



NAVELINK

Developer forum

23-05-2024

DocId: 0189
Version: v1.0

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Agenda

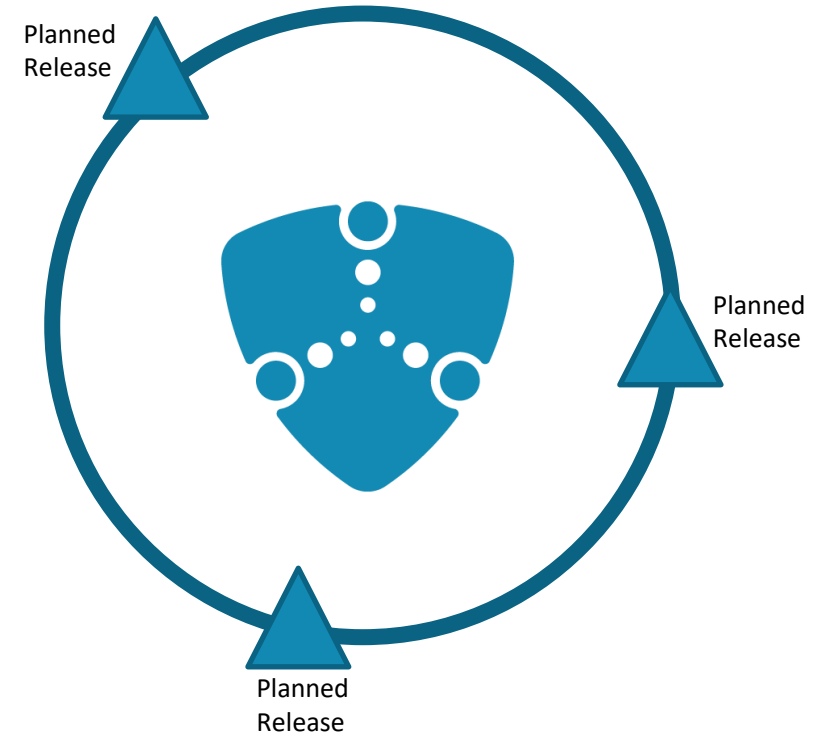
- 1) Navelink Platform status & update
- 2) Navelink Roadmap (Head of concept Navelink)
- 3) Service development discussions & information
 - a) Forum service developers (Each developer)
 - b) Forum security and interoperability (Each developer)
- 4) Overview of Navelink usage
- 5) Q&A
 - a) New questions (All)
- 6) Presentation – SECOM Hotel
- 7) Closing remarks

1) Navelink Platform status & update

- Since the last meeting:
 - Work on implementing SECOM Hotel to DEV
- Current work:
 - Work on implementing SECOM Hotel to TEST
 - Deep analysis on what long-term effects the EU sanctions will have on the MCP system
 - Analysis on the updated NIST directive and its consequences on Navelink and the MCP system

Received questions

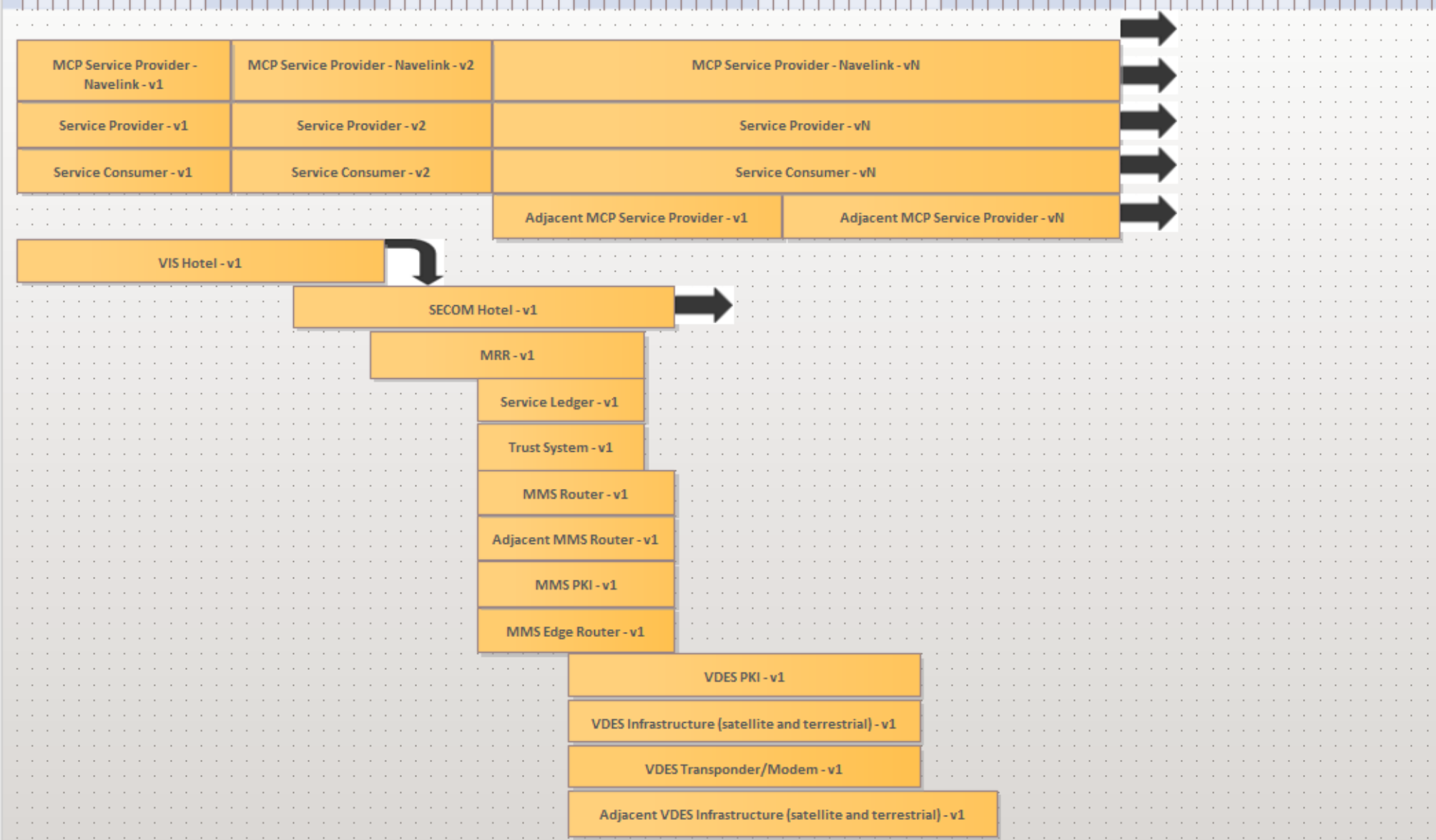
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Unit: Years

Maritime digital environment

2023 2024 2025 2026 2027 2028 2029 2030



Interfaces

MIR Open interface	<p>Open interface to MCP Identity Registry</p> <p>Main functions are:</p> <ul style="list-style-type: none"> - OCSP certification check - CRL download <p>http://</p> <p>No authentication required.</p>
MIR Secure interface	<p>Secure interface to MCP Identity Registry</p> <p>Main functions are:</p> <ul style="list-style-type: none"> - Create, Get, Update and Delete entities - Issue certificates - Create, Update and Delete Roles - KeyCloak <p>Protected by Navelink Certificates and HTTPS</p>
MSR Open interface	<p>Open interface to Navelink Service Registry</p> <p>Main functions are:</p> <ul style="list-style-type: none"> - Search and Get Service Specifications - Search and Get Service Designs - Search and Get Service instances metadata <p>Protected by HTTPS</p> <p>No authentication required.</p>
MSR Secure interface	<p>Secure interface to Navelink Service Registry</p> <p>Main functions are:</p> <ul style="list-style-type: none"> - Create, Update and Delete Service Specification - Create, Update and Delete Service Design - Create, Update and Delete Service Instance metadata <p>Protected by Navelink Certificates and HTTPS</p>

SECOM - Public	<p>SECOM Service interface for connecting public SECOM users to the SECOM Service.</p> <p>Main functions are</p> <ul style="list-style-type: none"> - Uploaded Message - Get Summary - Get Message - Create and Remove Subscription - Request Access - Send EncryptionKey <p>Defined by OpenAPI file (JSON) designed by IEC 63173-2 SECOM</p> <p>Protected by SECOM PKI Certificates and HTTPS.</p>
SECOM Hotel - Private	<p>Vendor specific interface for connecting user application to the SECOM Service.</p> <p>Main functions are</p> <ul style="list-style-type: none"> - Get Uploaded Messages - Get Notifications - Publish Messages to downloaders and subscribers - Set Access Control on published messages - Create subscriptions for users <p>Defined by OpenAPI file (JSON) designed in Navelink, based on SECOM Test Project.</p> <p>Protected by HMAC and HTTPS.</p>
VIS - Public	<p>VIS Service interface for connecting public VIS users to the VIS Service.</p> <p>Main functions are</p> <ul style="list-style-type: none"> - Uploaded Message - Get Summary - Get Message - Create and Remove Subscription <p>Defined by OpenAPI file (JSON) designed by STM Project.</p> <p>Protected by MCP PKI Certificates and HTTPS.</p>
VIS Hotel - Private	<p>Vendor specific interface for connecting user application to the VIS Service.</p> <p>Main functions are</p> <ul style="list-style-type: none"> - Get Uploaded Messages - Get Notifications - Publish Messages to downloaders and subscribers - Set Access Control on published messages - Create subscriptions for users <p>Defined by OpenAPI file (JSON) designed in STM Project.</p> <p>Protected by HMAC and HTTPS.</p>

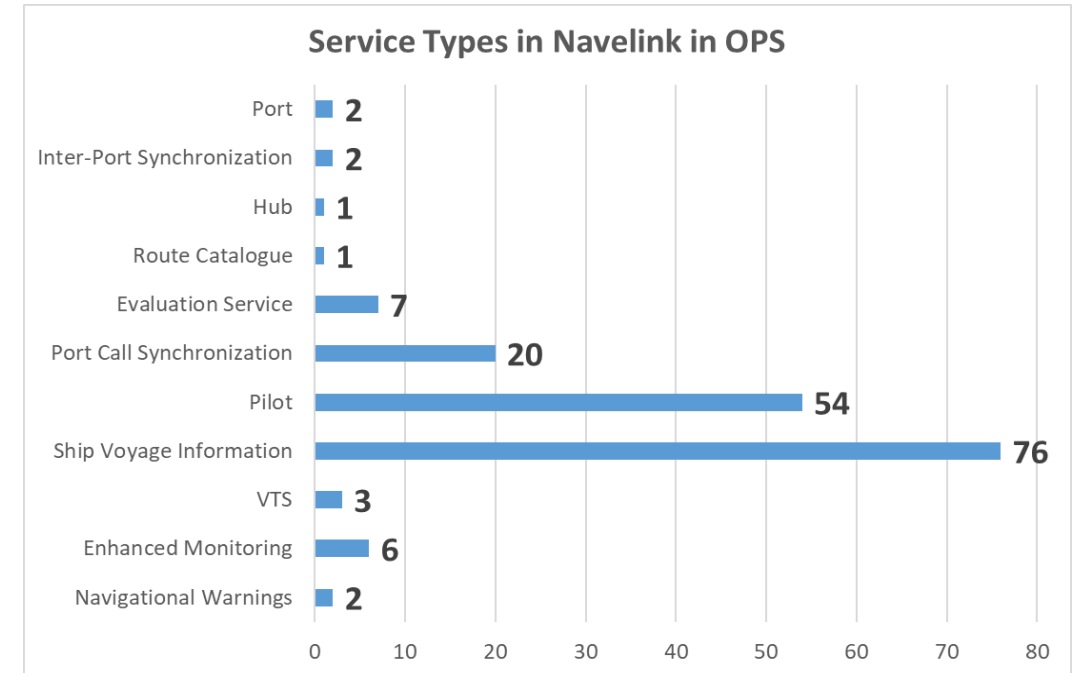
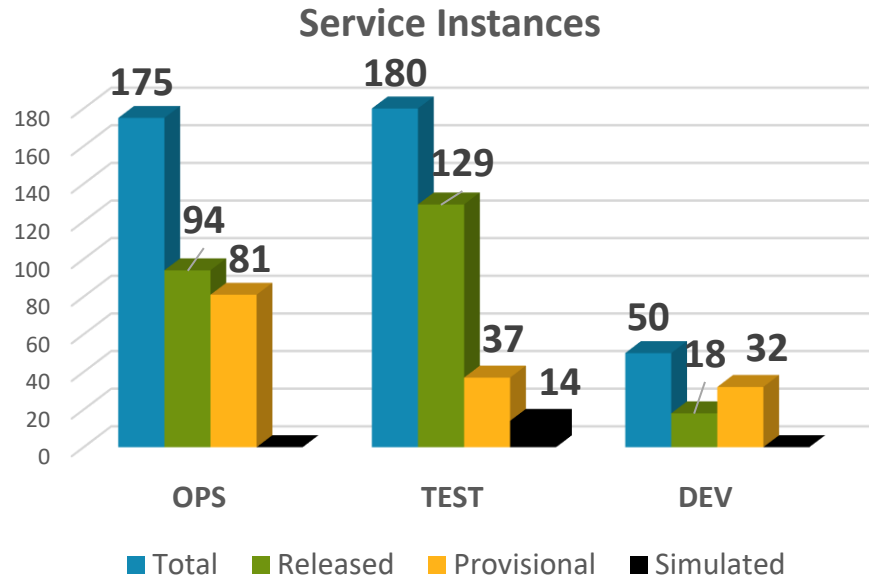
3) Service development discussions & information

- Forum service developers
 - Common discussions
- Forum Security and interoperability
 - Common discussions



4) Overview on Navelink usage

2024-04-24

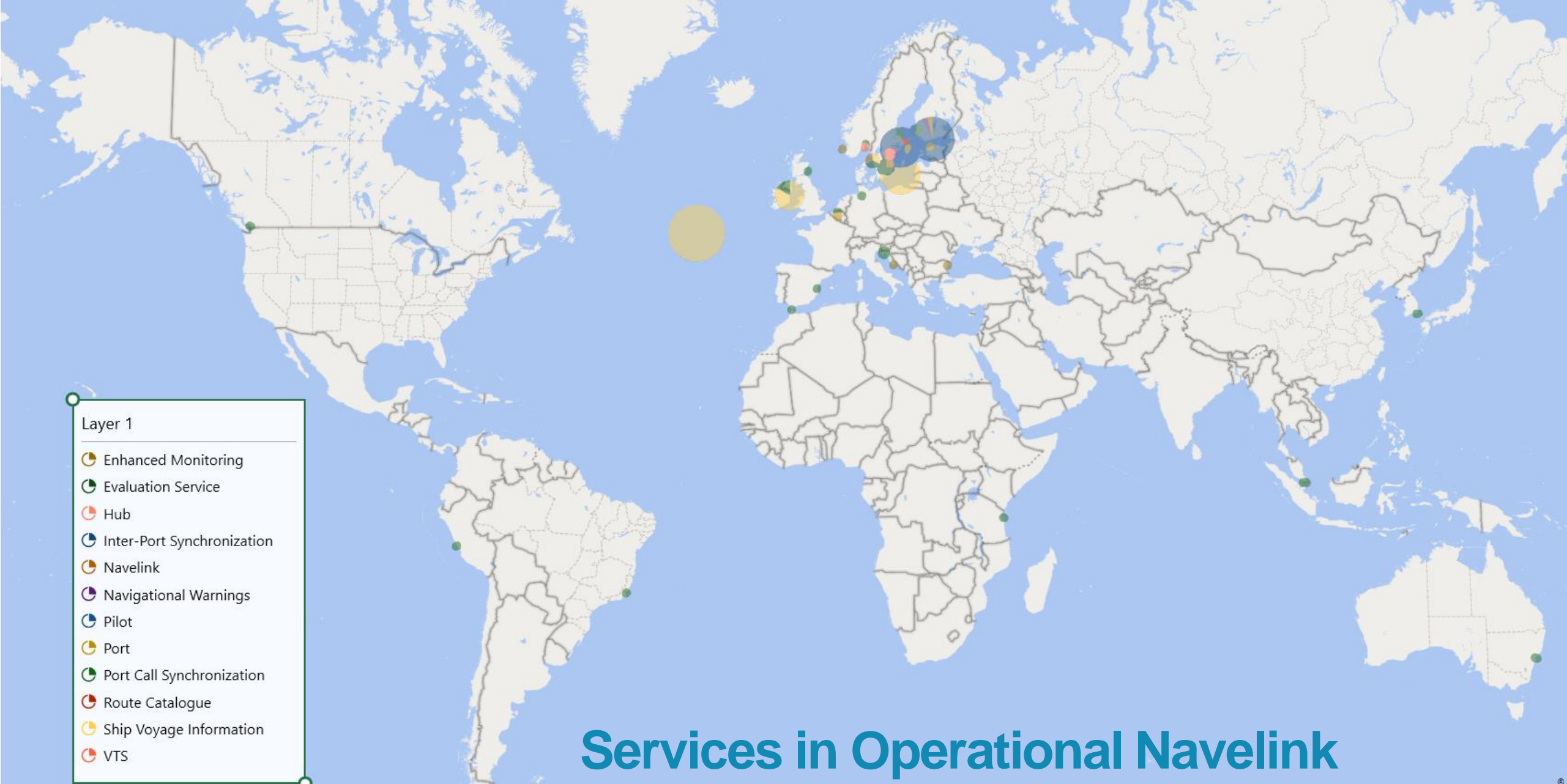


Navelink Operational environment Service Registrations

Service Specifications: 2 (Voyage Information Service v2.2) + **SECOM Generic Service Specification v1**

Service Technical Design: 2 (Voyage Information Service Design v2.2) + **SECOM Service Design Template v1**

Service Instances: 175



Services in Operational Navelink

5) Q&A

- Any Questions? The floor is open.

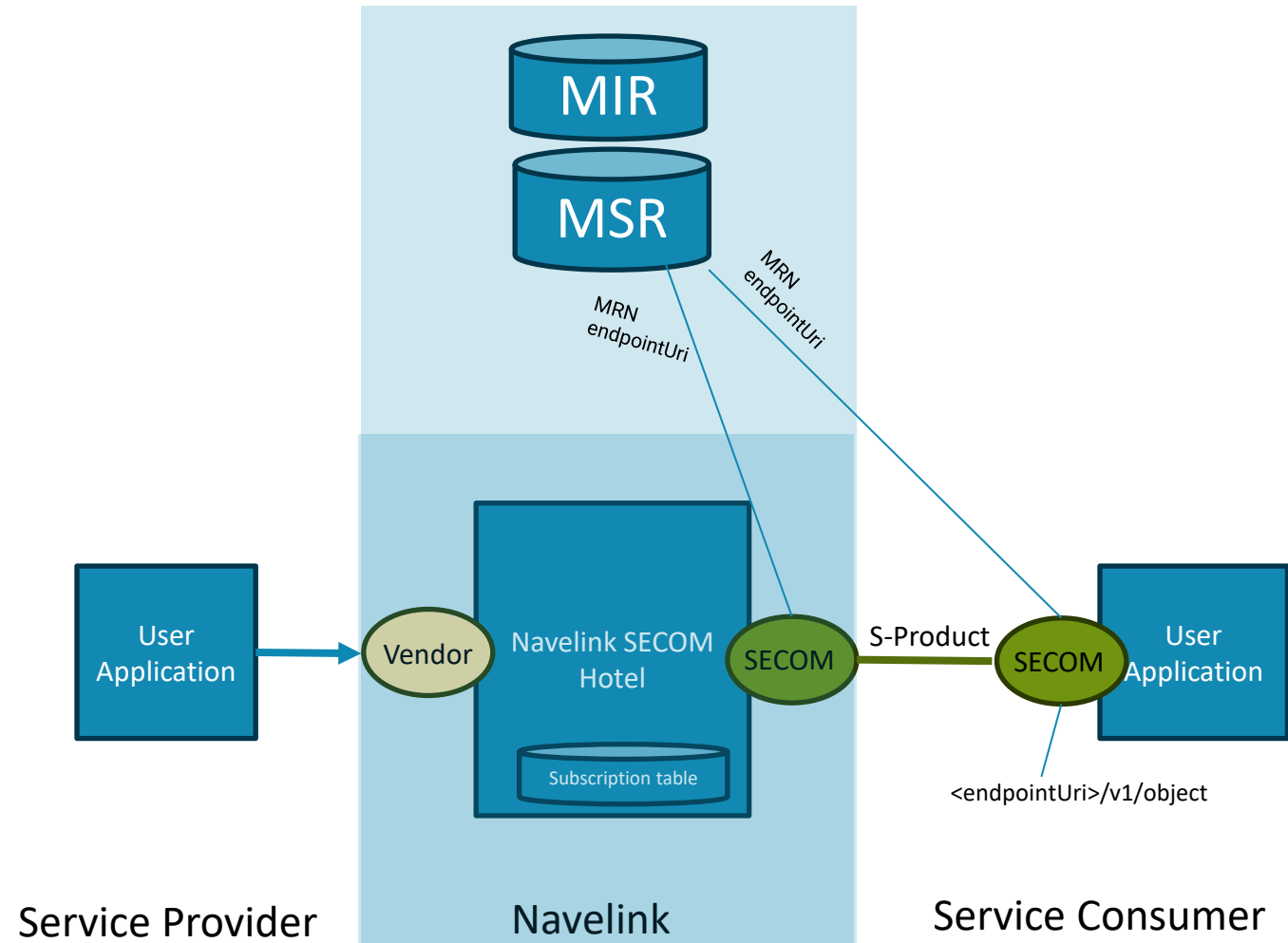
6) Presentation

- SECOM Hotel by Mikael Olofsson (Navelink)

DEMO of SECOM Service Hotel

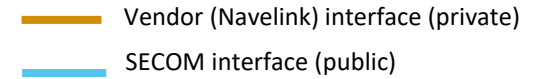
Demo

- Show the services in Management Portal
- Scenario 0
 - Ping the SECOM Service
 - Get Capability for the SECOM Service
- Scenario 1 – Download (pull) information
 - Publish Data on private side
 - Get Summary and the Data on SECOM side
- Scenario 2 – Upload (push) information
 - Upload data on SECOM side
 - Get Notification and the Uploaded message on private side
- Scenario 3 - Subscription
 - Create subscription on S-124 data
 - Publish S-124 Navigational Warning on private side
 - Get the Uploaded S-124 Navigational Warning on private side



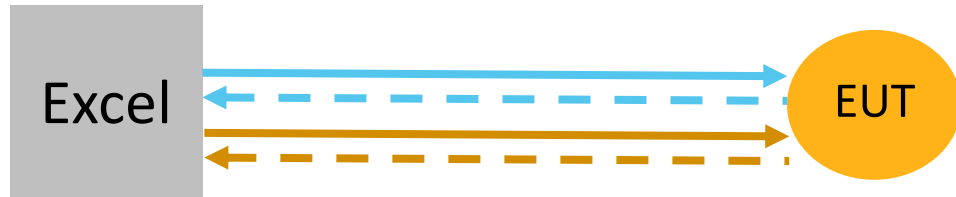
Demo Set-up

- Excel "REST Service Test Case Excel Tool"
- EUT in SECOM Service Hotel



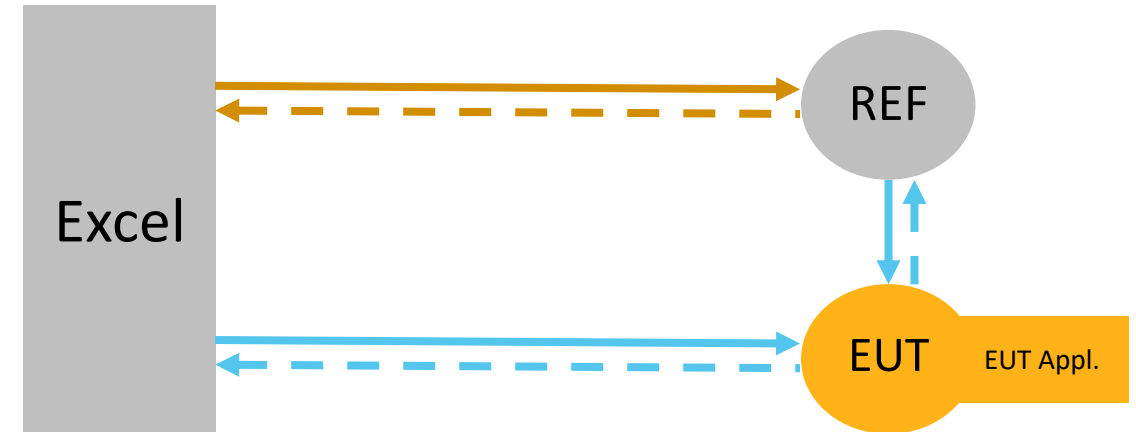
Prepared Excel Service Test where the EUT access is both to the public SECOM interface and the private Navelink interface.

1. Send prepared operation and check response
2. Send scenario based operations and check the responses



Prepared Excel Service Test where the EUT access is only to the public SECOM interface.

A Ref SECOM Service is used.



Scenario 1 – Download (pull) information

Scenario: Service providing Reference Routes (e.g. pilot routes) for anyone to download. The Service is registered in Service Registry to be discoverable.

Preparation

The Service Provider prepares messages to be published

- Create signature for the data
- Set description parameters for the data (i.e. metadata)

Publish

The Service Provider publishes the prepared data

- Define access control list
- Publish the data to my own service

SECOM GET

The Service Consumer discovers the service and gets Summary, then picks data to download

- SECOM Get Summary
- SECOM Get Data by <dataReference>
 - Verify signature

To prepare for demo

- Register service (use SECOM Verification Service)
- Publish realistic data of different types
 - Prepare realistic RTZ
 - Prepare realistic S-124
 - Prepare realistic S-125
 - Prepare realistic S-421
- Set signature and Verify signature on data
- Publish the test data set ACL "all"

Scenario 2 – Upload (push) information

Scenario: Ship uploads route plan to VTS.

Preparation

The Service Provider prepares messages to be uploaded

- Create signature for the data
- Set description parameters for the data (i.e. metadata)
- Create envelope signature

SECOM Upload

The Service Provider uploads the prepared data to SECOM Consumer

Get Uploaded Message

The Service Consumer gets notification and gets the uploaded message

- Get Notification
- Get Uploaded Message [envelope is verified and Acknowledgement sent, if requested]
 - Verify signature

To prepare for demo

- Register service (use SECOM Verification Service)
- Prepare realistic S-421
- Set signature and Verify signature on data and envelope
- Verify data signature on uploaded message

Scenario 3 – Subscription

Scenario: Service providing subscription of S-124 Nav Warnings.
Both provider and consumer Service is registered in Service Registry to be discoverable.

Preparation

The Service Provider prepares messages to be published

- Create signature for the data
- Set description parameters for the data (i.e. metadata)

Publish

The Service Provider publishes the prepared data

- Define access control list
- Publish the data

Subscription

The Service Consumer subscribes to data

- Create subscription
- Get Uploaded Messages
 - Verify envelope signature and data signature

To prepare for demo

- Register service (use SECOM Verification Service)
- Publish realistic data of different types
 - Prepare realistic RTZ
 - Prepare realistic S-124
 - Prepare realistic S-125
 - Prepare realistic S-421
- Set signature and Verify signature on data and envelope
- Publish the test data set ACL "all"
- Create subscription
- Publish new/updated messages
- Get the uploaded messages
 - Verify envelope and data signature

7) Closing remarks

- Break for the summer – No Developer Forum in June, July or August
- Next Developer Forum at 26/09-2024
- Have a great summer everyone!

Meeting notes (1/3)

- SECOM Hotel has been added to DEV environment, work is ongoing on implementing it to TEST as well as an investigation on whether to add an MMS router in Navelink once the standard is set.
 - In the future it is also planned to be added to the operational environment and a user guide is currently being created
- There is also ongoing work and discussion in the VDES community about using MCP as identity provider
- The Navelink Development schedule after 2025 is up to the specification work, so the roadmap written currently for after 2025 is preliminary. If you have specific opinions that we should include something or test something, please forward them to us at info@navelink.org.
- Are there any new additions to the identity registry planned Thomas?
 - Thomas: Yes. There will be some changes according to the updated MIR specification but will wait until it is accepted by IALA. An official council meeting is scheduled in June for IALA, so the update will probably be released in autumn.
- The service registry today is free for everyone to search in and Navelink is of the opinion that it is acceptable by security and sanction reasons. So currently, Navelink have no plans to close it but are considering to have two options.... One open search for all, including anonymous user, with somewhat (TBD) constrained answer; And one open for members with full answer.
- Today in the Service registry we are using the serviceTypes as they were defined in the STM Project but this will be changed in the new IALA G1128 edition where they are based on enumeration of IMO e-Navigation services (MS1 to ~MS20). When this edition will be enforced is still uncertain, but it will probably be in this autumn. If you have services in Navelink Service registry, please take a moment to consider what consequences this change may have for you. We will provide more information on when and how the change occurs as we know.

Meeting notes (2/3)

- Mikael Olofsson gave a demonstration of SECOM Hotel.
 - The idea is that you have your own instance in the SECOM Hotel to have a quick way to share your data with standardised service interface.
 - It is not tailored to a specific payload type but rather is a general implementation of SECOM Service Interface.
 - Except the Get by/Upload by Link, all other SECOM Interfaces have been implemented, including pushing and pulling data and handling subscriptions.
 - Because of an ongoing discussion on IEC regarding property rights the IEC documentation has not been added to the Navelink Management Portal yet, but documentation of the SECOM Technical Design will be added.
 - The signature algorithm used by default in SECOM Hotel is ECDSA-384-SHA2 which is aligned with the coming IHO S-100 ed 5.2
 - There is now a registered service called “Navelink SECOM Verification Service” which will contain a set of valid test data. This service may be used by anyone wanting to test their SECOM instance or wanting to retrieve test data from SECOM.
 - If you want a SECOM instance to experiment with, we will create one for you if you send us an email at info@navelink.org. Of course you need to be a member, but we can help you with this as well, just send us an email asking for a discussion!
 - We have not yet added the SECOM amendment so to use subscription, both provider and consumer service need to be registered in the service registry with correct endpointUri. Hopefully, we will get the amendment implemented after the summer.

Meeting notes (3/3)

- Break for the summer – No Developer Forum in June, July or August
- Next meeting 26/09-2024



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