Building New Capabilities for Integrating Data on Earth, Space and Environment - Location Index Project

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In 2018, the Location Index (LOC-I) project was initiated as part of the Data Integration Partnership for Australia (DIPA) program to bring together a number of government agencies aiming to build a framework that:

- supports critical government decision making;
- contributes significantly to economic, social and environmental sustainability by linking foundation spatial data with observational data
- provides a consistent way for seamless integration of data on people, business, and the environment.

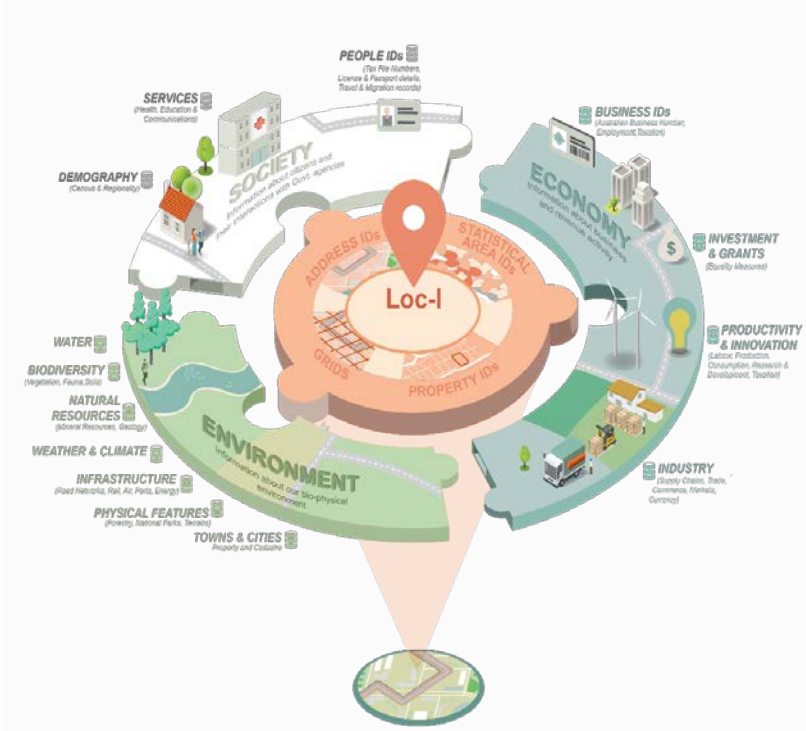

Figure1: Location Index Project - Data Integration through location

This GIS without GIS framework brings together modern technological approaches of Linked Data and Discrete Global Grid Systems (DGGS). The project also addresses important aspects of Social Architecture to ensure relevance, transparency, openness and accessibility of multidisciplinary data for the Australian Government and non-government users.

Through disseminating new capabilities across Commonwealth agencies, Loc-I objective is to provide users with:

- stable, persistent and repeatable access to the data
- increased interoperability with other datasets
- enhanced information sharing and a greater number of users and re-uses of the data
- reduced complexity in using of the data
- standardised governance of data and information and transparency in data management
- improved efficiency by reduced cost and time in collection, management and delivery
- governed and managed federated supply chains

Using this approach, the Loc-I program aims to open a substantial opportunity to all stakeholders by providing a richer set of information to deliver better citizen-centric services, more efficient programs and improved policy advice.

The Loc-I is extending collaboration by introducing new use cases. For example, new case studies were developed to integrate satellite raster data (big data) with vector attribute data (little data) using Digital Earth Australia, Surface Hydrology and Cadastre datasets. Example below illustrates application of DGGS to test assigning calibration/content information from the hydrology waterbodies to raster data of Water Observations from Space (WofS). The approach has proven that this method could significantly reduce development time (days, not months), assist with integration of different types of data (vector and raster) and remove a need for building complex GIS schemas.

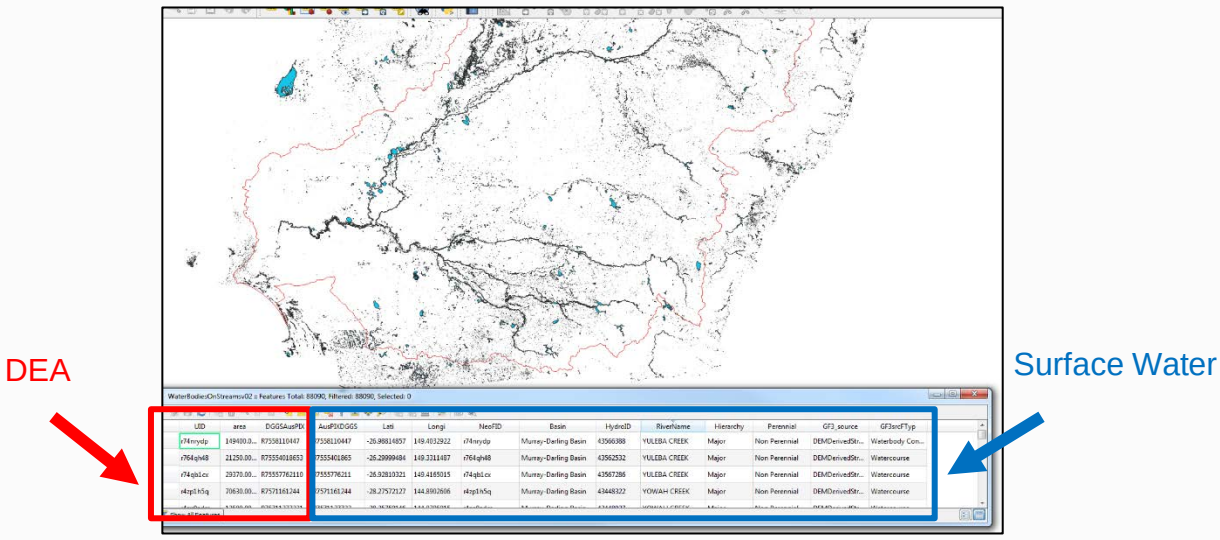

Figure2: Assigning names to waterbodies on streams to WOfS.