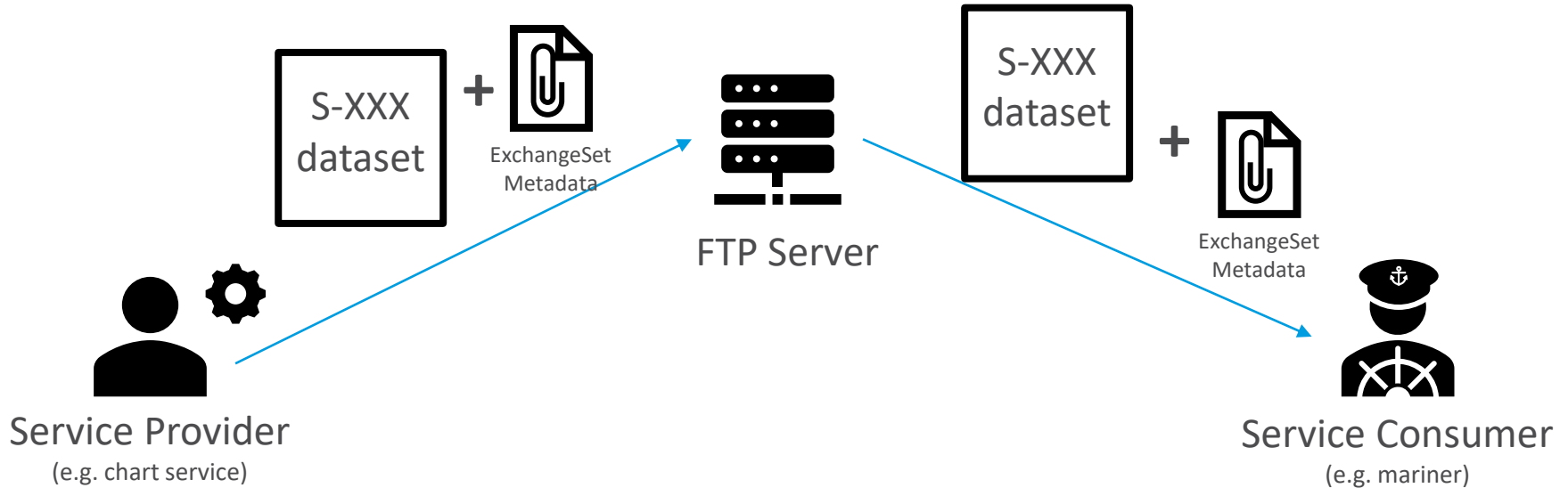


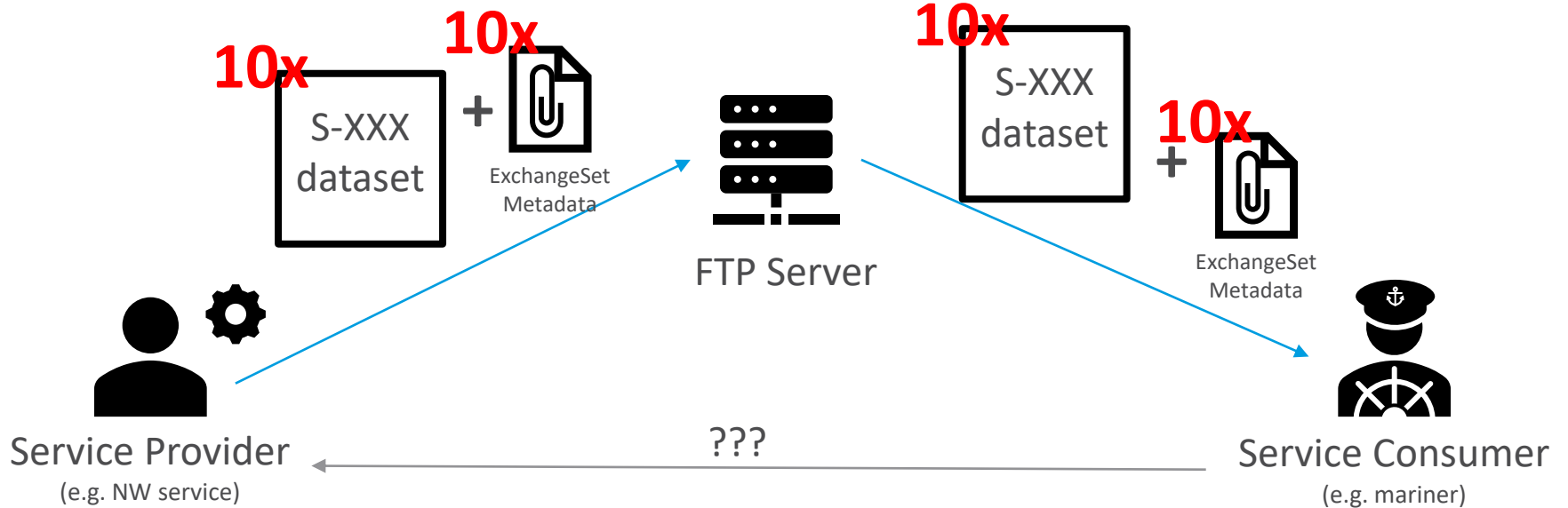
Web Service Based S-100 Data Exchange

Julius Möller

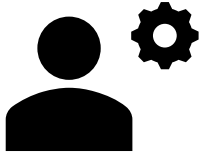
18/06/2020



What if this happens frequently?



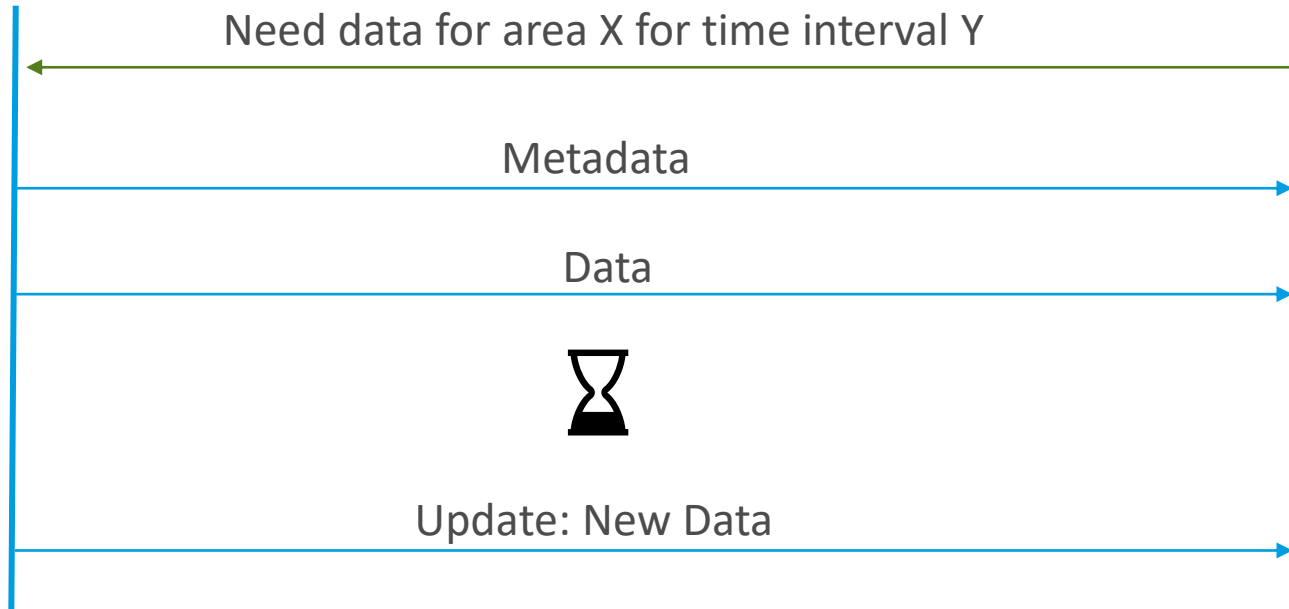
Fine-grained Message Exchange?



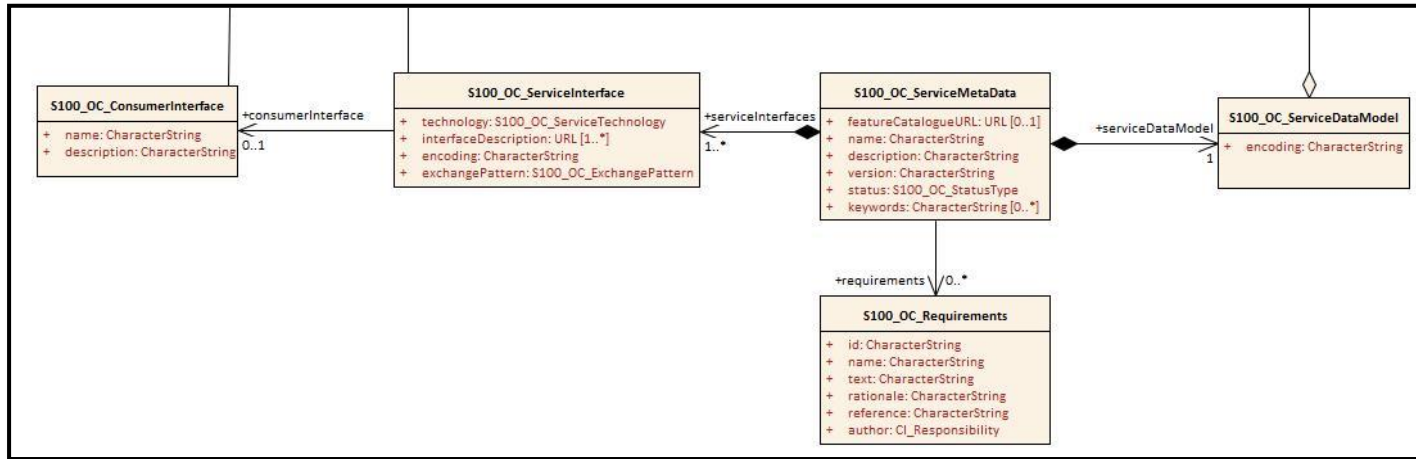
Service Provider



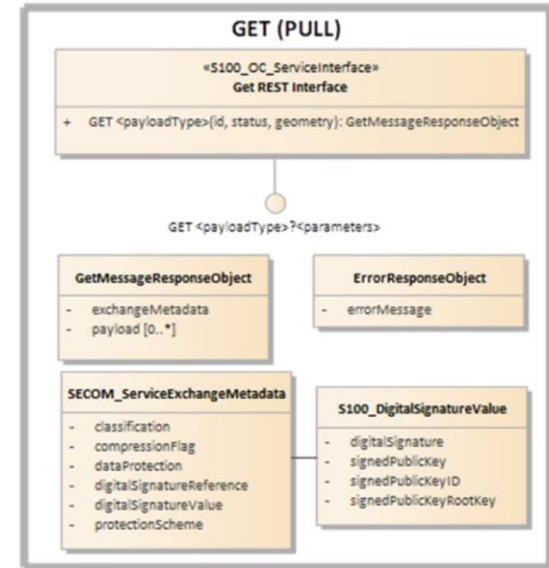
Service Consumer



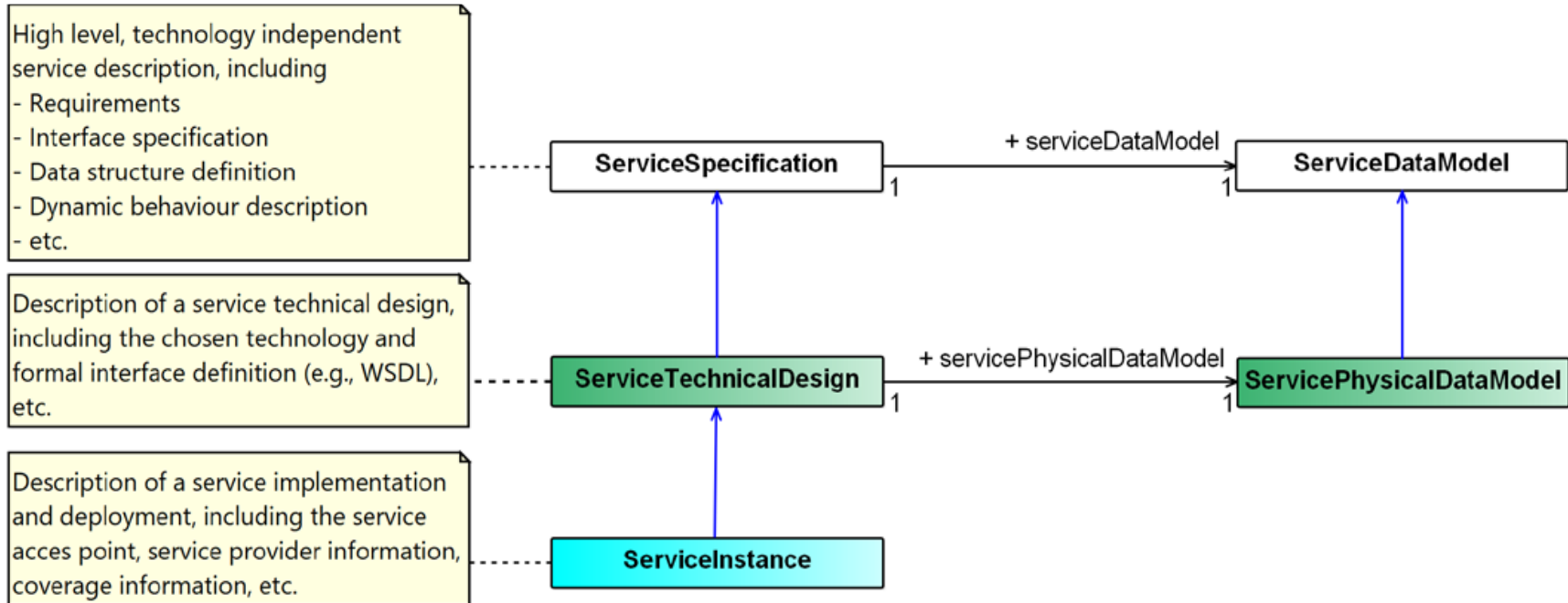
- S-100 Part 14: Online Data Exchange
- Basically specifies how online data exchange can be realized with S-100
- Service Interfaces, Operations, Parameters, Metadata



- Secure exchange and communication of S-100 based products (SECOM)
- Standardizes Interfaces for S-100 Data Exchange
- Provides Data Protection Schemes
- “Optimized” Data Exchange for Web Services (IP-based)



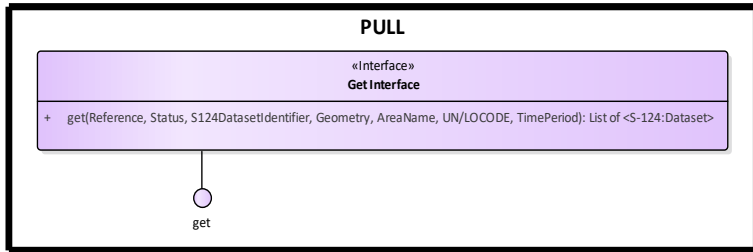
G1128 – The Specification of e-Navigation Technical Services



Name	S-124 Service Specification
ID	To be assigned by IHO, probably using MRN <i>e.g. urn:mrn:iho:service:specification:S-124:001</i>
Version	1.0
Description	The S-124 service specification describes a standardized service implementing the corresponding IHO geospatial standard for navigational warnings. S-124 Navigational Warnings are intended to be used in an overlay to ENC within a navigation system.
Keywords	S-124, Navigational Warnings, NW, MSI
Architect(s)	Per Löfbom, Malin Liljenborg, Johan Von Bültzingslöwen, Julius Möller
Status	Provisional

S-124 Service Specification Identification

An Example: S-124 – Service Specification



Parameters (in)	Encoding	Mult.	Description
Reference	UUID	0..1	Reference to information object e.g. from Get List result.
S-124DatasetIdentifier	see technical design	0..1	The identifier can be provided as search criteria. A list of identifiers can be retrieved via Get List interface. (...) It's up to the service to apply relevant authorization procedure and access control to information.
Status	see technical design	0..1	Status can be provided as search criteria. If no Status is provided, it's up to the service to decide what to return. It's up to the service to apply relevant authorization procedure and access control to information.
Geometry	see technical design	0..1	Geometry condition for geolocated information objects
AreaName	see technical design	0..1	Name of defined area
UN/LOCODE	see technical design	0..1	Code of defined object
TimePeriod	see technical design	0..1	Time related to validity of information objects

Return Type (out)	Encoding	Mult.	Description
List of Information Objects	List of < S-124:Dataset >	0..*	Information object(s) in return

Name: Get Interface

Sub-path: warning/

HTTP-Method: POST

Cookies: Session-Cookies (optional)

Content-Type: text/xml (gml)

Operation get:

“The operation shall be used for retrieving Navigational warnings from producer. If no parameters are given, the return is either an empty list or all navigational warnings the consumer has been given access to by the NAVAREA Coordinator filtered according to chosen parameters. The optional parameters Status, AreaName, UN/LOCODE, TimePeriod and Geometry must be encoded as properties of the S100_Service_Message, if they are used as search criteria. If a specific S124-Dataset is requested, the S124DatasetIdentifier of this dataset must be encoded as properties of the S100_Service_Message.”

```
<?xml version="1.0" encoding="UTF-8"?>
<S100_Service_Message xmlns:gml="http://www.opengis.net/gml/3.2"
  xmlns:S100="http://www.iho.int/s100gml/1.0"
  xmlns:S100EXT="http://www.iho.int/s100gml/1.0+EXT"
  xmlns:s100_profile="http://www.iho.int/S-100/profile/s100_gmlProfile"
  xmlns:xlink="http://www.w3.org/1999/xlink">
  <messageID>234ad27fe929de2</messageID>
  <properties>
  ...
  </properties>
  <operationName>getS124Information</operationName>
  <issueDate>2019-05-04</issueDate>
  <issueTime>18:13:52.0</issueTime>
  <digitalSignatureValue>
302C021433796C6647CC1C55A67DC72FA7C6E157A6594B2B02145D3768B44F3A6ABA11A77178B
738AD3B6A0DE344
  </digitalSignatureValue>
  <digitalSignatureReference>ecdsa</digitalSignatureReference>
  <composedOf>
  <S124:DataSet
    xmlns:S124="http://www.iho.int/S124/gml/cs0/0.1"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.iho.int/S124/gml/cs0/0.1 .../S124.xsd" gml:id="ds">
    ...
  </S124:DataSet>
  ...
  <S124:DataSet
    xmlns:S124="http://www.iho.int/S124/gml/cs0/0.1"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.iho.int/S124/gml/cs0/0.1 .../S124.xsd" gml:id="ds">
    ...
  </S124:DataSet>
  </composedOf>
</S100_Service_Message>
```

How to provide a secure Environment for Maritime Services in production?

Service Registry?

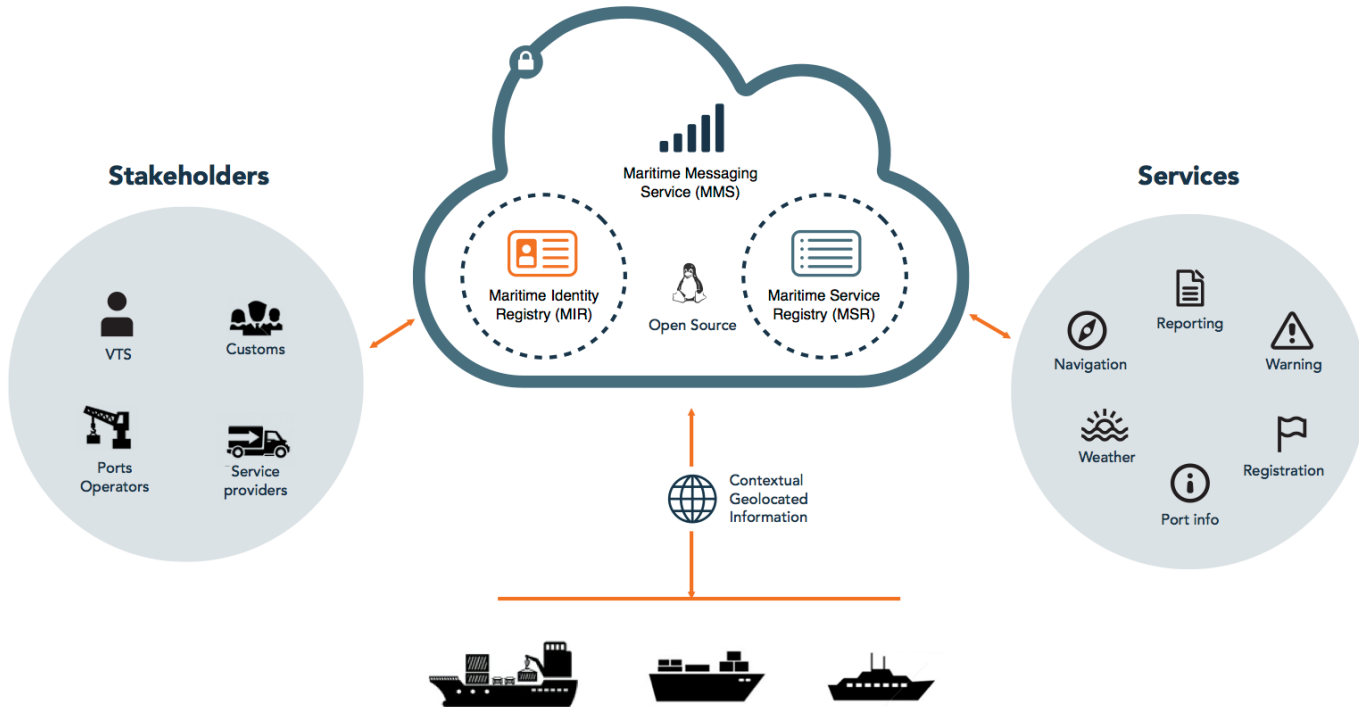
Support for Web Services?

Identities of Users and Service Providers?

Messaging Infrastructure?

Public Key Infrastructure?

The Maritime Connectivity Platform



Thank you for your attention!

Questions?

Contact: julius.moeller@uol.de