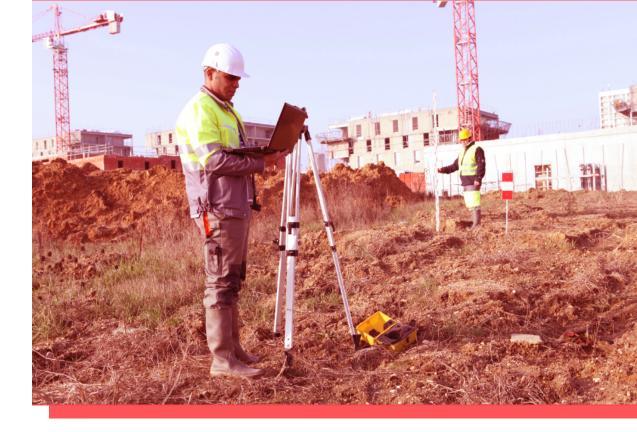# surround

# USE CASE

Digital Atlas of Australia and Data
Queries using Linked Data, Geospatial
Solutions and Knowledge Graphs

# DIGITAL ATLAS OF AUSTRALIA AND DATA QUERIES USING LINKED DATA, GEOSPATIAL SOLUTIONS AND KNOWLEDGE GRAPHS.

Client Success Story: Geoscience Australia

Geoscience Australia (GA) apply science and technology to describe and understand the Earth, including for example, soils and climate change, and to connect this to data on social and environmental issues.

GA wanted to improve how data sets were managed and queried to enable Australians to find the information they needed about people, infrastructure, and the impacts of flooding.

GA needed a method to integrate and query different spatial and social data to enable effective decision in policy making. This required an approach to simultaneously cover multiple diverse use cases such as social, environmental, and economic issues, and must be transparent, verifiable, and trusted.

**APPLICATION EXAMPLE:** FIND POPULATION DATA IN A GEOGRAPHIC AREA, THAT WAS EFFECTED BY FLOOD, AND WHERE THE FLOOD ALSO IMPACTED ON SERVICES SUCH AS POWER AND TELECOMMUNICATIONS.

## CRITICAL REQUIREMENTS

Geoscience Australia's priorities included:

- The solution required joining and querying both spatial, and non-spatial data e.g. population, economic and infrastructure impacts in a flooded area

- To enable data discovery and queries without the need for speciality GIS software

- Address inconsistent representation of data from local, regional, national, and globally diverse sources and providers

- Overcoming existing approaches to managing metadata that had significant limitations

- Enabling rapid data integration and analysis for improved ability to predict and plan for response and recovery to minimize the impact of events

## HOW SURROUND HELPED

- SURROUND designed and implemented a process to join spatial and non-spatial information into a knowledge graph

- SURROUND developed data conversion and standardisation workflows to join different data

- Demonstrated that as more data is made machine readable and interoperable, more insights can be formed through the application of Linked data to enable development of deeper and more astute decision making.

- This provided GA with the confidence to plan a solution that would work at a National level.

## SOLUTION DELIVERED

SURROUND developed live websites, tools and a mapping system to discover data, and the ability to query combined data sets, without having to rely on proprietary GIS software

SURROUND built a data conversion and integration pipeline to join different datasets and to ensure high quality information. Metadata is published ensuring transparency and trust

SURROUND implemented technology that allows data to be easily interrelated, integrated, and interlinked through persistent uniform resource identifiers or URLs assigned to each data item.

Use cases were developed to efficiently discover and analyze millions of data items and other data items related to them faster and easier than conventional GIS software, and generate powerful insights to support decision making.

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