# First Year of ESCAPE
# WP3 – E-OSSR

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# E-OSSR Aims and Objectives

- Aim: expose the tools of the ESCAPE (ESF)RI projects in a repository under the EOSC catalogue of services

- Objectives:
  - continuous development, deployment, exposure and preservation of software/tools/services
  - interoperability, software re-use and cross-fertilisation
  - open innovation environment for open standards (workflows), common regulation and shared (novel) software for multi-messenger&multi-probe data

- All objectives follow:
  - a community-based approach
  - the FAIR principles for open software/services and data

- E-OSSR strives to:
  - Establish a foundation to (co-)develop EOSC-ready software and services;
  - expose them to users via the EOSC catalogue of services;

# Work Organisation

● General entry point for information at the [ESCAPE Wiki](#)

● Organisation:

   ● Tasks formulate the main objectives of the [work package](#)

   ● Focus groups facilitate the day-to-day work within the tasks

● Tasks

   ● Task 3.1: Management Activities, Policy and Support Action (MAPS) - Providing assistance and support for work package related activities

   ● Task 3.2: ESFRI Software and Services Collection (ESSC) – Systematically list available software and requirements to facilitate integration into the repository

   ● Task 3.3: Common Approaches: Software and Services (CASS) – Fostering common developments and facilitate sharing of software

   ● Task 3.4: Foundation of Competence for Software and Service Innovation (COSSI) - Establish competence group for mainstreaming new approaches to data analysis (e.g. deep learning)

   ● Task 3.5: Repository Implementation and Deployment (RIAD) – Setting up a demonstrator for a common software repository

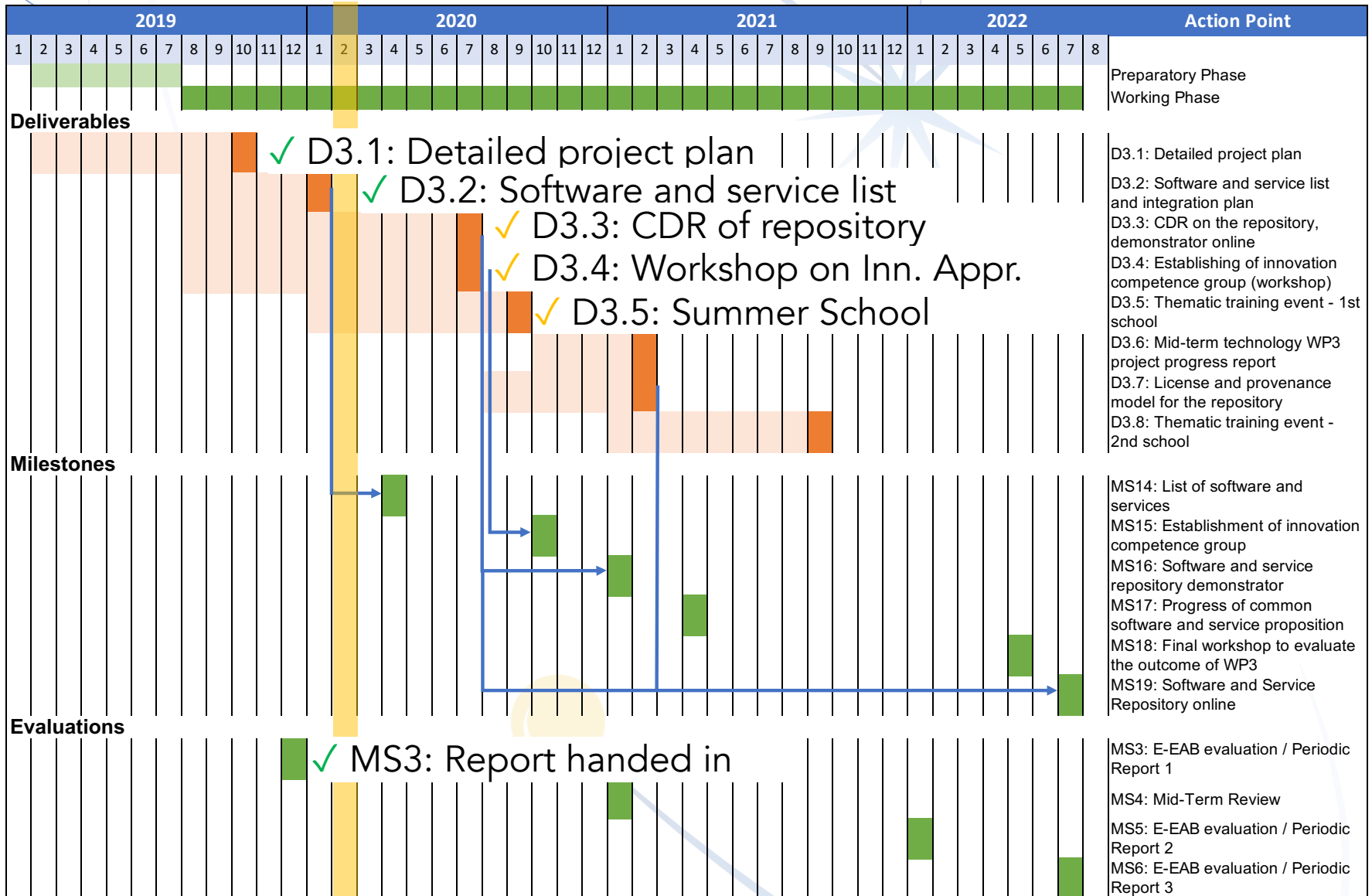# Work Organisation

- Focus groups
  - [Focus group 1](): Collecting Software requirements
    (related to Task 3.2)
  - [Focus group 2](): Technical implementation of the repository
    (related to Task 3.5)
  - [Focus group 3](): Innovative workflows
    (related to Task 3.4)
  - [Focus group 4](): Distributed computing
  - [Focus group 5](): Common approaches to Corsika
    (related to Task 3.3)

# OSSR: Deliverables & Milestones



| | 2019 | 2020 | 2021 | 2022 | Action Point |
|---|---|---|---|---|---|

**Deliverables**

✓ D3.1: Detailed project plan

✓ D3.2: Software and service list

✓ D3.3: CDR of repository

✓ D3.4: Workshop on Inn. Appr.

✓ D3.5: Summer School

D3.1: Detailed project plan

D3.2: Software and service list and integration plan

D3.3: CDR on the repository, demonstrator online

D3.4: Establishing of innovation competence group (workshop)

D3.5: Thematic training event - 1st school

D3.6: Mid-term technology WP3 project progress report

D3.7: License and provenance model for the repository

D3.8: Thematic training event - 2nd school

**Milestones**

MS14: List of software and services

MS15: Establishment of innovation competence group

MS16: Software and service repository demonstrator

MS17: Progress of common software and service proposition

MS18: Final workshop to evaluate the outcome of WP3

MS19: Software and Service Repository online

**Evaluations**

✓ MS3: Report handed in

MS3: E-EAB evaluation / Periodic Report 1

MS4: Mid-Term Review

MS5: E-EAB evaluation / Periodic Report 2

MS6: E-EAB evaluation / Periodic Report 3

Preparatory Phase
Working Phase

# Communication/Management

- Working group
  - with 19 partners in different project status (also wrt. open science)
  - different goals from "defining and sharing best practices" to the repository generation

⇒ efficient communication and management necessary

- Resources and partner contributions monitored on six-monthly bases (first round for the E-EAB report)
- Main contacts (institutes and ESF/RIs) identified
- IT services set up
- Link to EOSC Working groups established
- Regular Meetings

⇒ partners well linked to the WP now

# Preparatory Phase

- First half year of preparatory phase
  → successfully finalised
  - Survey of expectations, status and planned contributions from all partners
  - First all hands meeting
  - Definition of project plan, defining
    - Goals and objectives
    - Structure and roles
    - Resources and management
    - Organisation and communication
    - Constraints and interfaces
    - Accountability and decision process
    - Risk analysis
  - Hiring of human resources (slightly but not significantly delayed due to good econonmic situation)

- Setting up of working and focus groups

# Working Phase

- Task 3.1 - Management Activities, Policy and Support Action – K. Graf (FAU):
  - Implemented [IT services](#) and helpdesk for the WP;
  - Established links within ESCAPE and towards the EOSC Architecture Working Group.

- Task 3.2 - ESFRI Software and Services Collection – K. Graf (FAU):
  - started development, benchmarking and deployment of software within and across partners;
  - gathering of common practices and know-how towards the definition of best practices to be shared with the community;
  - first round of software to become part of the repository collected; template for software gathering set up; partners started to prepare the software for repository integration;
  - Contact with the HSF ([HEP software foundation](#)) has been established, discussing the options to add software to the repository.

- Task 3.3 - Common Approaches: Software and Services – C. Bozza (INFN):

  - Started coordinative work for common data formats and software tools between the partners and the ESF/RIs they represent;

  - Development and production of CORSIKA – an air shower simulation program - turnkey containers for various use cases and functional development of CORSIKA for specific purposes;

  - Usage of the DIRAC interware for large scale simulation productions is pursued.

- Task 3.4 - Foundation of Competence for Software and Service Innovation – E. Cuoco (EGO)
  - machine learning approaches to simulation and experiment data adapted and benchmarked;
  - definition of data formats and different deep-learning approaches pursued;
  - Exchange of experience and harmonisation of approaches for innovative workflows;
  - Gathering of workflows between different partners;
  - establishment of use cases for multi-messenger analysis workflows connecting several ESFRIs.

# Working Phase

- Task 3.5 - Repository Implementation and Deployment – T. Vuillaume (CNRS-LAPP):
  - partner feedback for the repository gathered;
  - preliminary design of the repository and the definition of technical solutions for its implementation
  - first prototype set up for internal use.

# SWOT Analysis - preliminary

| Internal | | External | |
|---|---|---|---|
| Strengths | Weaknesses | Opportunities | Threats |
| Diversity of partners representing different research fields and infrastructures | Diverse group with different backgrounds and different practices regarding open software/service products | Be part of defining the EOSC bringing in the community point of view. | Goals and timeline of the EOSC in general not yet defined in detail |
| Excellence of partner institutes and persons | Large number of partners | Interest from other communities to join the (e.g. HSF) | Expectations on EOSC very high as compared to commercial cloud solutions |

# Deviations from and Implementation of the DoA

- OSSR provided input to the general ESCAPE dissemination and data management plans, no updates needed

- Implementation:
  - All the tasks have been fully implemented, all of the foreseen critical objectives have been achieved.
  - Few weeks' delay in D3.2, listing the software and service to be included in the OSSR, no impact on the project schedule (open list)
  - A small percentage of partners have not been able to complete their hiring process in time. For some of the affected partners, institute staff have fulfilled the foreseen activities; for the others, the foreseen activities will still be completed in time to fulfil all obligations.
  - Otherwise all resources are available and currently deemed adequate.

- There is no significant difference between the actual and planned resources up to this point.

- The contributions of the work package to the impacts as listed in section 2.1 of the DoA are still valid and do not need to be updated.

- Subcontracting: none

# Risks and Mitigation

● Unforeseen risks:

| Nr. | Description of Risk (Level) | WP | Proposed risk mitigation measures |
|---|---|---|---|
| 5 | Difficulty to find suitable contract staff (Medium) | 3 | Advertisements for contractual positions are to be distributed as widely as possible using the channels of the ESCAPE project. |
| 6 | Hired contract staff depart prematurely (Medium) | 3 | The partners will manage their contract personnel and indicate any risks if they arise to the WP management (Task 3.1). |

● Risk mitigation

| Risknr. | Did you apply risk mitigation measures? | Did your risk materialize? | Comments |
|---|---|---|---|
| 5 | Yes | partly | The risk mitigation did help, at present, the risk not severe, as described in Sec. 1 and 5 |
| 6 | No | No | - |

# Dissemination & Exploitation of Results

- No scientific publications have been written for WP3 in the reporting period
  → main publications will be software & services made openly available, proceedings on best practices and outcome of TSC

- dissemination and communication activities for WP3:

  - Organisation of one workshop (first OSSR workshop), one exhibition

  - Participation in three conferences, several workshops and collaboration meetings

  - 29 meetings scheduled

- IPRs are not applicable to WP3 → aim of open science

# Planning until Mid-Term Review

- the work will be carried out along the deliverables and milestones of the project
  - the prototype of the repository will be set up and a few available open source software from the partners added as test cases
  - the innovative competence group will be formed from the SOC of the IWAPP workshop
  - the first ESCAPE summer school will be held
  - use cases of multi-messenger analysis workflows as well as CORSIKA simulations will be finalised

# Backup Slides

- exposing software and services in the cloud brings challenges and questions:
  - Functional range of repository and its integration in EOSC
  - Administrative and legal issues
    (A&A, licensing, preservation, provenance,…)
  - Efficient implementation of co-development, cross-fertilisation and innovative approaches in software/service development
  - Harmonising the wishes/needs of the (ESF)RIs, the EOSC itself and its users

- E-OSSR strives to:
  - Establish a foundation to (co-)develop EOSC-ready software and services;
  - expose them to users via the EOSC catalogue of services;

- E-OSSR does not focus on:
  - application of those services in the EOSC and integration to portals/analysis platforms → link to the other WPs

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