

The JERICO e-infrastructure e-JERICO

JERICO-S3 Task 7.5 - Now and looking forward April 22, 2021

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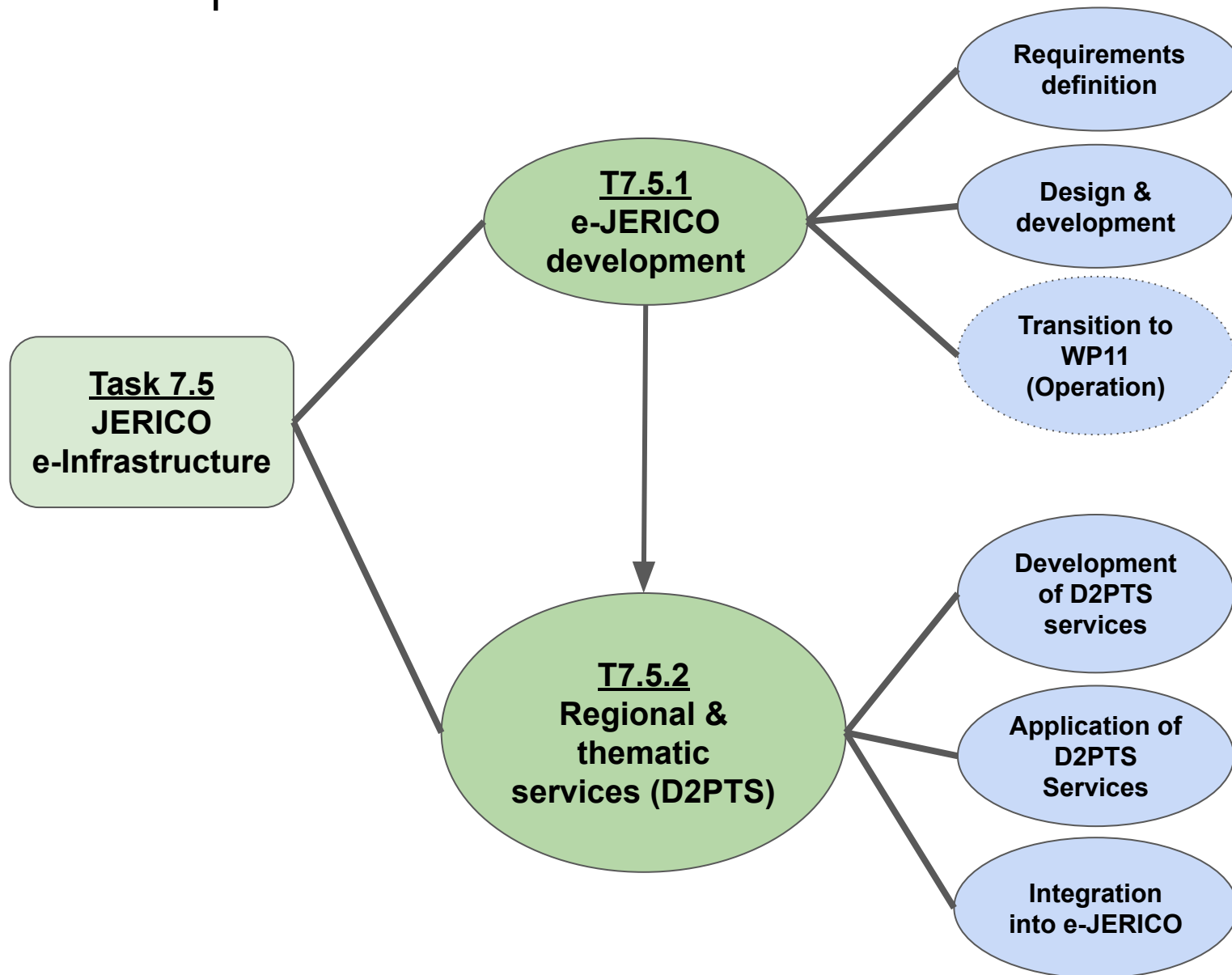
on behalf of the JERICO-S3 partners who are contributing to the ongoing
e-JERICO development and evaluation efforts:

IEEE, SOCIB, MARIS, IFREMER, AZTI, ETT, BLIT, IODE, CNRS-LOV,
CNR, FMI, TALTECH, SYKE

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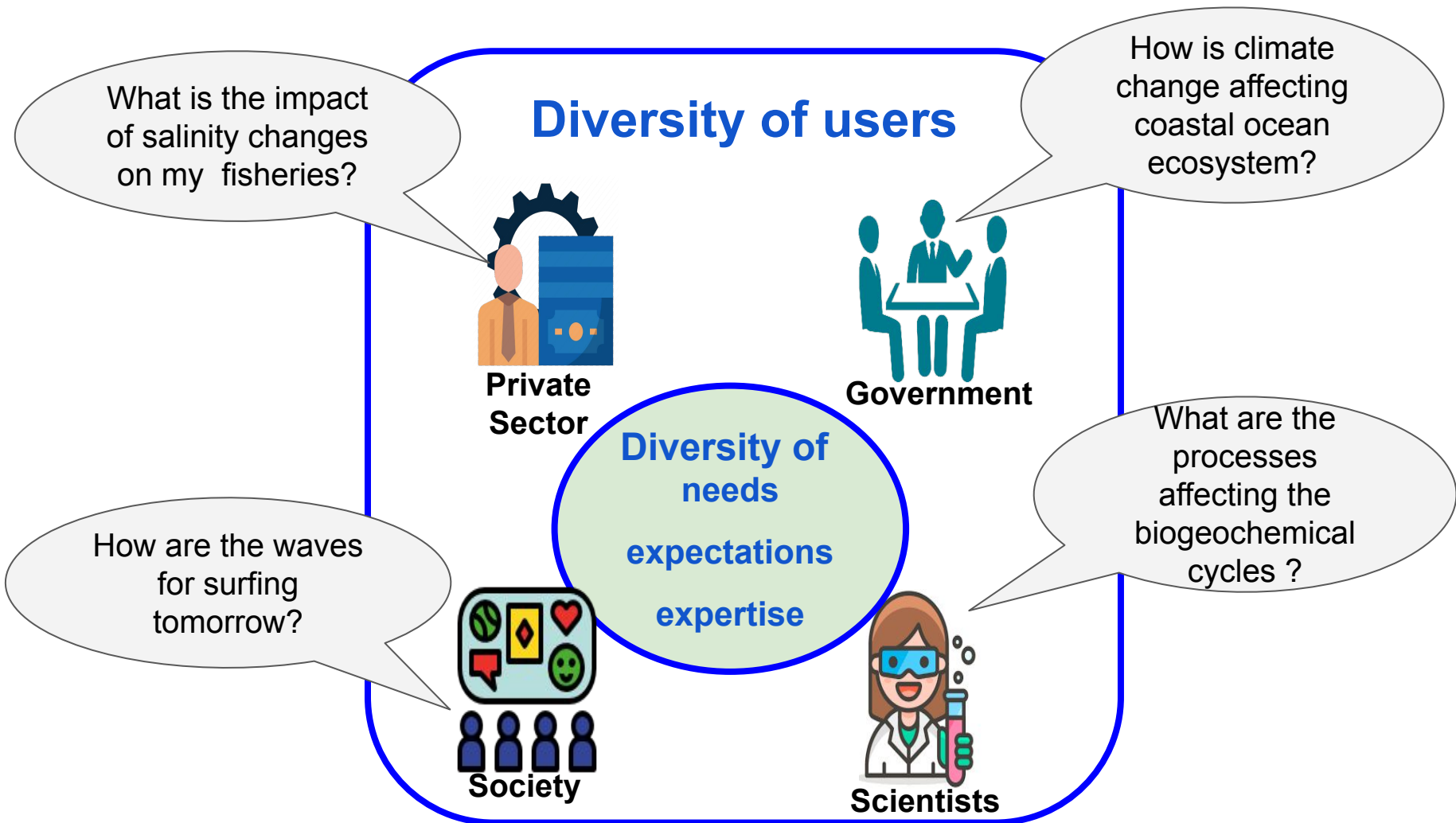
Description of JERICO-S3 T7.5



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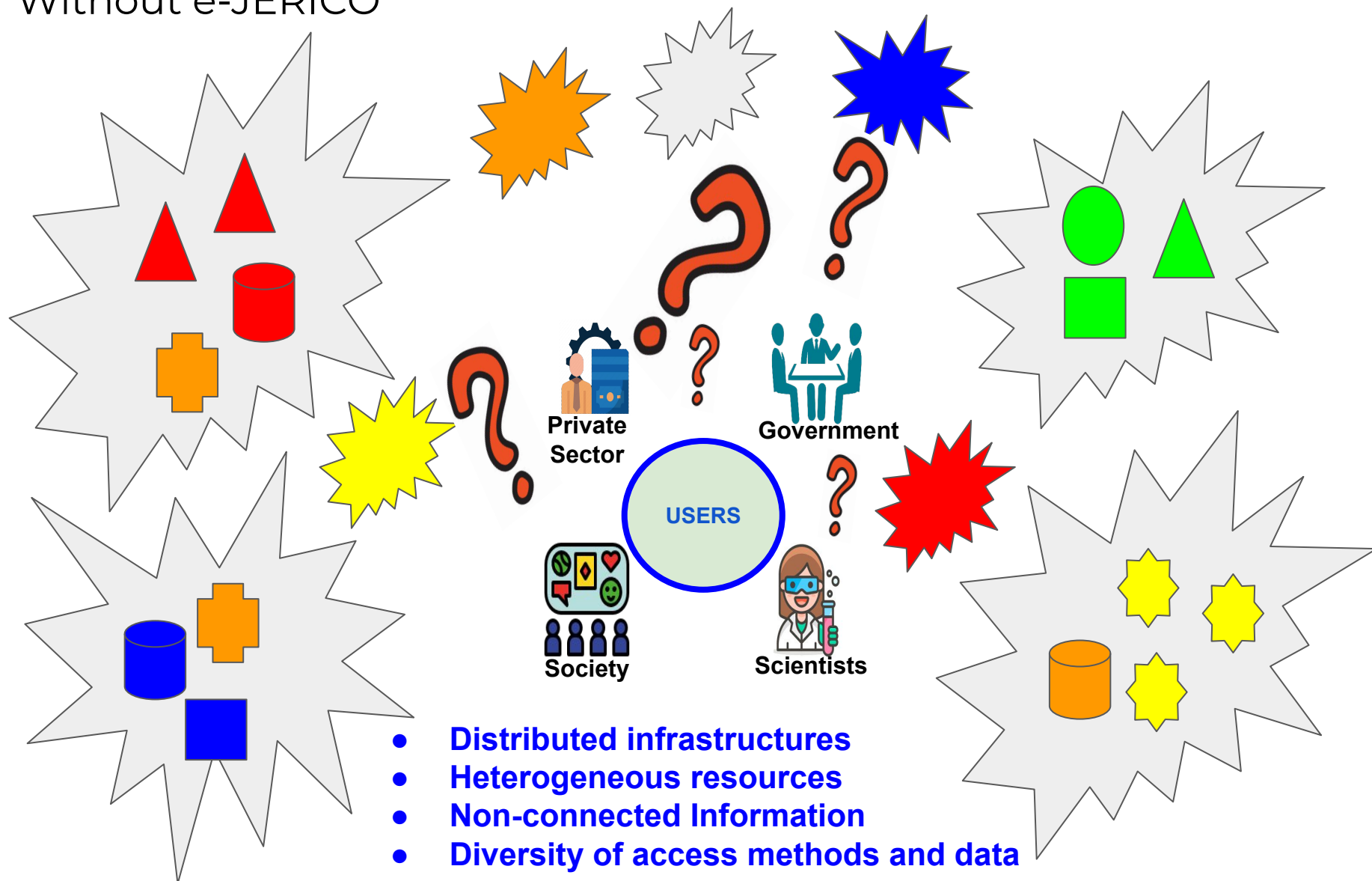


- Description of the context and objectives of the e-JERICO infrastructure
- Development strategy
- Conceptual design
- Demonstration cases (D2PTS & VRE TS)
- Summary of First Year Work



JERICO-RI Users and Partners

Without e-JERICO

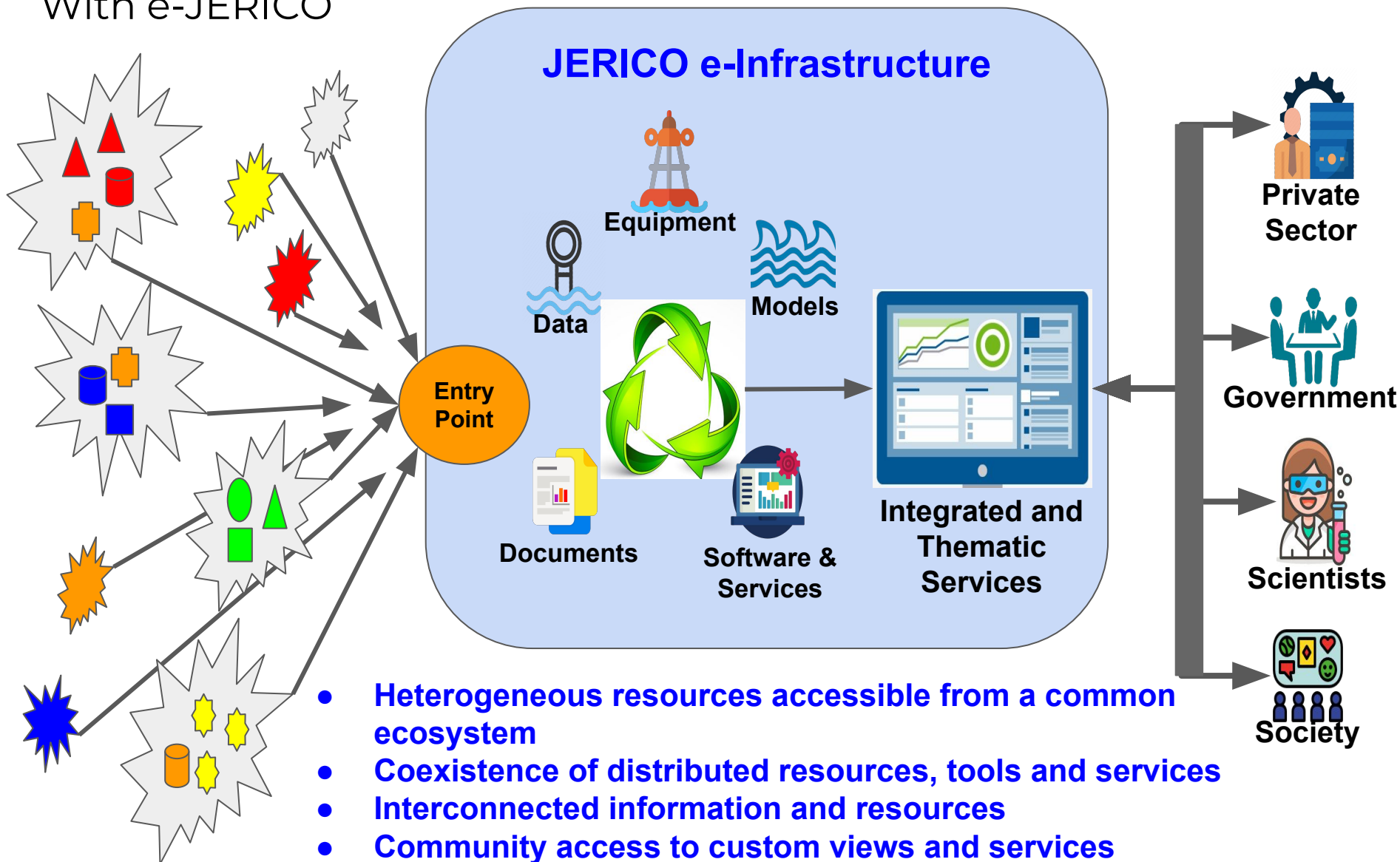


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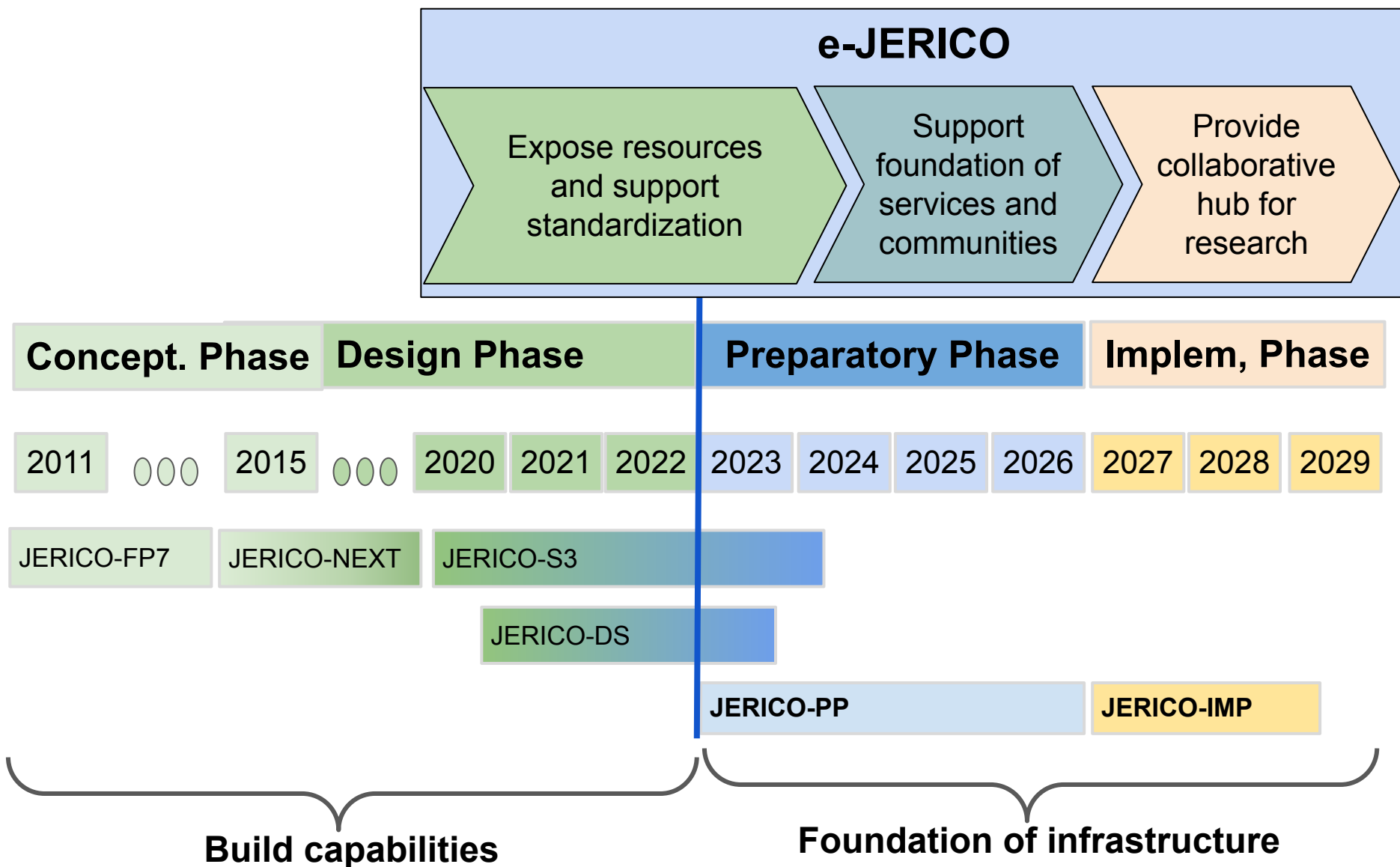
JERICO-RI Users and Partners

With e-JERICO



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e-JERICO within JERICO Roadmap



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e-JERICO International Context

- Collaboration with European infrastructure including data aggregators and VREs



- In CoastPredict as the Coastal Observatory Resource Environment (CORE)
- International and cross-domain collaboration potential (for example)



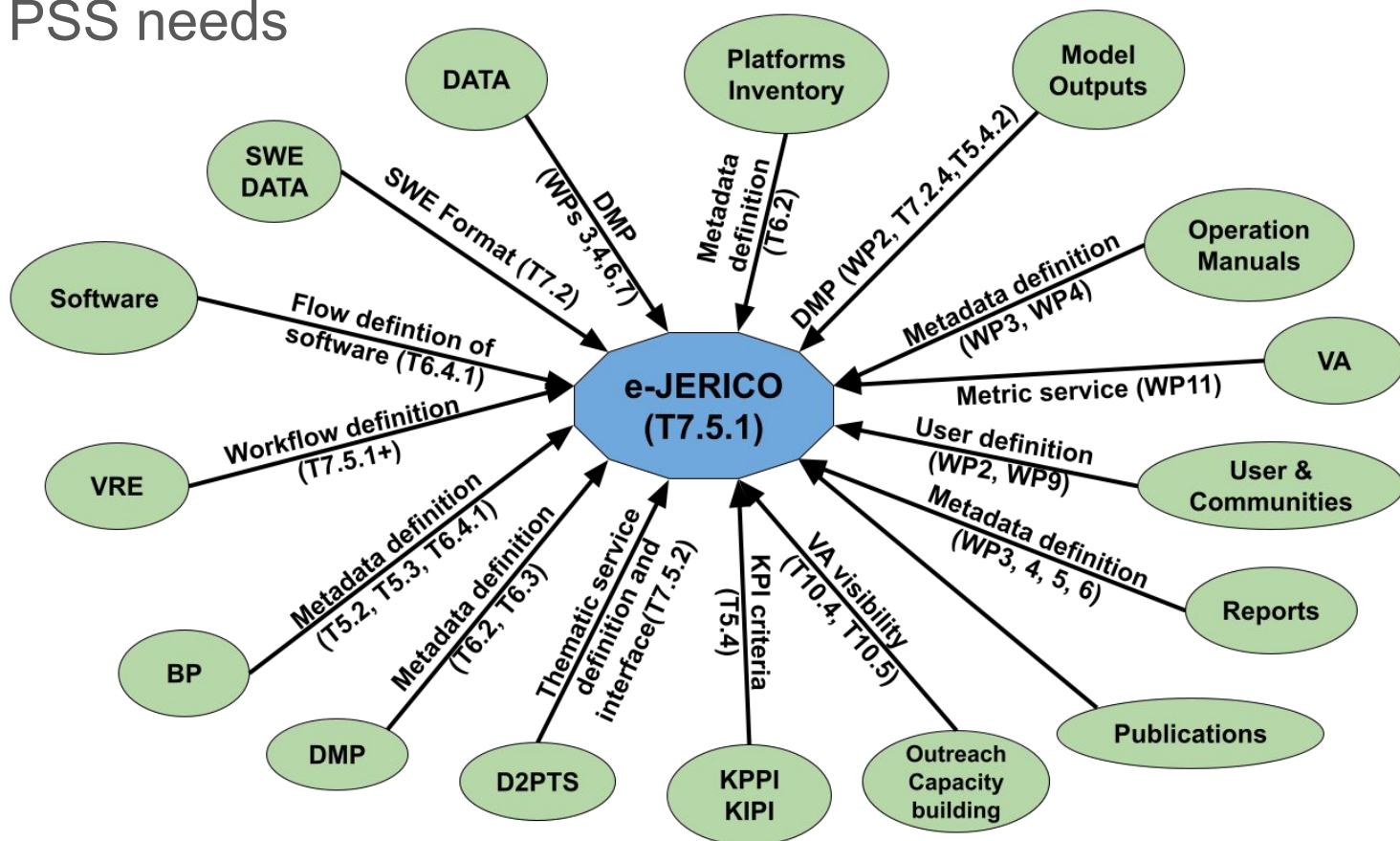
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Development Strategy

User driven and co-design

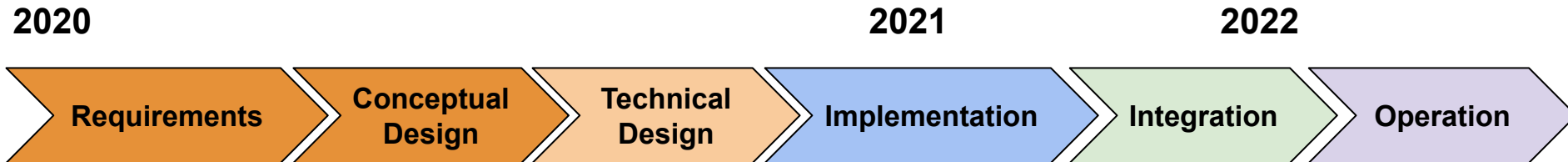
- Across JERICO-S3 WPs
- D2PTS use cases
- IRS and PSS needs



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Development Strategy



Build on foundation of:

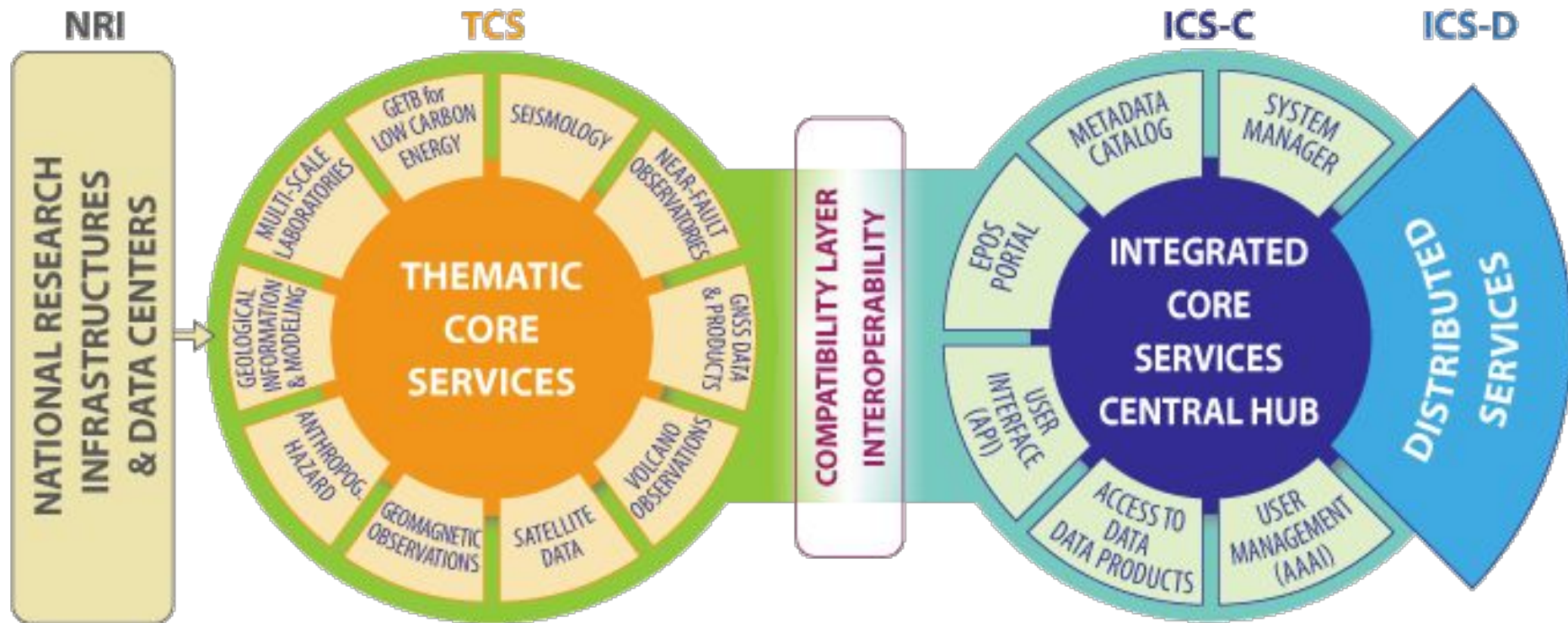
- JERICO specific needs in JERICO-S3 (Description of Work and WP interaction)
- Allocation of resources consistent with priorities
 - Explore technologies
 - International context

Criteria Description	EPOS	ICOS	DATAONE	AODN
sustainability				
Integration of distributed services				
Machine-to-Machine capabilities				
Catalog of linked resources				
a repository of custom services				
discover partner remote services				
Modular architecture				
Documented architecture				

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EPOS Thematic Centers and Structure



Development Strategy

Central hub for thematic centers

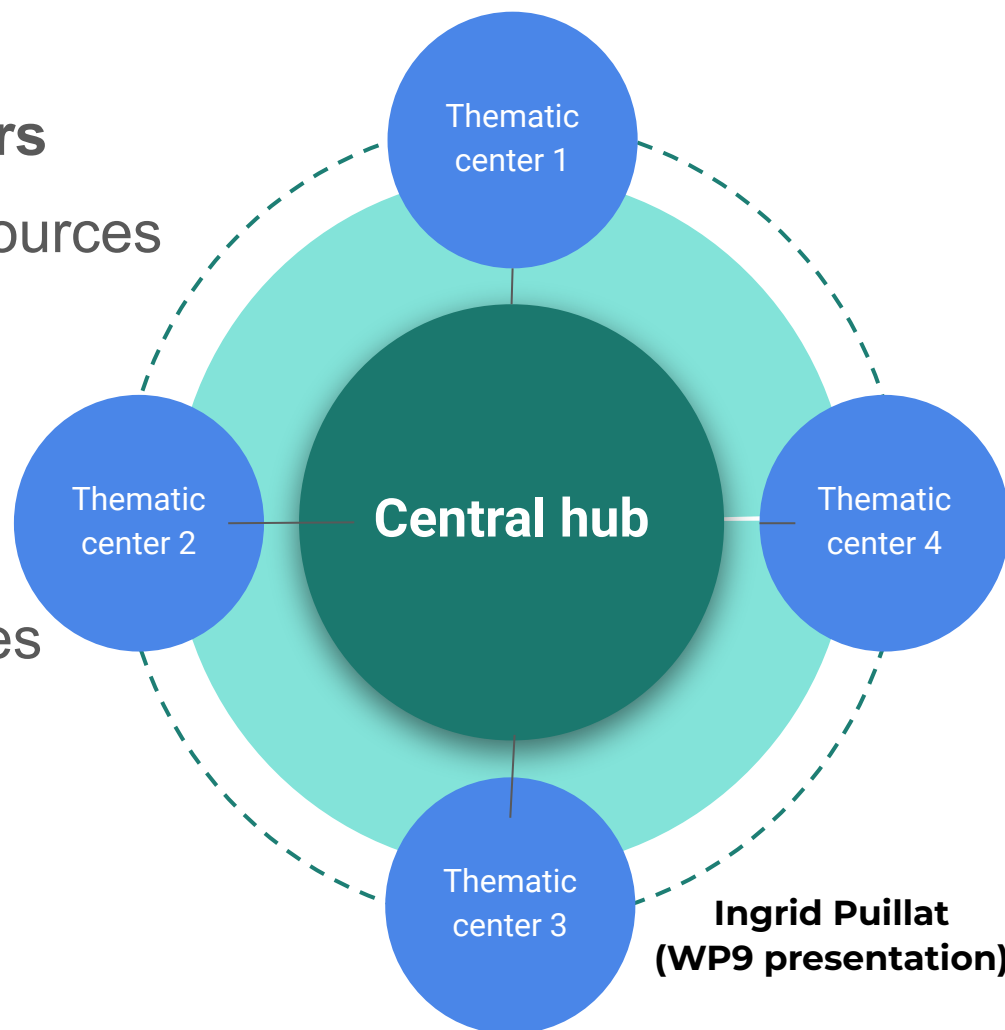
=> Collection of data & other resources

=> Common metadata format

=> Development of service layer

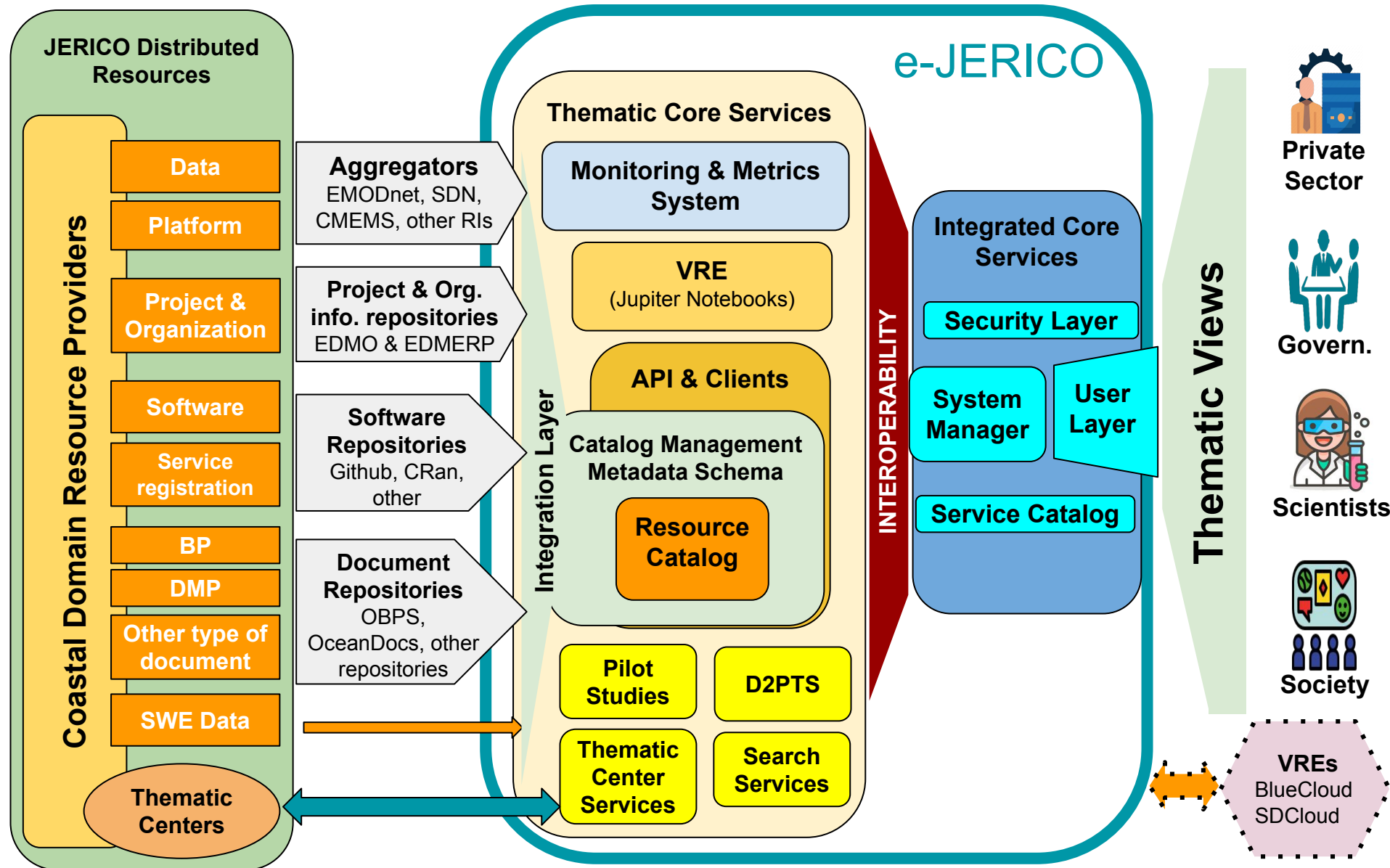
- D2PTS
- Pilot studies
- Thematic center services

=> Virtual research environment



**Ingrid Puillat
(WP9 presentation)**

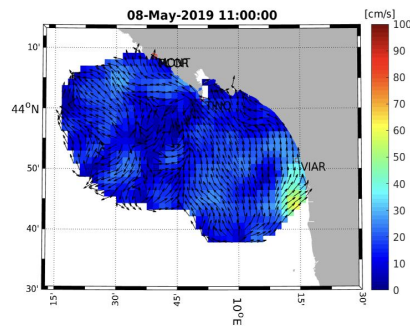
Conceptual Design



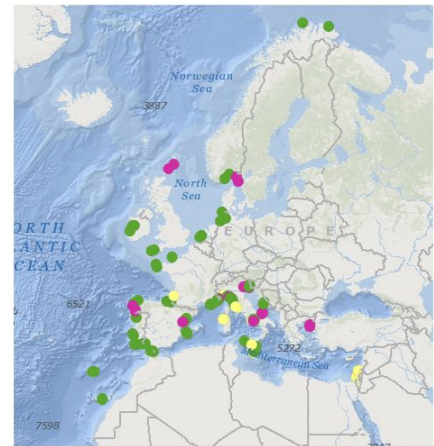
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Demonstration Cases (D2PTS [1/2])

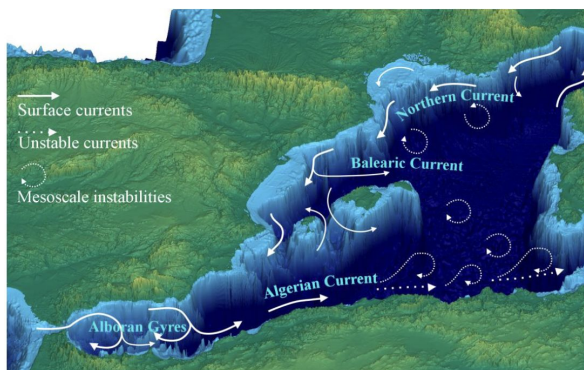
HF Radar D2PTS



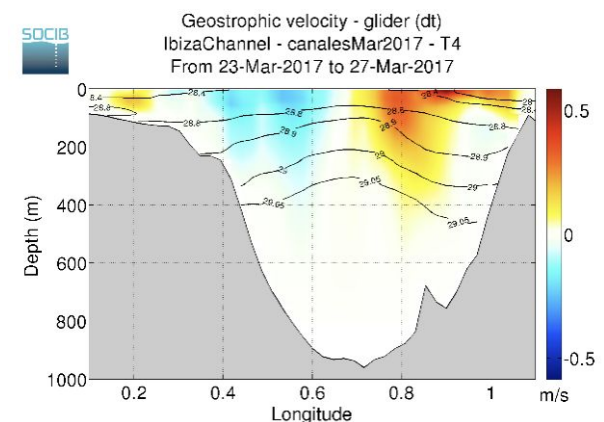
- Interactive map showing the inventory of the European HFR network (see left)
- Best Practices, Tools, Reports, Outage database
- Gap filled surface current fields implemented initially in Bay of Biscay IRS and NW-MED PSS (see right)



Glider D2PTS



- Geostrophic transports, variability of the circulation
- Impact on North/South water mass exchanges
- Impact on marine ecosystem, bluefin tuna, jellyfish, ...



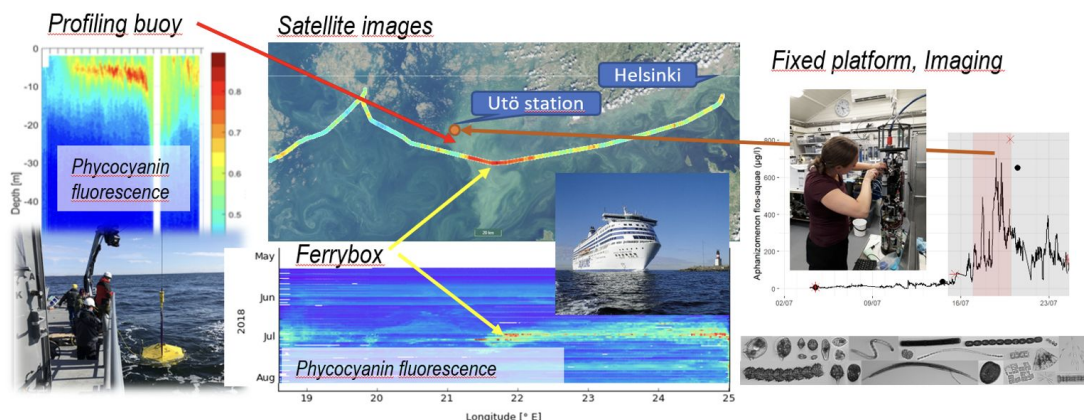
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Demonstration Cases (D2PTS [2/2])

BGC D2PTS

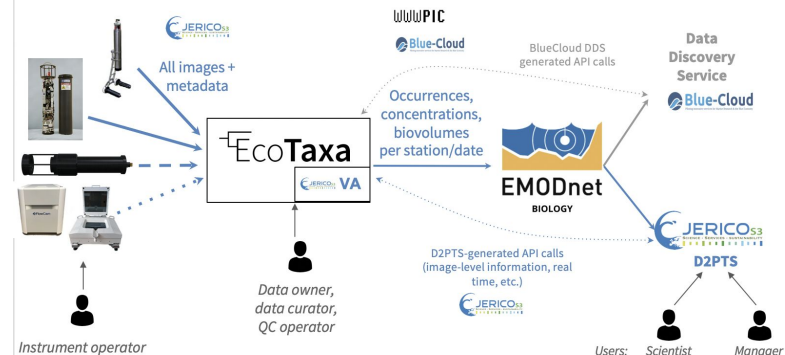
- Near real-time observations: data from two fixed island stations and three FerryBox lines.
- Data products: weekly HAB reviews
- Tools for data processing, QC, metadata and product creation.



EcoTaxa D2PTS

- Tool for a network analysis of plankton and marine particle images.
- Virtual Access to ECOTAXA services (upload, download, recognition algorithms, expert validation)
- Long term archiving of plankton counts through EMODnet.

Implementation in the frame of Jerico3, WWWPIC, Blue-Cloud



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Demonstration Cases (VRE)

IRS Pilot Study in Iberian Atlantic Margin

- **Transboundary processes:** Forcing slope currents and interactions shelf-slope circulation
- **Extreme events:** Impact of extreme events such as storms and hurricanes
- **Long term variability and climate change:** Ocean warming and heat waves



Summary of First Year Work

✓ **Conceptual design of e-JERICO infrastructure**

✓ **Establish EPOS collaboration to help design and development of core system and user interface**

➔ **Design and development of thematic core services framework**

- Catalog management and metadata schema
- Integration layer to collect metadata from providers
- API for machine-to-machine access to resource catalog

➔ **Development of D2PTS**

- **Integrate into the Core Infrastructure built upon EPOS**
- **Integrate demonstration services (D2PTS and VRE)**
- **Transition to WP 11 Operations**

Thanks

Additional material

Description and objectives of T7.5

- **Task 7.5:** JERICO e-Infrastructure (M1-M34): define and develop a Virtual Access (**VA**) scalable framework that allows the visibility and access of the JERICO-S3 resources with the aim of increasing the scientific and societal impact in a long-term sustained Research Infrastructure.

Description and objectives of T7.5

- **Subtask 7.5.1 VA Portal development (M1-M30):** Operational **requirements** will be derived with JERICO-RI partners, modelers, product developers and other experts in collaboration with WP11. Requirements will be used for detailed design of the VA portal. This development will include a **User Interface (UI)**, an **IT infrastructure**, **connectivity to the JERICO data and services catalogues**, **access** to the best practices systems and an e-library for tools and similar resources. In addition, the VA may provide access to aggregators like ROOSes/CMEMS (NRT), SeaDataNet (validated archives), EMODNet Physics and Biology portals. Access to **priority/mature tools from partners** will be incorporated into the VA and will help to test the e-infrastructure performance. This activity will set up the first elements of the JERICO e-infrastructure, e-JERICO, that will be **operated in WP11 VA** to support users.

Description and objectives of T7.5

- **Subask 7.5.2: Data-to-Products Thematic Services (D2PTS) (M1-M25) :**

This subtask will create four pilot-focused regional/thematic services from JERICO-S3 data to demonstrate the benefits of the JERICO RI information life cycle. The work will be done in the areas of physical, biogeochemical and biological oceanography to be exemplars on “how to” for larger scale creation of products and services. Specific D2PTS targets include:

- **HF-Radar tailored products D2PTS:** will develop physical oceanography products from HF Radar data to provide gap filled surface current data products, potentially transferable to CMEMS in the future. Pilot application will be undertaken in Bay of Biscay IRS and NW-MED PSS.
- **Estimation of sea water masses types and transport monitoring D2PTS:** will develop physical oceanography products from glider data that may be combined with biogeochemistry observations. Pilot application will be undertaken in GoF and NW-MED PSSs.
- **Biogeochemical state of coastal areas D2PTS:** will provide regional, combined multiplatform observations products. Pilot application will be undertaken in GoF PSS.
- **JERICO-EcoTaxa D2PTS:** will provide coastal plankton monitoring products from ecological imaging sensors. Pilot application will be undertaken in NW-MED, GoF, Channel and NorthSea PSSs.