

# **Frameworkx 19.0**

## **Product Conformance**

## **Certification Report**

**Tecnotree**  
**DCM - Digital Catalog Manager v5.0.2**

**September 2020**

**Version 1.0**

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## 1 Introduction

### 1.1 Executive Summary

This document provides details of Tecnotree self-assessment and TM Forum's Conformance Assessment of the **DCM – Digital Catalog Manager v5.0.2**, against the following Frameworkx 19.0 components:

- Business Process Framework Version 19.0

The assessment included a review of:

- The methodology approach to process modeling against the TM Forum's Business Process Framework Release 19.0 according to the specific processes submitted in scope for the Assessment.

For more information on the Tecnotree DCM Product please contact:

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For any additional information on this Frameworkx Conformance Certification Report, please contact TM Forum at: [conformance@tmforum.org](mailto:conformance@tmforum.org).

## 2 Product Functionality/Capability Overview

### 2.1 DCM - Digital Catalog Manager v5.0.2 Platform Overview

Market opportunities and evolving customer needs have encouraged Communication Service Providers (CSP) in broadening their operations and managing multiple lines of businesses (LOBs). Such expansions have compounded the complexity of their products and services and resulted into multiple OSS and BSS systems in their operational landscapes. At the same time, there is an intense pressure of enhancing customer experience and declining traditional revenue streams.

Tecnotree Digital Catalog Manager (DCM) is a central repository of products that spans across multiple lines of businesses. DCM plays a vital role in CSP's environment by providing the integration of products and resources across the business and operational support systems (B/OSS), thus contributing to both the current and emerging market opportunities by helping them surge ahead of the competition.

Tecnotree Digital Catalog Manager helps unify product management and streamlines the process of product creation and launch. It provides CSPs the flexibility of phasing out legacy systems and migrating to strategic systems to meet their product management challenges. This comprehensive and detailed approach adopted by DCM is one of the core reasons for it becoming the tool that bolsters the CSPs' business and operational strategy.

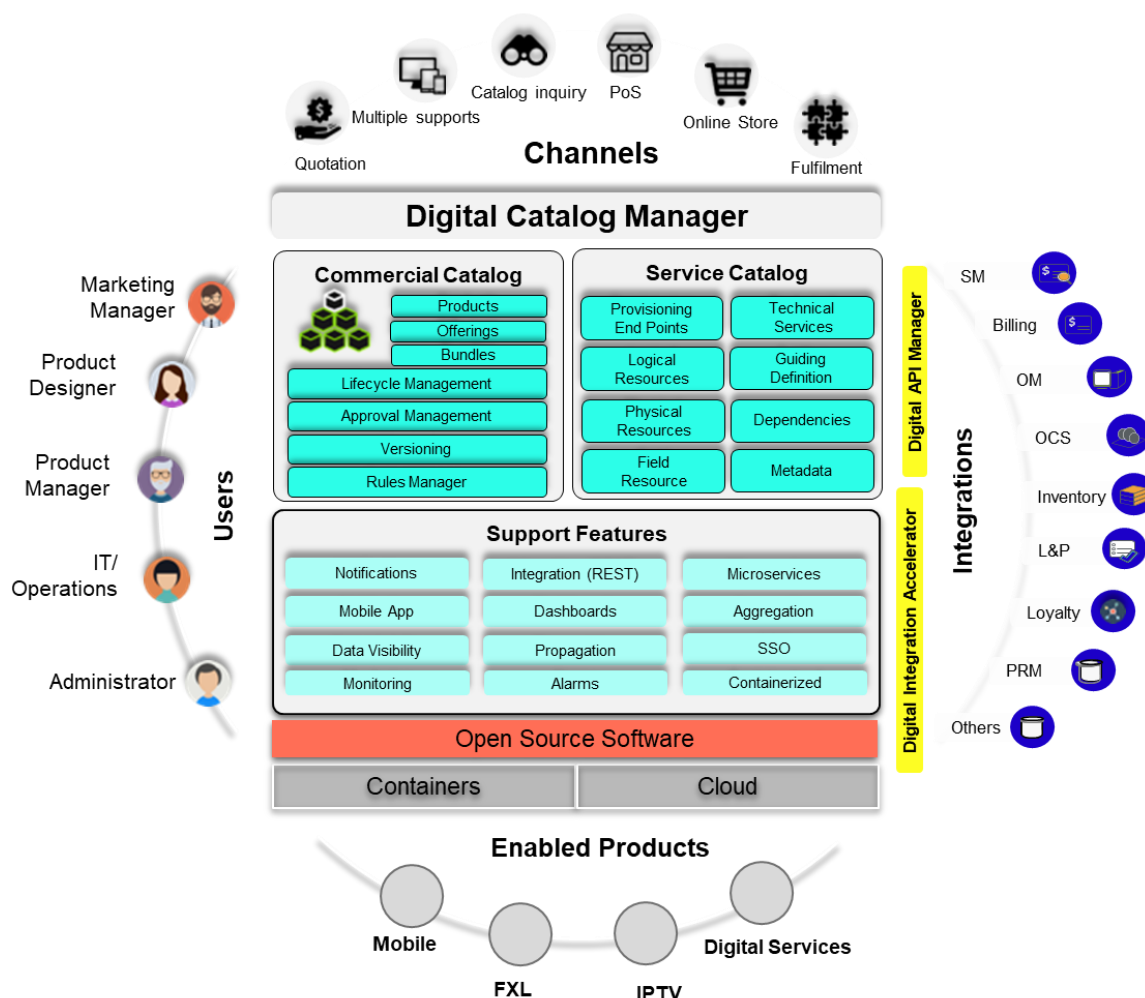


Figure 1 Digital Catalog Manager Overview

Following are the key features of DCM 5.0.2:

- Streamlined product definition process facilitates quicker launch of new offerings and ideas to the market and aids the CSP in providing timely response to competing offers.
- Unified product management across line of businesses
- Flexible commercialization capabilities
- Easy to use graphical user interface enables the CSP's business users to design the offerings quickly and ensures delineation of technical and business activities.
- End to end lifecycle management of products
- Future-proof open architecture based on TM Forum SID product model and APIs.
- TM Forum compliant restful API's enable fast integration with in-house and partner systems and rendering of product information through any desired channel.

### 2.1.1 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		
<b>Digital for Business</b>	Continuous customer engagement through different channels to understand consumer behaviors and generate higher revenues	<ul style="list-style-type: none"> <li>▪ Omni Channel</li> <li>▪ Digital Marketplace</li> <li>▪ Digital Wallet</li> <li>▪ Advanced Campaigns</li> <li>▪ Loyalty Monetization</li> <li>▪ Personalize Experience</li> </ul>
<b>Digital for Technology</b>	Providing Platforms and Tools to achieve agility for delivering Business goals	<ul style="list-style-type: none"> <li>▪ Orchestration</li> <li>▪ Open API</li> <li>▪ Service Innovation</li> <li>▪ Micro services</li> <li>▪ Advance Analytics/ML</li> <li>▪ Containerization</li> </ul>
<b>Digital for Operations</b>	Automation of tasks and providing insights into process or business performance through guided application intelligence	<ul style="list-style-type: none"> <li>▪ Self-Healing -ML</li> <li>▪ Operations Anywhere APP</li> <li>▪ Continuous Deployment</li> <li>▪ Automated Fault Management</li> <li>▪ Self-Monitoring</li> </ul>



Below table highlights Tecnotree signatures for Digital BSS Suite 5.

**Table 2 Tecnotree Digital BSS signatures**

<b>Tecnotree Digital BSS Signatures</b>	
<b>Mobile First</b>	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.
<b>Omnichannel Enabled</b>	Extending Omni channel experience which is all about creating an Omni-present and consistent experience across all channels.
<b>Open APIs</b>	Opening Partner ecosystem through Open API's and monetization capabilities with Seamless integrations
<b>Reduced TCO</b>	<ul style="list-style-type: none"> <li>▪ Open source technical stack eliminates expensive license cost</li> <li>▪ Standardized services increase reusability and reduce overall cost</li> <li>▪ Improved performance and availability reduce the downtime</li> </ul>
<b>Cloud-Native</b>	Embracing Cloud-Native technologies helps in selecting the right future-proof stack among the rapidly evolving options is critical and cannot wait
<b>Micro-services Orchestration</b>	Achieving Agility, Reusability, Self-Governing, Cohesiveness, Testability, Deploy-ability, Scalability and high Availability
<b>Incremental feature improvements</b>	Continuous Delivery as the means of fast delivery of incremental features
<b>AI Enabled</b>	<ul style="list-style-type: none"> <li>▪ AI Enabled digital products providing deep insights about Customers, Partners, Services/Products</li> <li>▪ Adding intelligence to ease Operations</li> </ul>
<b>Self-healing</b>	Proactive Managed Services through Self-Healing based on AI & ML capabilities
<b>Automated fault management</b>	Through Fault Tolerant and Resilient solution
<b>Auto Scaling</b>	Capability to augment capacity on demand basis

## 2.2 DCM - Digital Catalog Manager v5.0.2 Platform Benefits

Digital Catalog Manager allows product marketing and management functions of the CSP to create product offerings by mixing products across different business lines. It therefore becomes an aggregator of Product definitions from existing systems or 3rd party systems having product definitions that are specific to one or more line of business into common concepts. It provides the richness in expressing those offerings in terms of a wide variety of factors such as price, geography, subscriber preferences or others.

DCM will be used by Order Management, CRM, self-care and other systems as part of their core functions to look up a consistent and common method of access to a product catalog. Thus, the CSP's employees belonging to different roles and working on different applications will have to access different parts of the DCM product catalog for different operations on them.

DCM product model supports integration with the analytics engine component to provide recommendations at offering creation and point of delivery to the subscribers along with BI capabilities to drive product performances to the next level.

Enterprise Services – Standard Driven	Configure Price Quote - Enablement	Digital First Design	Multi Faceted Catalogs
Digital Catalog Manager is designed with extensible data models which refers to Industry Standards, built with Catalog Driven Approach – which ensures provisioning of any products including the Enterprise Communications and Digital Products to be done seamlessly. Standards allows the Products and Services can be specified with all necessary technical details – which makes it compatible with any given underlying OSI layer.	Every Enterprise customer has something unique about their needs, it is important to be able to tailor make the products and services required by customer.  Tecnortree DCM's TM Forum compliant model, granular commercial model and open APIs allows any CPQ application to integrate to the system – and enable configuration of the products and services as required by customer. Furthermore, the pricing constructs and business rules enable pricing to be determined dynamically based on the configurations.	Digital Catalog Manager has been designed by taking into consideration the needs of the new digital world. Which enables it to support various modern needs of the customers – such as IoT, Cloud Services etc.  These provided opportunity for Operators to offer value additions on top of existing communication services offered to the customers	Multi Faceted Catalogs enables two important abilities for the Operators:  1. One unified system for both Retail Consumers and Enterprise Customers.  2. Ability to provide custom catalogs for certain large, high value customers – which can promote self service and ease of use for customers.

Figure 2 DCM Value Proposition

## 2.3 DCM - Digital Catalog Manager v5.0.2 Modules

DCM is multilayer application that operates as a centralized master repository that covers resource, service and product catalog functionality and associated APIs within service provider's environment.

DCM follows the TM Forum catalog management structure and resource models, and provides product, service and resource management functionality. It provides abilities to create and design new entities, map entity definitions, manage complex rules, support

componentization of entities and manage their relationships and dependencies. Additional aspects include versioning, change management, enhanced viewing, as well as editing and tracking capabilities

- **Resource Catalog**

Resources are physical or non-physical components (or some combination of these) within CSP's infrastructure or inventory. They are typically consumed or used by services (for example a physical port assigned to a service) or contribute to the realization of a product (for example, a SIM card). They can be drawn from the application, computing and network domains, and include, for example, network elements, software, IT systems, content and information, and technology components.

- **Service Catalog**

A service catalog is a catalog of the services a CSP or DSP provides to the consumers (internal consumers like its employees or B2B customers or B2C customers).

- **Product Catalog**

A product catalog is a collection of product offerings enhanced with additional information such as SLA parameters, invoicing and shipping details.

Each product offering in a product catalog combines pricing and availability information with product or product bundle specifications that describe the relationships between products, the services used to realize the products, and the resources they require.

DCM product module allows product, service and resource definitions for all product categories and product lines. The categorization is CSP-specific.

The categorization aids in bundling, searching and viewing the details of offerings. The lines of business in DCM are defined as per the CSP's lines of business. For instance, for a certain CSP the product lines could be voice, data and entertainment and for another it could be GSM, Wireless Broadband and DTH.

DCM enables the users to both aggregate the resources and services from legacy systems and define products directly in product catalog. These definitions are then used by the product designers to create products and offerings.

During aggregation product definitions from various source systems, such as Prepaid Systems, Inventory systems, Rating and Billing systems, any other catalog systems are imported and maintained in the Digital Catalog Manager along with the source system specifications. With the help of the UI, the products imported from source systems can be viewed.

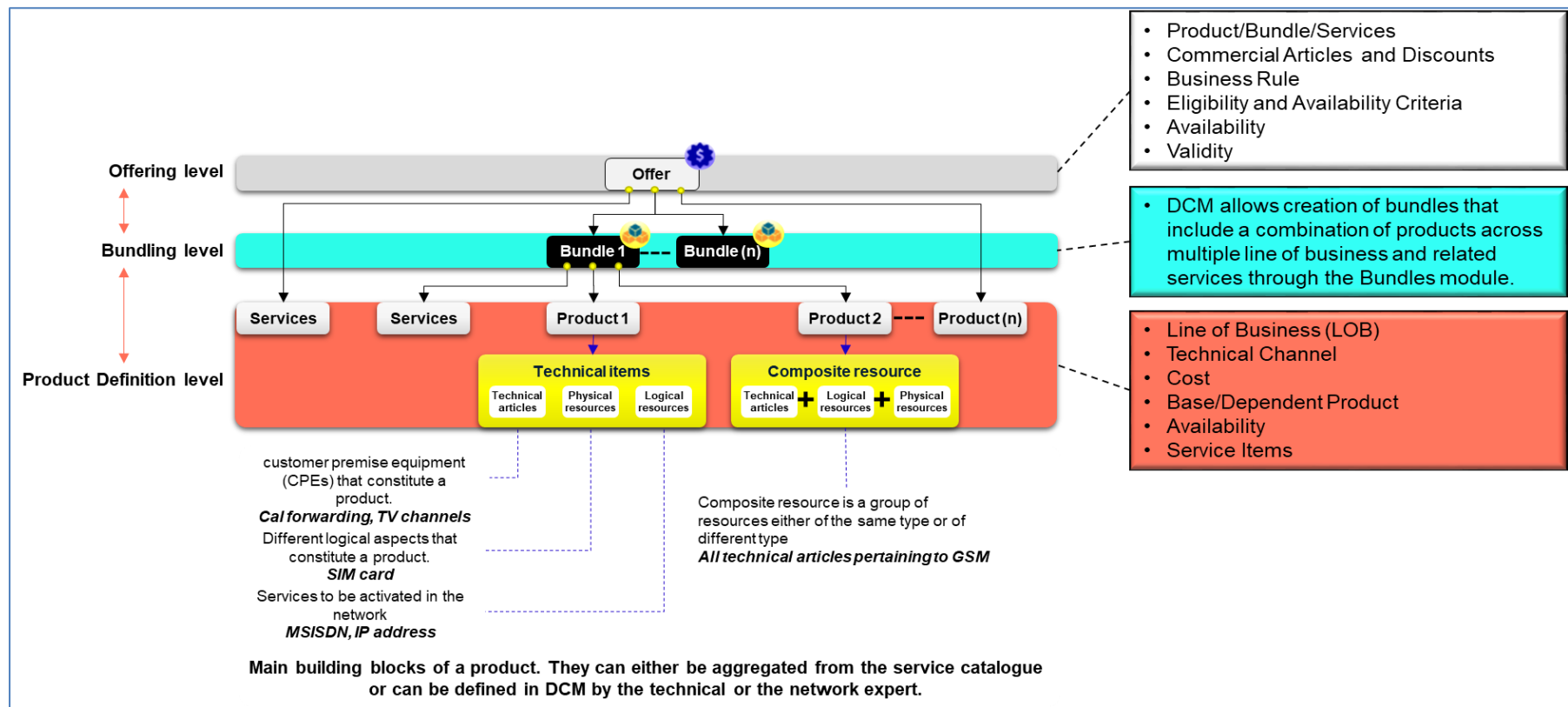


Figure 3 DCM Components Hierarchy

## 2.4 DCM - Digital Catalog Manager v5.0.2 Supported Installation Models

The following installation models are applicable for DCM - Digital Catalog Manager v5.0.2:

DCM application is based on Containerization and uses the Docker Containerized model for its deployment. Docker Container based application deployment is inherently simpler and has hugely less integration points than any previous deployment models. That is because the application is not actually installed on target. It is merely copied in place, as the Container image has all the required 3rd party dependencies (libraries etc.) already incorporated inside the container image. Essentially Dockers can be deployed on Bare metal, Virtualized Machines or on Cloud.

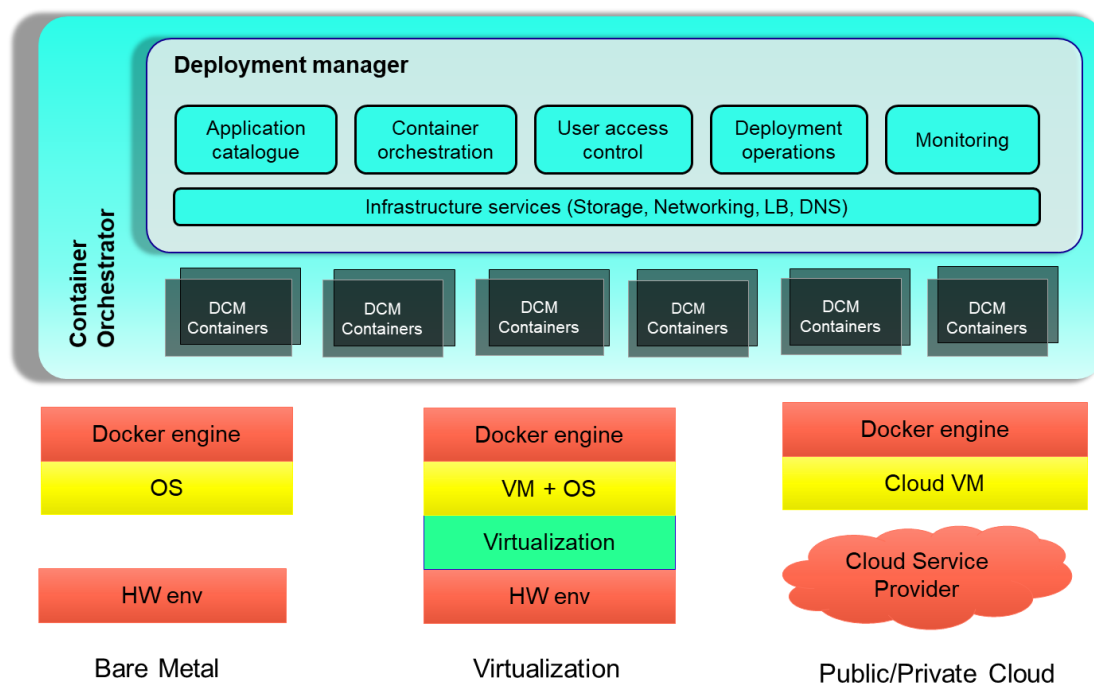


Figure 4 DCM Installation Models

## 2.5 Product Scope

The following diagram depicts the scope of DCM that includes the functional modules, the NFRs (Non Functional Requirements) and the cross-module features.

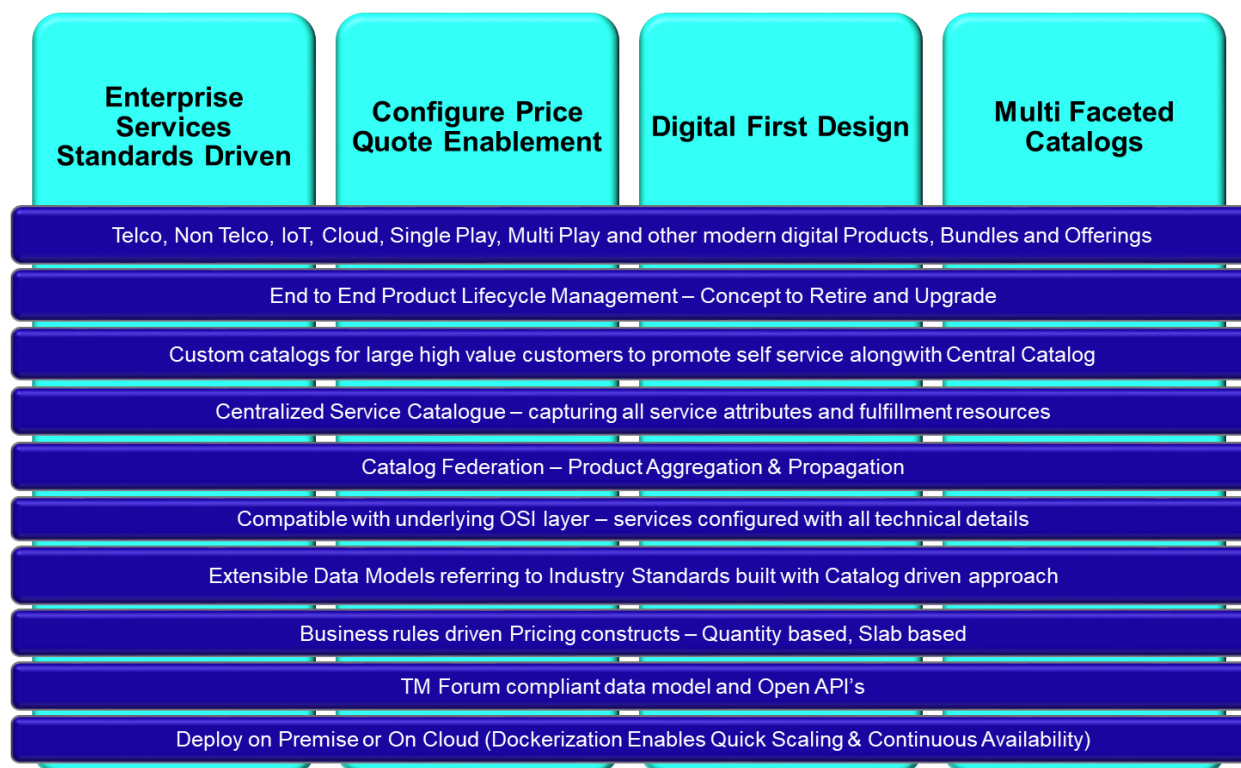
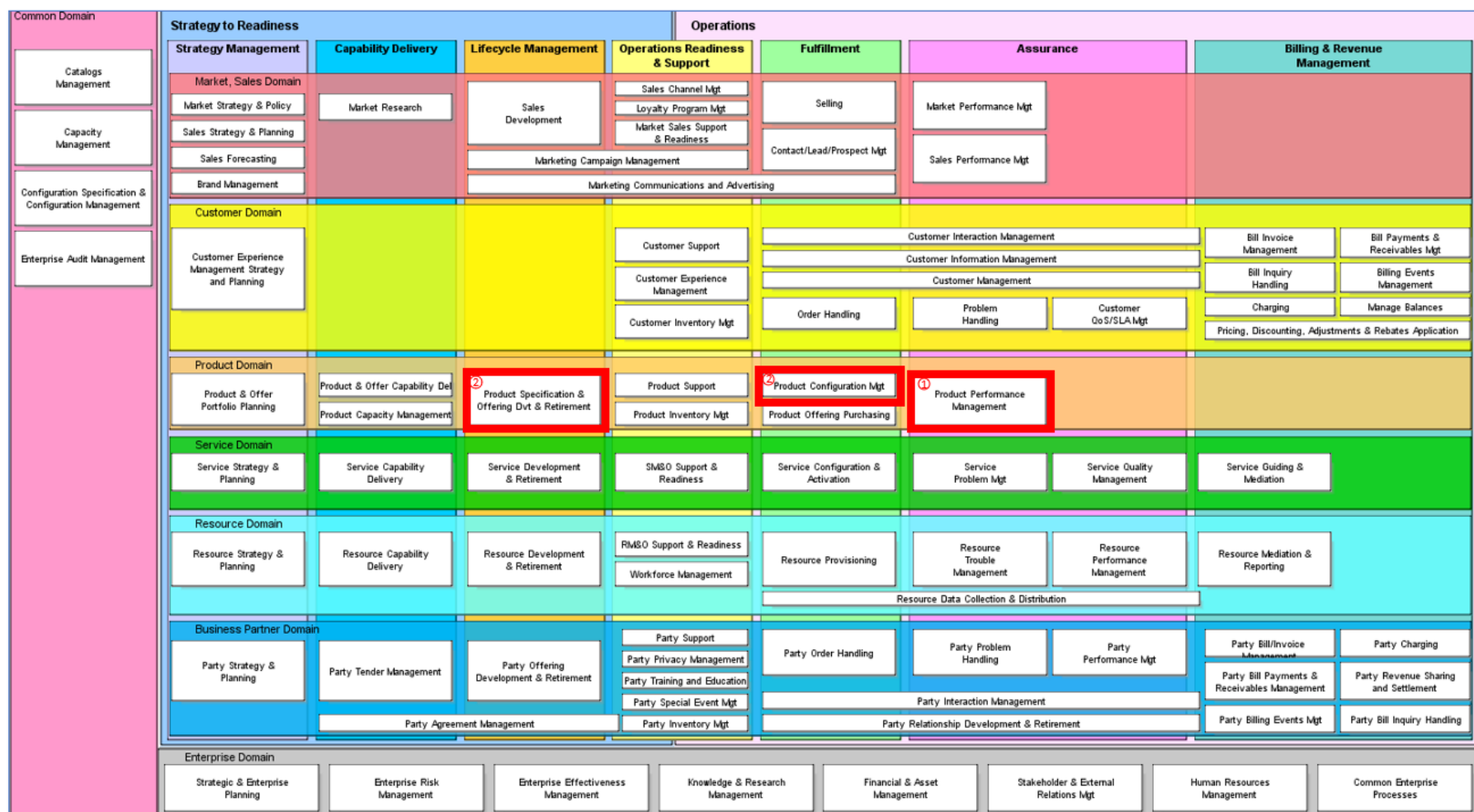


Figure 5 DCM 5.0.2 Scope

## 2.6 Business Process Framework Level 2 Process Scope

The following figure on next page represents the Business Process Framework Level 2 processes that were presented in scope for conformance certification.



# Number of Level-3 process elements submitted for conformance certification

Figure 6 - eTOM – v19.0 – Tecnotree - DCM - Digital Catalog Manager v5.0.2- Conformance Footprint

## 2.7 Business Process Framework (eTOM) Assessment Overview

### 2.7.1 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.

**2.8 Scope of Conformance Certification (eTOM)**

TM Forum Framework 19.0 Assessment Scoping Document - Business Process Framework (eTOM)				
Member:		Tecnotree		Certification Scope for Level-3 Process Elements
Product:		DCM 5.0.2 - Digital Catalog Manager		
Assessment Type		Product		
Number of L3 Processes in Scope:		3		
Level 1	Level 2	Level 3		
1.2 - Product Domain				
1.2.5 - Product Configuration Management				X
		1.2.5.1 - Manage Product Configuration Specification		
		1.2.5.2 - Manage Product Configuration		
1.2.6 - Product Performance Management				X
		1.2.6.1 - Monitor Product Offerings		
1.2.7 - Product Specification & Offering Development & Retirement				X
		1.2.7.1 - Product Specification Development & Retirement		
		1.2.7.2 - Product Offering Development & Retirement		

**Table 3 - Business Process Framework (eTOM) Assessment Scope**

### 2.8.1 Scope of Conformance Certification – Chart (eTOM)

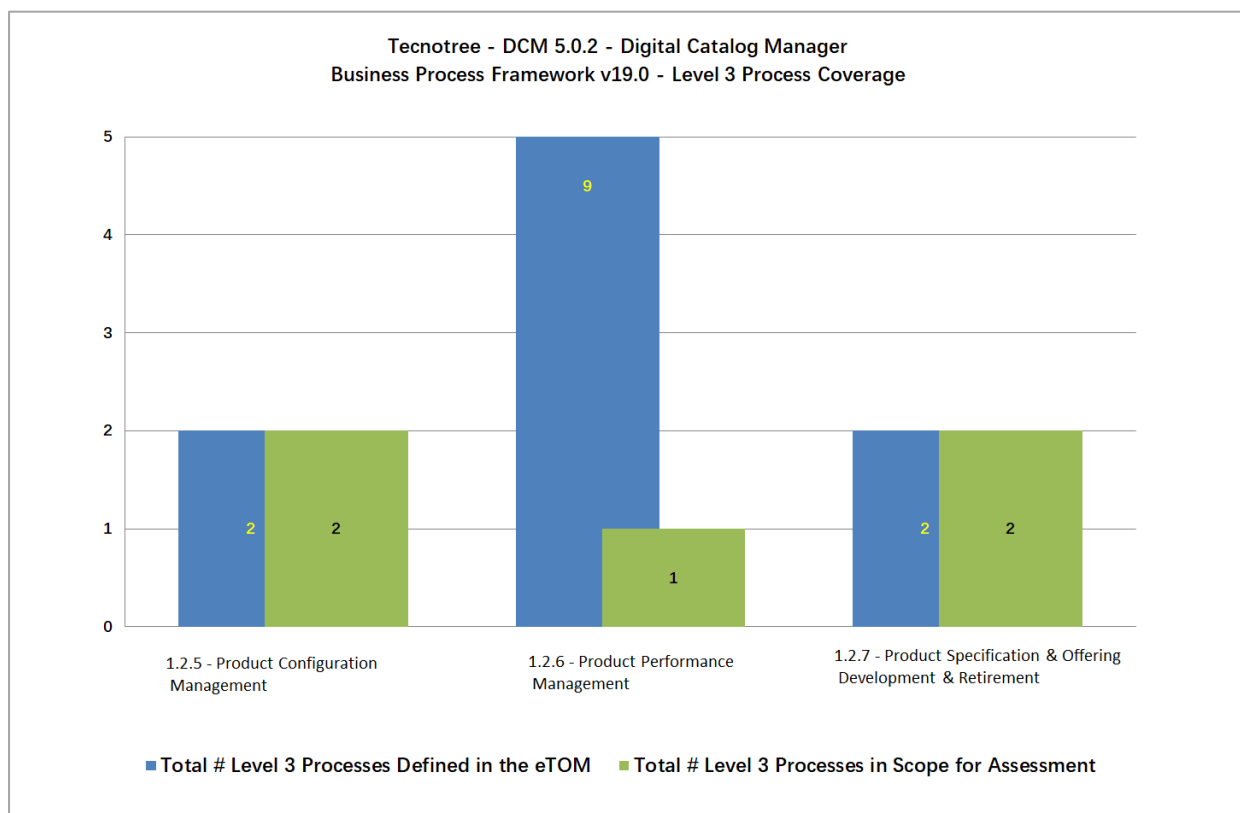


Figure 7- Level 3 process coverage for certification

## 2.9 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 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 8- TM Forum Business Process Framework: Conformance Scoring Rules

## 2.10 Business Process Framework – Process Mapping Descriptions

This Section provides a summary of the solution mappings that were provided in the form of self-assessment.

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

## 2.11 Mapping Details & Supporting Evidence

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

[https://www.tmforum.org/wp-content/uploads/2020/09/DCM-5.0.2-Digital-Catalog-Manager-eTOM\\_R19.0.1\\_Conformance-Tecnotree-V1RF.pdf](https://www.tmforum.org/wp-content/uploads/2020/09/DCM-5.0.2-Digital-Catalog-Manager-eTOM_R19.0.1_Conformance-Tecnotree-V1RF.pdf)

Mappings and supporting evidence were presented for the following **L3** processes:

<b>1.2.5 - Product Configuration Management</b>	
	1.2.5.1 - Manage Product Configuration Specification
	1.2.5.2 - Manage Product Configuration
<b>1.2.6 - Product Performance Management</b>	
	1.2.6.1 - Monitor Product Offerings
<b>1.2.7 - Product Specification &amp; Offering Development &amp; Retirement</b>	
	1.2.7.1 - Product Specification Development & Retirement
	1.2.7.2 - Product Offering Development & Retirement

## 2.12 Framework Conformance Result

This Section details the Scores awarded to reflect Conformance for Tecnotree - DCM - Digital Catalog Manager v5.0.2 to the Business Process Framework (eTOM) components of Framework 19.0.

TM Forum Framework 19.0 Assessment Scoping Document - Business Process Framework (eTOM)			
<b>Company:</b>		<b>Tecnotree</b>	<b>Certification Final Scores for Level-3 Process Elements</b>
<b>Product:</b>		<b>DCM 5.0.2 - Digital Catalog Manager</b>	
<b>Assessment Type:</b>		<b>Product</b>	
<b>Framework Version:</b>		<b>19</b>	
<b>Number of L3 Processes in Scope:</b>		<b>3</b>	
<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	
<b>1.2 - Product Domain</b>			
	<b>1.2.5 - Product Configuration Management</b>		<b>5</b>
		1.2.5.1 - Manage Product Configuration Specification	
		1.2.5.2 - Manage Product Configuration	
	<b>1.2.6 - Product Performance Management</b>		<b>5</b>
		1.2.6.1 - Monitor Product Offerings	
	<b>1.2.7 - Product Specification &amp; Offering Development &amp; Retirement</b>		<b>5</b>
		1.2.7.1 - Product Specification Development & Retirement	
		1.2.7.2 - Product Offering Development & Retirement	

Figure 9- TM Forum Business Process Framework: Conformance Scores

### 2.13 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 - DCM - Digital Catalog Manager v5.0.2 conformance assessment. 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)

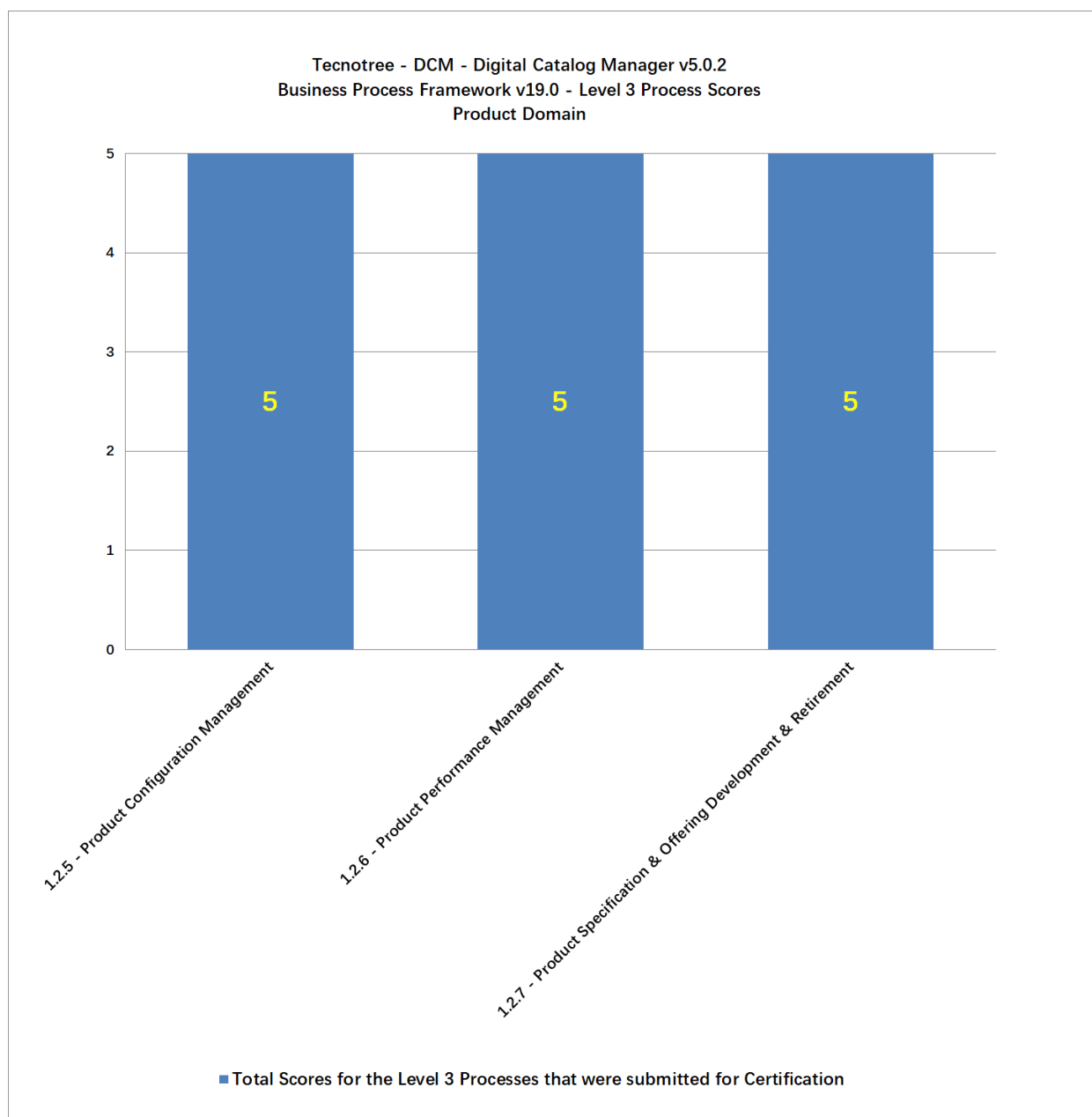


Figure 10- Conformance Scores – eTOM – (Product Domain) Processes

## Version History

0.1	16-September-2020 Initial Draft from Tecnotree	TM Forum
0.2	21-September-2020 Updated Draft by TM Forum	TM Forum
1.0	23-September-2020 Final Draft by TM Forum	TM Forum