

Solution Conformance Certification Report

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

For:

Jio Platforms Limited

JIO B2C System - ODA-C – TMFC038
JIO Network Performance Management
(JNPM)

November 2024

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1 Introduction

1.1 Executive Summary

This document provides details of JIO B2C System for JIO Network Performance Management, 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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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

A telecom network performance management system serves as the backbone for maintaining the efficiency and reliability of telecommunication networks.

Jio platform's Integrated OSS Assurance stack constitutes Fault and Performance management solutions. Jio Network Performance Manager (JNPM), its performance management component (TMFC038), provides the capability to integrate any new element or a metric and monitor key parameters on the real time dashboard that are essential for managing a service or a domain.

By continuously monitoring the performance in real time helps in reducing the network and service degradation thereby ensuring continuity in business outcomes.

JNPM is designed with a framework to offer end users with the capability to create their own KPI/KQI and detect anomalies using algorithms rather than traditional threshold crossing alarms. It also offers on the fly aggregations at different time intervals or at a network hierarchical level.

2.2.1 Key Features:

Performance Monitoring:

Constant monitoring various network performance counters and KPIs such as bandwidth usage, Throughput, latency, packet loss, signal strength, and overall network availability across millions of network elements spanning across multiple domains.

Performance Analysis :

Analysis of collected data to assess the overall performance of the network, identifying trends, patterns, and areas for improvement.

Real-time Reporting:

Provides real-time dashboards, reports, and alerts to network administrators, enabling them to promptly respond to performance issues and make data-driven decisions.

Historical Analysis:

Stores historical performance data for trend analysis, capacity planning, and regulatory compliance purposes.

Alarm and Event Management:

Generates alerts and notifications for abnormal network behaviour or performance degradation, enabling timely troubleshooting and resolution.

Compliance and Regulatory Reporting:

Generates reports and maintains compliance with regulatory requirements and industry standards governing telecommunications networks.

2.2.2 Architecture

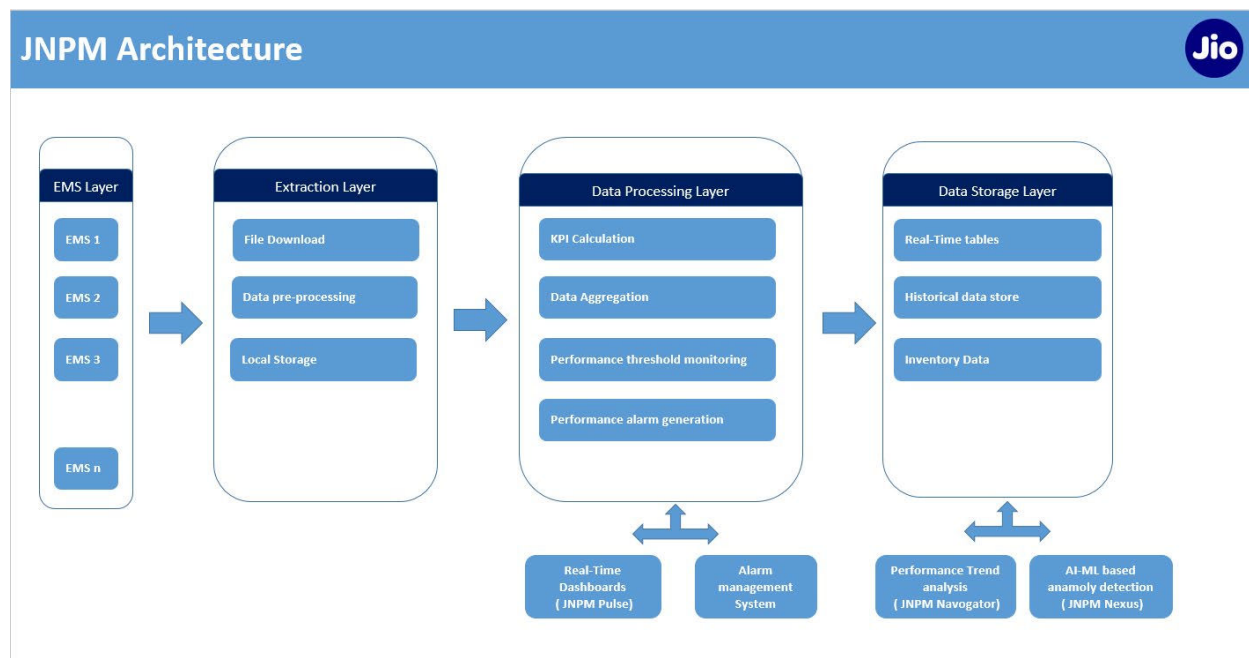


Figure 1 – JIO B2C System for Jio Network Performance Management (JNPM) –Architecture Diagram

2.3 JIO B2C System for Network Performance Management (JNPM) – Benefits

These features collectively enable Network Operations team to effectively monitor, manage, and optimize the performance of network elements, ensuring reliability, efficiency, and quality of service.

Customizable Dashboards:

JNPM provides customizable dashboards with user friendly interfaces and visualizations to display key performance indicators (KPIs) and metrics relevant to specific network stakeholders.

Scalability and Flexibility:

Scalable architecture that can accommodate growing network infrastructures and evolving technology requirements without compromising performance.

Integration Capabilities:

JNPM is integrated with other network management systems, OSS/BSS platforms, and third-party tools through TMF based standard APIs or standardized protocols for seamless data exchange and interoperability.

Cloud-based Deployment:

JNPM supports deployment in cloud environments for increased scalability, agility, and cost-effectiveness, while also providing remote access and management capabilities.

Standards Compliance:

JNPM adheres to the TMF Component 038 in terms of process compliance and API compliance so that it can readily integrate with an external consumer for threshold generation of data consumption

Business Process Framework v24.0 – JIO B2C Network Performance Management (JNPM) – Conformance Scope

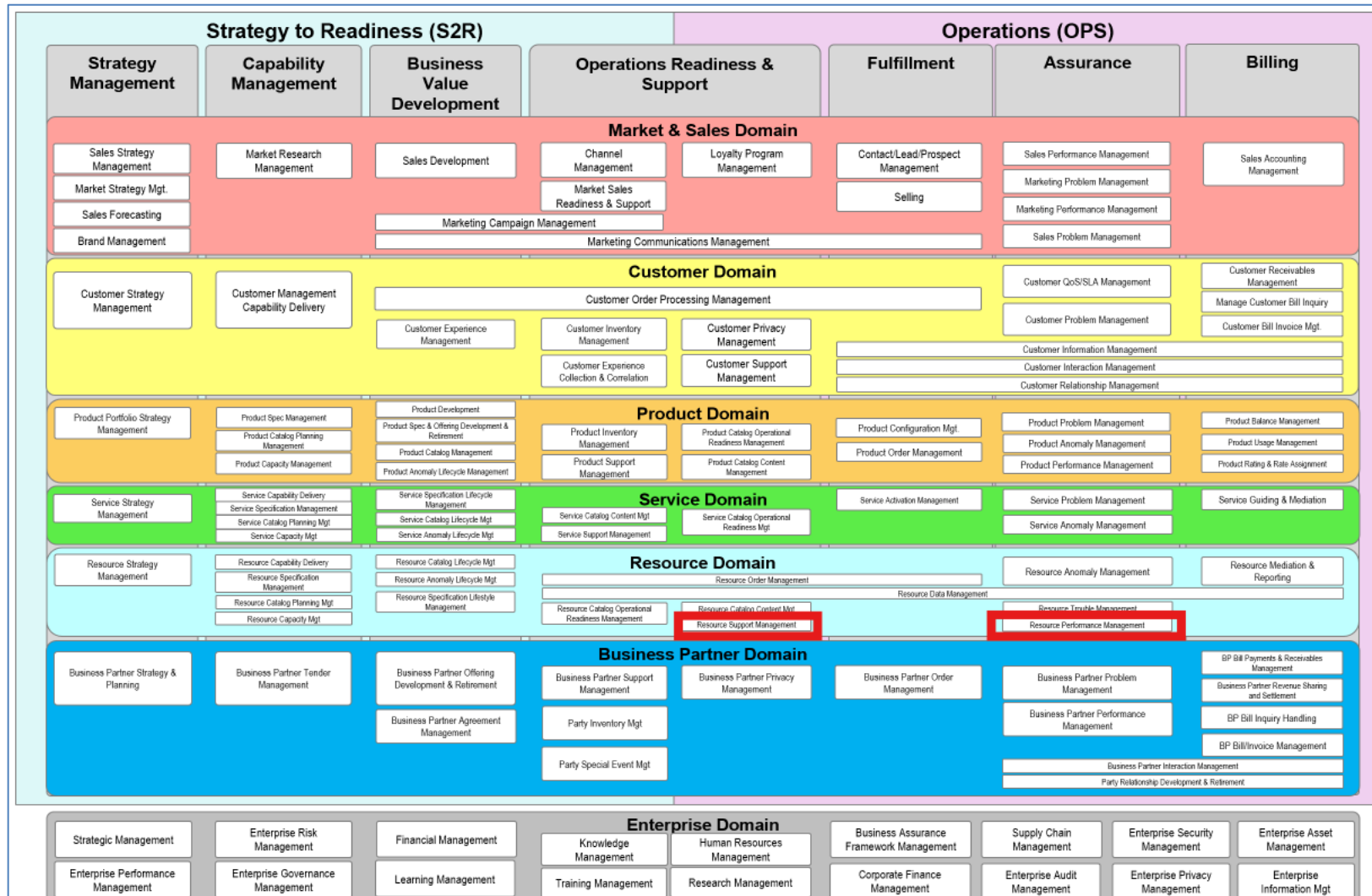


Figure 2 - Process coverage for JIO B2C System for Jio Network Performance Management (JNPM) - Conformance Certification

2.4 Information Framework Assessment - ABE Scope

Information Framework (SID) - v24.0 – JIO B2C Network Performance Management (JNPM) – Conformance Footprint

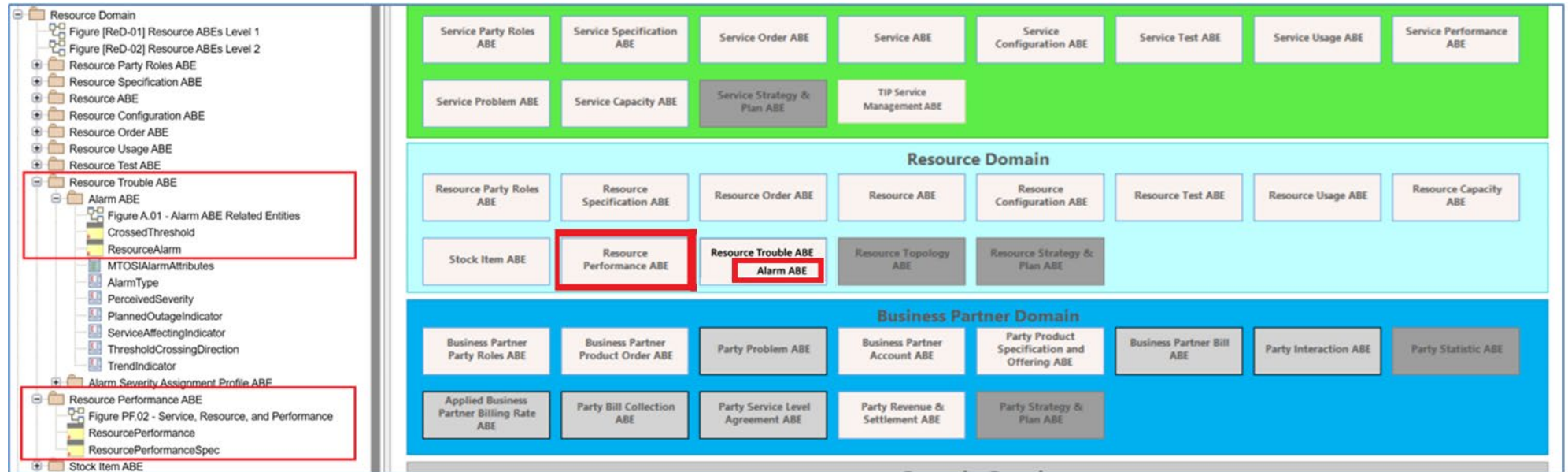


Figure 3 - Level 1 ABEs - SID coverage for JIO B2C System for Jio Network Performance Management (JNPM) – Resource Domain

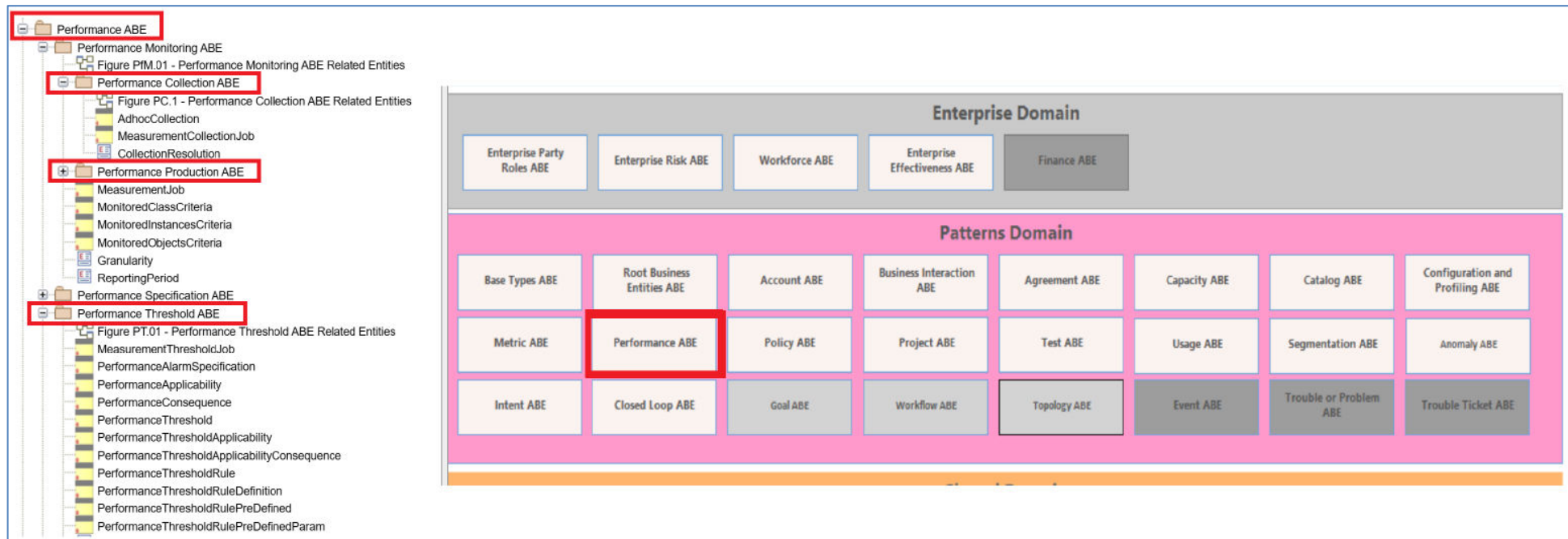


Figure 4 - Level 1 ABEs - SID coverage for JIO B2C System for Jio Network Performance Management (JNPM) – Patterns Domain

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 for Jio Network Performance Management (JNPM) 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.

1.5.4 - Resource Support Management

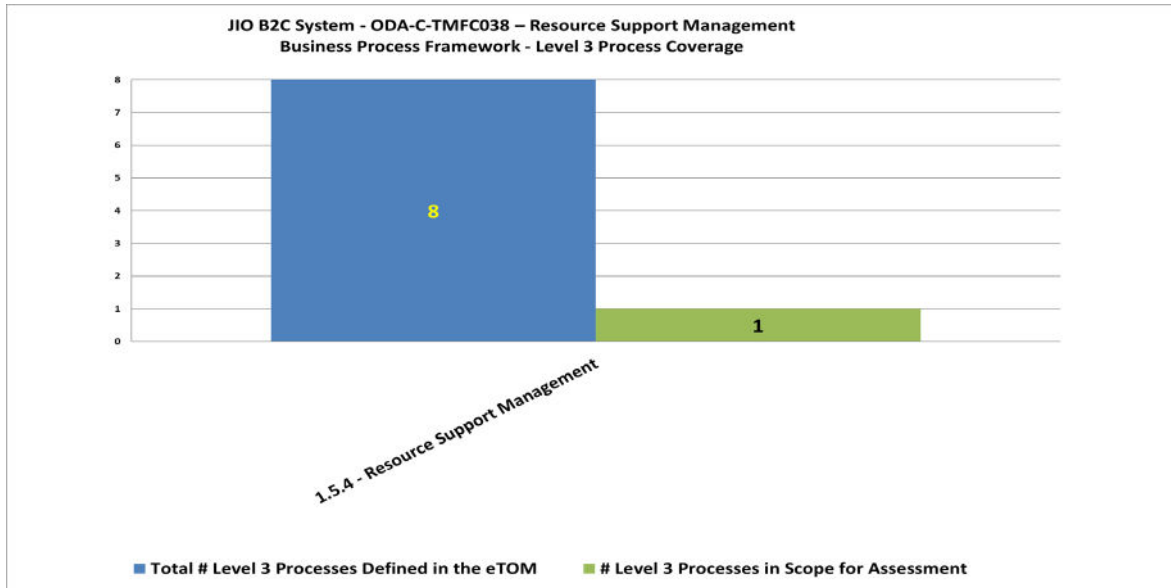


Figure 5- Resource Support Management – Level 3 processes in scope for certification

1.5.9 - Resource Performance Management

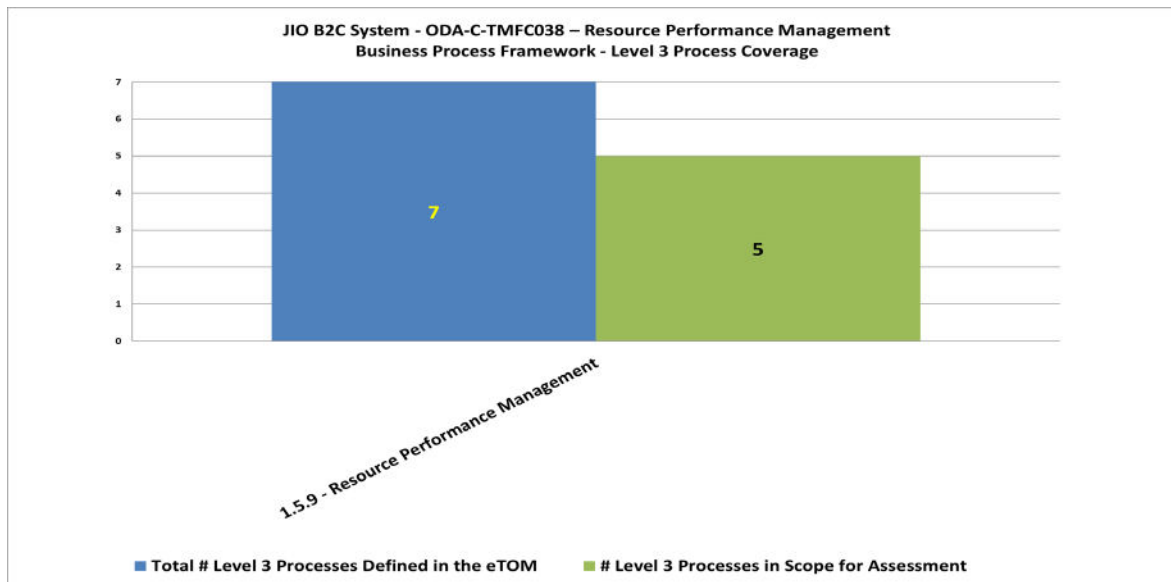


Figure 6- Resource Performance Management – Level 3 processes in scope for certification

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 - ODA-C – TMFC038 - JIO Network Performance Management (JNPM)</i>
<i>Assessment Type</i>		<i>Solution</i>
<i># of L3 Processes in Scope:</i>		<i>4</i>
Level 1	Level 2	Level 3
1.5 - Resource Domain		
1.5.4 - Resource Support Management		
1.5.4.2 - Enable Resource Performance Management		

Figure 7- Level 3 process scope for certification – Resource Support 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 - ODA-C – TMFC038 - JIO Network Performance Management (JNPM)</i>
<i>Assessment Type</i>		<i>Solution</i>
<i># of L3 Processes in Scope:</i>		<i>5</i>
Level 1	Level 2	Level 3
1.5 - Resource Domain		
1.5.9 - Resource Performance Management		
1.5.9.1 - Monitor Resource Performance		
1.5.9.2 - Analyze Resource Performance		
1.5.9.4 - Report Resource Performance		
1.5.9.5 - Create Resource Performance Degradation Report		
1.5.9.7 - Close Resource Performance Degradation Report		

Figure 8- 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 (eTOM) - Conformance Scoring 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 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 definitions.
* 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. 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 process descriptions. The score awarded for a Level 3 process, is deduced according to the support mapped to the Level 3 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. <u>This note specifically applies to Product & Solution Assessments.</u>		
Note 5 - Processes that are supported via manual implementation <u>only</u> , are not considered in scope for the Assessment. <u>This note specifically applies to Product & Solution Assessments.</u>		

Figure 9- 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 Network Performance Management (JNPM).

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/2024/11/eTOM-24.0_Conformance_Mapping_Template-JIO-B2C-System-ODA-C-TMFC038-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			
<i>Member:</i>		<i>JIO</i>	
<i>Solution:</i>		<i>JIO B2C System - ODA-C – TMFC038 - JIO Network Performance Management (JNPM)</i>	
<i>Assessment Type</i>		<i>Solution</i>	
<i># of L3 Processes in Scope:</i>		4	
Level 1	Level 2	Level 3	
1.5 - Resource Domain			
1.5.4 - Resource Support Management			
1.5.4.2 - Enable Resource Performance Management			4/5

Figure 10- - eTOM Conformance Scores Summary – Resource Support 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 - ODA-C – TMFC038 - JIO Network Performance Management (JNPM)</i>	
<i>Assessment Type</i>		<i>Solution</i>	
<i># of L3 Processes in Scope:</i>		5	
Level 1	Level 2	Level 3	
1.5 - Resource Domain			
1.5.9 - Resource Performance Management			
1.5.9.1 - Monitor Resource Performance			4.3/5
1.5.9.2 - Analyze Resource Performance			4/5
1.5.9.4 - Report Resource Performance			5/5
1.5.9.5 - Create Resource Performance Degradation Report			5/5
1.5.9.7 - Close Resource Performance Degradation Report			5/5

Figure 11- - eTOM Conformance Scores Summary – Resource Performance Management

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).

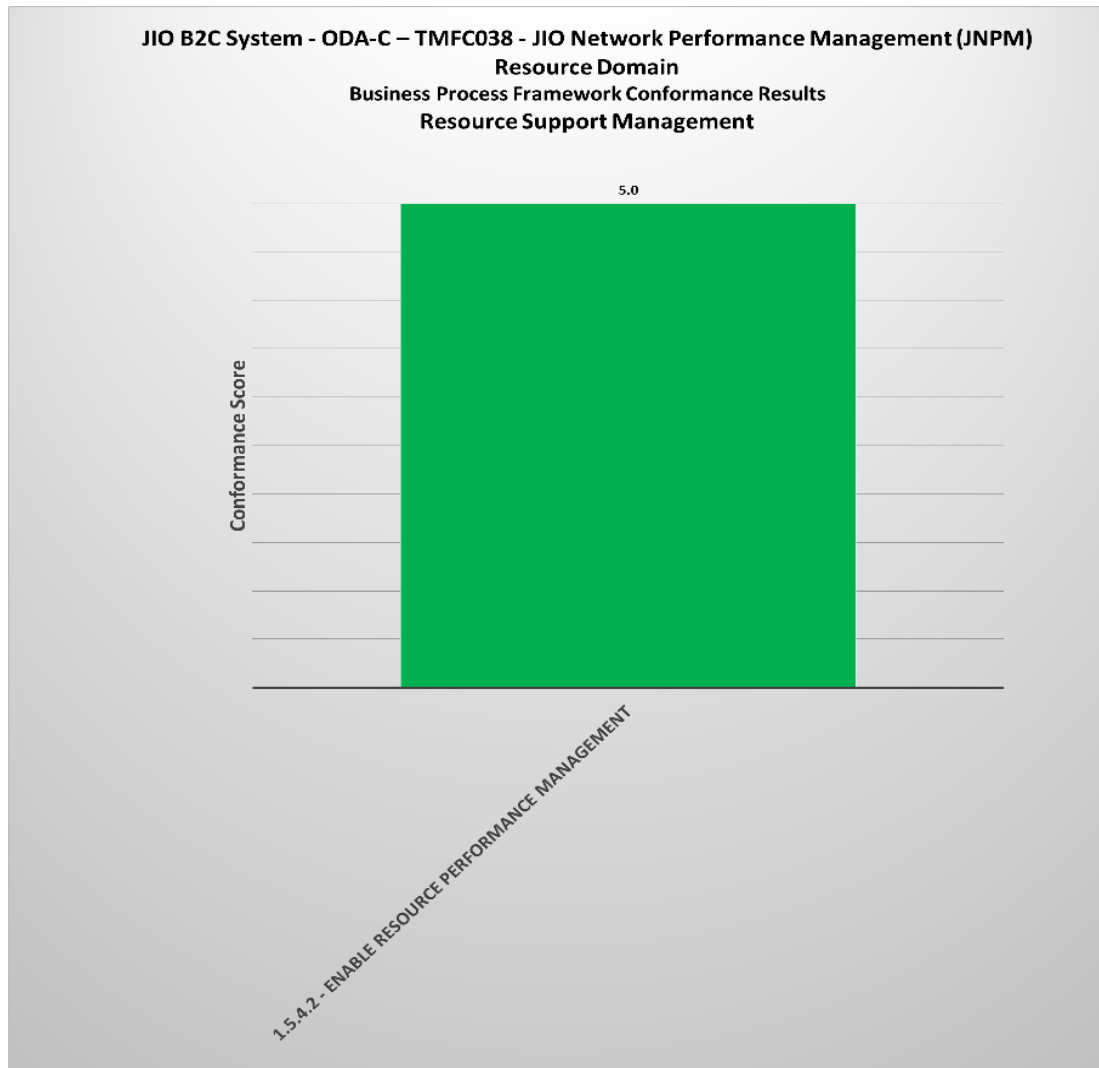


Figure 12- - eTOM Conformance Scores Graph – Resource Support Management

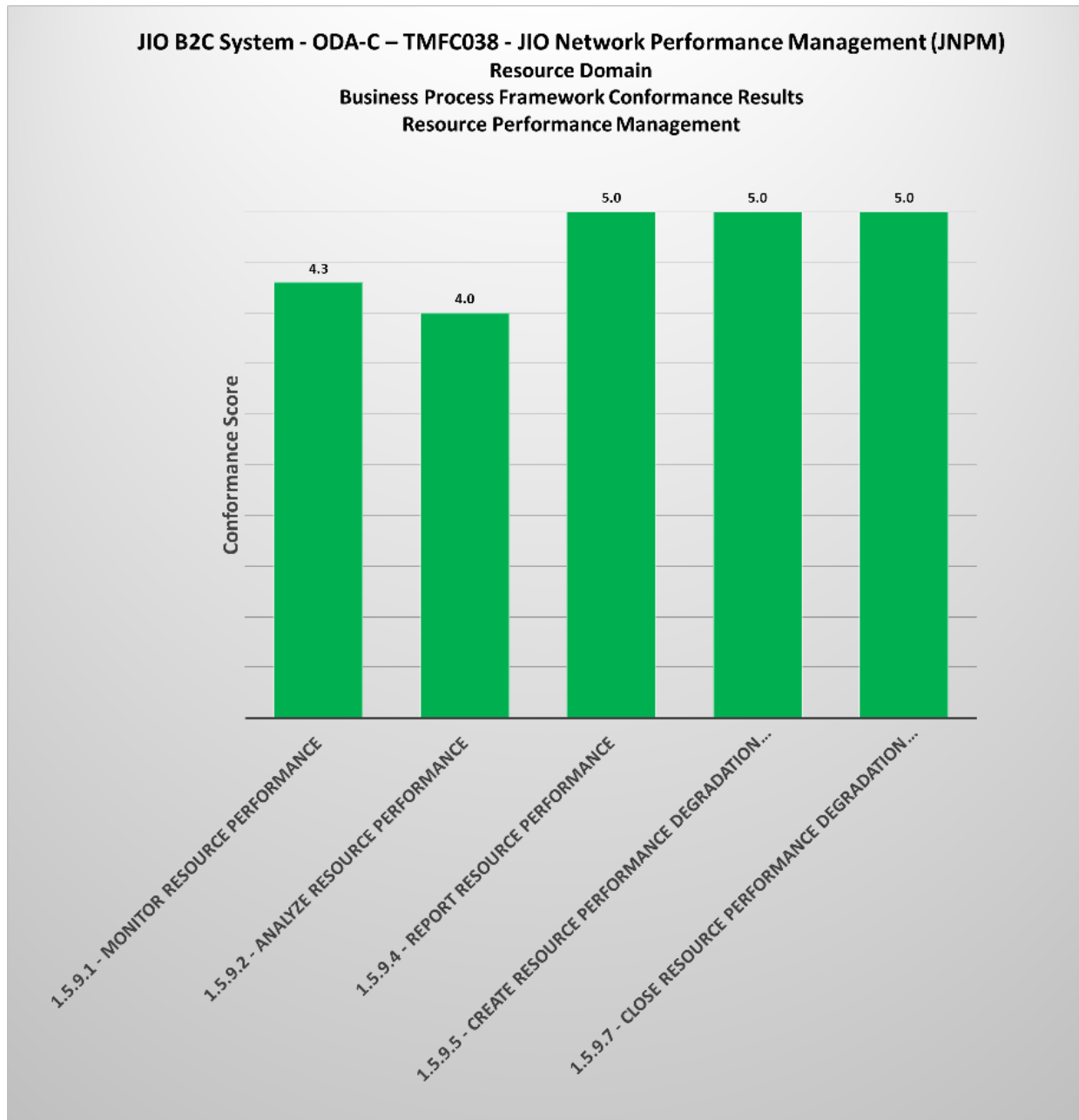


Figure 13- - eTOM Conformance Scores Graph – Resource Performance Management

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 - ODA-C – TMFC038 - (JNPM) - Resource Domain = 2 ABEs
<i>L1/L2/L3 ABEs</i>
Resource Domain
Resource Performance ABE
Resource Trouble ABE :: Alarm ABE

JIO B2C System - ODA-C – TMFC038 - (JNPM) - Patterns Domain = 4 ABEs
<i>L1/L2/L3 ABEs</i>
Patterns Domain
Performance ABE
Performance ABE :: Performance Threshold ABE
Performance ABE :: Performance Monitoring ABE :: Performance Collection ABE
Performance ABE :: Performance Monitoring ABE :: Performance Production ABE

Figure 14 - SID - v24.0 – JIO B2C System for Jio Network Performance Management (JNPM) SID Certification Scope

4.3 Information Framework Conformance Result

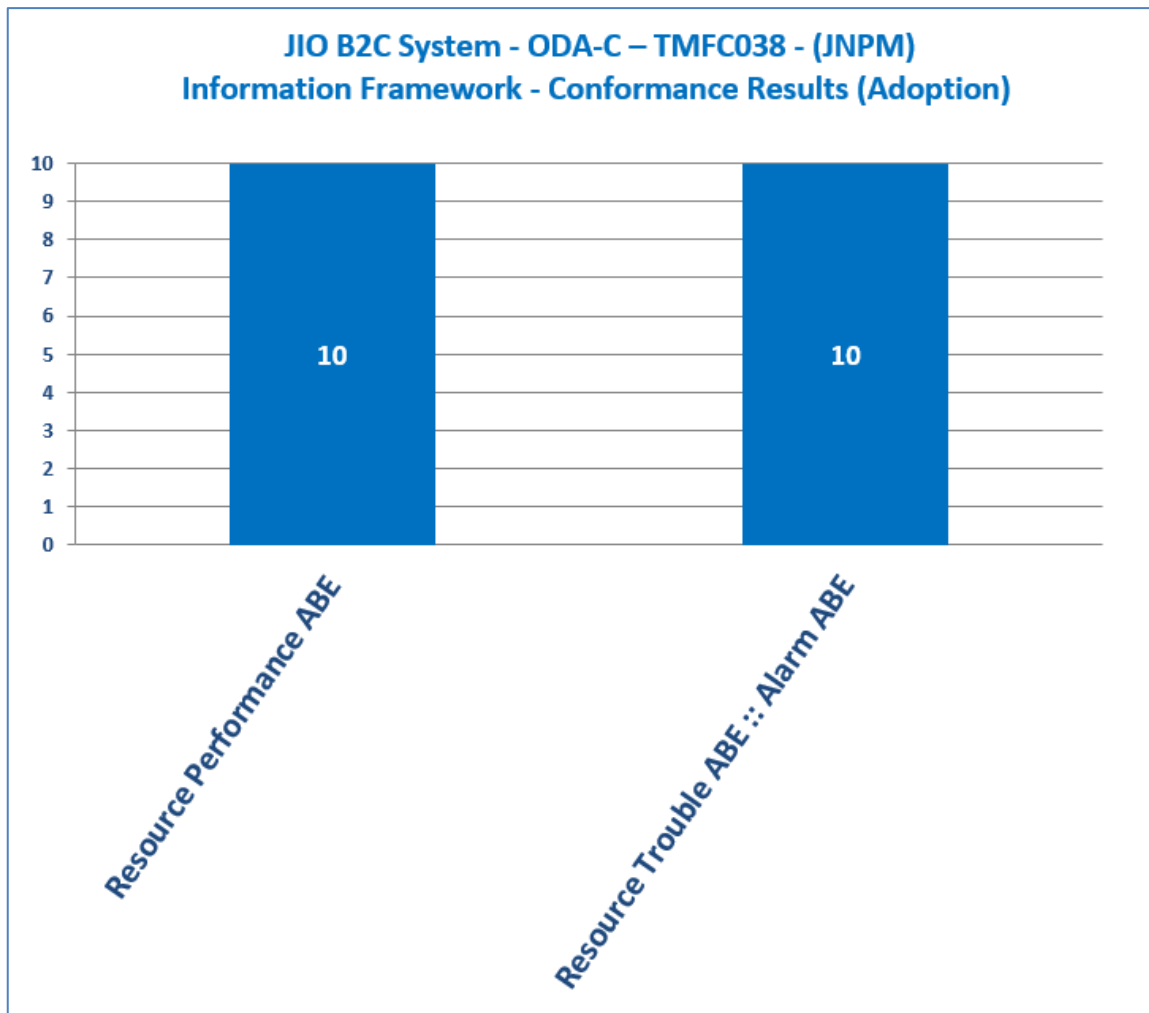


Figure 15 - SID - v24.0 – JIO B2C System for JNPM SID Certification Scores Resource Domain

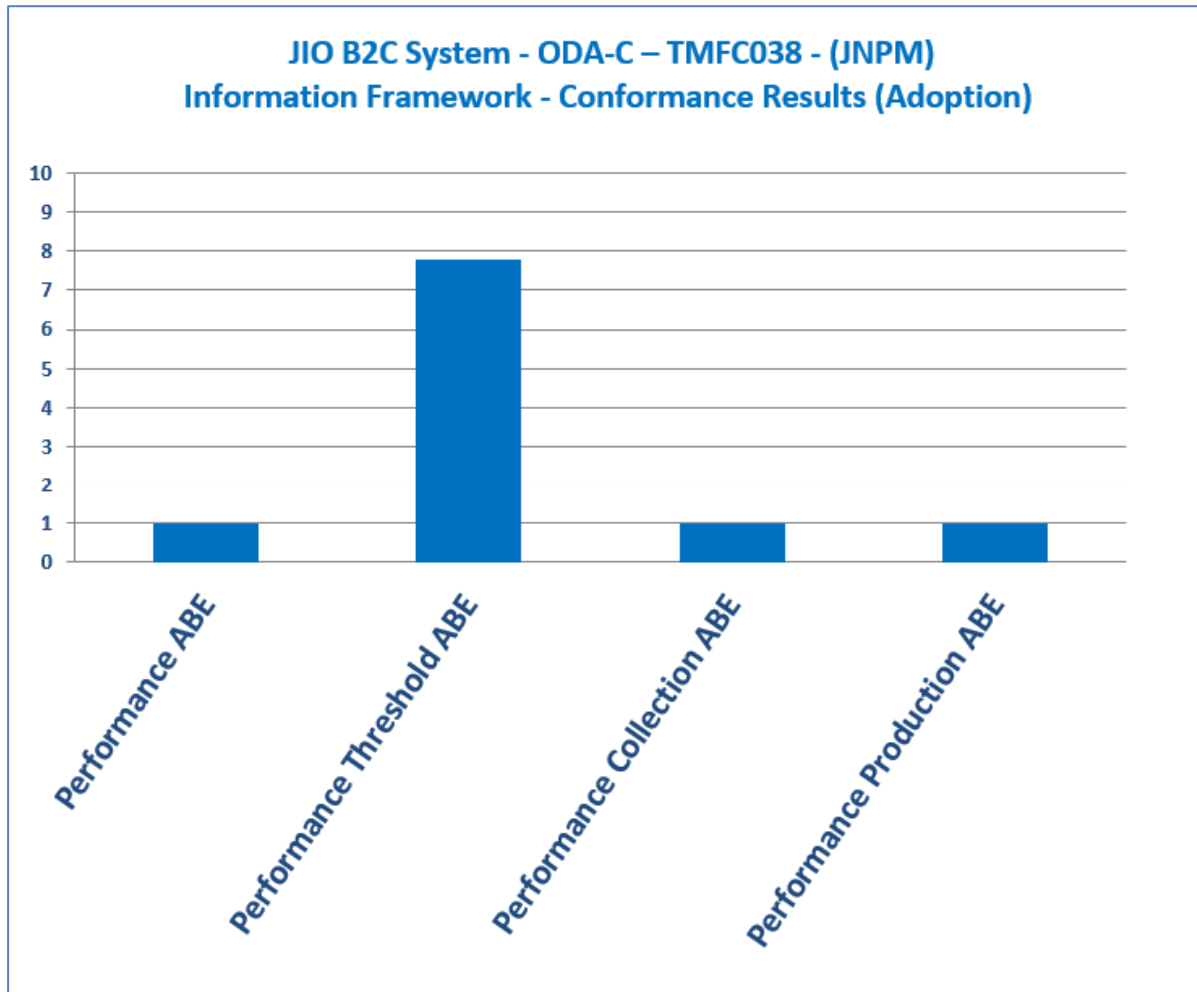


Figure 16 - SID - v24.0 – JIO B2C System for JNPM SID Certification Scores Patterns Domain

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]
<p>NOTES:</p> <p>1. The score values for each SID component are added together to get the overall Adoption Conformance score.</p> <p>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.</p> <p>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).</p>						

Figure 17 - 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 Based 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 Based 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.