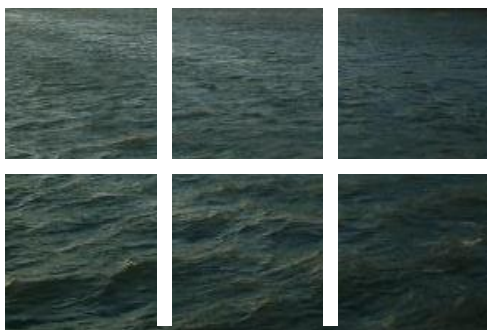


The Structure of Maritime Service Portfolio(s) (MSP)

Jan-Hendrik Oltmann, Germany

„e-Navigation Architect“ @ IALA,
ACCSEAS, and elsewhere



Presentation overview

- **The context of the Maritime Service Portfolios (MSPs)**
- **2014, SIP completed – what next?**
- **The Structure of MSP, proper**
- **Summary & Conclusions**

***The architect speaks,
here in “construction site management” mode.***

The Context of the MSPs /1

Impact statement – What is e-Navigation about?

“Bringing the maritime domain into the digital age”

= Existing services to be transformed/adapted

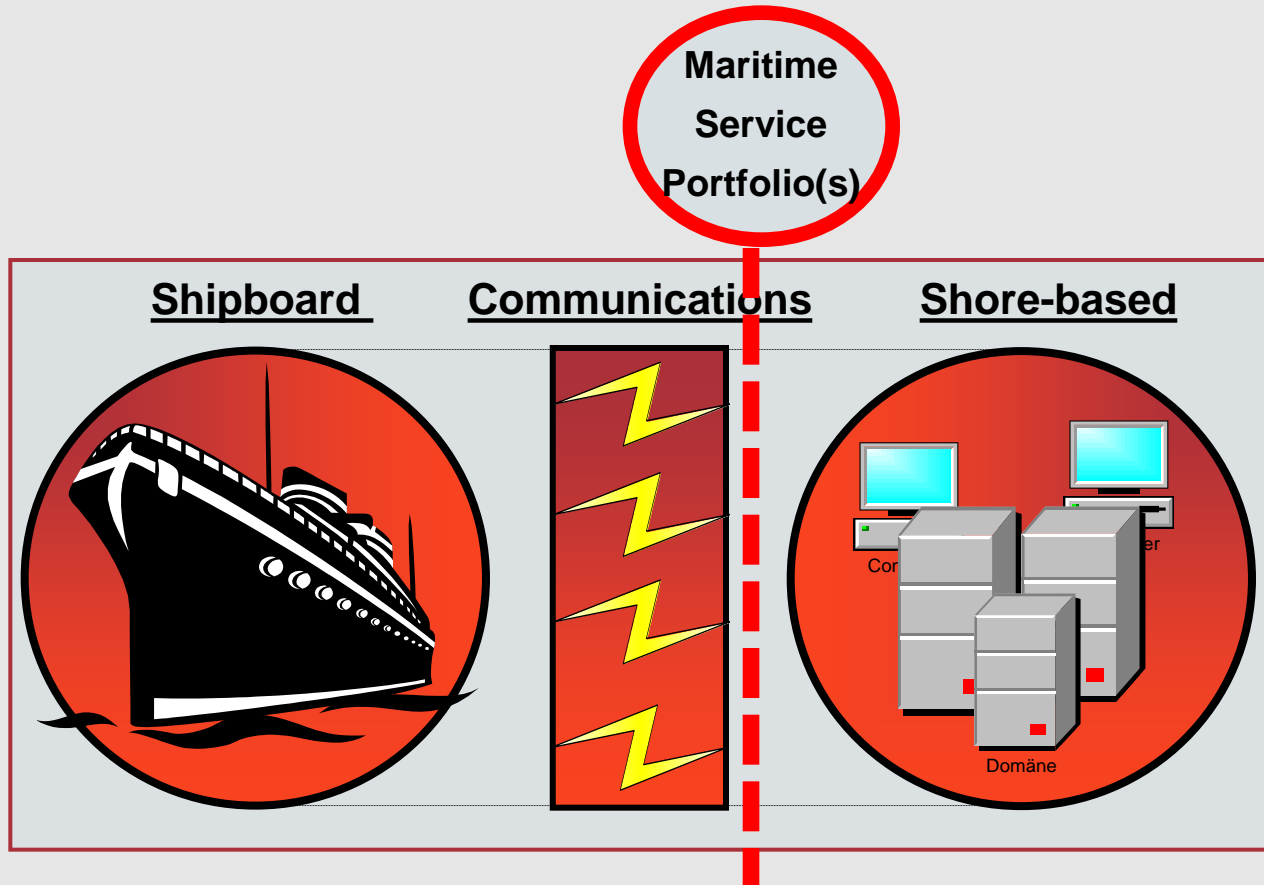
+ Innovative service introduced

- How to facilitate that paradigm shift in an orderly manner *with “everybody onboard”*?
- How to *govern the huge complexity*?
- How to *break it down*? I. e. reduce it into chunks that people/organizations can chew?

The Context of the MSPs /2

The place of MSPs in overarching architecture

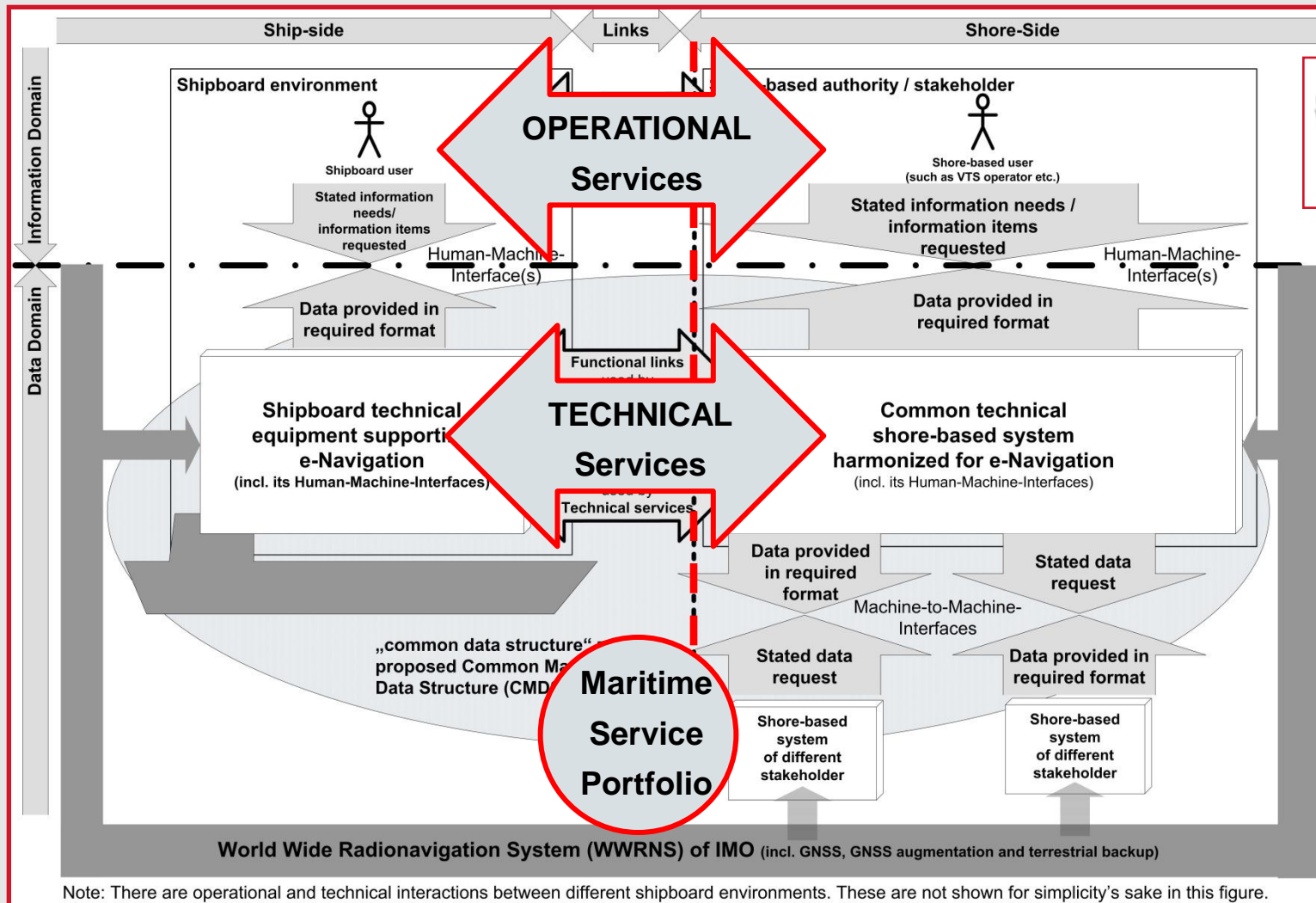
Let's start with something well known ...



... and consider its inherent power to answer above questions.

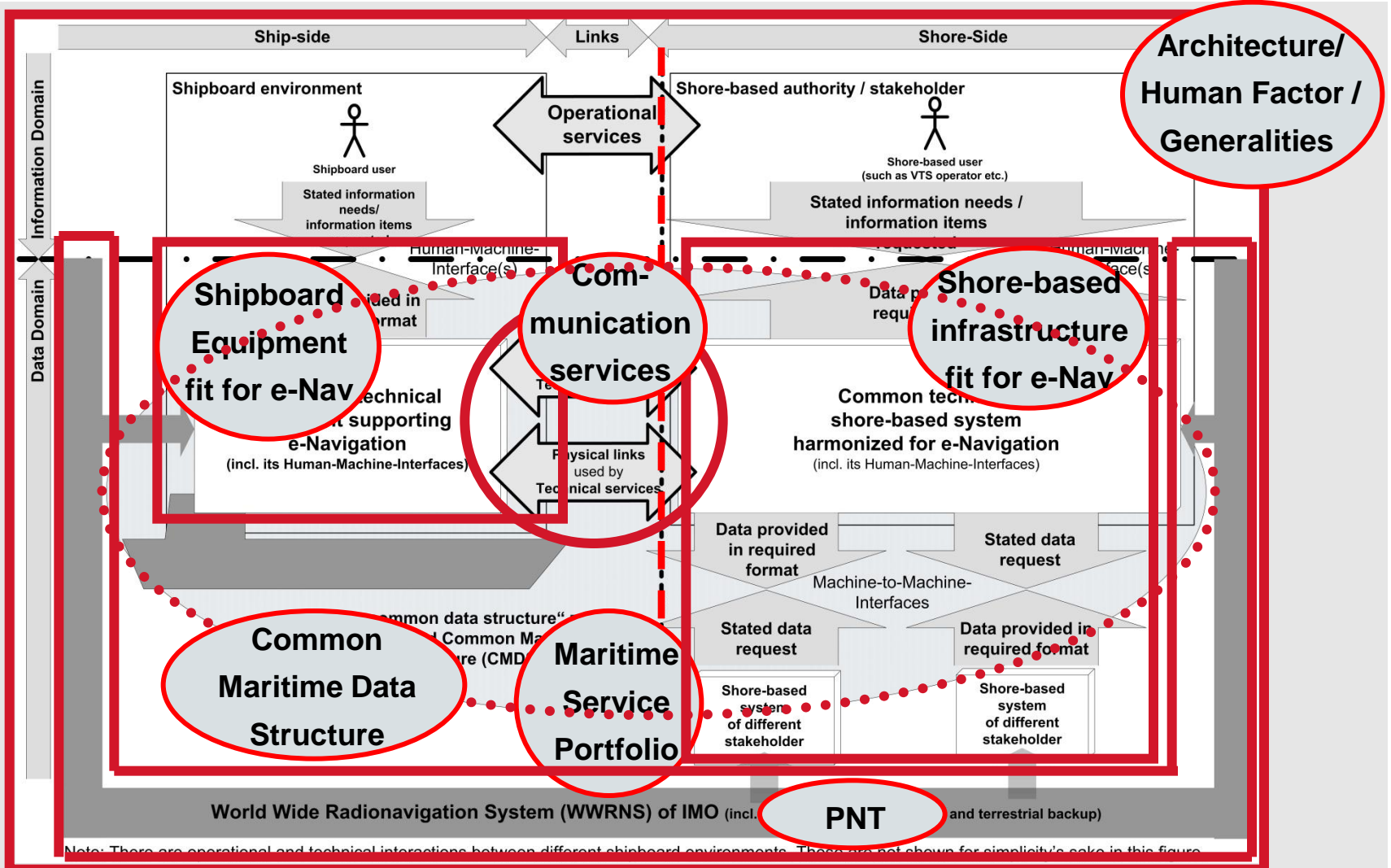
The Context of the MSPs /3

The place of MSPs in overarching architecture



The Context of the MSPs /4

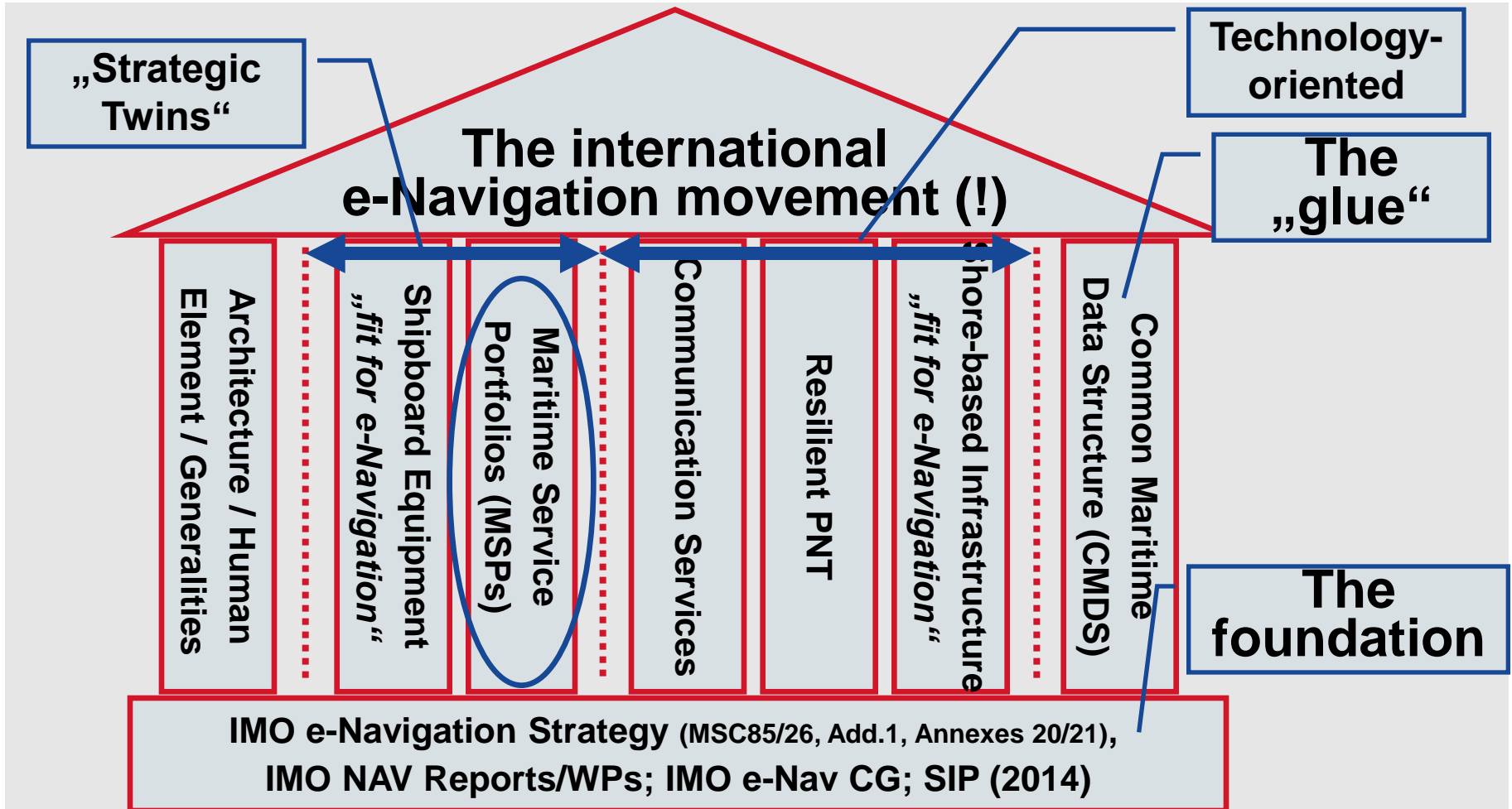
The “Seven Pillars of e-Navigation” – the application of the e-Navigation architecture to e-Navigation project management



Note: There are operational and technical interactions between different shipboard environments. These are not shown for simplicity's sake in this figure.

The Context of the MSPs /5

The “Seven Pillars of e-Navigation”



Seven pillars = seven working field where recognizable communities can work while being in sync with e-Navigation international movement at large => *Means to reduce complexity*

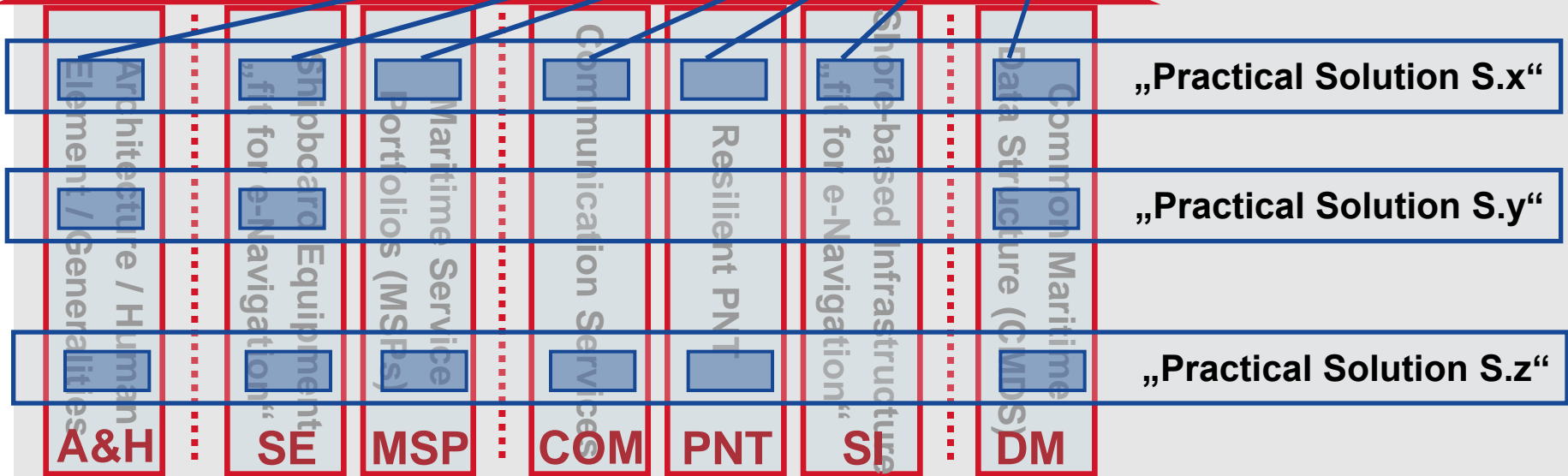
The Context of the MSPs /6

The “Practical Solutions” + “Seven Pillars”

IMO/NAV have developed “practical solutions” to prioritize work. How do they use “seven pillars”?

The international e-Navigation movement

„Ingredients“
or „contributions“



IMO documentation on e-Navigation

The Context of the MSPs /7

The “Practical Solutions” + “Seven Pillars” / Example

<p>A&H</p> <p>S4 <u>Integration and presentation of available information in graphical displays received via communication equipment</u> MSP</p>	<p>SI</p> <p>S4.1.3 Provide mapping of specific services (information available) to specific regions (e.g. maritime service portfolios) with status and access requirements</p>	
<p>SE</p> <p>S4.1 <u>Integration and presentation of available information in graphical displays (including MSI, AIS, charts, radar, etc.) received via communication equipment</u> SI</p> <p>COM MSP</p>	<p>SE</p> <p>S4.1.4 Provision of <u>system</u> for automatic source and channel management on board for the selection of <u>most appropriate communication means (equipment)</u> according to criteria as, band width, content, integrity, costs</p> <p>COM MSP</p>	<p>iii. Provide an <u>administrative HMI interface in INS task concept</u> for identifying updates and setting of presentation rules based on route plan, vessel characteristics, INS tasks supported and other user-selected priorities</p> <p>A&H</p>
<p>DM</p> <p>S4.1.1 Implement a Common Maritime Data Structure and include parameters for priority, source, and ownership of information</p>	<p>SE</p> <p>S4.1.5 Routeing and filtering of information on board (weather, intended route, etc.):</p>	
<p>SE</p> <p>S4.1.2 <u>Standardized interfaces for data exchange should be developed</u> to support transfer of information from <u>communication equipment</u> to <u>navigational systems (INS)</u></p> <p>COM MSP</p> <p>SI</p>	<p>PNT</p> <p>i. Develop of SW/HW (module (S)) for processing, filtering and transfer/routeing of information exchanged via communication equipment to the appropriate applications on board, e.g. navigation, other bridge applications (safety, security) and other onboard applications</p> <p>ii. Provide functionality as part of INS to process and filter exchanged information received via communication equipment for relevance to</p>	<p>S4.1.6 Provide quality assurance process to ensure that all data is reliable and is based on a consistent common reference system (CCRS) or converted to such before integration and display</p>

Note: Analysis not complete.

The Context of the MSPs /8

The “Practical Solutions” + “Seven Pillars”

Conclusions:

1. All “practical solutions” will require “ingredients / contributions” from several pillars.

=> *Determine those “ingredients”*

2. “Practical solution”
= another means to reduce complexity

=> *Combine with “Seven Pillars” approach*

2014, SIP completed – what next? /1

IMO Governance + digital innovation delivered

Let's put ourselves into the near future: 1-2 years, only.



How structure work after that?

How can IMO governance

and wish for digital innovation be “reconciled”

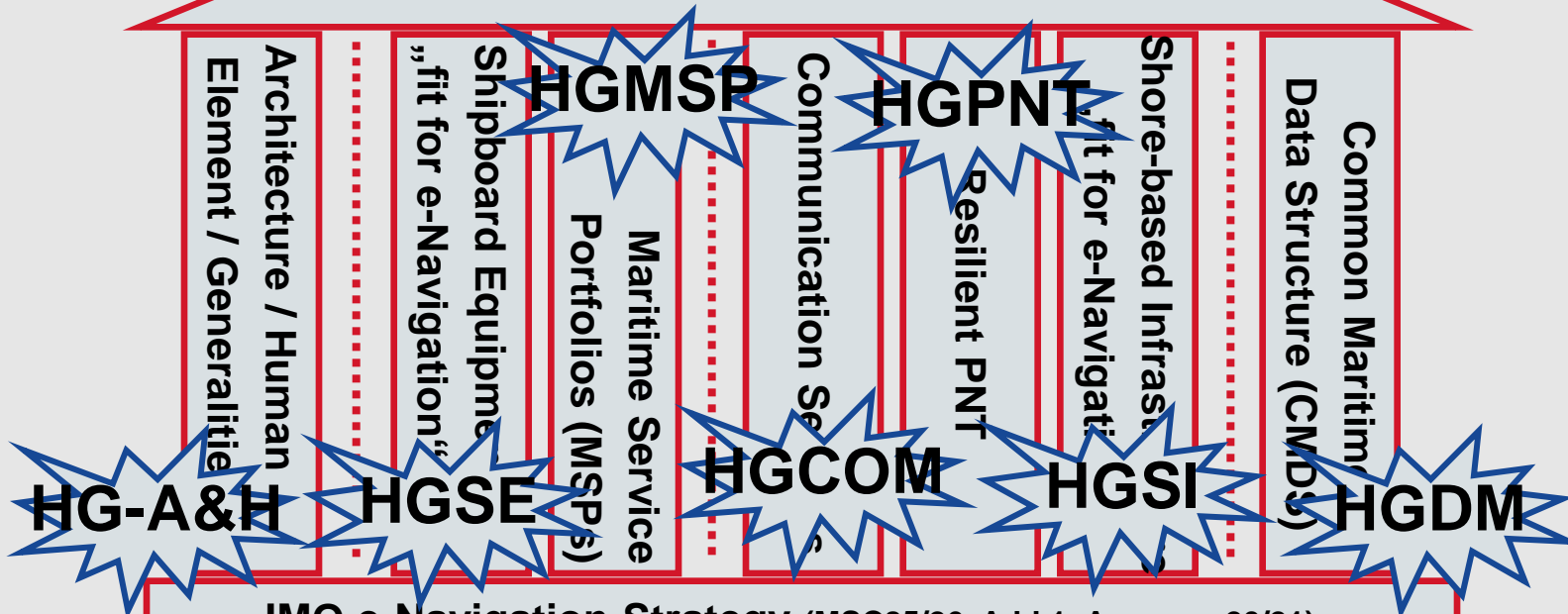
in procedural terms?

2014, SIP completed – what next? /2

How to facilitate harmonization large scale

Plan projects using “seven pillars” + “Harmonization Group (HG)” concept:

IMO governance



IMO e-Navigation Strategy (MSC85/26, Add.1, Annexes 20/21),
 IMO NAV Reports/WPs; IMO e-Nav CG; SIP (2014)

2014, SIP completed – what next? /3

How to facilitate harmonization large scale

Plan projects using “seven pillars” + “Harmonization Group (HG)” concept:

- **Define 1 international project for each of the pillars**
- **Each international project lead by a dedicated HG**
- **Governance of all international projects concurrently by IMO (MSC, new Sub-Committee structure)**
- **Core Terms of Reference for international projects / HGs:**
 - **Task in general terms: Provide harmonization/co-ordination to progress assigned “pillar” (working field) in the spirit of e-Navigation.**
 - **Contribute “ingredients” of assigned working field to “practical solutions”;**
 - **Develop respective working field at large using expert knowledge;**
 - **Liaise with relevant international organisations;**
 - **Liaise with other 6 HGs as needed to achieve consistency;**
 - **Report to IMO governing body.**

2014, SIP completed – what next? /4

How to facilitate harmonization large scale

Listen to what I have NOT said:

I have NOT said,

that IMO is supposed to run all or even most of the international projects themselves;

I have NOT said,

that IMO is supposed to support all proposed Harmonization Groups (HGs) themselves.

What I HAVE implied, though, is,

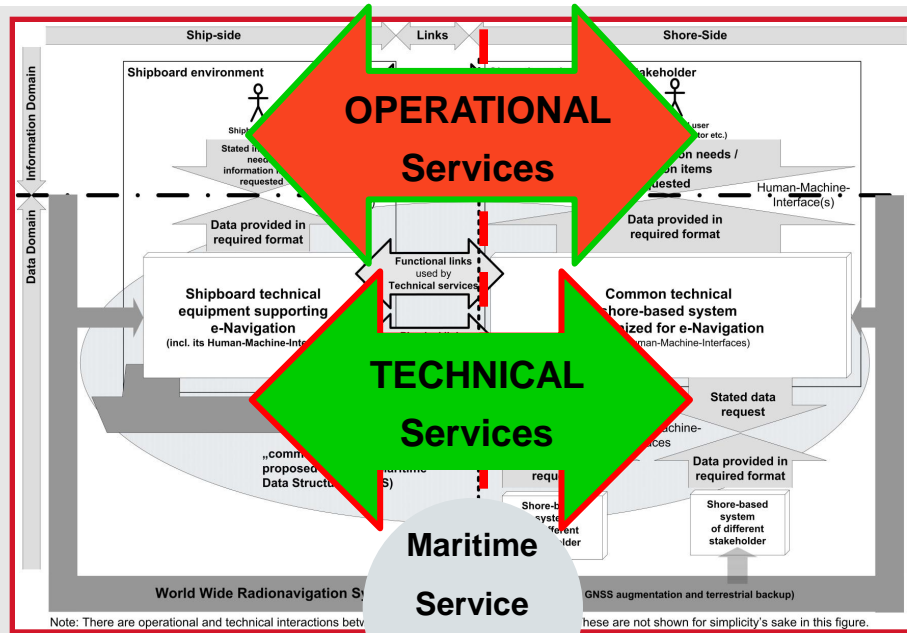
that IMO develop their way how to introduce required flexibility while maintaining desired governance.

The structure of MSP, proper /1

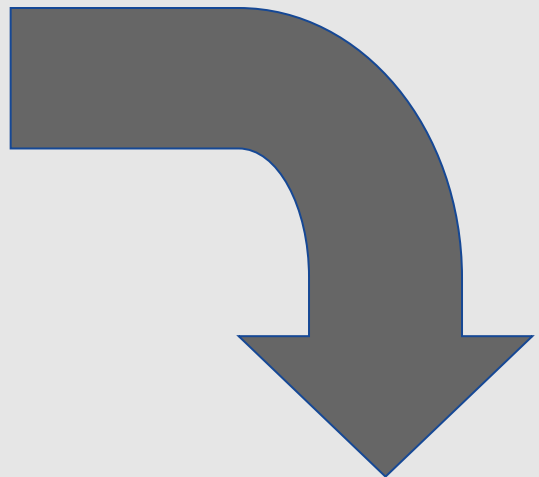
Topics identified regarding MSP Structure

- ***By very definition, MSPs have internal structure.***
- ***Following architectural topics have been recognized:***
 - Designating and naming MSPs: Categorization of MSPs as a means to handle complexity
 - Service / MSP provision area definitions:
 - several recognized ways to define areas in different services' domains;
 - blanket coverage vs. traffic-related coverage (route topology-based)
 - Metadata on MSP (MSP catalogue/ status) in the CMDS
 - Dynamic service / MSP selection at vessel during a voyage: „spectrum“ of available services
 - Pre-selection of service usage for a voyage in advance
 - Dynamical (i.e. time-variable) MSPs offered
- ***These topics must have be addressed (eventually) in order to arrive at a viable MSP architecture / structure.***

The structure of MSP, proper /2 Service “Spectra”



**Maritime
Service
Portfolios**



The spectra of services

The spectrum of operational services

The spectrum of technical services

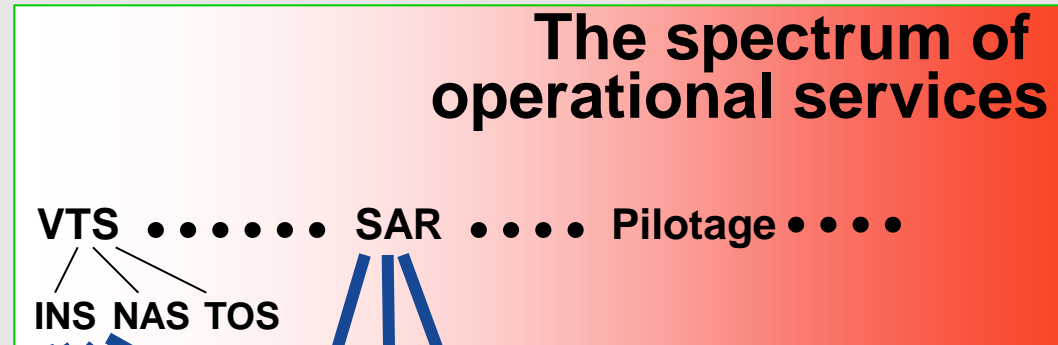
**Maritime
Service
Portfolios**

The structure of MSP, proper /3

Service “Spectra” + Management of Requirements

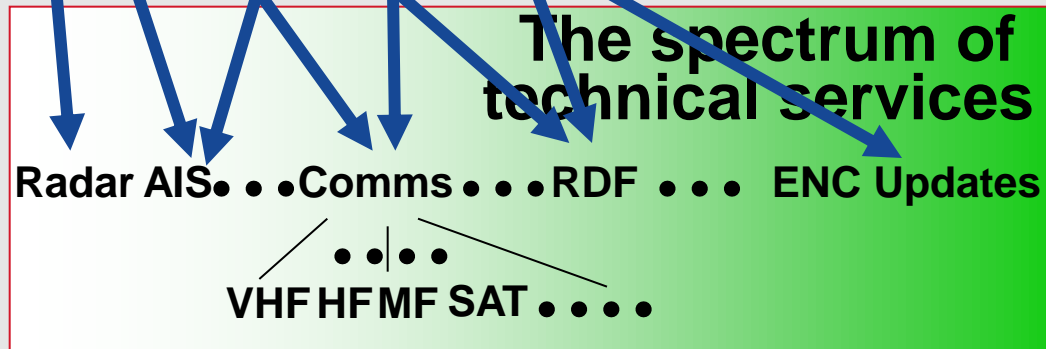
The spectra of services

Maritime Service Portfolios



Requirements (*Examples*):

- Which technical services?
- What service level in which area?
- What service quality parameters?



The structure of MSP, proper /4

Service “Spectrum” + Management of Requirements

Power of the services spectra concept:

All services (existing + new) identified, named and thereby recognized in an internationally harmonized manner => *catalogues of services*.

Service levels, service quality parameters (existing + new) equally identified, named and thereby recognized in internationally harmonized manner => *catalogue of service levels + service parameters*.

Such catalogues may be transferred into a data model (product specification within S-100 framework) at CMD5 => *electronic exchange feasible and measurement of service spectra at run time*.

Service-to-service dependencies (= requirements) would *be known exactly* => *applicability of requirement management methods*.

International, harmonized role assignment for maintaining service descriptions by clearly identified international organisations feasible.

Reduction of complexity regarding MSP handling.

Synergies for (at least technical) services could potentially be gained by using same service levels + service parameters for several requirements.

The structure of MSP, proper /5 MSP Management + the Lifecycles of MSP

How can governance of complex MSP/service spectra be achieved?

Don't re-invent the wheel
... It's there! LITERALLY

Remember "digital age"

⇒ *Learning from IT*

⇒ *Use ISO 20000 series (ITIL V3 toolbox)*



The structure of MSP, proper /6

MSP Management + the Lifecycles of MSP

Conclusions:

- Introduce “Maritime Service Portfolio Management”
 - = governance “tool” for IMO
 - = what services with what features!?
- Using the best practice “tool box” ITIL V3 (ISO 20000) when developing MSPs and services
- Initial “Maritime Service Portfolio Management” to be developed by proposed international project, lead by proposed Harmonization Group on MSP (“HG-MSP”)

The structure of MSP, proper /7

Impact of MSP Management on Service Definitions

There will be an impact on basically all services in the service spectrum (in the maritime domain)!

How to proceed? – Step-by-step as follows (“cookbook”):

- 1. Extract functional essence of services, if not already done (i.e. create services descriptions NOT depending on any specific technology).***
- 2. Consolidate existing requirement base in accordance with above functional essence.***
- 3. Add / complete / describe important service parameters, namely service levels and service quality parameters.***
- 4. Harmonize service descriptions with other pillar’s results, in particular with CMDS (HGDM).***

Above steps can be given for each service to a dedicated international working community to work on + finalize. Thus reduce complexity.

Definitely the last slide – Iconic Summary

Three concepts presented ...

The spectra of services

The spectrum of operational services

The spectrum of technical services

MSPs

The international e-Navigation movement / IMO governance

