

sense-t capability statement

smart. data. innovation.



We enable innovative data solutions to improve our world by developing new data, new knowledge and new products.

Sense-T integrates and applies rich data in real-time sensing to develop real insights and industry solutions via advanced data analytics and visualisation tools.

Sense-T is creating the world's first economy-wide IoT (Internet of Things) system across Tasmania, initially developed in partnership with the Australian and Tasmanian Governments and CSIRO. We develop multidisciplinary and collaborative approaches to data applications in industries such as agribusiness, health, tourism, forestry, transport and logistics. Our work with University of Tasmania researchers, CSIRO, government agencies and industries means the customised projects deliver real solutions to demand-driven problems – with economic, environmental and social benefits.

One of the tools we have developed to meet the needs of an economy-wide IoT system is the Sense-T Data Platform. The Data Platform enables sensor data consumers to discover, analyse and form predictions from data across diverse sources. We save time and resources collecting and distributing data by using a common underlying information model. This unique data hub offers tailored functionalities which service both leading-edge R&D and the provision of commercially-oriented products. This major innovation increases capability to develop real-time IoT-based decision-making systems through the re-use of data, spatio-temporal sensor data services, background analytics, machine learning and end-user decision support dashboards and visualisations. This statement outlines the skills and capabilities within Sense-T which have been successfully applied to industry-focused projects.

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sense-t.org.au [/sensingtasmania](https://twitter.com/sensingtasmania)

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Electronic and Mechanical Engineering

Sense-T has the expertise to design, build, test and deploy systems and sensors, in research, production and commercial environments via:

- data acquisition
- sensor development
- embedded software development
- sensor deployment
- hardware design
- networking and communications
- Internet of Things (IoT)
- developing hardware prototypes
- short production runs using our Advanced Sensor Manufacturing Facility (ASMF)
- embedded systems engineers
- 3D CAD design and rendering

Sensor Telemetry and Data Collection

Design, selection and deployment of telemetry solutions to transfer sensing data to an application

- LTE (3G/4G mobile)
- satellite
- LoRa
- Wi-Fi
- Sigfox
- near range device to device
- mesh networking

Applications and Dashboards

Software engineering expertise to create prototype systems ready for production deployment:

- requirements gathering
- project scoping
- project management
- product management
- quality assurance processes
- database design and operations
- application/web development
- system integration

Transforming data into knowledge

Data analysis and visualisation experience to transform data into knowledge:

- Sense-T Data Platform
- data ETL (Extract, Transform, Load),
- exploratory data analysis
- Geographic Information Systems (GIS)
- interactive data visualisation: productivity tools and industry dashboards
- image recognition
- 3D augmented reality
- predictive analysis
- machine learning and optimisation
- data mining, algorithm/mathematical development
- advanced decision analytics
- modelling and simulation
- signal, image and video processing
- cold chain logistics
- open data from third parties and historical data
- data integration
- confidentiality and privacy controls
- process modelling and mapping

End-to-end Data Value Chain

Full end-to-end data value chain including business development and project management and delivery:

- grant writing, impact assessment and reporting
- problem analysis and definition
- connect multidisciplinary research teams
- resources identification
- data specification
- commercialisation
- data marketing
- marketing and communications
- industry analytics and experts
- leverage translation of scientific research for industry impact
- applied and industry focus

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