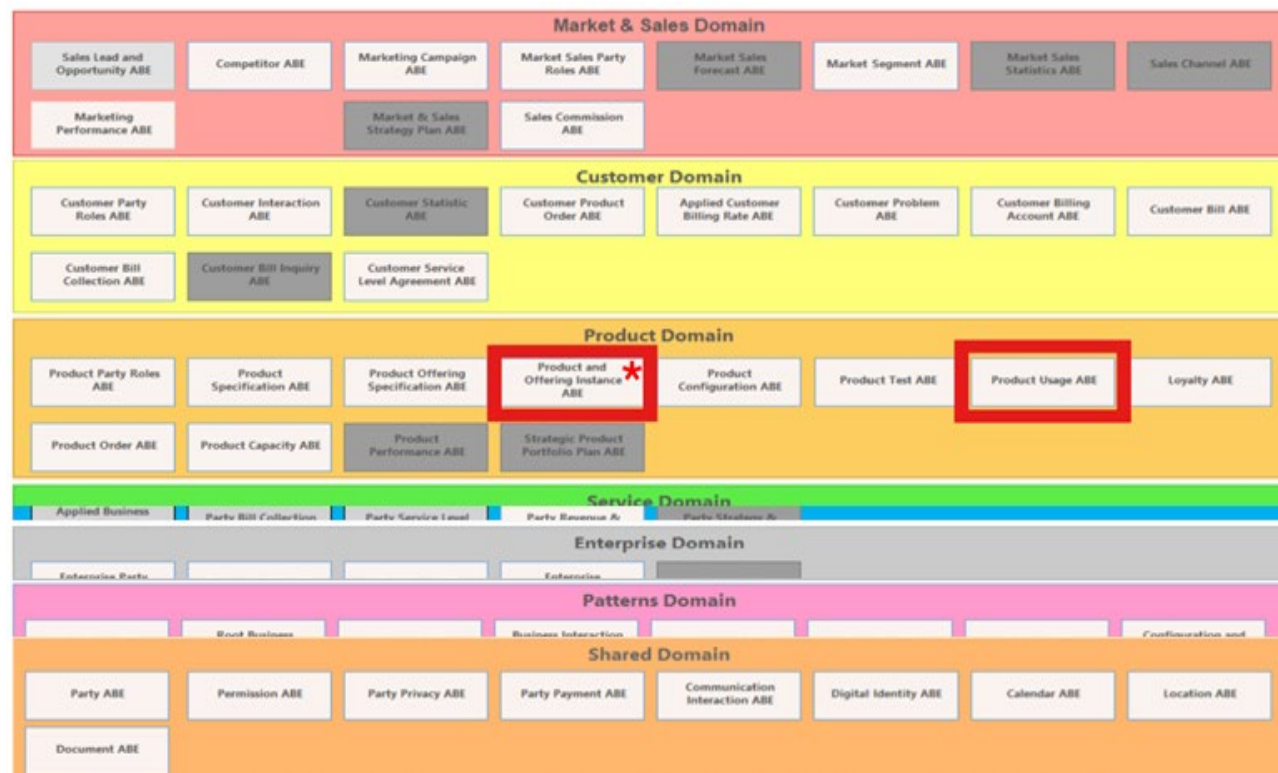


Figure 2 - Process coverage for JIO B2C System for Subscription Engine - Conformance Certification

2.4 Information Framework Assessment - ABE Scope

Information Framework (SID) - v24.0 – JIO B2C System for Subscription Engine – Conformance Footprint



*** Product and Offering Instance ABE../Product ABE../Product Price ABE**

Figure 3 - Level 1 ABEs - SID coverage for JIO B2C System for Subscription Engine Conformance Certification

3 Business Process Framework Assessment Overview

3.1 Mapping Technique Employed

Business Process Framework Level 3 descriptions are analyzed by focusing on implied tasks also referred to as implied functional requirements. (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.

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 3 or a Level 4 implied task within a process element:

- **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 3 processes, such mappings are provided against the process’ extended description. If an Extended Description is not defined, then the mapping is provided against the Brief Description.

3.2 Scope of Conformance Certification Graph (eTOM)

This document conveys information about the Business Processes implemented by for JIO B2C System for Subscription Engine in accordance to the TM Forum Business Process Framework. It also maps the processes with the Level 2 and Level 3 frameworks' business activities. The document covers the following L3 Processes in scope for certification.

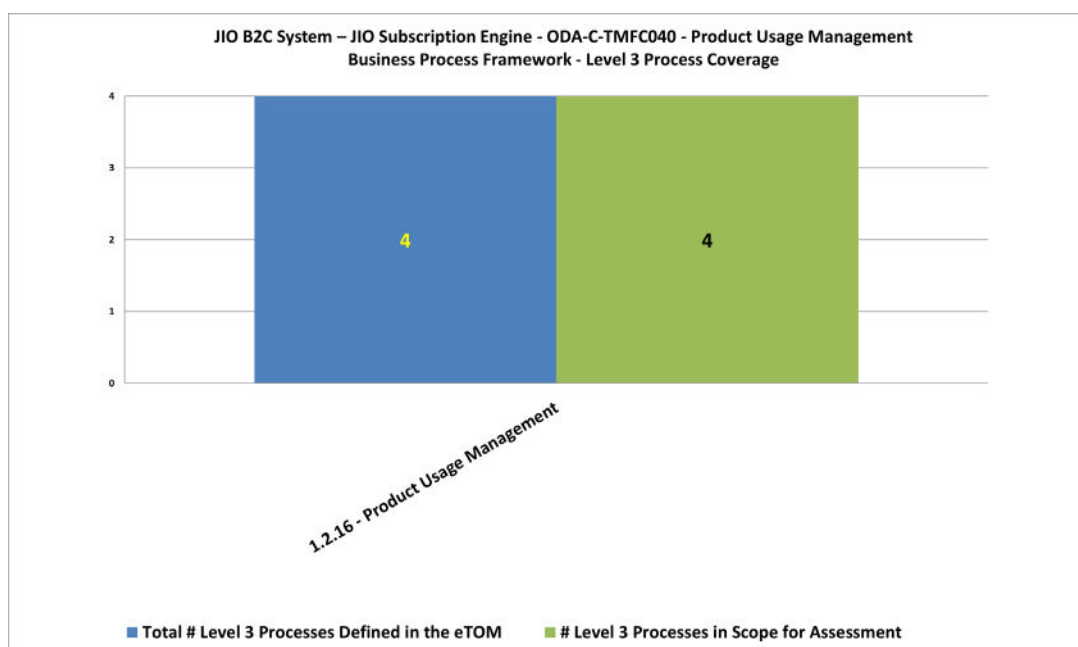


Figure 4- JIO Subscription Engine – Product Usage Management - Level 3 processes in scope for certification

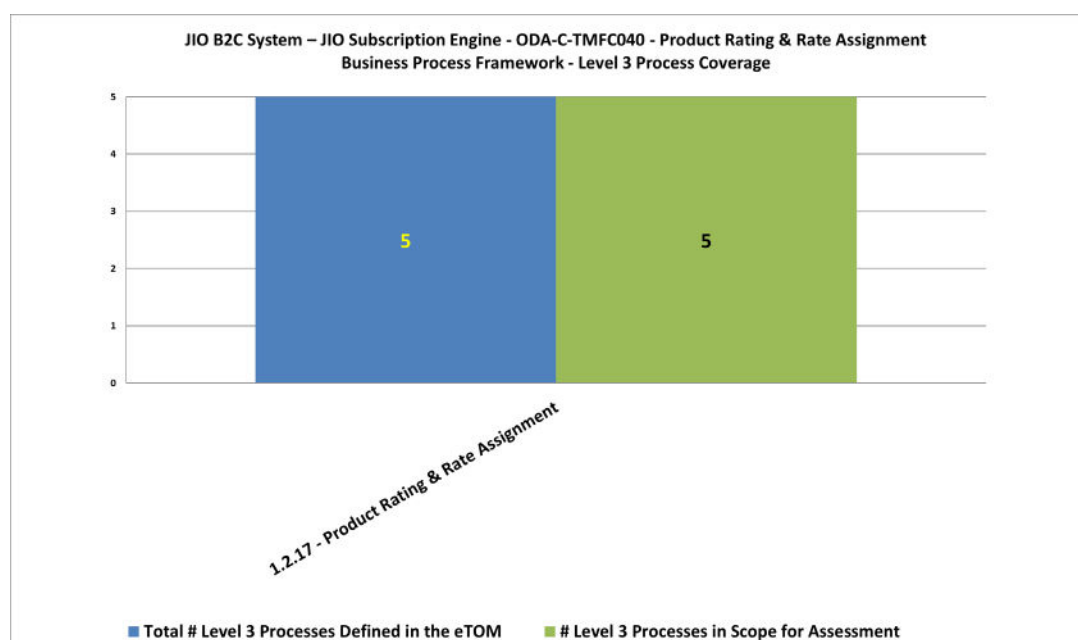


Figure 5- JIO Subscription Engine – Product Rating & Rate Assignment - Level 3 processes in scope for certification

3.3 Scope of Conformance Certification – Chart (eTOM)

TM Forum Assessment Scoping Document - Business Process Framework (eTOM) v24.0		
<i>Member:</i>		<i>JIO</i>
<i>Solution:</i>		<i>JIO B2C System – JIO Subscription Engine - ODA-C-TMFC040 - Product Usage Management</i>
<i>Assessment Type</i>		<i>Solution</i>
<i># of L3 Processes in Scope:</i>		<i>4</i>
<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>
1.2 - Product Domain		
	1.2.16 - Product Usage Management	
		1.2.16.1 - Enrich Product Usages
		1.2.16.2 - Guide and Assign Product Usages
		1.2.16.3 - Mediate Product Usages
		1.2.16.4 - Report Product Usage Records

Figure 6- Level 3 process scope for certification – Product Usage Management

TM Forum Assessment Scoping Document - Business Process Framework (eTOM) v24.0		
<i>Member:</i>		<i>JIO</i>
<i>Solution:</i>		<i>JIO B2C System – JIO Subscription Engine - ODA-C-TMFC040 - Product Rating & Rate Assignment</i>
<i>Assessment Type</i>		<i>Solution</i>
<i># of L3 Processes in Scope:</i>		<i>5</i>
<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>
1.2 - Product Domain		
	1.2.17 - Product Rating & Rate Assignment	
		1.2.17.1 - Perform Rating
		1.2.17.2 - Aggregate Items for Rate Assignment
		1.2.17.3 - Manage Customer Assignment Hierarchy
		1.2.17.4 - Provide Advice of Rate
		1.2.17.5 - Apply Rate Level Discounts

Figure 7- Level 3 process scope for certification

3.4 Business Process Framework – Scoring Guidelines

This section provides the Process Mapping output from the self-assessment carried out by TM Forum Subject Matter Experts alongside supporting documentation made available for this purpose.

Business Process Framework - Conformance Certification 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 Framework 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 give 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.		
Additional Notes		
Note 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.		
Note 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.		
Note 3 - The Conformance Assessment shall be carried out at process level 3 (if there are no level 4 process elements defined for a specific level 3 in scope) or at level 4 (if there are level 4 process elements defined for a specific level 3 in scope). For each Level 3 process (when there are no level 4 processes available), conformance shall be deduced according to the documented support for the process implied tasks. For each Level 4 process (when available), conformance shall be deduced according to the documented support for the process implied tasks, as decomposed and described in the 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.		
Note 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.		
Note 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.		

Figure 8- TM Forum Business Process Framework: Conformance Scoring Rules

3.5 Business Process Framework – Process Mapping Descriptions

This section provides the mapping of Business Process Framework against the processes supported by JIO B2C System - ODA-C – Jio Subscription Engine.

The self-assessment was reviewed by TM Forum Subject Matter Experts alongside supporting documentation provided.

3.5.1 Mapping Details & Supporting Evidence

The documented mapping information for all Level 3 business processes in scope is available from the following link:

<https://www.tmforum.org/wp-content/uploads/2024/10/eTOM-24.0 Conformance Mapping Template-JIO-B2C-System-ODA-C-TMFC040-VFRF.pdf>

3.6 Conformance Results – Chart (eTOM)

This Section details the Scores awarded to reflect Conformance to the Business Process Framework (eTOM).

TM Forum Assessment Scoping Document - Business Process Framework (eTOM) v24.0				
Member:		JIO		Level 3 Process Elements Scores achieved
Solution:		JIO B2C System – JIO Subscription Engine - ODA-C-TMFC040 - Product Usage Management		
Assessment Type		Solution		
# of L3 Processes in Scope:		4		
Level 1	Level 2	Level 3		
1.2 - Product Domain				
	1.2.16 - Product Usage Management			
		1.2.16.1 - Enrich Product Usages		5/5
		1.2.16.2 - Guide and Assign Product Usages		5/5
		1.2.16.3 - Mediate Product Usages		5/5
		1.2.16.4 - Report Product Usage Records		5/5

Figure 9- - eTOM Conformance Scores Summary – Product Usage Management

TM Forum Assessment Scoping Document - Business Process Framework (eTOM) v24.0				
Member:		JIO		Level 3 Process Elements Scores achieved
Solution:		JIO B2C System – JIO Subscription Engine - ODA-C-TMFC040 - Product Rating & Rate Assignment		
Assessment Type		Solution		
# of L3 Processes in Scope:		5		
Level 1	Level 2	Level 3		
1.2 - Product Domain				
	1.2.17 - Product Rating & Rate Assignment			
		1.2.17.1 - Perform Rating		5/5
		1.2.17.2 - Aggregate Items for Rate Assignment		5/5
		1.2.17.3 - Manage Customer Assignment Hierarchy		3/5
		1.2.17.4 - Provide Advice of Rate		5/5
		1.2.17.5 - Apply Rate Level Discounts		3/5

Figure 10- - eTOM Conformance Scores Summary – Product Rating & Rate Assignment

3.7 Conformance Results – Graph (eTOM)

This Section provides a summary graph of the scores awarded to reflect Conformance to the Business Process Framework (eTOM).

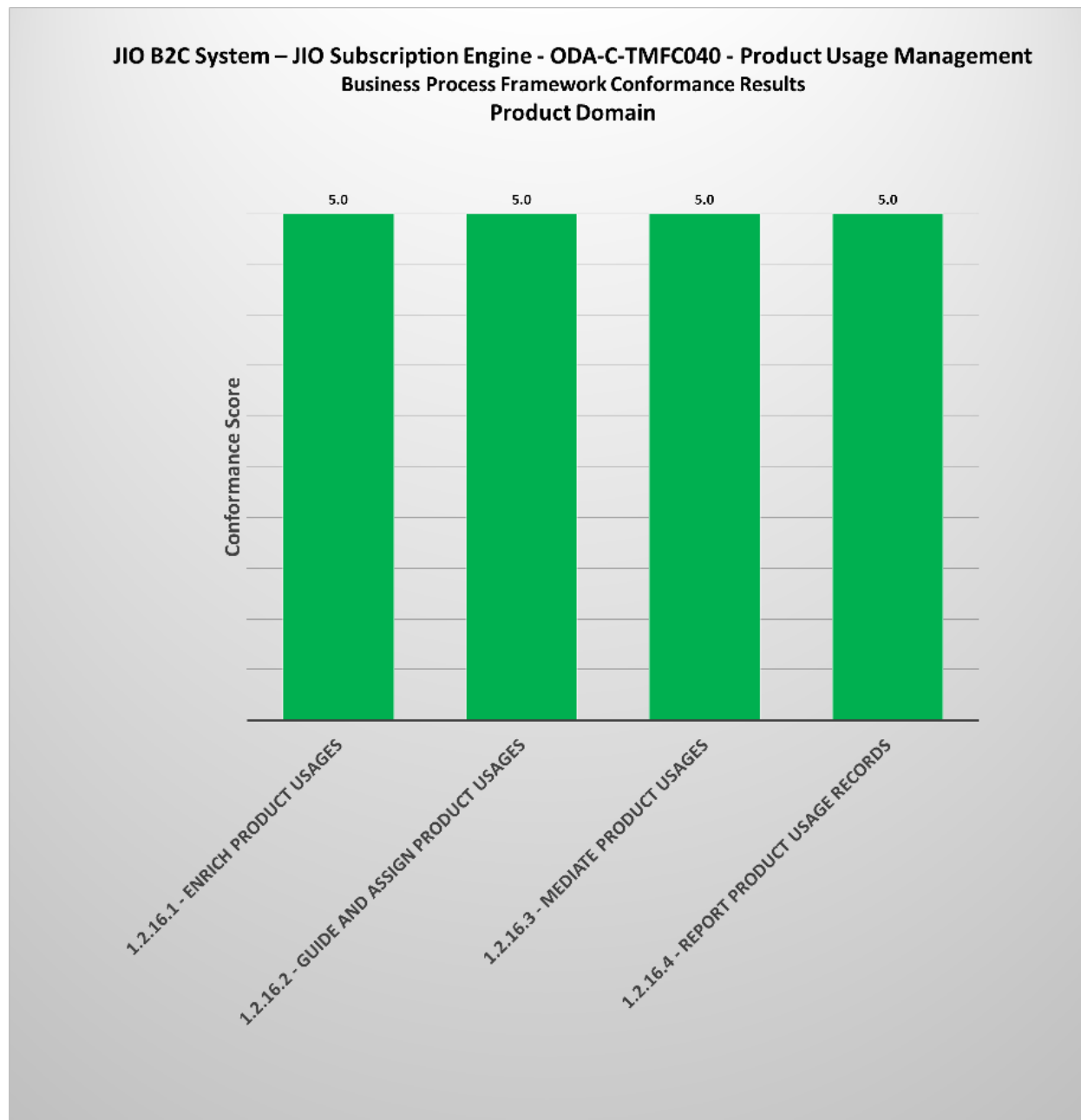


Figure 11- - eTOM Conformance Scores Summary Graph – Product Usage Management

JIO B2C System – JIO Subscription Engine - ODA-C-TMFC040 - Product Rating & Rate Assignment
Business Process Framework Conformance Results
Product Domain

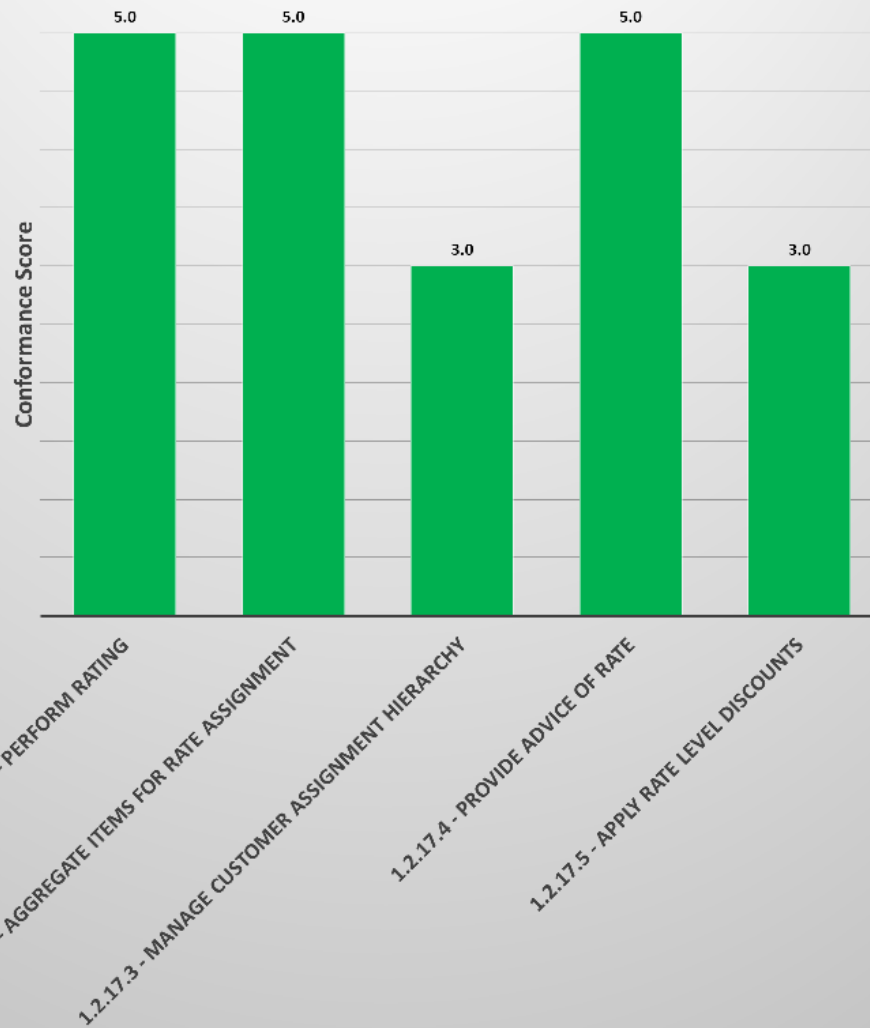


Figure 12- - eTOM Conformance Scores Summary Graph – Product Rating & Rate Assignment

4 Information Framework Assessment Overview

4.1 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 and optional attributes for each entity, as defined in the SID model, according to what is supported for the product/solution under assessment.

4.2 Scope of Conformance Certification (SID)

JIO B2C System – JIO Subscription Engine - ODA-C-TMFC040 - Product Domain = 2 ABEs
<i>L1/L2/L3 ABEs</i>
Product Domain
Product Usage ABE
Product and Offering Instance ABE../Product ABE../Product Price ABE

Figure 13 - SID - v24.0 – JIO B2C System for Subscription Engine SID Certification Scope

4.3 Information Framework Conformance Result

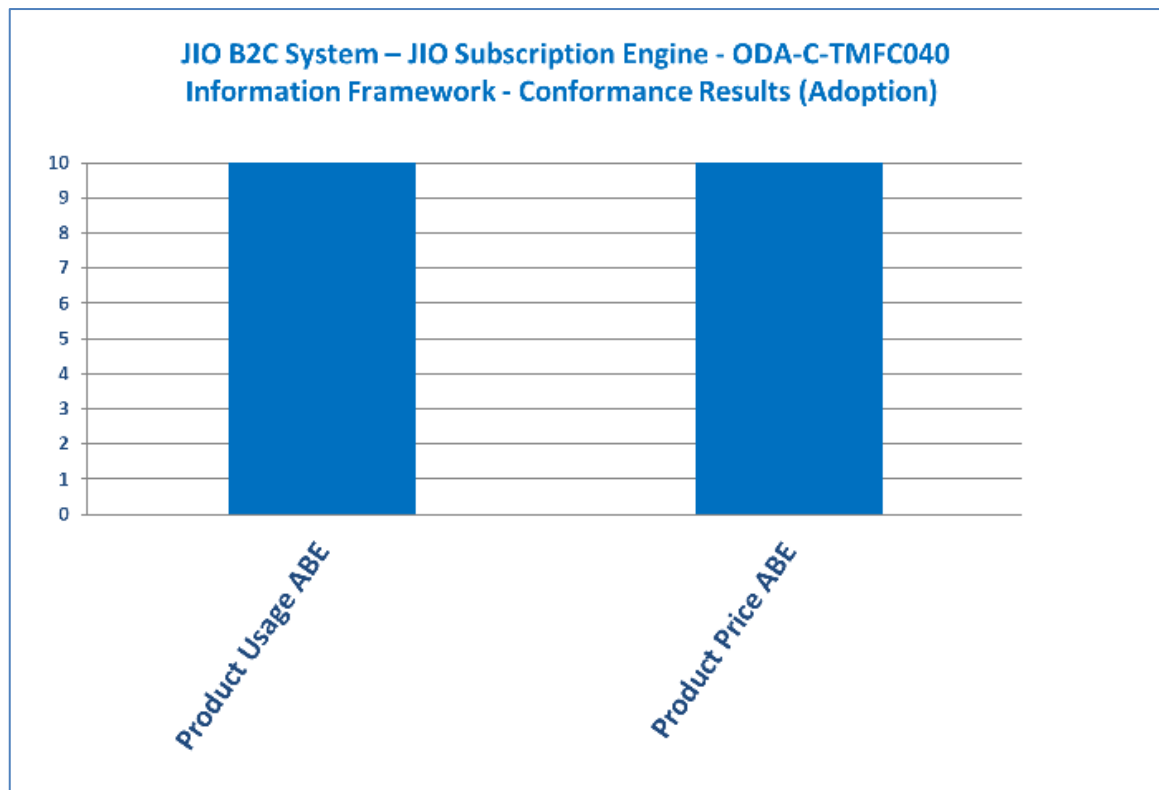


Figure 14 - SID - v24.0 – JIO B2C System for Subscription Engine SID Certification Scores

4.3.1 Information Framework – Scoring Rules

Between 2013 (Framework 14.0) and the end of 2017, TM Forum applied a combined scoring method based on two different categories of conformance scoring:

1. Information Framework Maturity
2. Information Framework Adoption

Starting on the 1st of January 2018, only one method has been retained instead of these two scoring methods (Maturity + Adoption). The use of two different methods made interpretation and understanding difficult and ambiguous for many of our members, on the ground of such experience, the TM Forum decided to keep only the “Adoption” scoring method and discard the “Maturity” scoring method.

Adoption scoring ensures a good balance between qualitative and quantitative criteria on SID conformance criteria. The adoption scoring method consists of a range of scores from 1 to 10 which makes it intuitive and fair, it is also based on weighted criteria e.g. core element, dependent, required, optional, etc.

4.3.2 Information Framework Adoption Conformance Scoring Methodology

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

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 and 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 1 - TM Forum Information Framework Adoption Conformance - Scoring Rules Table 1 below.

Information Framework - 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 [Must support min 50% of Required Attributes]			
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 to 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]
NOTES:						
1. The score values for each SID component are added together to get the overall Adoption Conformance score.						
2. If 50% of of the required attributes of Core entities are not supported, scores for following components 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 recognise 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).						

Figure 15 - TM Forum Information Framework Adoption Conformance - Scoring Rules

4.3.3 Additional Notes on Information Framework Conformance Adoption scoring:

1. For each level, according to what is required, a value is calculated SEsed on the percentage of entities/attributes supported - as appropriate. This will result in a decimal figure (rounded to one decimal place).
2. Adoption Scoring is SEsed on the progressive scoring schema from the former “Maturity” scoring; however it provides additional flexibility in-so-far as it allows to score all attributes and entities in an assessed ABE. In the former “Maturity” scoring, when not all required attributes of the Core Entity were supported, the Maturity Level score would not progress to the next level, regardless of conformance to other “subordinate” components of the ABE (e.g. dependent entities, optional attributes). “Adoption” scoring fixes this constraint as it provides a weighting mechanism to score all elements supported, regardless of the absence of the core entity or/and required attributes.
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.
5. The score values for each SID component are added together to get the overall Adoption Conformance score.
6. 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.