



Landscape of the EU-US Research Infrastructures and actors: Moving towards international interoperability of earth system data

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Research Infrastructures (RIs) are major long-term investments supporting innovative, bottom-up research activities. In the environmental research, they range from high atmosphere radars, to field observation networks and coordinated laboratory facilities. The Earth system is highly interactive and each part of the system interconnected across the spatial and disciplinary borders. However, due practical and historical reasons, the RIs are built from disciplinary points-of-view and separately in different parts of the world, with differing standards, policies, methods and research cultures. This heterogeneity provides necessary diversity to study the complex Earth system, but makes cross-disciplinary and/or global interoperability a challenge.

Global actions towards better interoperability are surfacing, especially with EU and US. For example, recent mandates within the US government prioritize open data for federal agencies and federally funded science, and encourage collaboration among agencies to reduce duplication of efforts and increase efficient use of resources. There are several existing initiatives working toward these goals (e.g., COOPEUS, EarthCube, RDA, ICSU-WDS, DataOne, ESIP, USGEO, GEO). However, there is no cohesive framework to coordinate efforts among these, and other, entities.

COOPEUS and EarthCube have now begun to map the landscape of interoperability efforts across earth science domains. The COOPEUS mapping effort describes the EU and US landscape of environmental research infrastructures to accomplish the following: identify gaps in services (data provision) necessary to address societal priorities; provide guidance for development of future research infrastructures; and identify opportunities for Research Infrastructures (RIs) to collaborate on issues of common interest. EarthCube mapping effort identifies opportunities to engage a broader community by identifying scientific domain organizations and entities.

We present the current situation of the landscape analysis to create a sustainable effort towards removing barriers to interoperability on a global scale.