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Subject: Observations on GENERAL PROJECT REVIEW CONSOLIDATED REPORT (Ref. Ares(2020)7575396 - 14/12/2020)

Dear Mina,

In my capacity as the coordinator of H2020-ESCAPE consortium, I am writing you to first thank you and Eva Mendez for your recommendations and for your positive review of ESCAPE activities between 01/02/2019 and 14/12/2020.

In this letter, we present our observations on the consolidated review report to provide further information on the project implementation in line with your recommendations.

- *Increase further the user's engagement, with a special attention to scientist less familiar with the EOSC and fundamental principles of sharing data.*

The ESCAPE cluster introduces a cross-border innovation approach with participation of several ESFRI projects and landmarks. ESCAPE supports uptake of open science and FAIRness of data uniformly in all the participating ESFRI projects, consortia encompassing many research communities. ESCAPE addresses specific needs of individual ESFRI projects through transversal activities as far as is possible. ESCAPE will implement following approach to increase user's engagement:

1. Implementation of Test Science Projects (TSPs) to extend the added value of open science to large communities embracing more than a single ESFRI project and those which are not participating in ESFRI consortia.
2. Development of training material and citizen science mass participation experiments will be made available in ESCAPE virtual environment and linked through the EOSC portal. These activities will support us onboard not only researchers, university students but also citizens in EOSC. The training events that were delayed in the first reporting period due to COVID-19 will be organized in person or virtually in the second reporting period to further increase user engagement.
3. A subset of open data as well as use cases from ESFRI projects would be made available through ESCAPE for educational purposes.

ESCAPE has been discussing EOSC implementation challenges with APPEC, NuPPEC, ECFA and ASTRONET. This fruitful interaction is paving the way for including new ESFRI and world class projects in the ESCAPE work programme as well as in EOSC. We are looking forward to validating the ESCAPE repository with use cases under [Future Circular Collider \(FCC\)](#) for open access of all the digital objects produced during the feasibility study of FCC. Secondly, [Grand Accélérateur National d'Ions Lourds \(GANIL\)](#), an ESFRI infrastructure has expressed interest to formally join ESCAPE work programme. In addition, ESCAPE is also exploring collaboration with neutrino communities through the DUNE project. The Einstein Telescope will be a third generation interferometer for gravitational wave astronomy in Europe. Its data challenges are



driving VIRGO communities to discuss open data challenges under ESCAPE for the Einstein Telescope.

- *Demonstrate better the need of creating a multiple of similar services. For example, what is the added value of accessing data from different services and data bases. During the mid-term review we have seen that one can access different set of astronomy data from multiple sources - telescopes archive, data lake, ESFRI science analyses platform.*

All of the ESFRI projects in ESCAPE share the ambition of providing open access to their own data. These projects are responsible for curating and publishing their respective data products. The detailed mechanism put in place vary from project to project, depending on the types of data being generated and the needs of their community. ESCAPE aims to reduce redundancy and streamline access by:

- Developing interfaces to or promoting archiving and aggregation services for low-level science products (such as Zenodo and OpenAire) and containerisation tools (such as Docker and Singularity) which the ESFRI projects can build upon;

- Developing unified interface, in the shape of the ESCAPE Science Analysis Platform, which provides a single point of entry for accessing and working with data from the various ESFRI projects, with a particular focus on multi-probe scientific use cases where interoperability and combination of datasets from multiple research infrastructures is required.

This approach is designed to align with the global EOSC approach: EOSC is expected to provide an interoperability layer for scientific data

- *Increase ESO/European Extreme Large Telescope engagement*

ESO's participation in ESCAPE is focussed mainly on the scope of WP4, with strong links and interest on several other work packages (Data Lake, Science Platforms). This is both for its current observatories, namely La Silla Paranal and ALMA, and, crucially, the Extremely Large Telescope (ELT). During the first phase of ESCAPE, ESO was very engaged in delivering according to the agreed milestones. This included disseminating the results in public forums like the WP4 Tech Forum, the European Astronomical Society Annual Meeting and the 2020 EIROforum Topical Workshop on Big data, ESCAPE PR material and publications in refereed scientific journals. ESO is committed to keep doing so in the second phase of ESCAPE. Based on the feedback above, for which we warmly thank the reviewers, we will take special care of enhancing the visibility of the ESO's participation in ESCAPE.

We believe these observations provide sufficient information on how the ESCAPE consortium plans to implement recommendations from your review. Please do let us know should you wish additional information on our observations.

Best regards,  
Giovanni Lamanna, Coordinator H2020-ESCAPE

