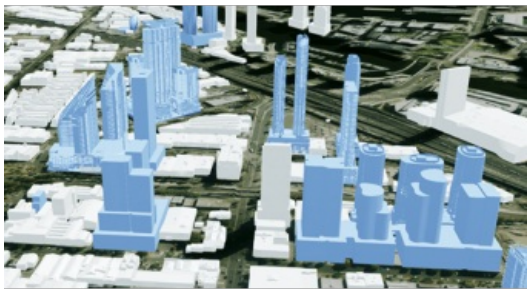
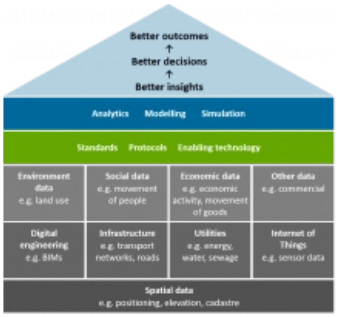
Australia Develops Principles for Spatially Enabled Digital Twins





Foundation spatial (or location) data is essential for effective decision-making across the built and natural environment. Increasingly there is a need to integrate this data with other information such as digital engineering models, Internet of Things (IoT) sensor data and environmental data to provide more holistic insights. In Australia, a nationally consistent approach to spatially enabled digital twins has been developed.

In recent years, digital twins – being highly advanced digital representations of the real world – have emerged as a powerful tool to better harness and integrate data to understand our physical environment. The value of digital twins increases substantially when combined with underpinning spatial data, which positions digital twins relative to each other to reflect the real world.

Spatially enabled digital twins can provide valuable location-based insights, helping users to understand place-based policy and planning issues, test potential interventions, and deliver more sustainable planning and development.

To help drive a nationally consistent approach to spatially enabled digital twins, ANZLIC – The Spatial Information Council – has collaborated across governments, industry and the research sector to develop the Principles for Spatially Enabled Digital Twins of the Built and Natural Environment in Australia.

Spatially enabled digital twins integrate multiple data types and sources to enable advanced analytics for improved insight.

Principles, benefits and use cases

The principles draw on the UK's Centre for Digital Built Britain's (CDBB) Gemini Principles published in 2018, and describe high-level principles, benefits and use cases for spatially enabled digital twins in the Australian context. The principles also outline the vision of a federated ecosystem of securely shared digital twins and their value for the Australian economy.

To develop the principles, ANZLIC collaborated with CSIRO's Data61 and the Smart Cities Council Australia and New Zealand (SCCANZ), and consulted with leaders across Australia and New Zealand representing the geospatial and space industry, surveying and land information, smart cities, planning, architecture, engineering, construction, infrastructure, transport, indigenous, environment, data and digital transformation, local government, government service, and research. The outputs of ANZLIC's consultation with key stakeholders are available here.

Alongside these principles, SCCANZ plan to release a 'Digital Twin Guidance Note', which will provide guidance for digital twin developers and operators across Australia and New Zealand.

A collaborative approach across governments, industry, the research sector and the community will help realize the full benefits and best possible outcomes of a digital twin ecosystem in Australia.