Integrating ICS-D providers into EPOS Integrated Services: the case of Enlighten

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The European Plate Observing System (EPOS) aims to create a pan-European infrastructure for solid Earth science to support a safe and sustainable society (Horison2020 – InfraDev Programme – Project no. 676564). The main vision of EPOS is to address three basic challenges in Earth Science: (i) unravelling the Earth's deformational processes which are part of the Earth system evolution in time, (ii) understanding geo-hazards and their implications to society, and (iii) contributing to the safe and sustainable use of geo-resources. The EPOS-Norway project (RCN Infrastructure Programme – Project no. 245763) is the Norwegian implementation of EPOS and aims to monitor and understand the dynamic and complex Earth system by relying on new e-science opportunities and integrating diverse and advanced Research Infrastructures for solid Earth science. EPOS-N project has started in January 2016 with a national consortium consisting of six institutions, including the University of Bergen (Coordinator), NORSAR, National Mapping Authority, Geological Survey of Norway, Christian Michelsen Research and University of Oslo.

We present Enlighten-web, a web based visualization and analysis platform for multidisciplinary data. Enlighten is developed in part through the Norwegian project EPOS-N. In Enlighten, as a standalone application, data must be loaded manually, by providing links to the desired data-sources and services. In this presentation, we will detail how Enlighten conceptually can be started from a data-discovery session in the EPOS ICS with access to the workspace there. This will enable a workflow where a use can utilize the powerful meta-data database and discovery process through EPOS to build a "shopping cart"/workspace of data, and then bring these data into an interactive visualization and data-analysis session. Access to data, data analysis, data processing and data visualization can be varied based on the expertise level of the user. Where expert users can launch Enlighten through the Jupyter notebook web based programming interface for direct programmable access to data, a novice user would use the visualization framework where mouse interaction is sufficient.

The Enlighten-web is a typical virtual research environment (VRE) application and is also designed to be adopted as an ICS-D (distributed services that are provided outside the ICS – Integrated Core Services of EPOS e-infrastructure), and as such will be used as one of the cases of ICS-D integration with the central hub of the EPOS-ICS.