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CIRCE – PROMOTING A DATA E-INFRASTRUCTURE FOR THE INTERNATIONAL SPACE
STATION

Abstract

CIRCE (Cooperative International space station Research data Conservation and Exploitation) is a coordination action promoted by Telespazio, DLR and CNES, co-funded by the European Commission. Its goal is fostering cooperation with the international partners of the International Space Station (ISS) and it aims at designing a roadmap for the establishment of a European e-infrastructure geared towards long-term preservation and exploitation of scientific data produced on board the ISS.

Together with experts from research and industry and representatives of the Space Agencies involved in the ISS program the project is elaborating on the status of technologies, as well as policies and regulations involved in the exchange of data in the scope of scientific exploitation of ISS.

Experiments performed in space (not only on ISS) have some peculiar aspects like a large number of involved scientific domains, long preparation time (typically several years) and are usually very expensive. Successfully performed experiments cannot be easily repeated for improvement of statistics or different test conditions therefore it is imperative that the maximum use has to be made of the data that is available as it contains a very relevant scientific value.

This paper identifies benefits of an e-infrastructure, geared towards the exchange and long-term preservation of scientific data and its exploitation, including conserving the knowledge needed for interpretation of the data. Such an endeavor would not only help the scientists that already use the ISS for their ongoing research but also aid new scientists and researchers in non-space related projects in profiting from the investigations that were conducted on ISS.

The paper describes the challenges and the next steps that are necessary in establishing such an e-infrastructure, in terms of organizational and technological aspects, as well as policy matters on a multi-national level.