Platforms EOI: Australian Transport Research Cloud

Project title
Australian Transport Research Cloud

Field of Research code(s)
- 08 INFORMATION AND COMPUTING SCIENCES
- 09 ENGINEERING
- 12 BUILT ENVIRONMENT AND DESIGN
- 16 STUDIES IN HUMAN SOCIETY

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Collaborator details

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Project description
The aim of this project is to extend the existing AURIN platform to support the needs of the transport research community across Australia. The proposed platform will provide transport researchers with streamlined access to the key datasets and open source tools necessary to: address complex transport challenges using advanced analysis and modelling; and deliver the requisite knowledge base to inform smarter transport planning and policy making. It will provide access to a range of clean, curated high quality, FAIR datasets including: ABS Census and Journey to Work datasets, Household Travel Surveys, National Road network datasets (eg PSMA Transport and...
Topography); real time traffic and public transport data (GTFS feeds); public transport timetable data; and de-
identified smart travel card datasets. The project will also provide access to open source, sustainable transport
network analysis tools (e.g., Open Trip Planner (OTP), Urban Network Analysis Tools), transport accessibility tools
(Open Source Accessibility Tool (OSAT)) and transport network modelling tools (e.g. DynaMel) that have been
developed by the transport research community.

### Existing technology

#### Adopt

The project will adopt and extend the existing AURIN platform to provide a Portal to the datasets and tools that
transport researchers need to analyse and model (private and public) transport supply, demand and accessibility. It
will adopt FAIR principles as well as:

- Open APIs to enable integrated access to transport-related datasets across Australia;
- International data and metadata standards (e.g. CEN SIRI, GTFS);
- Existing open source analysis and modelling tools (e.g. GTFSpy, Open Trip Planner, Urban Network Analysis
  Toolbox, Open Source Accessibility Tool, DynaMel).

#### Adapt

The project will adapt:

- The existing AURIN Portal, to provide a Transport-specific version to support the Australian transport research
  community;
- Harmonization methods to map disparate transport datasets, surveys and metadata to common international
  standards;
- Open source, sustainable transport network analysis and modelling tools, so they are accessible as cloud
  services;
- Visualization and mapping services within AURIN to support real time data and predictive modelling outputs;
- Jupyter Notebooks to support the capture and re-use of workflows.

#### Build

The project will primarily build interfaces between existing datasets and services. Where necessary, it will build:

- Open APIs to high value transport-related open datasets hosted on State Govt, local govt and other agency open
data portals;
- Services to clean, curate, map and process existing data and metadata so it conforms with specified standards;
- Wrappers around existing analysis and modelling tools to enable them to be programmatically accessed as cloud
  services.

### Anticipated requirements

#### Annual funding

$600,000 - $699,000

#### Proposed length

3 years

### Other information

#### Other information you wish to provide

**LINKS TO RELATED MATERIAL**

Australian Transport Open Data Sources

General Transit Feed Specification (GTFS) [https://gtfs.org](https://gtfs.org)

TransitFeeds [https://transitfeeds.com/](https://transitfeeds.com/)


### Terms

I agree to the terms
Yes