EOSC-synergy WP3 KoM

Fostering Service Integration

About WP3

Ensure that a wide range of present/future services can be created, integrated and continuously validated into EOSC

Fostering adoption

- Fostering adoption of EOSC services and data requires quality services

- Services ➔ Put in place processes and tools to:
  - define and automatically validate services software quality and maturity
  - for thematic services and generic services

- Data ➔ Automated verification of FAIR data principles
  - through metadata analysis and
  - leveraging actionable features on data repositories

Provide incentives

- Add incentives for EOSC service adoption ➔ users
  - Making available mature and validated services
  - Increase services visibility

- Add incentives to improve service quality ➔ providers
  - Establish foundations for an EOSC-ready stamp for data and software

WP structure and tasks M1-M30

- WP3: ➔ 138 PM
  - Jorge Gomes <jorge@lip.pt>

- T3.1: Consolidation of an EOSC Software Maturity baseline
  - LIP 10PM, CSIC 6PM, UPV 5PM, DANS 10PM ➔ 31 PM
  - Mario David <david@lip.pt>

- T3.2: Implementation of an EOSC Service Integration platform
  - CSIC 20PM, LIP 17PM, UPV 5PM, LNEC 15PM, CYFRONET 10PM ➔ 67 PM
  - Pablo Orviz <orviz@ifca.unican.es>

- T3.3: Implementation of the EOSC FAIR data principles
  - DANS 15PM, CSIC 8PM, LIP 7PM, KIT 5PM, CYFRONET 5PM ➔ 40 PM
  - Gerard Coen <gerard.coen@dans.knaw.nl>
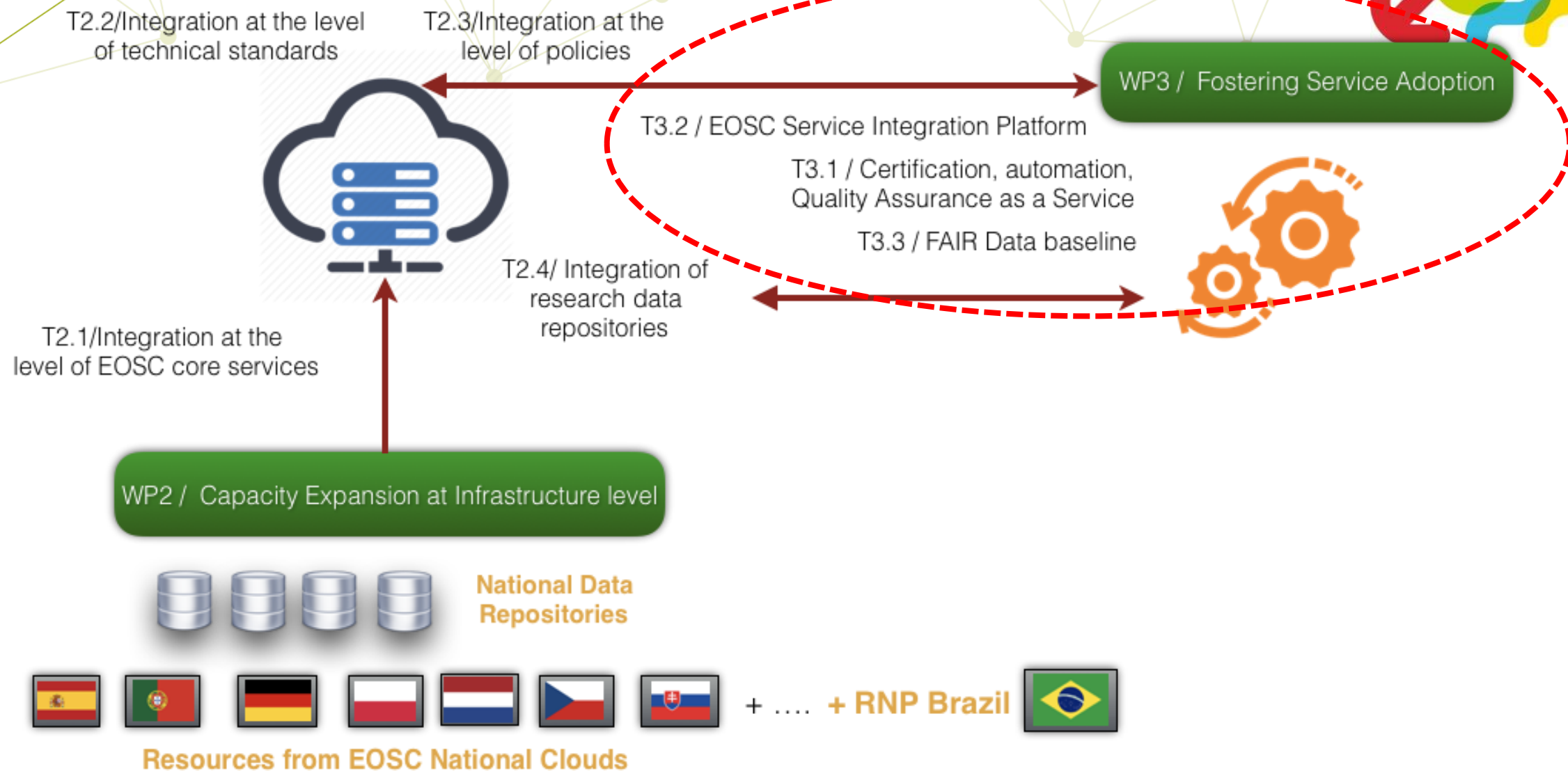
Contribution to the main project objectives

- O3.1 Define processes, documentation and tools as applicable to facilitate and automatize the onboarding of additional providers, including lightweight certification and service quality auditing procedures.

  - Implement a quality-driven integration process for new providers that promotes adherence to EOSC standards.
  - Enable service quality, conformance and compliance to be assessed.
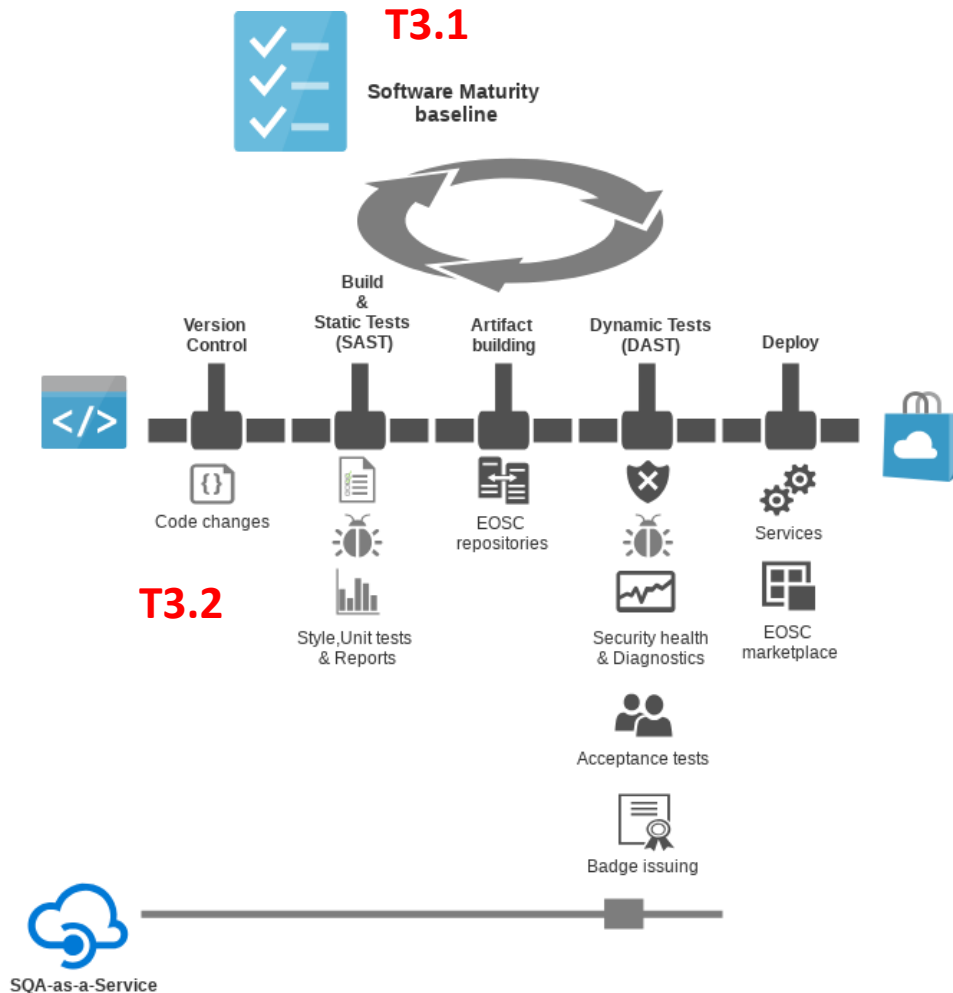 - Facilitate the onboarding of additional providers.

Contribution to the main project objectives

- O3.2 Foster the integration of services in EOSC by implementing an automated Software Quality Assurance (SQA) validation mechanism, harmonized with common SQA standards and best practices.

  - Provide a complete software management lifecycle for EOSC services.
  - Promote the uptake of quality standards and best practices applied to services, reducing issues and improving maintainability.
  - Improve services quality and reward adherence to EOSC standards through an EOSC SQA qualification/stamp.

Contribution to the main project objectives

- O3.3 Bridge with the project approved in INFRAEOSC-05 subtopic (c) (FAIR) Implement processes, guidelines and tools for data provider nodes adopting FAIR principles.

  - Propagate the policies developed in INFRAEOSC-05 subtopic (c) (FAIR) in the participating countries.
  - Definition of a FAIR data baseline implementation.
  - Better understanding of FAIR principles and requirements.
  - Ease the path towards the adoption of FAIR data practices.

Software Quality for EOSC services

T3.1

Software Maturity baseline

Version Control — Build & Static Tests (SAST) — Artifact building — Dynamic Tests (DAST) — Deploy

Code changes

T3.2

Style, Unit tests & Reports

EOSC repositories

Security health & Diagnostics

Acceptance tests

Badge issuing

Services

EOSC marketplace

SQA-as-a-Service

- Best practices for software quality

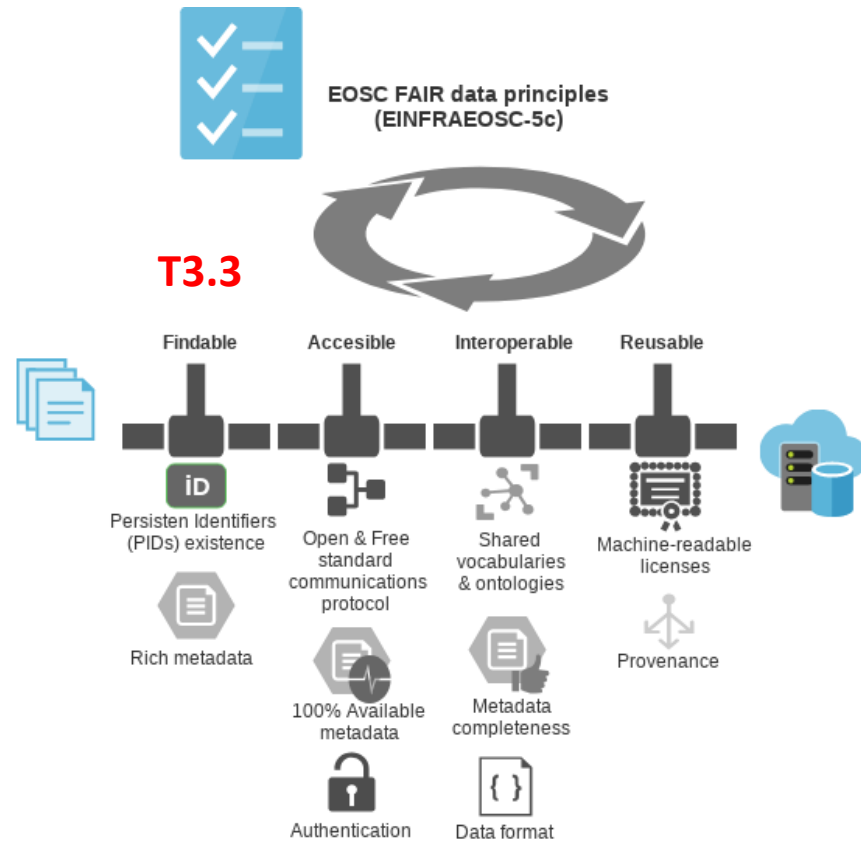- Quality baseline
  - http://digital.csic.es/handle/10261/160086

- Implementation of a SQAaaS platform for supporting service integration in EOSC

- Thematic services in WP4 will go through this pipeline other software services to be integrated in EOSC as well

EOSC FAIR data principles verification

EOSC FAIR data principles
(EINFRAEOSC-5c)

T3.3

Findable — Accesible — Interoperable — Reusable

Persisten Identifiers (PIDs) existence
Rich metadata

Open & Free standard communications protocol
100% Available metadata
Authentication

Shared vocabularies & ontologies
Metadata completeness
Data format

Machine-readable licenses
Provenance

- Analysis of EOSC-relevant FAIR practices from FAIRsFAIR

- Design a technical framework to check data FAIRness

- Leverage SQAaaS work from T3.2

Specific objectives

- Facilitate the integration process of thematic (WP4) and infrastructure (WP2) services in EOSC,
  - **focusing** on **validation**, **delivery** and **deployment** of software components.

- Consolidate a Software Sustainability baseline for service validation
  - **harmonized** with de-facto **standards** and **specifications** of **software quality** and **security assessment**.

- Automation to speed up the validation and certification of the Software Sustainability baseline
  - through the execution of **continuous integration (CI)** and **continuous delivery (CD)** pipelines.

- Promote incentives for the adoption of quality practices
  - definition and implementation of a **badge issuing process** ➔ conformance to the baseline recommendations
  - towards the establishment of an EOSC-ready stamp

- Develop a Software Quality Assurance (SQA) as-a-service
  - **facilitate** the **development**, **delivery** and **integration** of EOSC services.

- Foster the adoption and compliance of FAIR data practices
  - by the scientific communities
  - via implementation of a mechanism to **support the recommendations of the FAIR CSA** under the subtopic (c) of the call.

Deliverables

- D3.1 – Software Maturity baseline (R, PU) – M10 – Lead: LIP
  - Describes quality requirements and best practices to be considered when validating software from an EOSC service; describes the badge issuing process.

- D3.3 – Intermediate report on technical framework for EOSC FAIR data principles implementation (R, PU) – M12 – Lead: DANS
  - Describes the evaluation of the recommendations for assessing data FAIRness and data repository features coming from INFRAEOSC-5c and provides details about architecture, requirements and a roadmap for implementation

- D3.2 – First prototype of Service Integration platform (R, PU) – M15 – Lead: CSIC
  - Architecture, first achievements and implementation status of the platform for software validation of EOSC services, with the first CI/CD pipeline definition for the WorSiCa Thematic Service from WP4.

- D3.5 – Final report on technical framework for EOSC FAIR data principles implementation (R, PU) – M27 – Lead: DANS
  - Implementation details for a technical framework to validate and monitor data FAIRness. Any change or addition to the information gathered in D3.3 will be reported.

- D3.4 – Final release of Service Integration platform (R, PU) – M29 – Lead: CSIC
  - Describes the CI/CD pipelines for service validation, the badge issuing process for achievement recognition and the SQA-as-a-service offering.

Milestones

- M3.1 – All infrastructure services controlled by the project (national initiatives) have CI/CD pipelines – M6; mov: Jenkins service

- M3.2 – Quality and maturity software requirements & best practices are defined – M8; mov: new release of "A set of Common Software Quality Assurance Baseline Criteria for Research Projects" document.

- M3.3 – Working CI/CD pipeline for WorSiCa thematic service (WP4) – M12; mov: Jenkins service

- M3.4 – Badge issuing implemented – M20; mov: Jenkins service, EOSC Portal

- M3.5 – All thematic services (WP4) have a working CI/CD pipeline – M22; mov: Jenkins service

- M3.6 – SQA-as-a-Service allows to plug-in generic software for CI/CD. Integrated with badge issuing – M25; mov: SQA-as-a-Service API

People

- LIP
  - Jorge Gomes <jorge@lip.pt>
  - Mário David <david@lip.pt>
  - Samuel Bernardo <samuel@lip.pt>
  - João Pina < jpina@lip.pt>
- CSIC
  - Pablo Orviz <orviz@ifca.unican.es>
  - David Rodriguez <drodrig@ifca.unican.es>
  - Fernando Aguilar <aguilarf@ifca.unican.es>
  - Isabel Campos <isabel@campos-it.es>
- LNEC
  - Alberto Azevedo <aazevedo@lnec.pt>
  - Anabela Oliveira <aoliveira@lnec.pt>
- INFN
  - Cristina Aiftimiei <cristina.aiftimiei@cnaf.infn.it>

- CYFRONET
  - Lukasz Dutka <lukasz.dutka@cyfronet.pl>
  - Bartosz Kryza <bkryza@agh.edu.pl>
  - Michal Orzechowski <michal.orzechowski@cyfronet.pl>
  - Darin Nikolow <darin@agh.edu.pl>
- KIT
  - Valentin Kozlov <valentin.kozlov@kit.edu>
- UPV
  - Germán Moltó <gmolto@dsic.upv.es>
  - Miguel Caballer <micafer1@upv.es>
- DANS
  - Gerard Coen gerard.coen@dans.knaw.nl
  - Dirk Roorda dirk.roorda@dans.knaw.nl
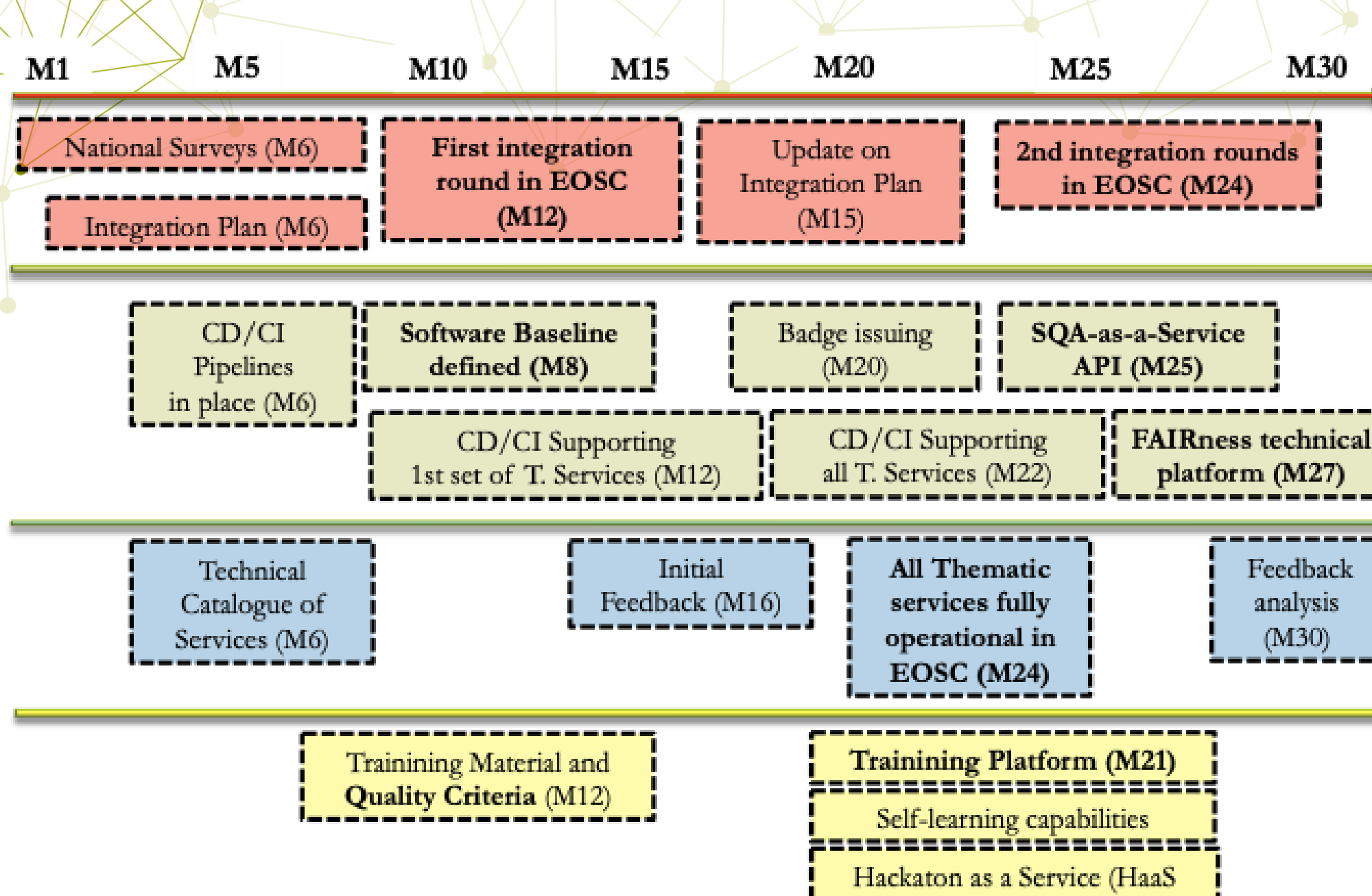 - Slava Vyacheslav Tykhonov <vyacheslav.tykhonov@dans.knaw.nl>

Dissimination deliverables

- Presentations of project results
- Promote quality badge scheme
    - 1x overview of how the scheme works.
    - 1x publicly available table of badges awarded.
- Promote the Software Quality baseline
    - 1x digested overview of what makes a software component compliant
- Promote the SQA-as-a-service
    - 1x article on community newsletter about the service (EGI newsletter)
    - 1x page on the EOSC Portal describing the service with messages for users and for developers

KPIs

- KPI 5 – Software Quality Assurance (SQA) mechanism in place → T/F
- KPI 6 – Number of services that went through SQA validation → 10/20
- KPI 8 – FAIR recommendations implemented → T/F

Timeline: M1 — M5 — M10 — M15 — M20 — M25 — M30

National Surveys (M6)

Integration Plan (M6)

First integration round in EOSC (M12)

Update on Integration Plan (M15)

2nd integration rounds in EOSC (M24)

CD/CI Pipelines in place (M6)

Software Baseline defined (M8)

Badge issuing (M20)

SQA-as-a-Service API (M25)

CD/CI Supporting 1st set of T. Services (M12)

CD/CI Supporting all T. Services (M22)

FAIRness technical platform (M27)

Technical Catalogue of Services (M6)

Initial Feedback (M16)

All Thematic services fully operational in EOSC (M24)

Feedback analysis (M30)

Training Material and **Quality Criteria** (M12)

Training Platform (M21)

Self-learning capabilities

Hackaton as a Service (HaaS

unconf

Quality Assurance

- Scope
  - Software
  - Services

- Target audience
  - **thematic** and **generic** services from the project
  - try to validate at least one external service from the marketplace

Quality Assurance

- baselines
  - for software quality already in place
    - maintenance/enhancements
  - services quality DOES NOT EXIST
    - check services on-boarding documents from EOSC-Hub
    - try to extract the most important things

- Agnostic approach
  - the baselines are implementation agnostic
  - we will provide an implementation that will be based on jenkins

SQAaaS

- SQA-as-a-Service
  - Enable pipelines to be extended using syntax based on groovy
  - Provide some self service capabilities to provide pipelines for given source code
    - based on some choices such as perform source code checks, run unit tests, execute security checks etc
  - metadata for software
    - software should have (recommended to have) metadata
- Badges
  - reward efforts towards software quality
  - provide a more elaborated list of achievements of the software
  - badges describe the conformance towards a seal

SQAaaS

- Usability
  - Is the software easy to use
  - Does it work well
  - Is the software documentation easy to follow
  - Requires human feedback
  - Suggestion usability questionnaires ➔ WP4

Data and FAIR

- Netherlands model
    - frontoffice-backoffice model where the FO is the institution (university) and the backoffice is DANS
    - works both at the level of technical interface and also human support with people at each institution taking care of metadata and quality.

Data and FAIR

- fairness checking
    - verify whatever we can automatically
    - multiple metadata schemas being used in different ways
    - dublin core is not enough
    - will need further metadata to describe the repository
    - open if possible, protected if necessary
    - identify the repositories in EOSC synergy and their characteristics

- repositories for the long-tail
    - define recommendations for creation of long-tail FAIR repositories

Data and FAIR

- push for FAISsFAIR recommendations
  - first to the repositories in the project
  - then select a few repositories outside of the project that could/implement/adopt them

- Repository-as-a-service
  - Is it viable
  - Can it assist in promoting FAIR adoption and repositories ?
  - Need to be seen WP2+WP3

Thank you

Human resources

- CSIC   34
- LIP   34
- KIT   5
- DANS   25
- UPV   10
- LNEC   15
- CYFRONET   15

- TOTAL   138 → over 30 months → 4.6 PM / month

Task slides

- Slides for T3.1: https://docs.google.com/presentation/d/1ii_54azxzvpesLwZmF2esA63NFmXwUIAIKl6QiY6fOE/edit?usp=sharing

- Slides for T3.2:

- https://docs.google.com/document/d/1__ejGliyTjDpuexFESEra_5A3Paz3f8obiWZA7nFa18/edit?usp=sharing

- Slides for T3.3:

- https://docs.google.com/presentation/d/1P75eZxGIAE0GmT0D3AXUmBfZHAUBAKn9wvmrSfOSNfU/edit?usp=sharing

Communication

- Web
  - https://www.eosc-synergy.eu/
- Trello
  - https://trello.com/b/JWLi25TC/eosc-synergy
- Mail
  - wp3@list.eosc-synergy.eu
- Videoconference
  - Zoom
    - https://videoconf-colibri.zoom.us/j/758127227?pwd=eW1OVGJ0Y0MvODdtU3RrYkY0eWxMUT09
  - Jitsi
    - https://meet.jit.si/EOSC-synergy-WP3