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Software tools and e-infrastructure services to support the long term preservation of earth science data - new functionality from the SCIDIP-ES project

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The ability to preserve earth science data for the long-term is a key requirement to support on-going research and collaboration within and between earth science disciplines. A number of critically important current research initiatives (e.g. understanding climate change or ensuring sustainability of natural resources) typically rely on the continuous availability of data collected over several decades in a form which can be easily accessed and used by scientists. In many earth science disciplines the capture of key observational data may be difficult or even impossible to repeat. For example, a specific geological exposure or subsurface borehole may be only temporarily available, and earth observation data derived from a particular satellite mission is often unique. Another key driver for long-term data preservation is that the grand challenges of the kind described above frequently involve cross-disciplinary research utilising raw and interpreted data from a number of related earth science disciplines. Adopting effective data preservation strategies supports this requirement for interoperability as well as ensuring long term usability of earth science data, and has the added potential for stimulating innovative earth science research.

The EU-funded SCIDIP-ES project seeks to address these challenges by developing a Europe-wide e-infrastructure for long-term data preservation by providing appropriate software tools and infrastructure services to enable and promote long-term preservation of earth science data. This poster will describe the current status of this e-infrastructure and outline the integration of the prototype SCIDIP-ES software components into the existing systems used by earth science archives and data providers. These prototypes utilise a system architecture which stores preservation information in a standardised OAIS-compliant way, and connects and adds value to existing earth science archives. A SCIDIP-ES test-bed has been implemented by the National Geoscience Data Centre (NGDC) and the British Atmospheric Data Centre (BADC) in the UK, which allows datasets to be more easily integrated and preserved for future use. Many of the data preservation requirements of these two key Natural Environment Research Council (NERC) data centres are common to other earth science data providers and are therefore more widely applicable. The capability for interoperability between datasets stored in different formats is a common requirement for the long-term preservation of data, and the way in which this is supported by the SCIDIP-ES tools and services will be explained.