



TRACKING AUSTRALIA FROM SPACE

The Australian Geoscience Data Cube (AGDC) is a novel collaborative approach from Geoscience Australia, CSIRO and NCI for storing, organising and analysing the vast volumes of satellite earth observation and other geospatial datasets at the continental scale.

The AGDC, building on 35 years of Landsat earth observation and evolving into a sophisticated system for managing and analysing varied earth observation datasets, allows researchers to visually track changes in the Australian landscape – including bushfire, flood paths and land clearance– yielding valuable insights for agriculture, environment and resource management, and a variety of information products of value to industry. NCI's integrated, high-performance computing and storage platform, and its expert data services team, provides the high-performance infrastructure and the capability needed to process and analyse petabyte-scale datasets, bringing analysis time from months down to hours for the award-winning Water Observations from Space—thereby making the previously impossible or infeasible task of continental scale analysis now achievable.

Before the creation of the Data Cube, satellite imagery and other geospatial datasets were downloaded, analysed and provided to users on a custom basis—a lengthy, high-cost approach that could only be used for a single purpose each time. The AGDC gives Australia a world-leading edge in the management of environmental data, and is the first time anywhere in the world that an entire continent's geographical and geoscientific attributes have been made available to researchers and policy makers—an achievement recognised by the AGDC winning the Content Platform of the Year at the 2016 Geospatial World Leadership Awards.

This Australian technology has opened up international partnerships through the international Committee on Earth Observation Satellites, with development now taking place on the international stage. Through these collaborations, the AGDC has been adapted for use in countries such as Cameroon, Columbia, and Kenya, well beyond its original Australian application by agencies such as the Murray-Darling Basin Authority.

IMPACTED GOVERNMENT PORTFOLIOS:

Industry, Innovation and Science
Environment and Energy
Agriculture and Water Resources