

Framework 19.0
Product Conformance
Certification Report

Tecnotree
DOCS - Digital Online Charging System
v5.0.2

October 2020

Version 1.0

Table of Contents

List of Figures	2
List of Tables	3
1 Introduction.....	4
1.1 Executive Summary	4
2 Product Functionality/Capability Overview	5
2.1 DOCS - Digital Online Charging System v5.0.2 Platform Overview	5
2.1.1 About Tecnotree.....	7
2.2 DOCS - Digital Online Charging System v5.0.2 Platform Benefits	9
2.3 DOCS - Digital Online Charging System v5.0.2 Modules	14
2.4 DOCS - Digital Online Charging System v5.0.2 Supported Installation Models.....	16
2.5 Product Scope.....	16
2.6 Business Process Framework Level 2 Process Scope	17
2.7 Business Process Framework (eTOM) Assessment Overview	19
2.7.1 Mapping Technique Employed.....	19
2.8 Scope of Conformance Certification (eTOM)	20
2.8.1 Scope of Conformance Certification – Chart (eTOM).....	21
2.9 Business Process Framework – Scoring Guidelines	22
2.10 Business Process Framework – Process Mapping Descriptions	23
2.11 Mapping Details & Supporting Evidence	23
2.12 Framework Conformance Result	24
2.13 Business Process Framework – Conformance Result Summary.....	25
Version History	26

List of Figures

Figure 1 Digital Online Charging System Overview	6
Figure 2 DOCS Architecture	14
Figure 3 DOCS Installation Models	16
Figure 4 DOCS 5.0.2 Scope	17
Figure 5 - eTOM – v19.0 – Tecnotree - DOCS - Digital Online Charging System v5.0.2- Conformance Footprint	18
Figure 6- Level 3 process coverage for certification	21
Figure 7- TM Forum Business Process Framework: Conformance Scoring Rules	22
Figure 9- TM Forum Business Process Framework: Conformance Scores	24
Figure 9- Conformance Scores – eTOM – (Customer Domain) Processes	25

List of Tables

Table 1 Tecnotree's Digital BSS Strategy	7
Table 2 Tecnotree Digital BSS signatures	8
Table 3 DOCS Platform benefits	9
Table 3 - Business Process Framework (eTOM) Assessment Scope	20

1 Introduction

1.1 Executive Summary

This document provides details of Tecnotree self-assessment and TM Forum's Conformance Assessment of the **DOCS - Digital Online Charging System v5.0.2**, against the following Framework 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.

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

2 Product Functionality/Capability Overview

2.1 DOCS - Digital Online Charging System v5.0.2 Platform Overview

We are in an era of Digital Transformation. The changes in technologies have been rapid and significant. Due to the revolution brought by invention of mobile phone and internet, people are increasingly connected with each other and to the online world.

This transformation necessitates the CSPs to re-invent themselves to provide a high performance, highly reliable infrastructure, which can scale based on requirement, but reduce the overall expenditure. A few years back, this was not possible when horizontal scaling (clone hardware for growth) was the only option available to the Operators. More Subscribers or more usage meant, buy more hardware. Hardware is expensive and does not guarantee seamless scaling with growth.

Tecnotree has decades of expertise in charging products and platform. By leveraging the same and investing in emerging digital technologies, Tecnotree is capable of catering to the vision and upscaling Charging as part of digital journey.

Tecnotree DOCS provides a Standard based, highly flexible and feature rich rating and balance management solution allowing CSPs to capture revenue from any service, independently of the payment method and the delivery channel chosen by the subscriber.

Tecnotree DOCS supports Prepaid as well as Post-paid Subscriber base, with varied rating and charging services for Voice calls, SMS events and data sessions.

The flexible tariff configuration capabilities combined with an optional Policy Management functionality allows CSPs to gain back the control of the network usage and to offer intelligent data allowance bundles quickly, while allowing the addition of a variety of ARPU increasing “booster” packages.

Tecnotree DOCS introduces the unique user-payer paradigm allowing the user of the service to be separated from the payer. The user-payer relationship is configurable and can be set e.g. to allow all calls from children to their parents independently of the balance available on the child’s account. Combined with support for multi-level hierarchies and self-care functionality, the solution empowers the head of the family to decide what, when and how much of the sub-account owners’ (e.g. children) usage is paid for by the main account owner, allowing full control of communications expenditure of the whole family.

The same functionality can also be applied in a corporate context, to limit the company’s exposure to runaway usage of services by employees. In the enterprise context, the payer definition can be based on call type (e.g. local, national, international), event type (e.g. SM MO, SM MT, MMS MO) and date or time (e.g. national holiday, weekday/weekend, business hours/outside of business hours) among other criteria.

The solution supports multiple levels of account hierarchies with a top-down definition of credit limits. The hierarchy allows the account administrator (corporate manager or the head of the family) to manage the credit limit definition per service and per sub-hierarchy.

Combined with Tecnotree Enterprise VPN solution, the user-payer paradigm offers a flexible, yet easy to use way to gain full control of corporate or family communications spending while maintaining the benefits of a single-SIM solution for the users.

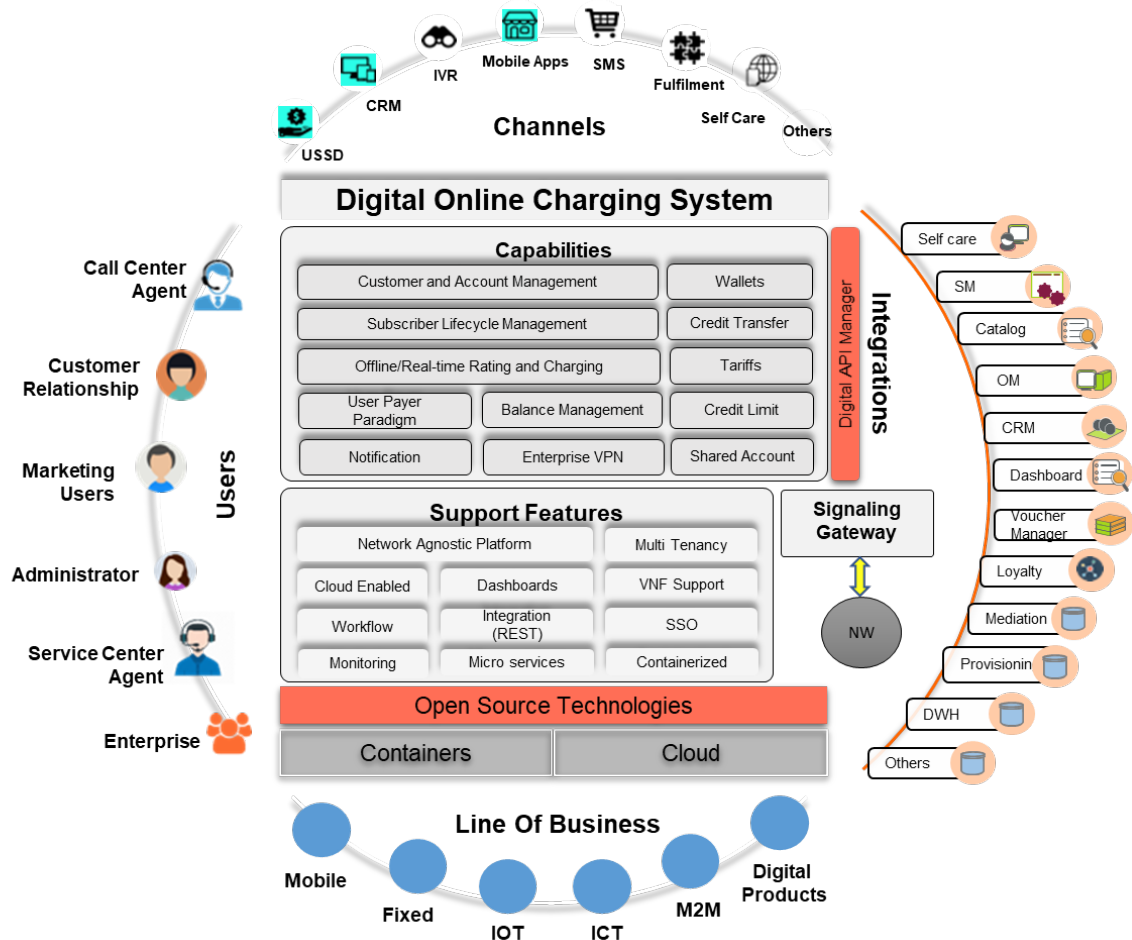


Figure 1 Digital Online Charging System Overview

The following are the key features of DOCS 5.0.2:

- Provides Real Time Convergent Rating and Charging
- Real Time Balance Management and Credit Management
- Managing the complete Subscriber Lifecycle right from Registration till Termination
- Managing Multiple Account Hierarchies and User Payer Paradigm
- Managing the Bonuses, Promotions and Subscriptions
- Wide range of notifications to be sent via different channels
- Call/Session Control using Signaling Gateway as Interface
- Multi-Protocol Support
- Integration with any 3rd party system requiring Rating and Charging services
- User Management, Identity Management, Dashboard for Reporting

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		
Digital for Business	Continuous customer engagement through different channels to understand consumer behaviors and generate higher revenues	<ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> ▪ Open source technical stack eliminates expensive license cost ▪ Standardized services increase reusability and reduce overall cost ▪ Improved performance and availability reduce the downtime
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	<ul style="list-style-type: none"> ▪ 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	Through Fault Tolerant and Resilient solution
Auto Scaling	Capability to augment capacity on demand basis

2.2 DOCS - Digital Online Charging System v5.0.2 Platform Benefits

The way industry is progressing, it is not just sufficient to provide an innovative solution once and not keep up to date with the changing technological trends of the market. By employing robust trusted Open Source software with an active community, it is possible, not just to keep the product relevant to the current trends but also reduce the overall cost associated with development. DOCS with its current platform of Open source technologies provides the following benefits:

Table 3 DOCS Platform benefits

General	Standard or Optional	Comment
Online charging	Standard	Real-time, fraud free charging for all metered usage of network services.
Offline charging	Standard	Rating of records from network elements for subsequent billing using Tecnotree NGB or third party billing system
Convergent prepaid/post-paid	Standard	The metering of usage and rating can be common for all customers, as can the services offered to customers. Prepaid and post-paid customers need only differ in how their accounts are topped up or billed
Real-time rating	Standard	Rates are determined for metered usage, one-time charges and periodically recurring charges based on a wide array of input parameters
Balance management	Standard	Monetary prepaid accounts are maintained, which can be charged or topped up as needed. In an analogous manner, credit limits can be handled on behalf of post-paid customers
Wallet	Standard	A wallet is a virtual folder or a placeholder that is used to credit monetary or non-monetary values for a subscriber. The wallets can also be used as counters for specific functionality. DOCS supports following wallets: <ul style="list-style-type: none"> • Base wallet: mandatory for every subscriber and is used to hold monetary value. • Static Wallet: also known as special purpose mandatory wallet, is used to hold non-monetary values. • Dynamic Wallet: These are multi-purpose wallets. All subscribers opting for a tariff plan automatically inherit these wallets. • DOCS supports the creation of the following wallet types: • Tariff specific (Dynamic) wallets – is specific to a tariff and is applied to subscriber who avails the tariff plan.

		<ul style="list-style-type: none"> • Accumulator wallets – holds the accumulated usage units and is used to compute promotional bonus based on the usage that is accumulated. Further details are explained in the succeeding sections. • These wallets are assigned to a Payer on Tariff activation and are removed during deactivation.
Redirection	Standard	<p>The redirection rules are created in DOCS. The different rules supported are:</p> <ul style="list-style-type: none"> • Redirection due to insufficient balance • Redirection on First Browsing session • Periodic Redirection • Redirection based on Tariff • Redirection based on availability of tariff configured as “Data Package” • Redirection based on priority of redirection • Redirection based on external application request • Redirection based on thresholds • Redirection based on Maximum total data usage.
Rounding	Standard	<p>The Rounding feature enables CSPs to setup a rule to round numbers to the nearest value. The decimal values are rounded off based on the decimal place configuration. The value can either be rounded up, down, or to the nearest decimal.</p>
Legacy telco services	Standard	Charging for CS voice, SMS, MMS, WAP and GPRS data
Next Generation telco services	Standard	Charging for mobile broadband data in LTE, WiMAX/WiFi and fixed line networks. Charging for VoLTE, VoWiFi, IP SM, LTE broadcast etc.
OTT services	Standard	Flow-based charging for Over-The-Top services carried on the PS bearer is supported
Generic services	Optional	Open APIs are supported for charging generic services

Key rating features		
Metered usage	Standard	Any quantity which can be metered in real-time can be used for rating e.g. <ul style="list-style-type: none"> • Session duration • Data volume • Number of events
Time and date	Standard	Time Of Day, Day Of Week, Holidays, and Special Days etc. can be used as rating input
Location	Standard	Location of customer using a service can be used for rating e.g. <ul style="list-style-type: none"> • Home or Roaming • Location Information (VLR/HLR), Cell Id • Home zone, preferred location
Destination address	Standard	For any communications service (CS voice, SMS, VoLTE ...), the rate can be dependent on the Called Party Address. This allows differentiated rates for: <ul style="list-style-type: none"> • Calls/messages to other networks • Calls/messages to other countries • Calls to premium rate numbers • VAS messages
Type or grade of service	Standard	Customers can be charged based on the type/grade of a service e.g. <ul style="list-style-type: none"> • Radio Access Type • QoS for PS bearer • SD or HD VoLTE • Audio or video
Customer account status	Standard	Information relating to a customer or the status of their account can be used as input to rating e.g. balance status, refill events and account history
Telescopic rating	Standard	A change of rate can be applied mid-session for voice calls, data or other sessions based on the metered quantity for service usage
Multiple pricing plans	Standard	Many pricing plans can be supported. Each customer is assigned a default pricing plan when provisioned
Tax calculation	Standard	Taxes can be calculated on top of the base price

Key charging features		
Monetary balances	Standard	Monetary balances are managed, such that prepaid customers pay for services in advance by topping up their balance and will be denied access to a service if their balance expires or is exhausted
Balance expiry	Standard	Balances can be created with a validity period e.g. one month
Charging for sessions	Standard	Session Charging with Unit Reservation (SCUR) based on metered usage
Charging for events	Standard	Event Charging with Unit Reservation (ECUR) and Immediate Event Charging (IEC) models supported
Simultaneous charging for multiple services	Standard	Customers can simultaneously access different services (e.g. voice call and data session). Simultaneous charging sessions with separate reservations is supported
Allowance of pre-rated units	Standard	In addition to monetary balances, multiple allowances of pre-rated units (e.g. minutes of voice, MB of data ...) can be handled per customer allowing for greater flexibility in creating commercial products
Time-limited packages	Standard	In addition to an allowance of pre-rated units, packages may be offered to customers which expire at a pre-configured time e.g. 5 GB of data valid for 1 month
Recurring subscriptions	Standard	Allowances with periodically recurring charges (daily/monthly ...) e.g. monthly subscription services form the basis of many commercial offers to prepaid and post-paid customers
Once-off charges	Standard	Once-off charge for single use subscriptions that are not automatically renewed, e.g. data day pass
Order of usage	Standard	Where different balances may be applicable for usage of a particular service, the order in which these are used is configurable e.g. earliest expiry date or highest priority is consumed first
Post-paid credit limits	Standard	Through fully configurable balance management and charging logic, credit limits can be applied for post-paid customers
Account top-up	Standard	Fully configurable account refill logic e.g. <ul style="list-style-type: none"> • Top-up can be triggered by external event • Automatic top-up at periodic interval
Bonuses	Standard	A bonus (monetary or allowance) may be granted as a result of a top-up event e.g. grant 500 MB extra data for top-up exceeding \$20

Policy and Charging Control		
Support Policy and Charging Control in standardized manner	Standard	Policy and Charging for PS bearer through integration with PCRF using Diameter over Sy reference point
Policy/QoS as part of commercial offers to customers	Standard	Products may include aspects of QoS e.g. downgrade QoS to 128 kbps after 10 GB data consumption
Spend and usage limits	Standard	Expenditure and usage of units can be controlled per customer
Fair Usage Policy	Standard	Unlimited data plans can trigger policy change at preset thresholds.

Key operational and platform features		
CDR generation	Standard	CDRs are logged for all rating, charging and refill events for billing, revenue assurance and customer care purposes
Notifications and redirection	Standard	Notifications via multiple channels for a range of events. For PS data bearer sessions, customers can be redirected to a web-portal for top-up or self-care based on flexible redirection criteria.
Alarms	Standard	Alarms are raised using SNMP traps.
Statistics	Standard	Statistics are logged for each network, charging or refill event.
Redundancy	Standard	No single-point of failure.
99.999% availability	Standard	Highly available solution offering five 9s availability.
Persistence of charging session	Standard	Session based charging (e.g. voice or data) is resilient to a charging component failure.
Geo-redundancy	Optional	Multiple sites can be deployed as an option for maximum resilience.
Massive scalability	Standard	Vertical and horizontal scalability of both hardware and software components.
Dynamic scalability	Standard	Software components can be added dynamically to absorb traffic peaks.

2.3 DOCS - Digital Online Charging System v5.0.2 Modules

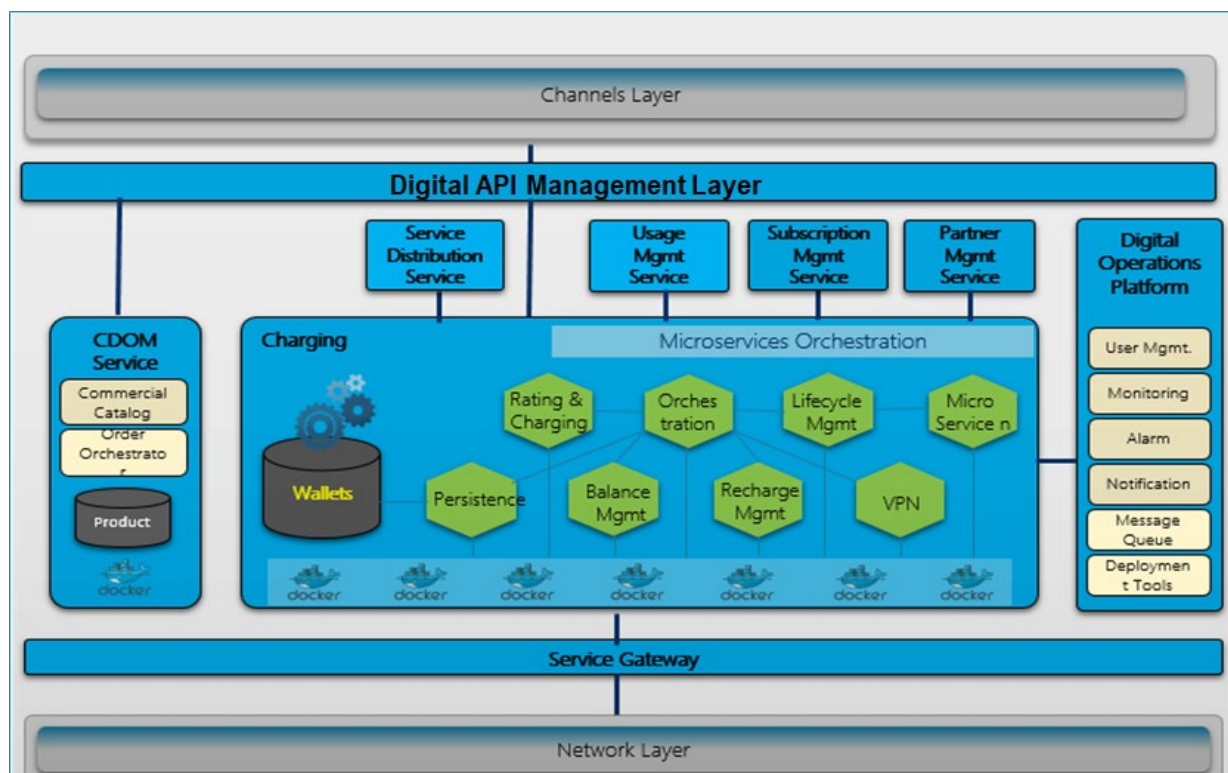


Figure 2 DOCS Architecture

Constituents of DOCS modules:

- **Customer and Account Management:**

The main functionality supported by this module is divided into the following sub-modules:

Subscriber Lifecycle Management	Allows managing the complete subscriber lifecycle right from registration till termination.
User-Payer Paradigm	This framework which allows separating the user of the service from the payer of the service.
Account Hierarchies	Multi-level Hierarchies are supported by which a Payer is defined for a particular service.
Customer Management	Provides tools for managing customer and user information via a GUI.

- **Real time rating and Balance Management:**

Rating is a process to calculate a subscriber’s usage charges (Voice/SMS/Other services) as per the rate plan that is applied to a subscriber. In addition to calculating the price, the rating process enables CSPs to compute the cost of delivering such a service. The parameters available to configure and compute service charges are described in the following sections.

The main functionality supported by this module is divided into the following sub sections:

1. Basic Rating Parameters
2. Special Rating Schemes
3. Tariffing
4. Bonuses, Promotions and Subscriptions

Balance management functionality allows defining rules for usage of the available balances. Balance information is stored in wallets. Wallets can be configured to be service specific or to be available for use for any type of calls, transactions or sessions. The main features provided by Balance Management functionality are listed in the table below.

Wallets	A virtual placeholder that is used to store monetary or non-monetary values. Wallets can also be used as counters for specific functionality (e.g. for bonus based on usage type of features).
Line/Spend Limit	Defines the maximum amount of credit that is offered against a subscriber's usage during one bill cycle.
Credit Transfers	Allows transfer of Units either between the subscriber's own wallets or to another subscriber's wallet.

- **Notifications:**

Tecnotree DOCS supports a wide-range of notifications which can be sent via SMS or Email to subscribers based on an event, a balance change, a validity change or a status change. Every subscriber is attached to a Notification Policy which determines the types of notifications that can be issued to them, i.e. Balance Threshold Notifications, Event Notifications, Validity Notification, and / or Status Change Notifications. By default, on account activation a default Notification Policy is applied to a subscriber.

DOCS utilises Notification Templates which are the actual messages that are created based on the Notification Type, and then activated by a configurable rule.

- **Signaling Gateway:**

The Signalling Gateway (serving as SCP node) provides IN interfaces, call/session control, service logic and acts as a gateway between the network and the DOCS. The SCP is deployed as part of the convergent charging system using common subscriber data and also provides the pre-call announcement functionality. The main integration point between the SCP and the DOCS is the Diameter Credit Control Application (DCCA) interface.

- **Enterprise Usage/Metered Rating and Charging:**

Tecnotree DOCS can be integrated not just with the telecom systems, but with any 3rd System requiring the Rating and charging services. It can be used as a stand-alone rating and charging system as well as work in tandem with telecom entities/3rd party partners. For e.g. ticketing platform, parking system services, cab aggregators etc.

2.4 DOCS - Digital Online Charging System v5.0.2 Supported Installation Models

The following installation models are applicable for DOCS – Digital Online Charging System v5.0.2: DOCS 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.

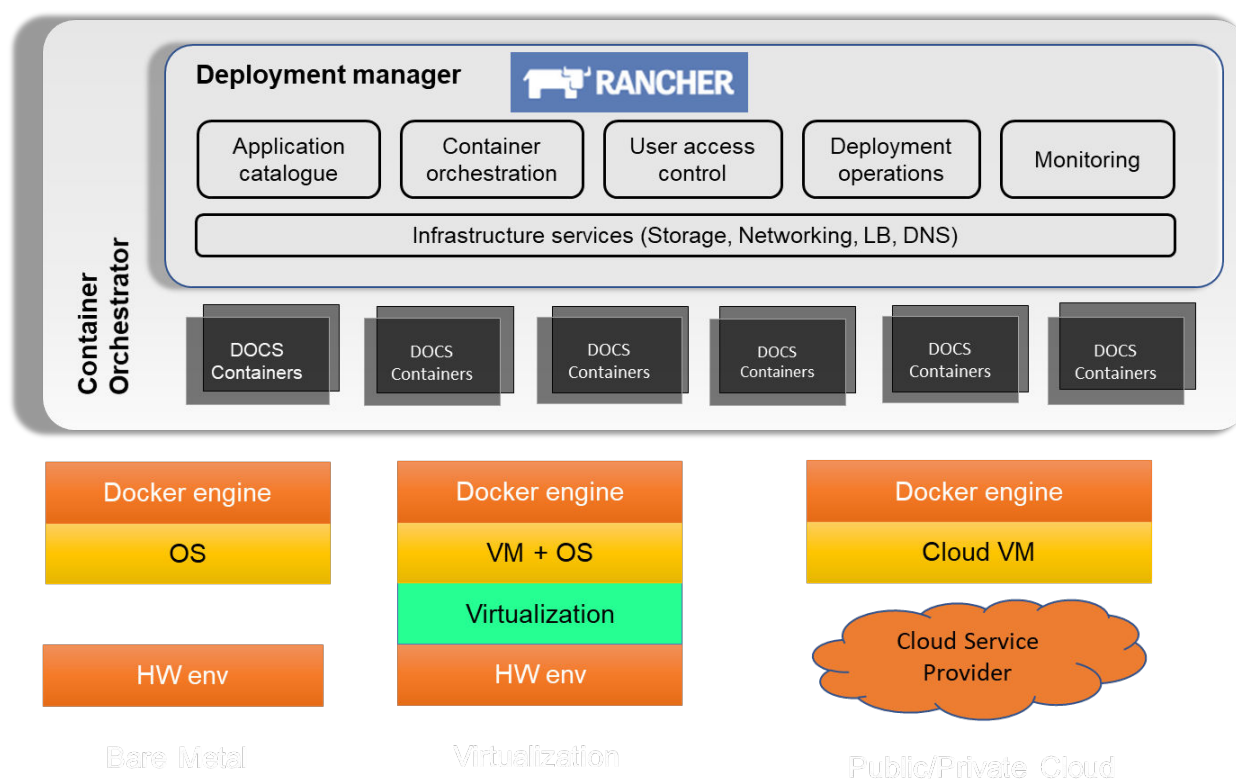


Figure 3 DOCS Installation Models

2.5 Product Scope

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

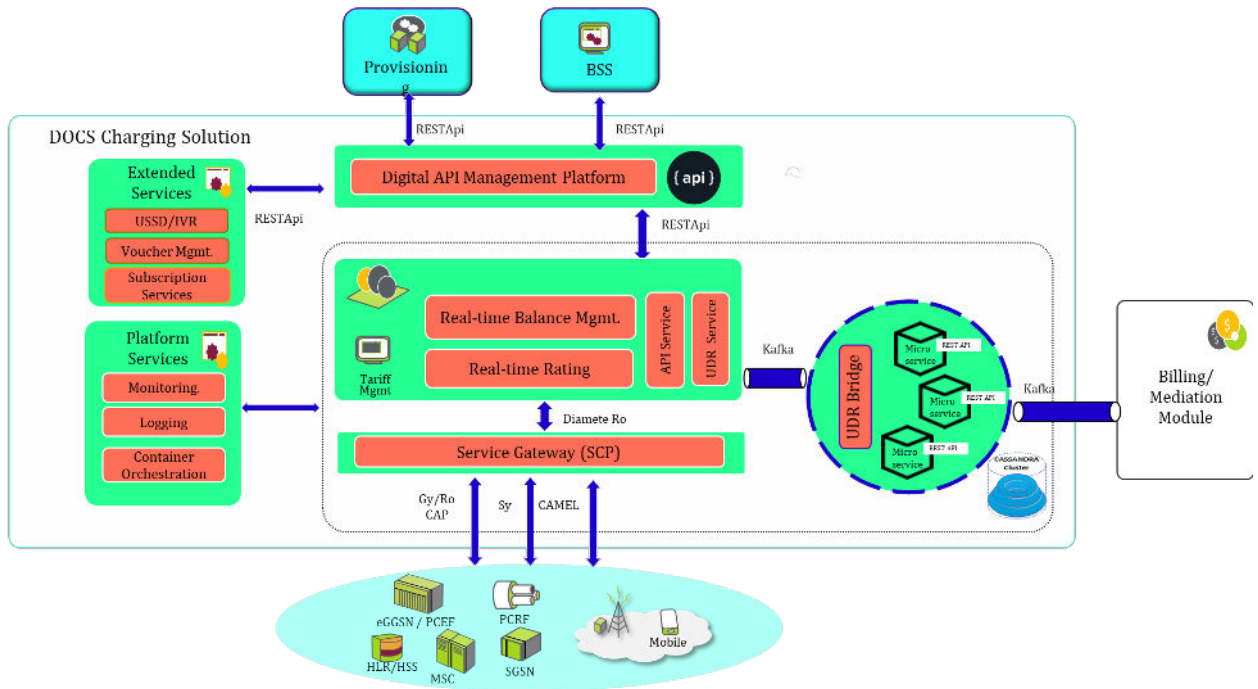


Figure 4 DOCS 5.0.2 Scope

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.

eTOM – v19.0 – Tecnotree - DOCS 5.0.2 - Digital Online Charging System - Conformance Footprint

Common Domain	Strategy to Readiness			Operations						
	Strategy Management	Capability Delivery	Lifecycle Management	Operations Readiness & Support	Fulfillment	Assurance		Billing & Revenue Management		
	Market, Sales Domain	Market Research	Sales Development	Sales Channel Mgt	Selling	Market Performance Mgt				
	Market Strategy & Policy			Loyalty Program Mgt						
	Sales Strategy & Planning			Market Sales Support & Readiness	Contact/Lead/Prospect Mgt	Sales Performance Mgt				
	Sales Forecasting			Marketing Campaign Management						
	Brand Management	Marketing Communications and Advertising								
	Customer Domain			Customer Support	Customer Interaction Management			Bill Invoice Management	Bill Payments & Receivables Mgt	
	Customer Experience Management Strategy and Planning			Customer Experience Management	Customer Information Management			Bill Inquiry Handling	Billing Events Management	
				Customer Inventory Mgt	Order Handling	Problem Handling	Customer GoS/SLA Mgt	③ Charging	④ Manage Balances	
					Pricing, Discounting, Adjustments & Rebates Application					
Product Domain	Product & Offer Capability Del	② Product Specification & Offering Dvt & Retirement	Product Support	Product Configuration Mgt	Product Performance Management					
Product & Offer Portfolio Planning	Product Capacity Management	Product Inventory Mgt	Product Offering Purchasing							
Service Domain	Service Capability Delivery	Service Development & Retirement	SM&O Support & Readiness	Service Configuration & Activation	Service Problem Mgt	Service Quality Management	Service Guiding & Mediation			
Resource Domain	Resource Capability Delivery	Resource Development & Retirement	RM&O Support & Readiness	Resource Provisioning	Resource Trouble Management	Resource Performance Management	Resource Mediation & Reporting			
Resource Strategy & Planning			Workforce Management							
					Resource Data Collection & Distribution					
Business Partner Domain	Party Strategy & Planning	Party Tender Management	Party Offering Development & Retirement	Party Support	Party Order Handling	Party Problem Handling	Party Performance Mgt	Party Bill/Invoice Management	Party Charging	
				Party Privacy Management				Party Interaction Management		Party Bill Payments & Receivables Management
				Party Training and Education	Party Relationship Development & Retirement			Party Billing Events Mgt	Party Bill Inquiry Handling	
				Party Special Event Mgt	Party Inventory Mgt					
		Party Agreement Management								
Enterprise Domain	Strategic & Enterprise Planning	Enterprise Risk Management	Enterprise Effectiveness Management	Knowledge & Research Management	Financial & Asset Management	Stakeholder & External Relations Mgt	Human Resources Management	Common Enterprise Processes		

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

Figure 5 - eTOM – v19.0 – Tecnotree - DOCS - Digital Online Charging System 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:		<i>Tecnotree</i>	
Product:		<i>DOCS 5.0.2 - Digital Online Charging System</i>	
Assessment Type		<i>Product</i>	
Number of L3 Processes in Scope:		5	
Level 1	Level 2	Level 3	
1.3 - Customer Domain			
1.3.13 - Charging			
		1.3.13.1 - Perform Rating	X
		1.3.13.2 - Apply Rate Level Discounts	X
		1.3.13.3 - Aggregate Items For Charging	X
1.3.14 - Manage Balances			
		1.3.14.1 - Manage Balance Containers	X
		1.3.14.2 - Manage Balance Policies	X

Table 4 - Business Process Framework (eTOM) Assessment Scope

2.8.1 Scope of Conformance Certification – Chart (eTOM)

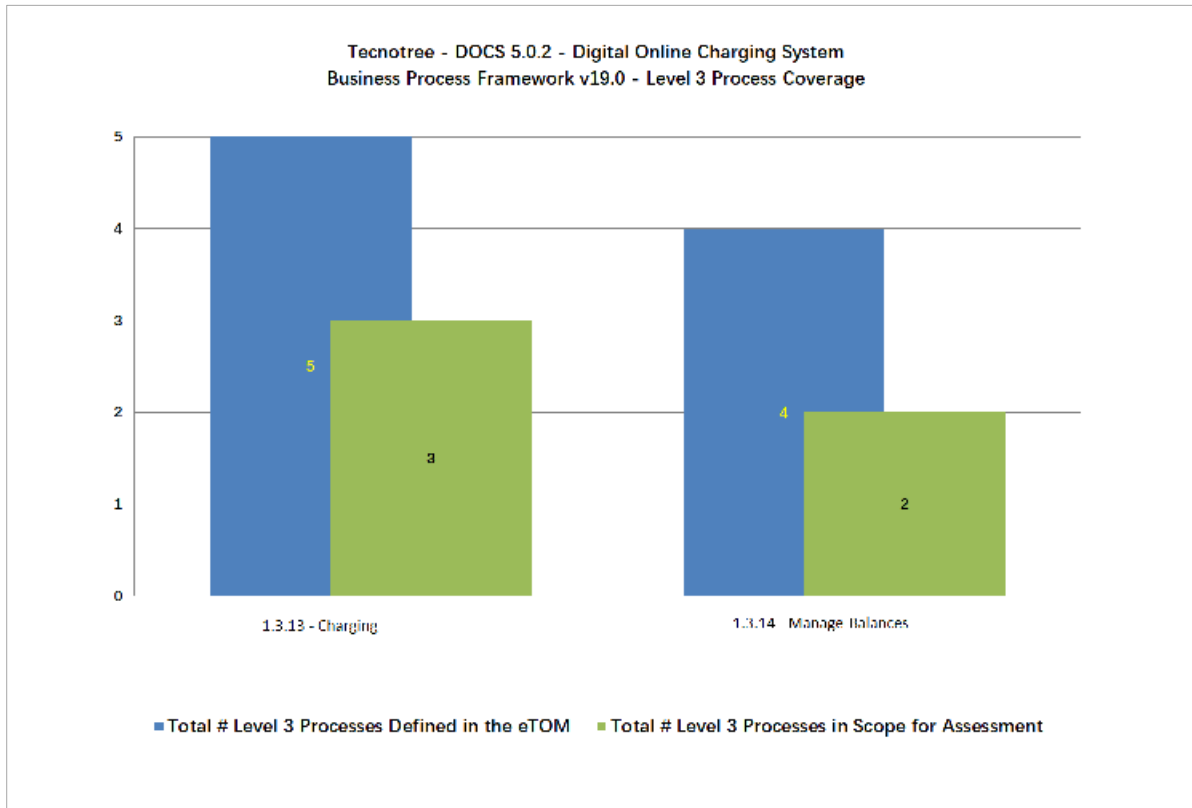


Figure 6- Level 3 process coverage for certification

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 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 7- 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/2020/10/DOCS-5.0.2-Digital-Online-Charging-System-eTOM_R19.0.1_Conformance-Tecnotree-V1RF.pdf

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

1.3.13.1 - Perform Rating
1.3.13.2 - Apply Rate Level Discounts
1.3.13.3 - Aggregate Items For Charging
1.3.14.1 - Manage Balance Containers
1.3.14.2 - Manage Balance Policies

2.12 Framework Conformance Result

This Section details the Scores awarded to reflect Conformance for Tecnotree - DOCS - Digital Online Charging System 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)				
Company:		Tecnotree		
Product:		DOCS 5.0.2 - Digital Online Charging System		
Assessment Type:		Product		
Framework Version:		19		
Number of L3 Processes in Scope:		5		
Level 1	Level 2	Level 3	Certification Final Scores for Level-3 Process Elements	
1.3 - Customer Domain				
	1.3.13 - Charging			5
		1.3.13.1 - Perform Rating		
		1.3.13.2 - Apply Rate Level Discounts		
		1.3.13.3 - Aggregate Items For Charging		
	1.3.14 - Manage Balances			5
		1.3.14.1 - Manage Balance Containers		
		1.3.14.2 - Manage Balance Policies		

Figure 8- 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 – DOCS - Digital Online Charging System 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)

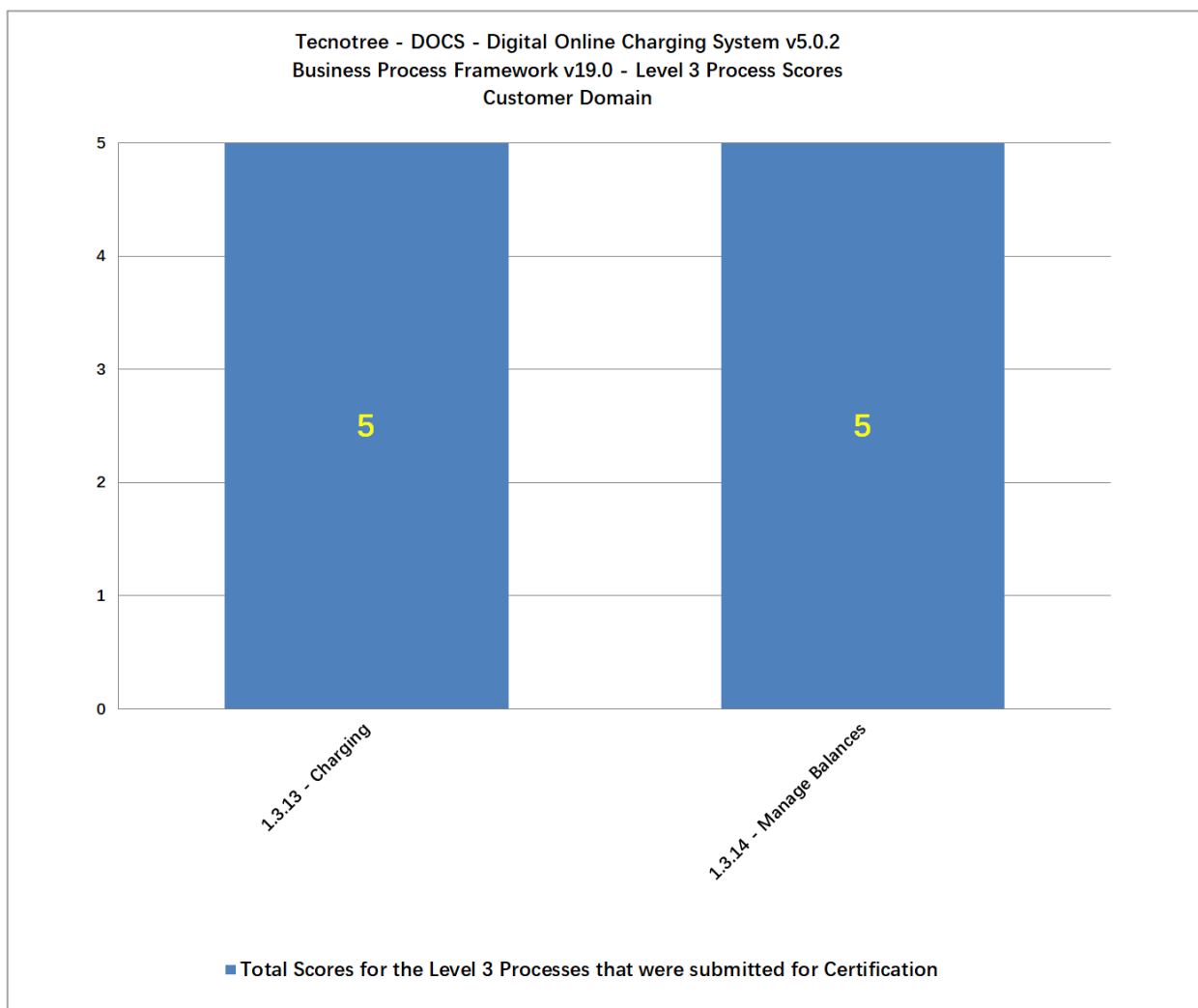


Figure 9- Conformance Scores – eTOM – (Customer Domain) Processes

Version History

0.1	16-September-2020 Initial Draft from Tecnotree	TM Forum
0.2	01-October-2020 Updated Draft by TM Forum	TM Forum
1.0	12-October-2020 Final Draft by TM Forum	TM Forum