Tecnotree

**Open Digital Architecture
Solution Conformance Certification Report**

Digital Service Provisioning System (DSPS)

Business Process Framework (eTOM) Release 22.0

TM Forum Standard

Business Process Framework (eTOM)

**14th June 2023
Report Version: 1.0**

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eTOM Scope for Digital Service Provisioning System (L3s)

TM Forum - Business Process Framework (eTOM) v22.0 Cconformance Assessment	
	Tecnotree
	Digital Service Provisioning System (DSPS)
	Solution
	5
Level 2	*Level 3*
1.4.5 - Service Configuration & Activation	
	1.4.5.2 - Allocate Specific Service Parameters to Services
	1.4.5.3 - Track & Manage Service Provisioning
	1.4.5.4 - Implement, Configure & Activate Service
	1.4.5.7 - Report Service Provisioning
	1.4.5.8 - Close Service Order

Figure 1 – Tecnotree - eTOM Certification Scope for Digital Service Provisioning System

1.1 Executive Summary

This document provides details of Tecnotree's self-assessment and TM Forum's Conformance Assessment of the Tecnotree - Digital Service Provisioning System v 5.0 against the following ODA core frameworks:

• Business Process Framework (eTOM) Version 22.0

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

For more information on the Tecnotree Digital Service Provisioning System please contact:
marketing@tecnotree.com

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

1.2   About Tecnotree

Tecnotree is a global provider of telecom IT solutions for the management of products, customers and revenue. Tecnotree helps Communications Service Providers to transform their business towards a marketplace of modern and digital services. Tecnotree empowers service providers to monetize service bundles, provide personalized user experiences and augment value throughout the customer lifecycle. Tecnotree serves around 90 service providers in more than 70 countries. Tecnotree is listed on the main list of NASDAQ Helsinki with the trading code TEM1V.

Tecnotree has a well-defined and augmented portfolio of products that is in line with the vision of Digital Transformation for DSPs and one which can provide a smooth transition from CSPs to DSPs. The following table provides this digital strategy that Tecnotree has embedded in its portfolio of products.

Table 1 Tecnotree's Digital BSS Strategy

Tecnotree Digital Strategy		
Digital for Business	Continuous customer engagement through different channels to understand consumer behaviors and generate higher revenues	- Omni Channel - Digital Marketplace - Digital Wallet - Advanced Campaigns - Loyalty Monetization - Personalize Experience
Digital for Technology	Providing Platforms and Tools to achieve agility for delivering Business goals	- Orchestration - Open API - Service Innovation - Micro services - Advance Analytics/ML - Containerization
Digital for Operations	Automation of tasks and providing insights into process or business performance through guided application intelligence	- Self-Healing -ML - Operations Anywhere APP - Continuous Deployment - Automated Fault Management - Self-Monitoring

Below table highlights Tecnotree signatures for Digital BSS Suite 5.

Table 2 Tecnotree Digital BSS signatures

Tecnotree Digital BSS Signatures	
Mobile First	Tecnotree's strategy is to move from Mobile too to Mobile first experience. Mobile native Apps are provided for partners, DSP's marketplace managers and consumers.
Omnichannel Enabled	Extending Omni channel experience which is all about creating an Omni-present and consistent experience across all channels.
Open APIs	Opening Partner ecosystem through Open API's and monetization capabilities with Seamless integrations
Reduced TCO	- Open source technical stack eliminates expensive license cost - Standardized services increase reusability and reduce overall cost - Improved performance and availability reduce the downtime

Tecnotree Digital BSS Signatures	
Cloud-Native	Embracing Cloud-Native technologies helps in selecting the right future-proof stack among the rapidly evolving options is critical and cannot wait
Micro-services Orchestration	Achieving Agility, Reusability, Self-Governing, Cohesiveness, Testability, Deploy-ability, Scalability, and high Availability
Incremental feature improvements	Continuous Delivery as the means of fast delivery of incremental features
AI Enabled	• AI Enabled digital products providing deep insights about Customers, Partners, Services/Products • Adding intelligence to ease Operations
Self-healing	Proactive Managed Services through Self-Healing based on AI & ML capabilities
Automated fault management	Thorough Fault Tolerant and Resilient solution
Auto Scaling	Capability to augment capacity on demand basis

We enable communication service providers to overcome digital barriers and capture the complete value of automation and connectivity. With over 40 years of deep domain knowledge, technical expertise, proven delivery and transformation capability across the globe, the company's portfolio spans across open-source technology-based agile products and solutions, comprising of a full range of business processes and subscription management for telecom. Our offerings include pre-integrated B2B, B2C and B2B2X solutions.
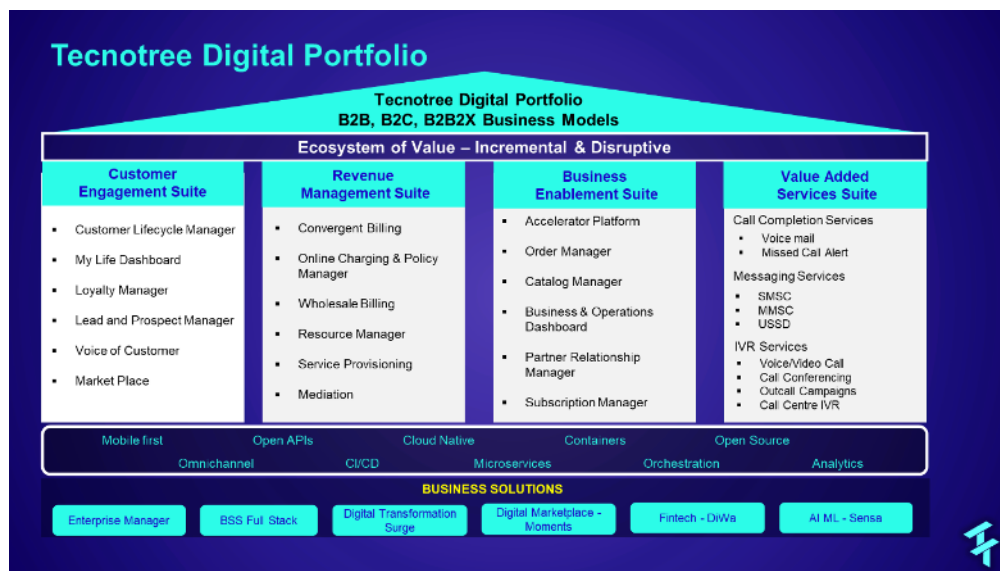
Figure 2 – Tecnotree Portfolio

2.   Product Functionality/Capability Overview

2.1   Tecnotree - Digital Service Provisioning System - Platform Overview

Figure 3 – Tecnotree – Digital Service Provisioning System Overview

The following are the key features of Tecnotree - Digital Service Provisioning System:

- **Agility and Flexibility for New Services/Line of Business On-Boarding:** With the help of DSPS products and other Tecnotree digital BSS products or operator own products, business teams can plan, define, and design new services which can then be launched in the production environment with zero-touch operations. The DSPS would be the system that will be responsible for provisioning part of the service fulfillment.

- **High Activation Success Rate and Reduce Service Order Processing Time:** centralization of all provisioning process in DSPS would enable fast and high-speed service fulfillment with higher assurance. Using new technologies and the design of DSPS would also help in processing the services in a high-speed manner.

- **Reduce OPEX:** By the power of the Monitoring and Analytics module, the Activities stream would be processed to forecast the upcoming demand of service or incoming outages and we're able to autonomously take actions like scaling up/down the workers or enable queue automatically when its needed i.e., when there is an outage in the network.

- **Support hybrid network integration:** In case if CSPs want to enable or swap the network, the DSPS would be able to support multi-network provisioning and enable the network operator to be done smoothly.

- **Increase automation:** DSPS provides automated retry and reconciliation for scenarios that may happen in the provisioning. With this capability, many of the reconciliation scenarios can be automated which then would reduce the operational activities and overhead.
- **Embedded analytics:** DSPS generates standard events in standard format which would be used by elastic components in the digital BSS stack for better generation of operational dashboards and reports.
- **TMF compliance:** TMF compliance in DSPS assures the CSPs of the design and availability of key capabilities following the standards worldwide.
- **Cloud-native design and architecture:** Same as all other digital products of Tecnotree in the BSS stack, the DSPS also follows the cloud-native architecture and design and allows better and efficient management of infrastructure and assures the high availability and performance of services.

2.2   Tecnotree - Digital Service Provisioning System Benefits
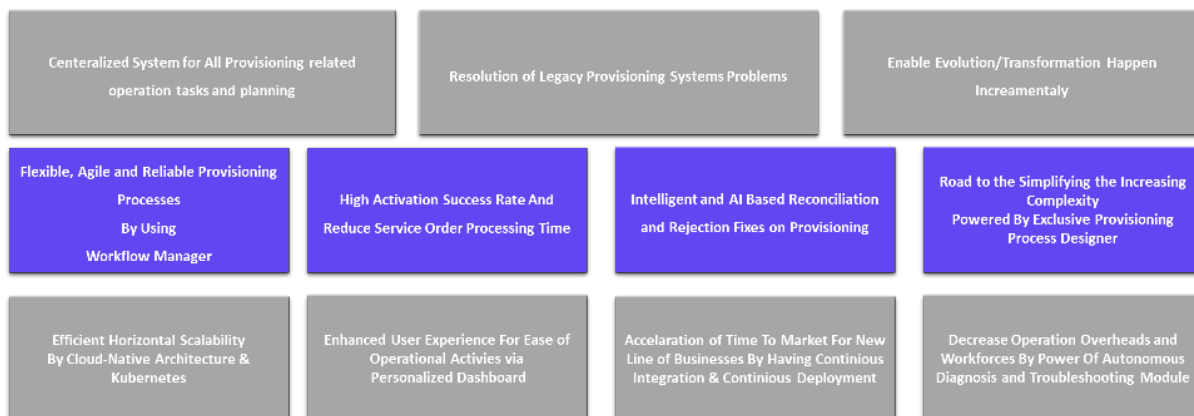
Figure 4 - Tecnotree – Digital Service Provisioning System value proposition

2.3   Tecnotree - Digital Service Provisioning System Modules
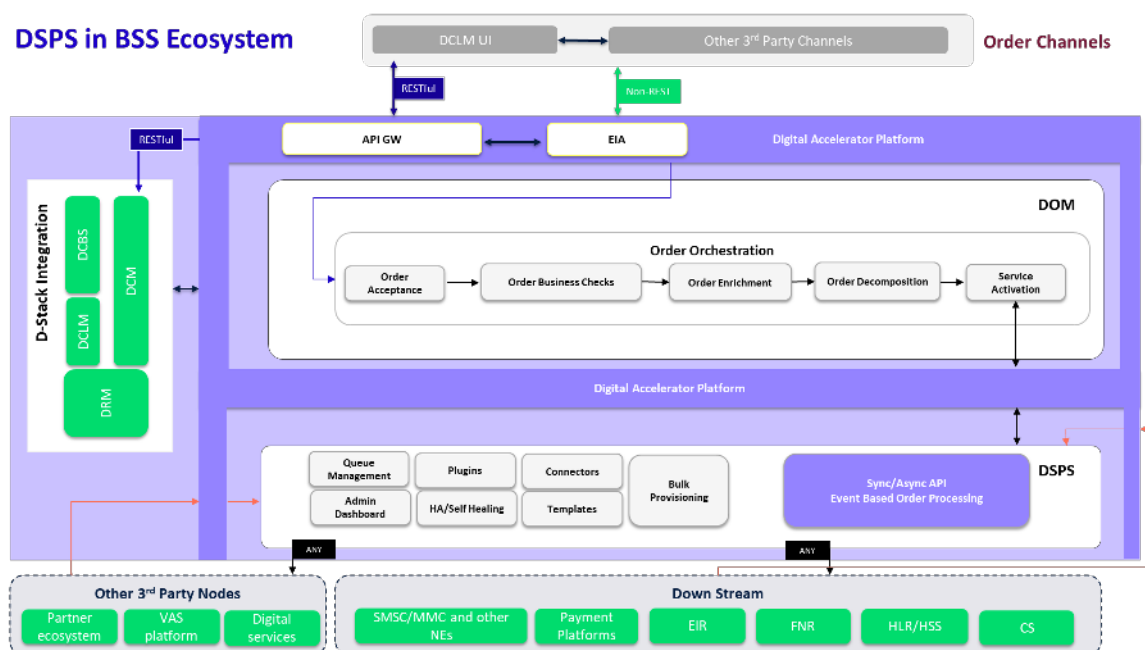
Figure 5 - Tecnotree - Digital Service Provisioning System Architecture

2.4   Tecnotree - Digital Service Provisioning System Supported Installation Models

The following installation models are applicable for Tecnotree - Digital Service Provisioning System:
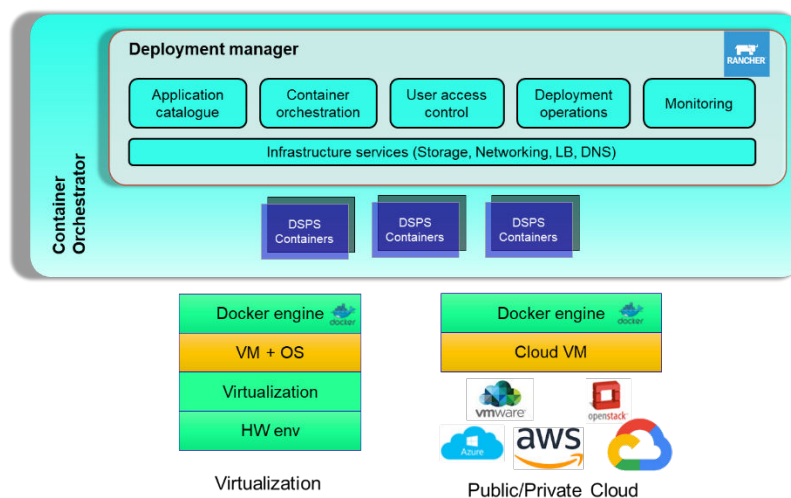
Figure 6 - Tecnotree - Digital Service Provisioning System Installation Models

2.4 Product Scope

1	**Input Adaptor**	✓Receive Provisioning Request from OSS/BSS ✓Support event-based provisioning using message queue ✓Support both sync/async mode ✓Supports priority-based order in provisioning
2	**Dashboard**	✓ Personalized dashboard ✓ Bulk features ✓ Hands-Free (planned outage / automatic outage management) ✓ Offline provisioning
3	**Processor**	Read input requests from queue/API and identify downstreams to be provisioned. ✓ Check list of commands and API calls to be executed on the down streams. ✓ Support MML and many more different integration standards and protocols ✓ Retry, roll back & call back mechanism based on each provisioning operation/micro operation workflow
4	**Plugins and Templates**	✓ Pre-integrated rules engine to enrich requests based on configured rules. ✓ Create/design/update any outbound calls on downstream using templates ✓ Extensible using plugin concept
5	**Agents Driven Execution**	Translates requests sent by upstream systems to downstreams expected protocols by Agents . Receives and analyzes response and execute based on designed rules. ✓ Identify no. of commands to be executed by adding parameter values. ✓ Analyzes response received.
6	**Rich Protocol supported unit**	✓ Already supporting Telnet, MML, REST,SOAP, HTTP ✓ Already integrated with key network providers for network elements like : OCS,HSS,FNR,VPN
7	**Response Reader**	✓Generate sync/async response to the up streams ✓Reading & analyzing response from queue ✓Flexible dashboards for analytics

Figure 7 - Tecnotree - Digital Service Provisioning System Scope

2.6 Business Process Framework (eTOM) Certification Scope

The following figure represents the Business Process Framework (eTOM) Level-2 processes that were presented in scope for conformance certification for the Digital Services Provisioning System (DSPS).

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Strategy to Readiness (S2R)				Operations (OPS)		
Strategy Management	**Capability Delivery**	**Lifecycle Management**	**Operations Readiness & Support**	**Fulfillment**	**Assurance**	**Billing & Revenue Management**

Market & Sales Domain

Market Strategy & Policy	Market Research	Sales Development	Sales Channel Management	Selling	Market Performance Management	Market & Sales Accounting Management
Sales Strategy & Planning			Loyalty Program Management		Market & Sales Problem Management	
Sales Forecasting		Marketing Campaign Management	Market Sales Support & Readiness	Contact/Lead/Prospect Management	Sales Performance Management	
Brand Management						

Marketing Communications and Advertising

Customer Domain

Customer Experience Management Strategy and Planning	Customer Management Capability Delivery	Customer Lifecycle Management	Customer Support	Customer Interaction Management		Customer Bill Invoice Management
			Customer Experience Management	Customer Information Management		Customer Bill Payments & Receivables Management
Customer Strategy & Planning			Customer Inventory Management	Customer Relationship Management		Customer Bill inquiry Handling
			Customer Privacy Management	Customer Order Management	Customer Problem Management	Customer QoS/SLA Management

Product Domain

Product & Offer Portfolio Planning	Product & Offer Capability Delivery	Product Catalog Lifecyle Management	Product Test Management	Product Configuration Management	Product Performance Management	Product Rating & Rate Assignment
	Product Specification Management / Product Capacity Mgt		Product Support		Product Problem Management	
Product Test Quality Analysis		Product Anomaly Lifecyle Management	Product Inventory Mgt	Product Offering Purchasing		Product Balance Management
	Product Catalog Planning Mgt	Product Specification & Offering Development & Retirement	Product Catalog Operational Readiness Management		Product Anomaly Management	Product Usage Management
			Product Catalog Content Mgt			

Service Domain

	Service Capability Delivery	Service Specification Development & Retirement	Service Test Management		Service Quality Management	
Service Test Quality Analysis	Service Specification Management		RM&O Support & Readiness		Service Problem Management	Service Guiding & Mediation
	Service Capacity Mgt	Service Catalog Lifecycle Mgt	Service Catalog Content Mgt	Service Configuration & Activation ⑤	Service Anomaly Management	
Service Strategy & Planning	Service Catalog Planning Mgt	Service Anomaly Lifecycle Mgt	Service Catalog Operations/Readiness Mgt			

Resource Domain

	Resource Capability Delivery	Resource Specification Development & Retirement	Resource Test Management		Resource Performance Mgt	
Resource Test Quality Analysis	Resource Specification Management	Resource Catalog Lifecycle Mgt	RM&O Support & Readiness	Resource provisioning	Resource Trouble Management	Resource Mediation & Reporting
	Resource Capacity Mgt	Resource Anomaly Lifecycle Mgt	Work Order Management		Resource Anomaly Management	
Resource Strategy & Planning	Resource Catalog Planning Mgt		Resource Catalog Operational Readiness Management			

Resource Data Collection & Distribution

Business Partner Domain

Business Partner Strategy & Planning	Business Partner Tender Management	Party Offering Development & Retirement	Business Partner Support	Business Party Order Management	Business Partner Problem Management	Business Partner Bill/Invoice Management
			Business Partner Privacy Mgt			Business Partner Bill/Invoice Management
			Business Partner Training and Education		Business Partner Performance Management	Business Partner Bill Payments & Receivables Mgt
		Party Agreement Management	Party Special Event Mgt	Business Partner Interaction Management		Business Partner Revenue Sharing and Settlement
			Party Inventory Mgt	Party Relationship Development & Retirement		Business Partner Bill Inquiry Handling

Enterprise Domain

Strategic & Enterprise Planning	Enterprise Audit & Risk Management	Financial Management	Corporate Finance Management	Human Resources Management	Business Assurance Establishment	Supply Chain Management
Enterprise Asset Management	Enterprise Performance Management	Enterprise Governance	Learning Management	Training Management	Research Management	Knowledge Management

Security & Privacy Management

**Number of L3 process elements in scope for certification**

Figure 8 – eTOM L2 processes coverage for Tecnotree's Digital Service Provisioning System

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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 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.

As of February 2018, TM Forum allows mappings to be provided against Level-3 process elements when:

- L3s have relevant, consistent full detailed descriptions reflecting all L4 process elements in their decomposition (usually implied tasks identified and separated by bullet points)
- No decomposition to Level 4 processes was available for a particular L3 process, but the Level-3 mappings fulfil the condition described above, therefore the score awarded hereafter is for the Level 3 process in its entirety.

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 most often provided against the text in the "Mandatory" field for the process. In the event of the Mandatory field not being defined in the eTOM specification, the process mappings are in that case provided against

the Level 4 Extended description. If an Extended description is not defined, then the mapping is provided against the Brief description.

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 3 process descriptions using the Mandatory/Extended/Brief description as per the guidelines explained for Level 4 based mappings in the previous note.

3.2   Scope of Conformance Certification (eTOM)

This section conveys information about the Business Processes implemented by Tecnotree - Digital Service Provisioning System v 5.0 in accordance to the TM Forum eTOM Framework Version 22.0. The section covers the following five L3 Processes.

3.3   List of Certified Processes– Chart (eTOM)

TM Forum - Business Process Framework (eTOM) v22.0 Cconformance Assessment	
	Tecnotree
	Digital Service Provisioning System (DSPS)
	Solution
	5
Level 2	*Level 3*
1.4.5 - Service Configuration & Activation	
	1.4.5.2 - Allocate Specific Service Parameters to Services
	1.4.5.3 - Track & Manage Service Provisioning
	1.4.5.4 - Implement, Configure & Activate Service
	1.4.5.7 - Report Service Provisioning
	1.4.5.8 - Close Service Order

Figure 9- List of Level 3 certified processes

3.4　Coverage of Certified Processes against eTOM Framework
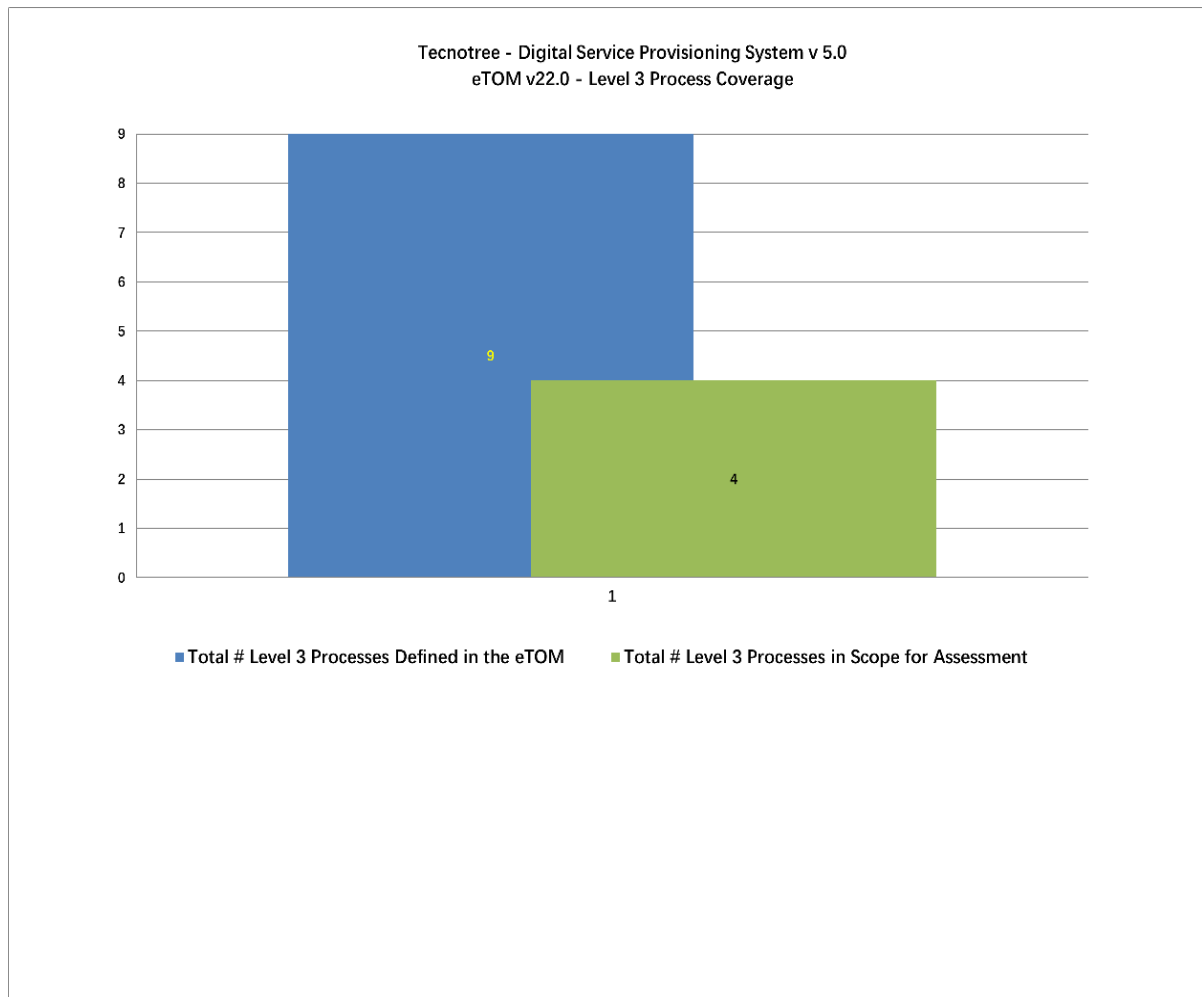

Figure 10- Level 3 process scope for certification

3.5 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 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.		
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 11- TM Forum Business Process Framework: Conformance Scoring Rules

3.6 Business Process Framework – Process Mapping Descriptions

This section provides the mapping of the eTOM v22.0 against the processes performed by Tecnotree - Digital Service Provisioning System v 5.0.

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

Mapping details & reference to supporting evidence.

The documented mapping information for all Level 3 processes in scope for the certification are available from this link.

3.7 Conformance Result

This Section details the Scores awarded to reflect Conformance to the Business Process Framework components of eTOM v22.0.

TM Forum Open Digital Architecture v.22.0 Assessment Scoring Document - Business Process Framework (eTOM)			
Company:	Tecnotree		Certification Final Scores for Level-3 Process Elements
Product:	Digital Service Provisioning System (DSPS)		
Assessment Type:	Solution		
Number of L3 Processes in Scope:	5		
Level 1	Level 2	Level 3	
1.2 - Product			
	1.4.5 - Service Configuration & Activation		
		1.4.5.2 - Allocate Specific Service Parameters to Services	5/5
		1.4.5.3 - Track & Manage Service Provisioning	5/5
		1.4.5.4 - Implement, Configure & Activate Service	5/5
		1.4.5.7 - Report Service Provisioning	5/5
		1.4.5.8 - Close Service Order	5/5

Figure 12- - eTOM Conformance Scores Summary

3.8   Business Process Framework – Conformance Result Summary

This Section provides a graphical view of the conformance levels granted to the Level 3 Processes presented in scope for Tecnotree - Digital Service Provisioning System v 5.0. Each Level 3 process was measured using a Business Process Framework (eTOM) conformance score according to the level of Conformance – Full Conformance (Score = 5) or Partial Conformance (Score below 5)
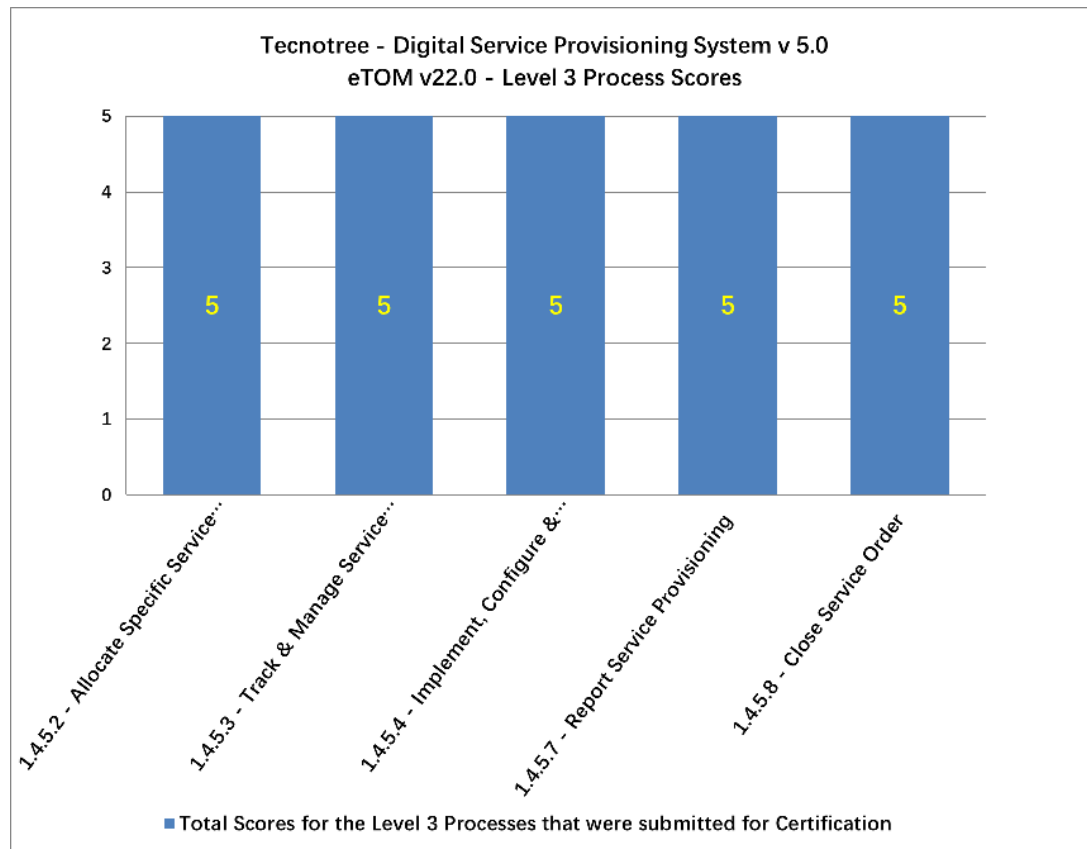

Figure 13- eTOM Conformance Scores