PSI READ-ME-FIRST

PSI-READMEFIRST

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1 Document Meta Information

1.1 Document Signature Table

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Table 1.1: Signature Table.

1.1.1 Document Change Record

1.1.1.1 Changes

Date	Version	author	message
2023-01-01	MS3	Christine Glaesser	Initial version
2023-04-19	MS4	Dafinka Srezoska	Minor reformattings
2023-07-27	MS5	Christian Grubert	Format updates
2023-10-06	MS6	Christian Grubert	Fixed milestone entries
2024-01-25	MS7	Wolfgang Robben	Updated milestone entries
2024-09-11	MS8 [1.2.0]	Thomas Schulz	Public release adjustments.
2024-12-09	MS9 [1.2.1]	Wolfgang Robben	No updates.
2025-02-03	MS10 [1.2.2]	Wolfgang Robben	No update, just version bump.

Table 1.2: DCR Table.

1.1.1.2 Source Control

Changes to this document are tracked electronically. No signature is required by the authors. The following information can prove the integrity of the document and reveal any change.

Repo	Date	Author	Branch	Hash

Table 1.3: GIT Changelog Table.

Figure 1.1: DCR QR-Code.

1.2 Documents

1.2.1 Reference Documents

Acronym	Reference	Title	Version
PSI-DL	PSI-DL	PSI CGI Document List	current MS (doc version)
PSI-ICD	PSI-ICD	PSI Interface Control Document	see before
PSI-MADR	PSI-MADR	PSI Markdown Administrative Decision Records	see before
PSI-REQ	PSI-REQ	PSI Requirements	see before
PSI-RR	PSI-RR	PSI Risk Register	see before
PSI-SDP	PSI-SDP	PSI Strategy And Development Plan	see before
PSI-SLF	PSI-SLF	PSI Software License File	see before
PSI-TAD	PSI-TAD	PSI Terms, Abbreviations and Definitions	see before
PSI-TOD	PSI-TOD	PSI Tasks and Operations Dictionary	see before
PSI-VVP	PSI-VVP	PSI Verification And Validation Plan	see before

Table 1.4: Reference Documents.

2 Introduction

The Pooling & Sharing Interfaces Definitions (PSID) project is an ESA co-funded effort to define a common standard for the interfaces of Pooling & Sharing Systems (PSS) for Satellite Communication (SatCom) services. A PSS is a digital platform for matchmaking (Gov)SatCom users' demands (both commercial and institutional) with (Gov)SatCom providers' offers. Bringing together multiple (Gov)SatCom providers in one platform makes the market transparent, thus allowing users to get an overview of the market and to compare different offers efficiently. Additionally, a PSS assists users with little knowledge about the (Gov)SatCom domain defining their requirements on the (Gov)SatCom services. Those two aspects combined allow for fast access to the services and an efficient usage of the available capacities. To accomplish this, a PSS steps in between the usual processes of finding a provider/supplier, requesting an offer, and ordering the desired products or services, either as a service broker or by pooling products and services from different providers and offering them as an intermediary or distributor. Subsequently, the PSS can be used to monitor the services and manage multiple missions in a single application.

Eventually, a PSS can also be used as (or manage) a community hub, i.e., a number of end users or customers with similar interest that *share* their common resources and utilize a commonly obtained *pool* of (Gov)SatCom capacities. This strategy increases the efficient usage of scarce resources further.

There are already different approaches on PSSs, that might lead to an unnecessary fragmentation of the market. Therefore, a common standard for the interfaces of a PSS is required to allow the interaction between those different PSSs and reduce the effort of (Gov)SatCom providers to offer their product and services via multiple PSSs to maximize their reach.

Such a standard needs to take care of the different interfaces involved in the aforementioned processes, i.e.,

1. an interface between PSS and resource providers (satellite operators, service providers, or other PSSs),
2. an interface between the PSS and users, and
3. an interface between PSS and its own governance.

The goal of this project is to mainly define aspect 1 and to develop a software mock-up as needed to validate the various interfaces being developed.

The PSI standard derives from the existing industry-standard "Open Digital Framework" of **TM Forum** alliance[1]. The "Open Digital Framework" is a reference framework for delivering online Information, Communications and Entertainment services to the telecom world. It empowers market participants to compete and cooperate. One of PSI's goals is to make this existing standard fit for the world of satellite communication.

The consortium for this project consists of the service & technology providers SES Techcom and CGI, as well as of the (Gov)SatCom operators SES, Hellas Sat, Hispasat, Hisdesat, and LuxGovSat, and Inmarsat being both a service & technology provider and a (Gov)SatCom operator.

[1] See https://www.tmforum.org/resources/reference/gb991-tm-forums-core-concepts-and-principles-v22-0-0/

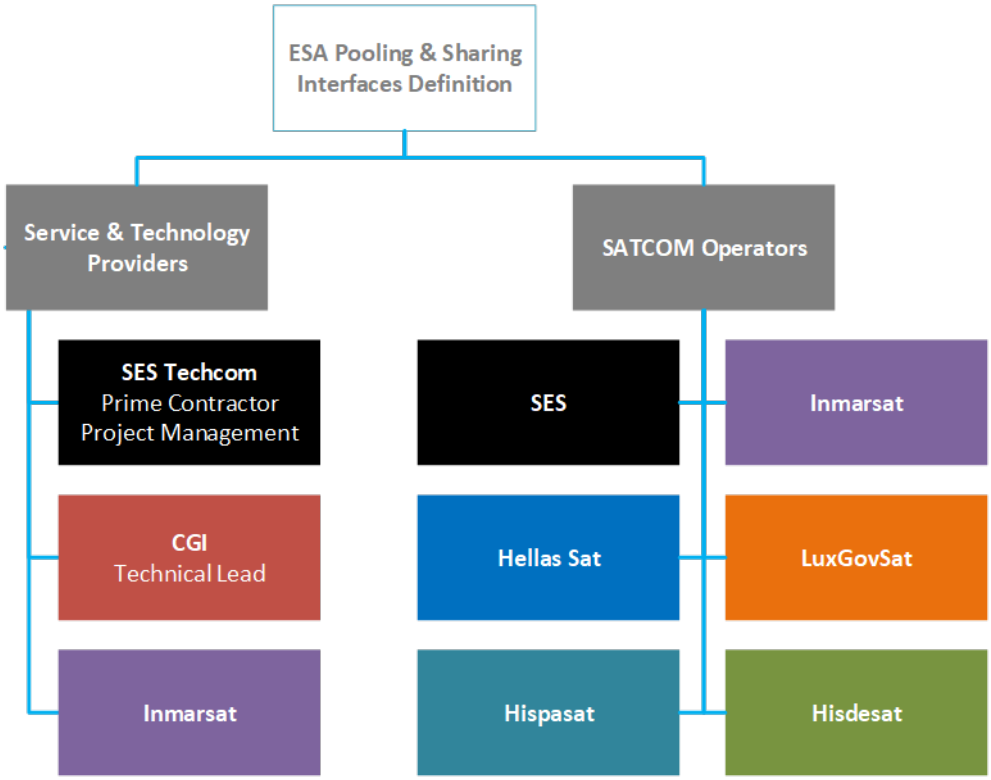

Figure 2.1: The PSI consortium.

2.1 Document Scope

This **READ ME FIRST** document provides the list of all documents already released as part of this project and the suggested order in which to read them.

2.1.1 Compiled Document

NOTE: THIS IS A COMPILED DOCUMENT [2]

This document has been compiled/generated from external sources and is not being written as-is. Therefore, any changes made within this compiled version of the document will be lost upon recompilation!

To make (permanent) changes, edit the respective sources directly or contact the PSID team.

2.1.2 Signature

Changes to this document are tracked electronically. No signature is required by the authors. The information in the “Source Control” chapter can prove the integrity of the document and reveal any change.

[2] Document compiled on 2025-02-12 11:44.

2.1.3 Development State

Current document version is `1.2.2`.
Next version is targeted for `2025-04-01`.

2.1.4 PSI Release Notes

2.1.4.1 Introduction

Welcome to the third release of the Pooling and Sharing Interface API! Below, you'll find details about the features, enhancements, and other important aspects of this release.

2.1.4.2 Key Highlights

The focus of this release lies on **mission management**, to facilitate a common understanding of user requirement towards communication. It aims to complement the Inquiry API by providing workflows and *understanding* to service requirements. This is mainly a user-oriented API, but it also enables exchange of mission data between PSS systems and therefore cross-platform-market places. This could become a future focal point. Such data exchange would include actual user requirements (expressed as missions), as well as templates for such missions. By the use of templates, user mission creation is streamlined and allows a governance to safeguard, streamline or ease the process of user requirement gathering.

Together with the APIs, we are working on a Plug&Play component for P&S systems (Hubs, Brokers, Marketplaces...), based on ODA. This will be a standalone Micro-Frontend open to be integrated into existing OSS/BSS/PSS systems. A first draft is included in this release.

It will come with different views:

- Time based (e.g. mission timeline, Gantt-Chart, to express that is needed *when*)
- Geography based (e.g. mission zones or network nodes on a map to express what is needed *where*)
- Logical View (e.g. communication interdependency graph to express *how* the requirements will look like)

Another area of improvement is the **performance management API**.

A new API has been added that allows to request performance reports to an ongoing mission from the provider. That is: the report itself is generated on provider's systems. The API handles the request and exchange of the report. The report has to be in line with the product's SLA and allows monitoring of compliance. It allows also to define alarm thresholds and receive a push of threshold violations by the provider, avoiding a constant pull.

We also added the technical considerations and resulting decisions to the document set. This allows easier future evolution and maintenance of the standard.

2.1.4.3 What's New

- [PSI-GID] now contains descriptions about the ODA component for mission management
- [PSI-ICD] now contains new and updated APIs - see below!
- [PSI-ADR] first release of our decision records

- [PSI-TAD] now contains descriptions of concepts for user missions, as well as performance and alarm management
- [PSI-TOD] now contains new tasks and operations for user missions, performance and alarm management

2.1.4.3.1 Newly added APIs

- PSID002 Mission Management
- This customer-facing API allows them to manage missions and assign products, services and resources to them.
- It can also serve as an entry point for the Customer Inquiry API to find matching products for their requirements.
- PSID143 Performance Monitoring
- Based on MEF143 - Performance Monitoring API (Version 2.0.0-RC).
- The performance monitoring allows a PSS or customer to request performance reports from a provider.
- PSID642 Alarm
- Based on TMF642 - Alarm API (Version 4.1.0).
- Allows the provider to notify a PSS or customer about detected problems with their products.

2.1.4.3.2 Updates APIs

- PSID001 Customer Inquiry
- Improved handling of places by adapting TMF Geography types.
- PSID620 Product Catalog
- Based on TMF620 - Product Catalog Management API (Version 4.1.0).
- Changed `SLARef` to `ServiceLevelSpecificationRef`
- Streamlined GeoJSON types
- PSID633 Service Catalog
- Based on TMF633 - Service Catalog Management API (Version 4.1.0).
- Changed `SLARef` to `ServiceLevelSpecificationRef`
- Streamlined GeoJSON types
- PSID634 Resource Catalog
- Based on TMF634 - Resource Catalog Management API (Version 4.1.0).
- Changed `SLARef` to `ServiceLevelSpecificationRef`
- Streamlined GeoJSON types
- PSID657 Service Quality Management
- Based on TMF657 - Service Quality Management API (Version 4.1.0).
- Add endpoints to manage KPIs that are supported by the PSS.

2.1.4.3.3 Added Requirements

- MISSION requirement category
- REQ-06-03 Key Indicator Management
- REQ-06-04 Performance Monitoring Job Management
- REQ-06-05 Performance Monitoring Report Management
- REQ-06-06 Alarm Management

2.1.4.4 Known Limitations

1. The Service Quality Management is rather basic. There is an ongoing effort to align this set of APIs with the results of a TM Forum Catalyst project. More information will follow in one of the next releases.
2. The Mission Management Service is at an early state. However, the available API implements basic mission management services, import and export. A full set of APIs to implement such a service are subject to an upcoming release. Refer also the [PSI-GID] to learn about the available API use cases.

2.1.5 Outlook

Currently, we are working on the next release with the following focal points:

- Finalize the mission management component
- Update the API baseline to TM Forum 5
- Converge with MEF schema for some selected APIs

2.1.6 Feedback and Contributions

We value your feedback! If you encounter any issues or have suggestions, please reach out. Additionally, we welcome contributions from the community.

3 Suggested Reading Order

Our documents contain references to other released documents and build upon knowledge gained by reading the referenced document(s).

Thus, for better understanding of our concepts, we suggest three different approaches for reading our documents.

3.1 Reading All Documents

To read all our documents, we suggest the following order:

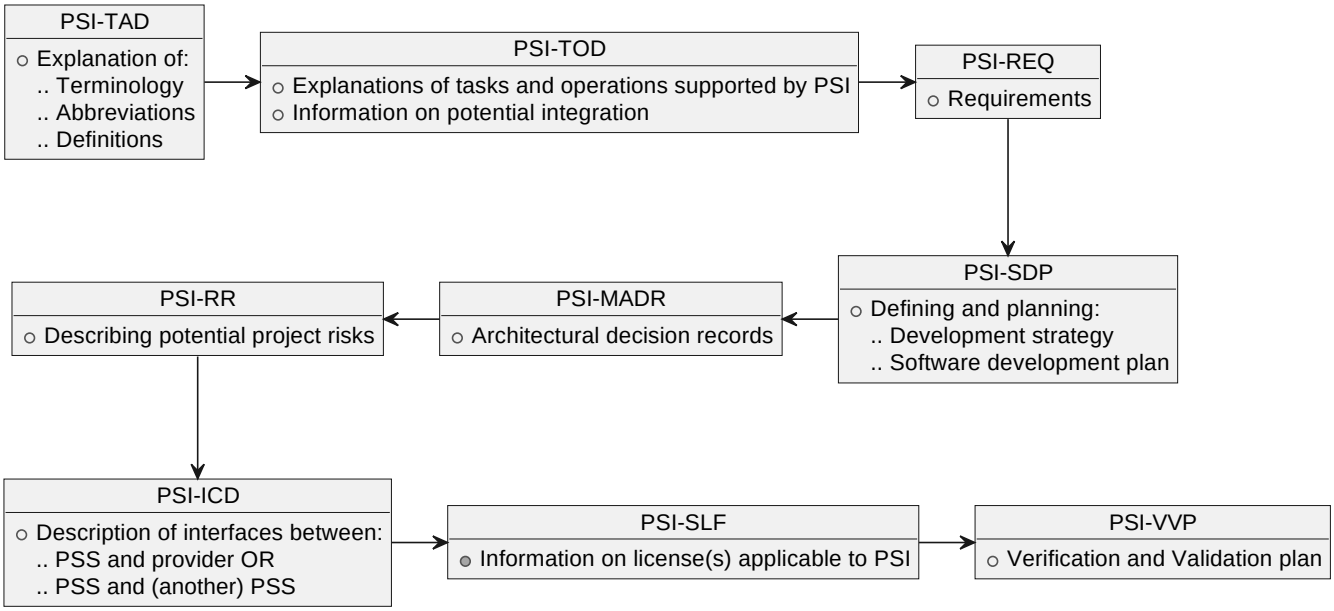

Figure 3.1: Document Reading Order - All Documents.

3.2 Reading Documents from Perspective of Interface Implementation

To read our documents with focus on the interface implementation, we suggest the following order:

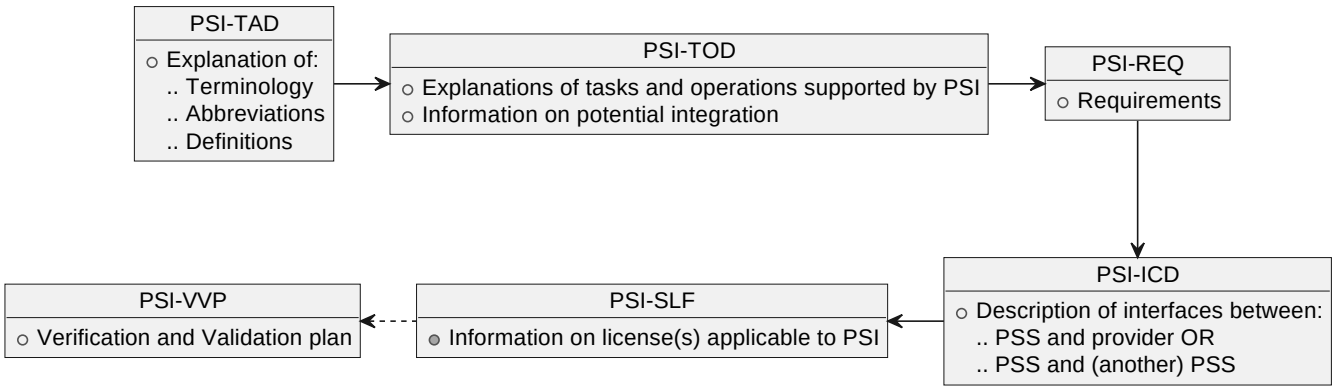

Figure 3.2: Document Reading Order from Interface Implementation Perspective.

3.3 Reading Documents from Perspective of Project Management

To read our documents with focus on the project management, we suggest the following order:

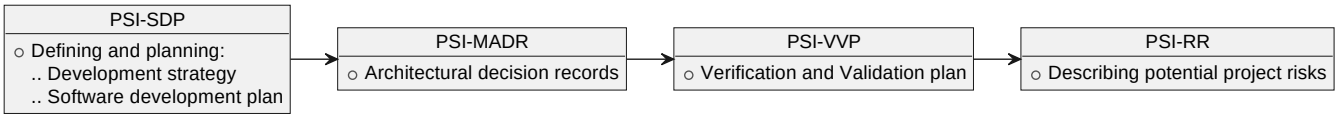

Figure 3.3: Document Reading Order from Interface Implementation Perspective.

4 Description of Documents

The **PSI-TAD** document explains terminology, abbreviations and definitions used throughout all documents. It determines the *language* which will be applied to the documents, thus reading this document will grant a common understanding to the other documents.

PSI-TOD explains tasks and operations supported by PSI, which are based on given requirements. PSI-TOD already mentions the PSI-ICD document, but we recommend reading the ICD after the general structures have been understood or use it only as a reference for now.

The requirements, defined in **PSI-REQ**, build the basis of the endpoints needed for the operations described here. As such, they provide understanding on how decisions and strategies were made and implemented.

The software development strategy and planning is described in **PSI-SDP**. This document also elaborates the general project plan.

PSI-MADR describes decisions that were taken on the project. Those decisions have an immediate influence on other documents as, e.g., the TAD. The architecture described in this document is designed to meet needs for interface implementation and project management, e.g. how the repository should be structured, how the mock-up shall be implemented etc.

Subsequently, risks that may arise due to decisions being made or strategies being defined within the documents already read are defined in document **PSI-RR**.

Document **PSI-ICD** describes the planned and already prototyped interfaces. Accordingly, (software) licenses applicable to PSI can be reviewed in document **PSI-SLF**.

Eventually, the **PSI-VVP** document contains information on the planned verification and validation. Those depend on the ICD definitions as well as the requirements and may change due to the implementation and description of interfaces.

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