Innovative Workflows in the OSSR and the ESCAPE EOSC Thematic Cell

IWAPP, March 2021

European Science Cluster of Astronomy & Particle physics ESFRI research infrastructures

ESCAPE brings together the astronomy, astroparticle and particle physics communities, as well as a cluster with European Strategy Forum on Research Infrastructures (ESFRI) projects. These ESFRI have demonstrated capabilities in addressing various stages of data workflow and concerned with fundamental research through complementary approaches.

HOW ESCAPE IS WORKING TO DELIVER THE EOSC THEMATIC CELL
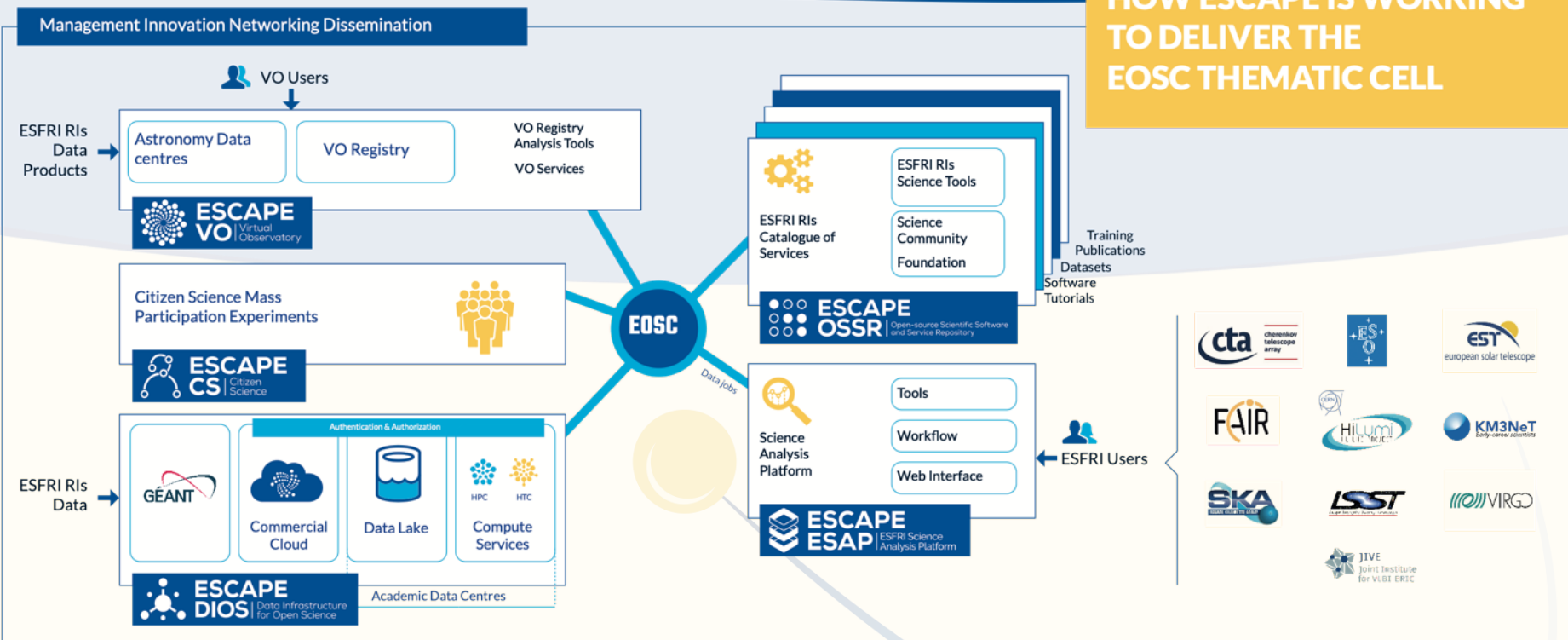
E-OSSR Aims and Objectives

- Aim:
  shared open science products based on FAIR principles

- Objectives:
  - Facilitate and support continuous **development, deployment, exposure and preservation** of partners' software/tools/services
  - Foster **interoperability, software re-use and cross-fertilisation** between ESFRIs (e.g. simulation)
  - Offer an **open innovation environment for open standards** (e.g. workflows, data-formats), **common regulations** and **shared (novel) software** for multi-messenger & multi-probe data

- All objectives follow:
  - Paradigm of **enabling open science**
  - a **community-based, inclusive** approach
  - the **FAIR principles** for open science resources – software and derivatives
  - **Federation** of available resources

Co-Development and Community Engagement

⊘ 23 July 2020 to28 July 2020

ESCAPE Workshop on Open-Source Software Life Cycles

Virtual
Software development is an integral part of modern science, gaining knowledge from data. All ESCAPE partners develop and
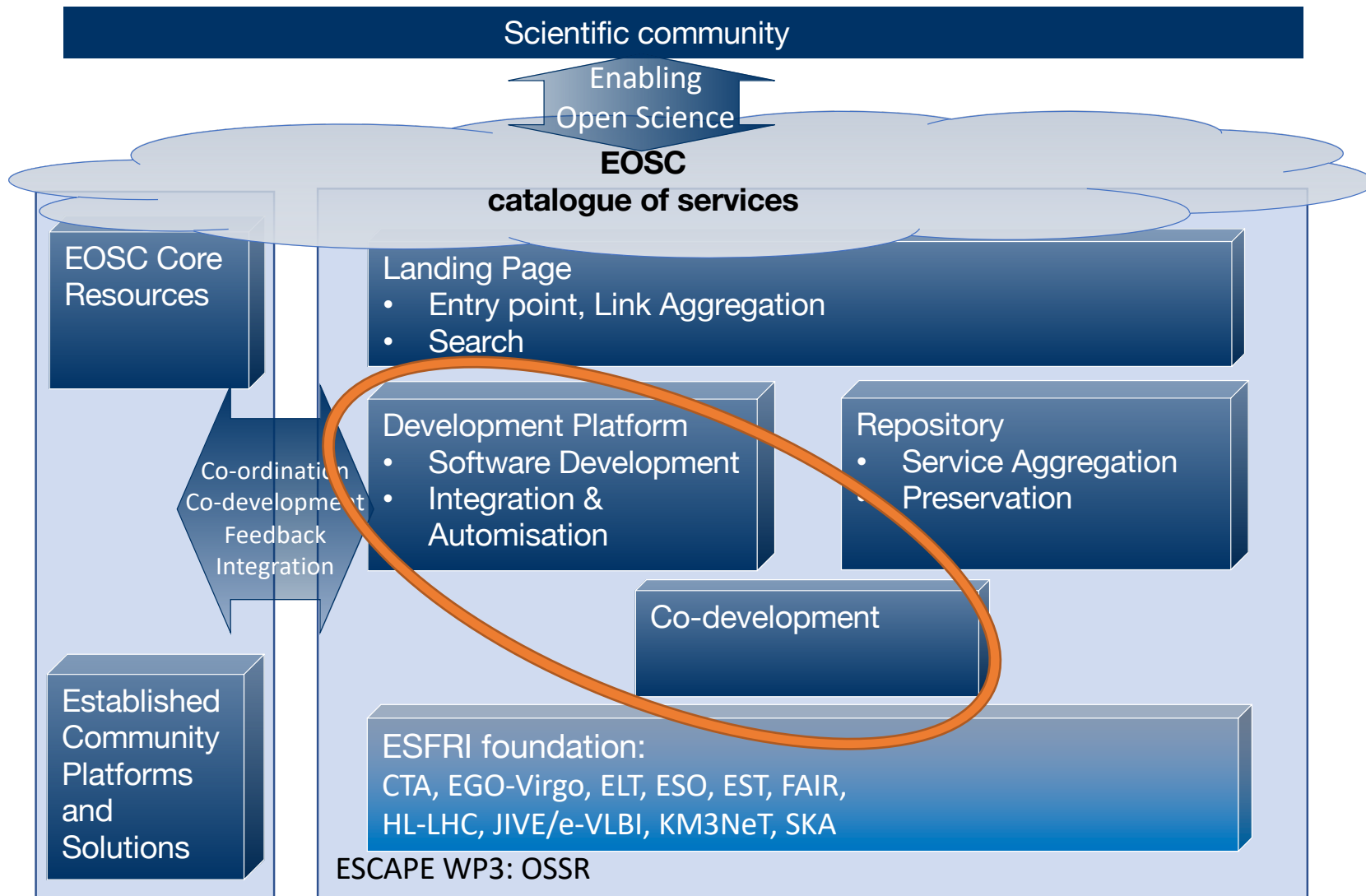
[...]

⊘ 08 March 2021 to12 March 2021

IWAPP Workshop - Innovative Workflows in Astro and Particle Physics

Online
The objective of this workshop is to bring together the scientists' communities of Astrophysics, Astroparticle Physics and Particle Physics who are leading the development of Innovative Workflows within their domain.

Scientific community

Enabling
Open Science

EOSC
catalogue of services

EOSC Core
Resources

Landing Page
- Entry point, Link Aggregation
- Search

Co-ordination
Co-development
Feedback
Integration

Development Platform
- Software Development
- Integration & Automisation

Repository
- Service Aggregation
- Preservation

Co-development

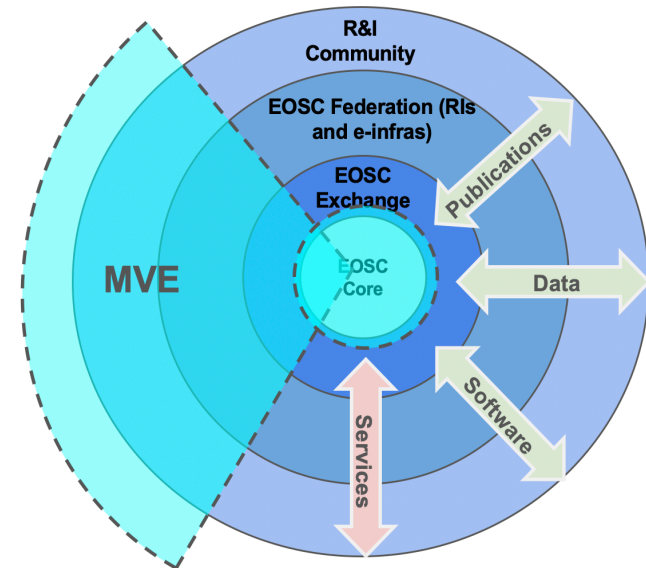Established Community Platforms and Solutions

ESFRI foundation:
CTA, EGO-Virgo, ELT, ESO, EST, FAIR,
HL-LHC, JIVE/e-VLBI, KM3NeT, SKA

ESCAPE WP3: OSSR

OSSR Prototype

Landing Page
- Entry point, Link Aggregation
- Search

Development Platform
- Software Development
- Integration & Automization

Repository
- Service Aggregation
- Preservation

EOSC (M)architecture

- EOSC-Core
  - Minimum architecture elements to enable the Federation

- EOSC-Exchange
  - Evolving Federation to serve the needs of research communities
  - Widening to the general public and the private sector

- Minimal Viable EOSC (aka MVE)
  - Minimum Federation to bring value to users

Minimal Valuable EOSC

From: https://www.esfri.eu/sites/default/files/Abramatic_Session-2_ESFRI-EOSC_06.10.20.pdf

Summary

- OSSR implements an **open, inclusive repository** (catalogue) for the Astrophysics, Astroparticle Physics and Particle Physics community
  - embedded in the EOSC environment

- You can benefit from:
  - Onboarding science products into a FAIR, trust-worthy repository
  - Definition of best practices and standards; recognition of software as first-class open science product
  - Cross-fertilization through co-development, re-use and innovation
  - Technical implementations

Have a productive and informative workshop!