PSI Software License File

PSI-SLF

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1 Document Meta Information

1.1 Document Signature Table

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Author	Wolfgang Robben	Project Manager	CGI
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Table 1.1: Signature Table.

1.1.1 Document Change Record

1.1.1.1 Changes

Date	Version	author	message
2022-09-30	MS2	Wolfgang Robben	Initial version
2022-12-31	MS3	Wolfgang Robben	Minor updates due to MS2 action items
2023-04-19	MS4	Wolfgang Robben	Formatting updates
2023-07-27	MS5	Wolfgang Robben	Formatting updates
2023-10-06	MS6	Wolfgang Robben	Formatting updates
2024-01-25	MS7	Wolfgang Robben	Only milestone updates
2024-09-11	MS8 [1.2.0]	Hendrik Oppenberg	Added GID, public release adjustments.
2024-12-09	MS9 [1.2.1]	Hendrik Oppenberg	No updates, just version bump.
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

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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-MADR	PSI-MADR	PSI Markdown Administrative Decision Records	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-GID	PSI-GID	PSI Graphical Interface Definitions	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/

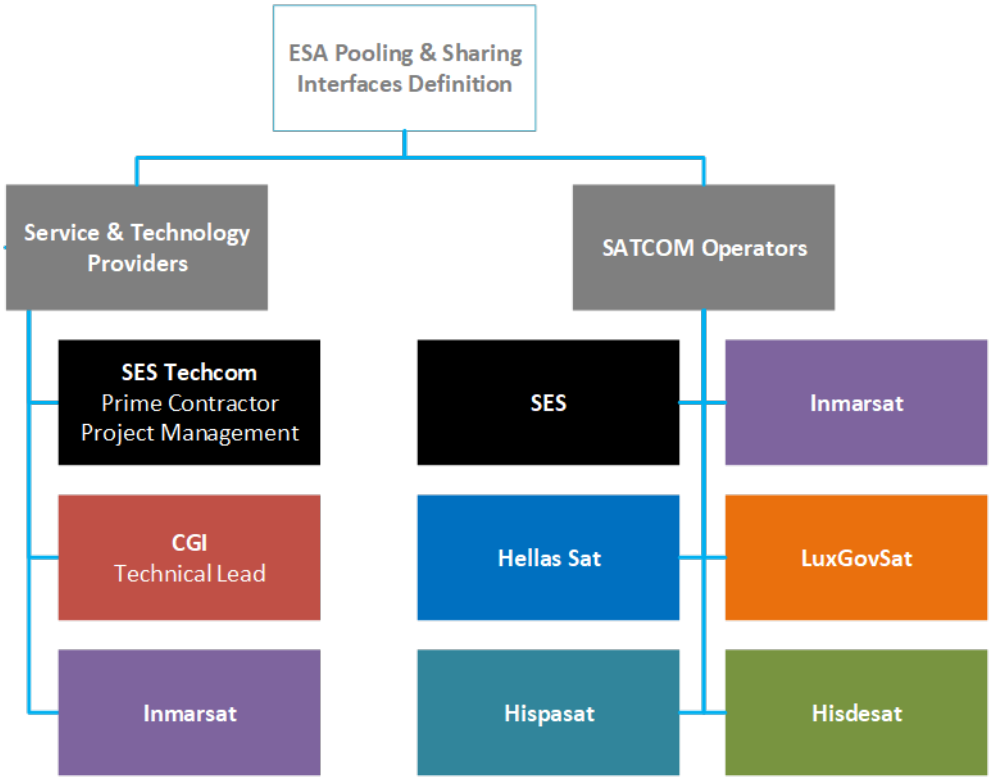

Figure 2.1: The PSI consortium.

2.1 Document Scope

This document contains information on the License(s) applicable to the PSI project. The license has to be shipped with each artefact of the project.

The following sections heavily refer to terms, abbreviations and definitions defined in the [PSI-TAD].

The 2.0 version of the Apache License, approved by the Apache Software Foundation (ASF) in 2004, was chosen by the PSI consortium as the license under which all portions of the PSI source code and documentation will be released. Find the justification below.

All artefacts produced by the PSI consortium are implicitly licensed under the Apache License, Version 2.0, unless otherwise explicitly stated.

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] Document compiled on 2025-02-12 11:46.

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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 TM Forum Heritage

Many aspects of the PSI project derive from the TM Forum projects. TM Forum applies the Apache License [3] to all its creations. That is, TM Forum artefacts, “code” and documentation is licensed under the Apache 2.0 license mode. This includes re-releasing the API. This project will work in close concert with the TM Forum API Project and will abide by its governance and use the output from that group in the forms for specifications, user stories, etc. as the input to the development process. Therefore, it’s necessary to apply the same license to PSI creations.

[3] https://www.tmforum.org/collaboration/api-apache-2-0-project/

4 License

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

4.1 Third Party Software Usage

The PSI project includes the utilization of third-party software components. Specifically, as part of our project development, we have utilized Draw.io for the creation of some visual representations.

Draw.io is a web-based diagramming tool based on Apache, which enables to create various types of diagrams. For additional information, please refer to the official Draw.io website https://www.drawio.com.

Penpot is a rapid prototyping tool for UIs by Kaleidos. Kaleidos' Products & Services open-source modules are licensed under open-source licenses (such as Mozilla Public License 2.0 (MPL 2.0) and other licenses endorsed by the Open-Source Initiative). It has been used to create wireframes of a possible UI of a PSS (see [PSI-GID]) and to get a better understanding of the proceeses the PSI will be involved in. For more information, please refer to the official penpot website https://penpot.app/.

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6.1 License File Template

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```

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