Parties memberships and interests in the ESCAPE Open Collaboration

This document summarizes the roles and priorities of each partner to formalise the organisation of the ESCAPE Open Collaboration.



## **ESCAPE Working Groups definitions:**

* **DIOS**: Data Infrastructure for Open Science – Data Lake

Build a scalable, federated, data infrastructure as the basis of open science for the ESFRI projects within ESCAPE.

* **OSSR**: Open-source scientific Software and Service Repository

Repository of "scientific software" as a major component of the “data” to be curated in EOSC for the ESCAPE community & cooperative environment for innovative software developments

* **VO**: Virtual Observatory

Extend the VO *FAIR* standards, methods and to a broader scientific context & prepare the VO to interface the large data volumes of next ESFRI facilities.

* **ESAP**: ESFRI Science Analysis Platform

Flexible science platforms to enable the open data analysis tailored by and for each ESFRI facility as well as a global one for transversal workflows.

* **CS**: Citizen Science

Open gateway for citizen science on ESCAPE data archives and ESFRI community

* **VRE**: Virtual Research Environment

A web-based highly-composable research-enabling interoperable data platform aimed at hosting Open Science projects and the community management environment.

* **COSO**: Challenging “Open Science Objectives” by RI commitments in Open Science Projects (OSP) as well as RI-wise or Cross-RI/-Cluster Open Science Projects (COSP).
* **TECH**: Bring the FAIRness within technology, R&D and innovation projects as well as explore new “close-to-sensors” low-latency open-data science.
* **CARS**: Career development and rewarding for researchers committing in Open Science. Planning, tracking, and assessing scientific knowledge production.
* **SDSS**: Building synergies on “Sector Data Spaces” for Society: Green deal, Health, Manufacturing, Education and Skills.
* **CC**: Operating the community-based “Competence Center” for EOSC-alignment, train and support, extended outreach, financial model for services and networking with other Science-Custer CCs
* **EVSI**: R&I for an “European Virtual Institute for Research Software” for advanced technologies.

# CERN (HL-LHC)

**Director/Spokesperson (member of the ESCAPE Assembly):** Joachim Mnich or nominated alternate

**Strategy Board membership (1 representative and 1 alternate):** Bob Jones and Simone Campana

**Technical Lead (member of the Executive Board):** Xavier Espinal

**Suggested Names for OSCARS cascading grant Independent Evaluation Committee (IEC):** (tbd)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ESCAPE Work programme** | **Interest**  **(YES/NO)** | **Highest Priority**  **(YES/NO)** | **Name of co-coordinator** | **Other persons involved** | **Project providing financial support** |
| **DIOS** | YES | YES | Xavier Espinal | Enrique Garcia | OSCARS |
| **OSSR** | YES | YES | Graeme Stewart  Stefan Roiser | Caterina Doglioni *(UMA & ULund)* | EVERSE |
| **VO** | NO |  |  |  |  |
| **ESAP** | NO |  |  |  |  |
| **CS** | NO |  |  |  |  |
| **VRE** | YES | YES | Xavier Espinal *(shared coordination with LAPP)* | Elena Gazzarrini Enrique Garcia | OSCARS |
| **COSO** | YES |  |  |  |  |
| **TECH** | YES | YES | Maria Girone | Tommaso Boccali *(INFN)* | SPECTRUM |
| **CARS** | YES |  |  |  |  |
| **SDSS** | YES |  |  |  |  |
| **CC** | YES |  |  |  |  |
| **EVSI** | YES |  |  |  |  |

**Key topics:** Future computing aspects in the HL-LHC work program envisage active research and development in key computing topics such as Data Management Frameworks and Data Lakes, Heterogeneous Data Processing and Analysis Facilities/Research Environments, Federated Identity Management, AI tools and Machine Learning, Software sustainability and the strengthening of Open Science approaches and practices.

Advancement in these areas are considered instrumental to foster economies of scale in distributed computing (eg. storage/DIOS and software/OSSR), and to boost the data processing capabilities of the experiments by easing the integration of diverse computing infrastructures (eg. HPC centres, opportunistic resources and heterogeneous architectures for AI/ML).

On the user side the investment in exploring new technologies of doing data analysis in integrated frameworks (VRE) is seen as the evolution towards merging software, code, data and data processing. Resulting in an opportunity to narrow the gap between the physicists and their time to get results.

# CTAO

**Director/Spokesperson (member of the ESCAPE Assembly):** Federico Ferrini / Stuart McMuldroch

**Strategy Board membership (1 representative and 1 alternate):** Matthias Fuessling and Roberta Zanin

**Technical Lead (member of the Executive Board):** Matthias Fuessling and Gareth Hughes

**Suggested Names for OSCARS cascading grant Independent Evaluation Committee (IEC):** See additional note [1]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ESCAPE Work programme | Interest  (YES/NO) | Highest Priority  (YES/NO) | Name of co-coordinator | Other persons involved | Project providing financial support |
| DIOS | YES | YES | See [2] | Matthias Fuessling (*CTAO*)  Gareth Hughes (*CTAO*)  Karl Kosack  *(CEA, CTAO)*  Nektarios Benekos (*CTAO*)  Frederic Gillardo  *(CNRS-LAPP)*  Jordi Delgado  *(PIC)*  *More are TBD [3]* | OSCARS |
| OSSR | YES | YES | See [2] | Thomas Vuillaume *(CNRS-LAPP)*  Matthias Fuessling (*CTAO*)  Gareth Hughes (*CTAO*)  *More are TBD [3]* | EVERSE |
| VO | YES | YES | See [2] | Matthias Fuessling (*CTAO*)  Mathieu Servillat (*ObsParis, CTAO*)  Catherine Boisson (*ObsParis, CTAO*)  Roberta Zanin *(CTAO)*  *More are TBD [3]* |  |
| ESAP | YES | YES | See [2] | Matthias Fuessling (*CTAO*),  Gareth Hughes (*CTAO*),  Mathieu Servillat (*ObsParis, CTAO*) Roberta Zanin (*CTAO*),  *More are TBD [3]* |  |
| CS | YES | NO |  | Roberta Zanin  (*CTAO*) |  |
| VRE | YES | NO, see also [4] |  | Matthias Fuessling (*CTAO*) | OSCARS |
| COSO | YES | YES/NO, see also [5] |  | Roberta Zanin  (*CTAO*) | OSCARS |
| TECH | YES/NO, see also [5] | YES/NO, see also [5] |  | Stefano Stanghellini  (*CTAO*) | SPECTRUM |
| CARS | YES/NO, see also [5] | YES/NO, see also [5] |  | Roberta Zanin  (*CTAO*) |  |
| SDSS | YES/NO, see also [5] | YES/NO, see also [5] |  | Roberta Zanin  (*CTAO*) |  |
| CC | YES/NO, see also [5] | YES/NO, see also [5] |  | Roberta Zanin  (*CTAO*) | OSCARS |
| EVSI | YES | YES/NO, see also [5] |  | Matthias Fuessling (*CTAO*) | EVERSE |

[1] Suggestion for names for the Independent Evaluation Committee (IEC) can be provided once the proposal evaluation and selection process and the profiles of the members of the IEC is more clearly defined.

[2] Unfortunately, CTAO cannot commit to co-coordinating individual work packages at the moment. There are several important activities ongoing (internal project re-organisation, transition to the ERIC) that need to progress first. We would like to reassess this issue in the course of the next year. In addition, there is the possibility of members from the CTAO community taking on this role on a case-by-case basis, however we would need more time to discuss with potential candidates.

[3] More persons will join the individual work packages in the future, e.g., from CTAO, from CTAO partner institutes contributing to CTAO or from the CTAO user community. Once the work programmes of the work packages have been further detailed, we can identify and name the corresponding persons.

[4] The priority of the VRE depends on the connection and links of the VRE and ESAP to each other and to the other work packages such as DIOS, as well as the future use of the VRE and ESAP. We would like to revisit this once this has been defined better.

[5] The interest and priorities can be provided once the topics and work programme of the individual work packages, entities, and programmes has been better defined. We are interested to be in the loop and revisit these once the topics are defined.

**Key topics and expectations:**

The topics that have our main interest for the individual work packages (DIOS, OSSR, VO, ESAP) are:

* DIOS:
  + Continued development of a data lake infrastructure covering all functionalities for a bulk archive (of raw data) and science archive (of science data products), incl. long-distance data transfer, data replication and backup, cold and hot storage, data stageing and caching, data ingestion and retrieval, data access
  + Performance monitoring
  + Integration with token-based identity management
  + Fine-grained authorisation and data protection
  + Automated data management workflows (incl. replication, removal)
  + Integration with large-scale data processing (batch processing, interactive processing)
* ESAP:
  + Continued development of a science platform infrastructure
  + Extension with more applications and functionality:
    - Web GUIs, interactive processing, batch processing, DOI service, User area with persistent storage, IVOA integration, notebook and workflows integration, etc.
  + Provision for cyber-security
  + Integration with token-based identity management
  + Integration with the data lake
  + Fine-grained authorisation and functionality tailored to the user
* VO:
  + Integration of CTAO in the IVOA landscape
  + Support for setting up CTAO IVOA services (data access, exchange of observation schedules, visibility, science alerts)
  + HE/VHE interest group and standardisation of IVOA data models and protocols to include the needs of the gamma-ray astronomy
  + Commonalities in science operations across observatories
  + Advanced functionalities for multi-messenger follow-up and coordinated multi-wavelength coordination
* Identity Management:
  + Integration of an identity management solution (Indigo IAM) with retained data management solutions (data lake, science platform, etc)
  + Token-based AAI
  + Federation of identities across platforms, services, and observatories
* OSSR / Research software (Science Analysis Tools, Pipelines software):
  + Multi-instrument /-messenger /-wavelength analysis techniques (gamma-ray/neutrino/radio/etc.)
  + Software quality standards in research software
  + Software metadata model
  + Development of a software model (community-driven software, community-based software, associated and/or affiliated software)
  + Support in on-boarding of CTAO software to the OSSR
* Topics across work packages for CTAO:
  + Development of CTAO instances of CTAO products and services (bulk archive, science archive, science platform, science analysis tools, pipelines software) and exploring the ESCAPE technologies and solutions
  + Collaboration with others ESFRIs on common challenges and solutions
* Other work packages (VRE, COSO, TECH, CARS, SDSS, CC, EVSI):
  + Topics are TBD and will need further discussions

Any further comments/suggestions:

# EGO-Virgo

**Director/Spokesperson (member of the ESCAPE Assembly):** **Massimo Carpinelli**

**Strategy Board membership (1 representative and 1 alternate):** **Elena Cuoco and Rhys Poulton**

**Technical Lead (member of the Executive Board):** **Stefano Bagnasco and Elena Cuoco**

**Suggested Names for OSCARS cascading grant Independent Evaluation Committee (IEC):**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ESCAPE Work programme | Interest  (YES/NO) | Highest Priority  (YES/NO) | Name of co-coordinator | Other persons involved | Project providing financial support |
| DIOS | YES/NO | YES/NO |  |  |  |
| OSSR | YES/NO | YES/NO |  |  |  |
| VO | YES/NO | YES/NO |  |  |  |
| ESAP | YES/NO | YES/NO |  |  |  |
| CS | YES/NO | YES/NO |  |  |  |
| VRE | YES/NO | YES/NO |  |  |  |
| COSO | YES/NO | YES/NO |  |  |  |
| TECH | YES/NO | YES/NO |  |  |  |
| CARS | YES/NO | YES/NO |  |  |  |
| SDSS | YES/NO | YES/NO |  |  |  |
| CC | YES/NO | YES/NO |  |  |  |
| EVSI | YES/NO | YES/NO |  |  |  |

**Key topics and expectations:**

# ESO (ELT)

**Director/Spokesperson (member of the ESCAPE Assembly):** Martino Romaniello

**Strategy Board membership (1 representative and 1 alternate):**

**Technical Lead (member of the Executive Board):**

**Suggested Names for OSCARS cascading grant Independent Evaluation Committee (IEC):**

* Christophe Arviset (ESA, [Christophe.Arviset@esa.int](mailto:Christophe.Arviset@esa.int))
* Bruno Merin (ESA, [bmerin@sciops.esa.int](mailto:bmerin@sciops.esa.int))
* Deborah Baines (ESA, [dbaines@sciops.esa.int](mailto:dbaines@sciops.esa.int))
* Scott Trager (Groningen, [s.c.trager@rug.nl](mailto:s.c.trager@rug.nl))
* Ben Stappers (Manchester, ben.stappers@manchester.ac.uk)
* Lourdes Verdes-Montenegro (IAA, Granada, [lourdes@iaa.es](mailto:lourdes@iaa.es))
* Gijs Verdoes Kleijn (Groningen,  [g.a.verdoes.kleijn@rug.nl](mailto:g.a.verdoes.kleijn@rug.nl))

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ESCAPE Work programme | Interest  (YES/NO) | Highest Priority  (YES/NO) | Name of co-coordinator | Other persons involved | Project providing financial support |
| DIOS | YES/NO | YES/NO |  |  |  |
| OSSR | YES/NO | YES/NO |  |  |  |
| VO | YES/NO | YES/NO |  |  |  |
| ESAP | YES/NO | YES/NO |  |  |  |
| CS | YES/NO | YES/NO |  |  |  |
| VRE | YES/NO | YES/NO |  |  |  |
| COSO | YES/NO | YES/NO |  |  |  |
| TECH | YES/NO | YES/NO |  |  |  |
| CARS | YES/NO | YES/NO |  |  |  |
| SDSS | YES/NO | YES/NO |  |  |  |
| CC | YES/NO | YES/NO |  |  |  |
| EVSI | YES/NO | YES/NO |  |  |  |

**Key topics and expectations:**

# EST

**Director/Spokesperson (member of the ESCAPE Assembly):** Manuel Collados / Nazaret Bello

**Strategy Board membership (1 representative and 1 alternate):** Nazaret Bello, Peter Caligari (both at KIS)

**Technical Lead (member of the Executive Board):** Gangadharan Vigeesh, Peter Caligari (both at KIS)

**Suggested Names for OSCARS cascading grant Independent Evaluation Committee (IEC):**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ESCAPE Work programme | Interest  (YES/NO) | Highest Priority  (YES/NO) | Name of co-coordinator | Other persons involved | Project providing financial support |
| DIOS | YES/NO | YES/NO |  |  |  |
| OSSR | YES/NO | YES/NO |  |  |  |
| VO | YES/NO | YES/NO |  |  |  |
| ESAP | YES/NO | YES/NO |  |  |  |
| CS | YES/NO | YES/NO |  |  |  |
| VRE | YES/NO | YES/NO |  |  |  |
| COSO | YES/NO | YES/NO |  |  |  |
| TECH | YES/NO | YES/NO |  |  |  |
| CARS | YES/NO | YES/NO |  |  |  |
| SDSS | YES/NO | YES/NO |  |  |  |
| CC | YES/NO | YES/NO |  |  |  |
| EVSI | YES/NO | YES/NO |  |  |  |

**Key topics and expectations:**

# ET

**Director/Spokesperson (member of the ESCAPE Assembly):** Michele Punturo

**Strategy Board membership (1 representative and 1 alternate):** Harald Lueck (harald.lueck@aei.mpg.de) and Stefano Bagnasco (bagnasco@to.infn.it)

**Technical Lead (member of the Executive Board):** Patrice Verdier (patrice.verdier@in2p3.fr)

**Suggested Names for OSCARS cascading grant Independent Evaluation Committee (IEC):**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ESCAPE Work programme | Interest  (YES/NO) | Highest Priority  (YES/NO) | Name of co-coordinator | Other persons involved | Project providing financial support |
| DIOS | YES | YES | Bagnasco / Verdier | 20 scientists from  BSC, CNRS, Cyfronet, EGO, INFN, PIC/CIEMAT, KIT, Université Catholique de Louvain, Nikhef, Université de Genève, Wigner Research Center | ET-PP |
| OSSR | YES | NO |
| VO | YES | YES |
| ESAP | YES | YES |
| CS | YES | NO |
| VRE | YES | YES |
| COSO | YES | NO |
| TECH | YES | NO |
| CARS | YES | NO |
| SDSS | NO | NO |
| CC | NO | NO |
| EVSI | YES | NO |

**Key topics and expectations:**

# FAIR

**Director/Spokesperson (member of the ESCAPE Assembly):** Paolo Giubellino

**Strategy Board membership (1 representative and 1 alternate):**   
Thorsten Kollegger, Johan Messhendorp

**Technical Lead (member of the Executive Board):** Mohammad Al-Turany

**Suggested Names for OSCARS cascading grant Independent Evaluation Committee (IEC):**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ESCAPE Work programme | Interest  (YES/NO) | Highest Priority  (YES/NO) | Name of co-coordinator | Other persons involved | Project providing financial support |
| DIOS | YES | YES |  | Jan Knedlik,  Soeren Fleischer |  |
| OSSR | YES | YES |  | Dmytro Kresan,  Christian Tacke Mohammad Al-Turany |  |
| VO | NO | - |  |  |  |
| ESAP | YES | NO |  | Alexey Rybalchenko |  |
| CS | NO | - |  |  |  |
| VRE | YES | YES |  | Dmytro Kresan,  Dennis Klein, Mohammad Al-Turany | OSCARS |
| COSO | YES | YES |  | Johan Messhendorp | OSCARS |
| TECH | YES | NO |  | Thorsten Kollegger |  |
| CARS | YES | NO |  | Matthias Kretz |  |
| SDSS | NO | - |  |  |  |
| CC | NO | - |  |  |  |
| EVSI | YES | NO |  | Mohammad Al-Turany, Thorsten Kollegger |  |

**Key topics and expectations:**  Software / simulation and AI, Data Lake, VRE for FAIR portal (as well as nuclear physics?)

Any further comments/suggestions:

# JIV-ERIC

**Director/Spokesperson (member of the ESCAPE Assembly):** Agnieszka Slowikowska

**Strategy Board membership (1 representative and 1 alternate):** Marjolein Verkouter, Giuseppe Cimo

**Technical Lead (member of the Executive Board):** Marjolein Verkouter

**Suggested Names for OSCARS cascading grant Independent Evaluation Committee (IEC):**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ESCAPE Work programme | Interest  (YES/NO) | Highest Priority  (YES/NO) | Name of co-coordinator | Other persons involved | Project providing financial support |
| DIOS | YES | NO |  |  |  |
| OSSR | YES | YES |  |  |  |
| VO | YES | YES |  |  |  |
| ESAP | YES | NO |  |  |  |
| CS | NO | NO |  |  |  |
| VRE | YES | NO |  |  |  |
| COSO | NO | NO |  |  |  |
| TECH | YES/NO | NO |  |  |  |
| CARS | YES | YES |  |  |  |
| SDSS | NO | NO |  |  |  |
| CC | NO | NO |  |  |  |
| EVSI | YES | YES |  |  |  |

**Key topics and expectations:**  federated identity management, IVOA technologies, the VRE, research software as a career, collaboration with partners outside our science domain. At a (much) lower priority we'd like to listen in on data lake developments every now and then; it's a technology/system that is not (yet) relevant to our interests but might be in the future.

# KM3NeT

**Director/Spokesperson (member of the ESCAPE Assembly):** Paschal Coyle

**Strategy Board membership (1 representative and 1 alternate):** Rosa Coniglione, Cristiano Bozza

**Technical Lead (member of the Executive Board):** Kay Graf

**Suggested Names for OSCARS cascading grant Independent Evaluation Committee (IEC):** Paul de Jong

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ESCAPE Work programme | Interest  (YES/NO) | Highest Priority  (YES/NO) | Name of co-coordinator | Other persons involved | Project providing financial support |
| DIOS | YES | YES |  | Mieke Bouwhuis (Nikhef) | OSCARS |
| OSSR | YES | YES | Kay Graf (FAU) | Jutta Schnabel (FAU) | EVERSE |
| VO | YES | NO |  |  |  |
| ESAP | YES | NO |  |  |  |
| CS | YES | NO |  |  |  |
| VRE | YES | NO |  |  | OSCARS |
| COSO | YES | NO |  | Jutta Schnabel (FAU) | OSCARS |
| TECH | YES | NO |  |  |  |
| CARS | YES | NO |  |  |  |
| SDSS | YES | NO |  | Christos Markou (Demokritos) |  |
| CC | YES | NO |  |  | OSCARS |
| EVSI | YES | NO |  | Kay Graf (FAU) | EVERSE |

**Key topics and expectations:**

* building an analysis framework from raw data to public ready data products in the regime of open science

# SKAO

**Director/Spokesperson (member of the ESCAPE Assembly):** Philip Diamond

**Strategy Board membership (1 representative and 1 alternate):** Antonio Chrysostomou

**Technical Lead (member of the Executive Board):** Rosie Bolton

**Suggested Names for OSCARS cascading grant Independent Evaluation Committee (IEC):**

John Swinbank, Lourdes Verdes-Montenegro

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ESCAPE Work programme | Interest  (YES/NO) | Highest Priority  (YES/NO) | Name of co-coordinator | Other persons involved | Project providing financial support |
| DIOS | YES | YES | Rosie Bolton |  | OSCARS |
| OSSR | YES | YES |  | Marco Bartolini  (*SKAO*) | EVERSE |
| VO | YES | YES | Mark Allen  (*CDS*) |  |  |
| ESAP | YES | YES | John Swinbank *(ASTRON)* |  |  |
| CS | NO | NO |  |  |  |
| VRE | YES | NO |  |  | OSCARS |
| COSO | NO | NO |  |  | OSCARS |
| TECH | YES | NO |  |  | SPECTRUM |
| CARS | NO | NO |  |  |  |
| SDSS | NO | NO |  |  |  |
| CC | NO | NO |  |  | OSCARS |
| EVSI | YES | YES |  | Marco Bartolini  (*SKAO*) | EVERSE |

**Key topics and expectations:** software development for data lakes, identity management and IVOA technologies, development of a network of SKA Regional Centres

Any further comments/suggestions:

We have said “NO” to CS but that is because currently SKAO does not have any archival data for CS projects. In the future, once we are operational for a few years, we will be very interested in Citizen Science projects.