



# Rapido

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**Bridging the gap between  
academia and industry**

**An R&D innovation hub delivering  
engineering and technology solutions  
for industry and social impact**



# Welcome to UTS Rapido

## R&D Innovation Hub

### Partnering for impact

UTS Rapido is an R&D and technology innovation hub that partners with industry, government and academia to solve complex, real-world challenges. We turn ideas into market-ready solutions through advanced engineering and digital innovation.

Our R&D commercialisation model combines a dedicated team of software, UX and mechatronics experts with deep academic expertise and access to cutting-edge university facilities.

Our industry-aligned approach helps partners:

- Access the UTS innovation ecosystem and facilities
- Translate research into real-world, commercially viable solutions
- Collaborate with one of Australia's leading universities
- Secure funding and navigate grant opportunities
- Leverage expertise in software, UX, mechatronics and additive manufacturing
- Work with a delivery-focused team that understands commercial outcomes

## About UTS

The University of Technology Sydney (UTS) is the #1 young university in Australia, ranked for excellence in teaching, research impact, industry engagement and international outlook.

With over 50,000 students, UTS ranks in the world's top 100 universities, recognised for its academic excellence, strong research performance and industry impact. Our campus is in Sydney's vibrant education and innovation hub, where creative energy and cross-disciplinary collaboration with leading researchers thrive.



**Hervé Harvard**

Founder and Executive Director, UTS Rapido



Our partners have secured over \$5M in industry-led grants to advance their R&D. We help bring ideas to life and support access to funding because commercial innovation is central to our mission.

# Bridging research and real-world solutions

UTS Rapido connects industry and research to solve complex challenges. Our team of engineers, R&D specialists and project managers work alongside world-class academics and leverage cutting-edge UTS facilities to deliver outcomes for industry, government and social impact partners.

## Access to the UTS innovation ecosystem

We are part of the UTS innovation ecosystem and lead every project with our own engineering and digital expertise, drawing on UTS specialists, facilities and labs as needed.

## Multidisciplinary engineering & digital expertise

Our team combines expertise in software, UX, mechatronics and additive manufacturing with commercial know-how and project management to deliver practical, robust innovation.

## Creating impact for industry

We help start-ups, SMEs and larger businesses turn ideas into advanced products and services. Our commercially-focused approach reduces risk and accelerates delivery.

## Rapido Social Impact – Engineering for Good

We work with not-for-profits and community organisations on a low-bono, discounted basis to co-design engineering and technology solutions that deliver meaningful social outcomes.



*Our collaboration with UTS focuses on digital innovation, research translation, and workforce development. We leverage complex algorithms and digital twins to advance the industry.*



Jenaro Sanchez, Chief Technology Officer, Navantia Australia

Access  
the UTS  
innovation  
ecosystem



ProtoSpace



RF & Communication  
Technologies Lab



Robotics Institute



Data Arena



Environmental  
Research Facilities



Tech Lab Antenna  
Chamber & Industry 4.0



Super Lab



Australian AI  
Institute





UTS Rapido Leadership Team

## Impact focused – solution driven

Founded in 2016 within the Faculty of Engineering and IT, UTS Rapido delivers practical innovation that creates measurable impact.

We collaborate with industry, government, and research teams to develop targeted, technology-led solutions.

Our engineering and IT capabilities help partners turn ideas into market-ready products and services.

## Core R&D capabilities: Engineering & IT

### Software Engineering

We apply analytical thinking, engineering principles, methods, tools and the latest AI software development expertise to the design, development and maintenance of bespoke software solutions.

### Mechatronics and Additive Manufacturing

We design, test and build intelligent systems that solve technical challenges through mechanical and mechatronic engineering, supported by in-house additive manufacturing expertise.

### UX and Digital Design

We create value generating digital solutions by identifying the needs of your business, its market, and the end-users, and by designing, developing and deploying innovative solutions in software and hardware.

### Research Translation

We provide the engineering and digital capability to turn research into practical, scalable solutions and move beyond discovery into development, deployment and impact.



Oscar Sanchez,  
Harris Community  
Centre Coordinator



*Without UTS Rapido, it would have taken us at least a couple of years to arrive at the CHEx digital currency solution they have created with us.*



# Partners in innovation

Industry partners

ADVANCED NAVIGATION

BIOMED TECHNOLOGY AUSTRALIA

CELESTINO

cercle.

Downer

ERICSSON

FIELDORTHOPAEDICS

FORCITE HELMET SYSTEMS

GEOIRON

INFORMED 365

KOTZUR

Mineral Technologies

Navantia Australia

NAVBIT

NOKIA

NTT

ORION

Pestrac

PolySpine

rotacaster

SPEED3D

stryker

Tec.Fit

THALES

Transgrid

WATERCO

WGR

ZURICH

Public organisations and government

NSW Health

NSW Revenue

NSW Transport for NSW

LOCAL GOVERNMENT NSW

Transport Sydney Trains

Funding organisations

NSW

AMGC

Cooperative Research Australia

digital health crc

imcrc

ADDITIVE MANUFACTURING AUSTRALIA MAKES

CRC

RAIL MANUFACTURING

Rapido Social Impact

DARTA

FIELD READY

Gender Legislative Index

ALS

ANTI-SLAVERY AUSTRALIA

SEASIDE PROJECT

South West AMS

Suicide Prevention Australia

Northcott Innovation

Street Kind

the children's hospital at Westmead

#thismymob

Starlight Children's Foundation

STAY KIND

Uniting

WasteFree

W

## Industries we're working with:

- AgTech
- Biomedical and Health
- Civil Engineering
- Defence
- Manufacturing
- Mining
- Public Sector
- Retail, Consumer and Fashion
- Technology
- Transport

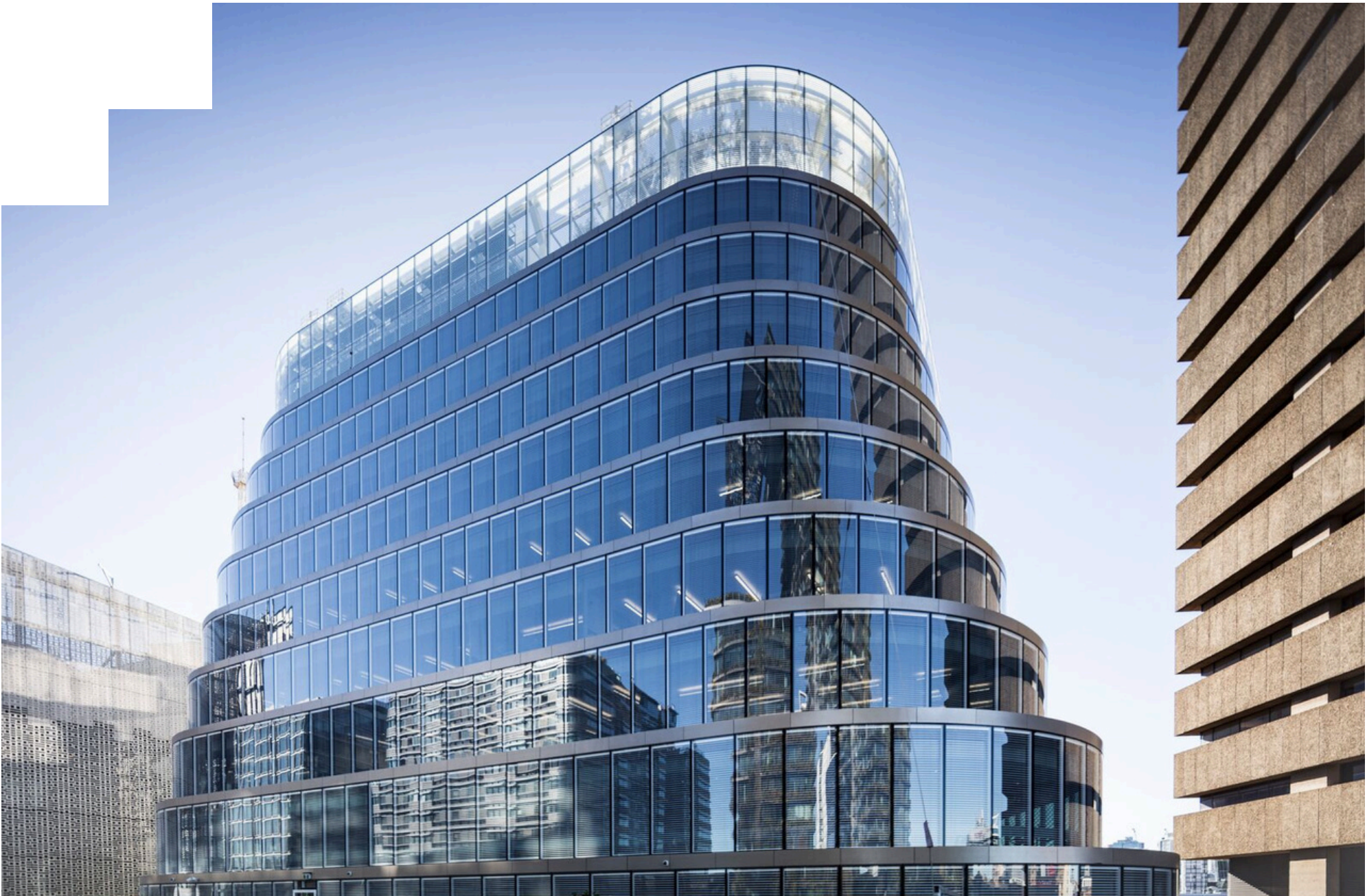
## Who we partner with:

- Global companies
- Small and medium enterprises
- Start-ups
- Not-for-profits and for-purpose organisations
- Government bodies and agencies
- Academic teams
- Individual researchers

## Access grant funding opportunities

We understand the financial challenges that come with innovation. That's why we support our partners in securing Australian Government grants, including:

- Industry Growth Program (IGP)
- Advanced Manufacturing Growth Centre (AMGC)
- Cooperative Research Centres (CRC and CRC-P)
- Other state and federal funding programs





# Case studies



## Mineral Technologies



Tasked with disrupting the mining industry by 3D printing on-site gravity spiral separators (GSS). UTS Rapido replaced traditional manufacturing of the separators with Industry 4.0 production through the development of a large scale bespoke 3D printer. As part of the project, we embedded IoT sensors to enable remote monitoring and automation of GSS. The increased design flexibility can reduce labour and time cost; improving health and decreasing environmental impact during production.



## Informed 365

## INFORMED 365

This collaboration, aimed at enhancing compliance with the Modern Slavery Act, involved a comprehensive UX research initiative. It assessed the current state of the Informed 365 tool from the perspective of its end-users. By conducting interviews, usability sessions, and analysing feedback, the team engaged with customers and customer experience staff to pinpoint key areas for improvement. The project not only refined workflow and design but also promises a weekly saving of up to 60 support staff hours by streamlining processes, setting a positive direction for future R&D initiatives.



## Energy Industry Partner

A detailed circuit and mechanical design project that aims to convert existing grid infrastructure into a source of clean, reliable power—particularly for hard-to-reach locations where diesel generators or solar panels are currently the norm. This R&D project includes a feasibility study on wirelessly harvesting energy from high-voltage powerlines. The project brings together a multidisciplinary team of engineers, researchers, and industry experts. Field trials will be conducted at Charles Sturt University’s AgriPark, ensuring the technology is tested in real-world rural and regional conditions.



## Zurich



A data-driven software project to help understand customers and enhance proactive health services. The team used AI to build advanced predictive data models and machine learning to identify potential uncollected data that can be overlaid to support decision-making and inform proactive health strategies. This project offers Zurich the opportunity to quickly and reliably assess health risks and offer pre-emptive wellbeing strategies. This project aims to harness data to optimise the health of Zurich's customer base and revolutionise health services in the insurance industry.





### Stryker



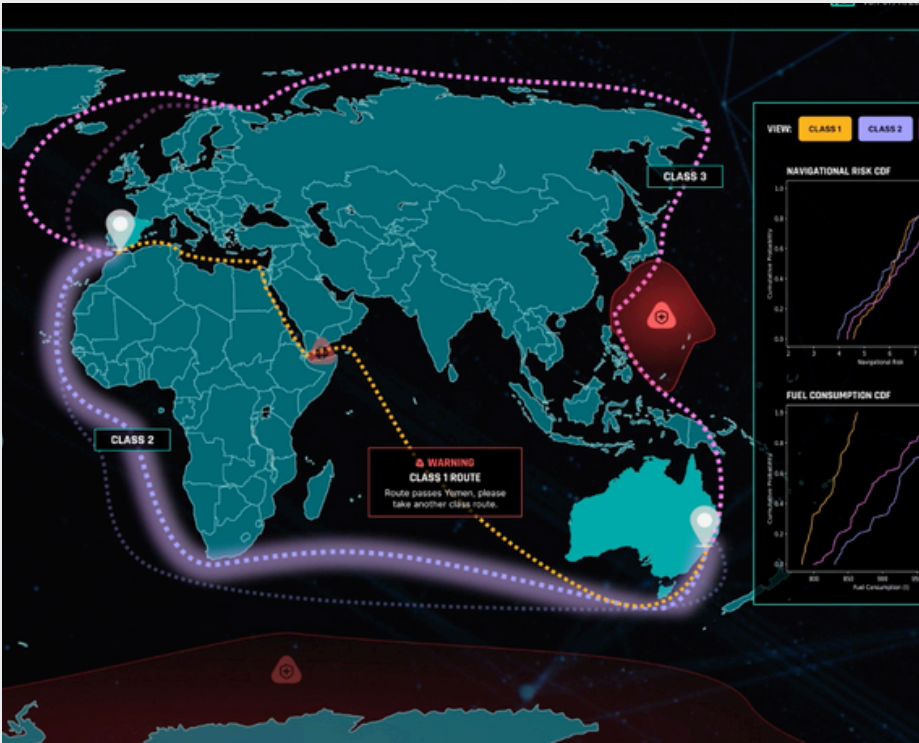
A digital platform to streamline the design of patient-specific surgical solutions using 3D printing. This new platform provides for virtual surgical planning, enabling users to easily design surgical models, implants, and bone cutting guides for 3D printing. This reduces the burden on highly specialised overseas design personnel, lowers production lead times, and accelerates access to treatment for patients. We utilised our expertise in 3D geometry processing to create precise 3D computer models using a combination of applied mathematics, computer science and engineering.



### StreetKind



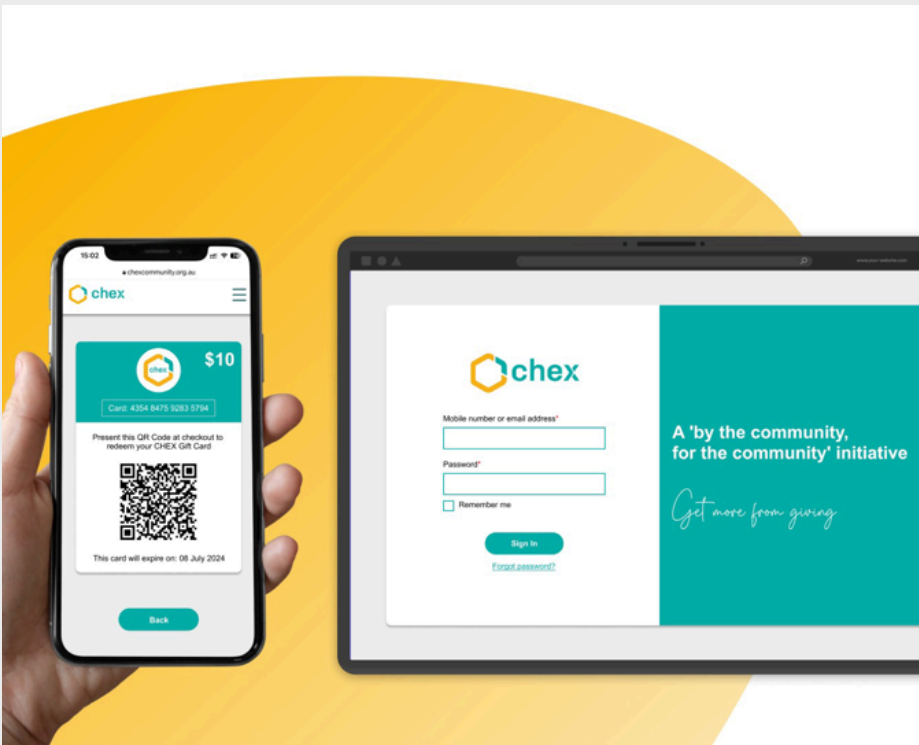
StreetKind needed a comprehensive system to collect and analyse specific harm prevention data, to demonstrate the effectiveness of their street safety initiative. The StreetKind app replaces paper-based reporting and workflows with a digital, cloud-enhanced solution, creating significant efficiencies in the harm prevention space. The app allows central collection, easier search-ability and reporting of specific harm prevention data sets, including by date range, demographics, and/or specific elements of harm prevention. The dashboard provides instant impact statements that inform and inspire the team and are available to the public. Stakeholder reporting is now centralised and in real-time.



### Navantia Australia



Rapido has collaborated closely with Navantia Australia since mid-2020 to deliver R&D projects, with ongoing collaborations around digital twin, ship routing, training gamification, situational awareness systems, and anomaly detection using deep learning models. Our software and UX teams are at the forefront of our collaboration, with the aim of developing sovereign digital technologies for the maritime industry. This partnership led to a bigger collaboration between UTS and Navantia Australia, culminating in the joint institute: Marintec - the Maritime Institute of Technology.



### CHEX Digital Currency



CHEX is a pioneering digital community currency aimed at providing emergency relief support and providing local circular economic activity. The central innovation includes the creation of an intuitive web application, hosted on Amazon Web Services (AWS), that allows for the immediate issuance, management, and real-time tracking of digital cards. This innovation is expected to save over 400 volunteer hours annually and approximately \$27k in reduced production costs and staff management. With plans to expand to 30 businesses within the first six months and scalable growth into new areas, it aims to strengthen the economic resilience of the community.



# Our capabilities

## UX and Digital Solutions

Our UX team brings together strategic design, engineering and behavioural insight to create solutions that are practical, scalable and grounded in real-world user needs.

We work closely with industry partners to understand the context of their products, services and their technology requirements, including business goals. Using market-led research and collaborative design methodologies, we develop products and services that deliver measurable value, reduce risk and ensure support adoption from day one.

We are product designers who support industry across the entire UX lifecycle of your products or operational processes, from discovery through to prototyping, usability evaluation and full stack product delivery.

### UX services include:

- Complete product design and lifecycle management
- Customer and workforce engagement need surveys
- Innovation workshops and strategic facilitation
- Sentiment and behavioural analysis
- Business and industrial ethnography
- User interface visual and functional interaction design
- Technology usability evaluation and in-field testing



### How UX adds business value

UTS Rapido helps you unlock the full value of innovation by:

- Strengthening your capability with our specialist UX and product design expertise
- Replacing assumption-based decisions with user-validated evidence
- Reduce risk product development and R&D investment
- Identifying and designing products, services and features your market will value
- Enhancing existing platforms to build stronger customer engagement

## Software Engineering

Our software engineering team designs, builds and maintains advanced, cost-effective systems using proven engineering methods and cutting-edge research.

Many of our solutions incorporate AI, machine learning and data-driven intelligence to support intelligent automation and predictive decision-making.

We specialise in delivering business-critical systems that are fit for purpose, user-focused and aligned with operational and commercial needs, whether large or small. Our work spans defence, energy, retail, finance, government, transport and social impact sectors.



### Software services include:

- Developing custom algorithms tailored to handle both structured and unstructured data, aligned with your unique business logic
- Delivering end-to-end web, mobile, and cloud platform development with robust architecture
- Applying AI, machine learning, and computer vision to automate processes and generate actionable insights
- Utilising advanced 3D geometry processing and complex algorithms for modelling, simulation, and advanced applications
- Leveraging game engines, gamification, and interactive design for simulation, training, and visualisation
- Building software that meets regulatory requirements, ensures usability, and integrates into existing environments
- Creating production-ready, scalable, and maintainable systems supported by documentation and knowledge transfer

### What you can expect

- AI-enabled solutions to support smarter business outcomes
- Fully developed, deployment-ready web and mobile applications.
- Seamless integration of cutting-edge technologies to solve real-world challenges
- Platforms designed for smooth interoperability with your existing systems and workflows
- Commercial-grade software delivered with comprehensive documentation and effective team handover for ongoing support
- Scalable, future-proof solutions that evolve alongside your business needs and growth



# Mechatronics

Our engineering team brings together expertise across mechanical, mechatronics, electronics, embedded software, control systems and additive manufacturing.

We design and deliver intelligent systems and precision-engineered products that address both every-day and complex challenges. Our portfolio includes autonomous and semi-autonomous robots, large-format 3D printers, satellite communication systems, biomedical devices, material handling systems, medical implants, IoT tracking solutions and scientific test equipment.

We apply professional engineering methods across the full development lifecycle, from concept development and system design through to fabrication, functional prototyping, testing and design for manufacture.

Our team uses laboratory and field testing to validate prototypes, assess client products and answer targeted research questions. We collaborate closely with subject matter experts and UTS researchers in robotics, Industry 4.0, power and RF electronics, mechanical systems, and ICT to ensure robust, commercially relevant outcomes.



## Mechatronics services include:

### Additive manufacturing and 3D printing

- Bespoke 3D printing for functional prototypes and end-use parts
- Advanced 3D printing and scanning technologies to manage the full additive manufacturing lifecycle
- Custom 3D printer development for novel applications

### Prototyping and product development

- Solution landscape studies to assess technical options
- Concept development and proof-of-concept design
- Detailed engineering design and fabrication
- Prototype assembly, testing and refinement
- Design for manufacture and assembly (DFMA)

### Testing and evaluation

- Product testing for quality, performance and standards compliance
- Product characterisation and functional evaluation
- Laboratory and field-based validation methods

### Research translation and collaboration

- Translation of research outcomes into deployable solutions
- Mechatronic design and fabrication to augment academic research teams
- Joint development with UTS research labs across robotics, Industry 4.0, biomedical engineering and more

*We went to Rapido because we have limited resources and limited access to testing equipment and the high-level research we needed.*

Peter McKinnon  
Managing Director, OMNIA

# Translating research into commercial impact

We bridge the gap between research and real-world application. We work with industry and research teams to turn validated ideas into working solutions. Our focus is on advancing innovations from proof of concept to pilot-ready or market-ready outcomes.

## What we do:

- Rapidly scope and prototype functional systems
- Build scalable software, hardware and integrated digital tools
- Engineer solutions that meet operational, user, and compliance requirements
- Provide a multidisciplinary team and delivery model aligned to industry timelines
- Identify the needs of your business, its market, and the end-users, and design, develop and deploy innovative solutions in software and hardware

We specialise in the mid to high Technology Readiness Levels (TRLs), where many promising innovations stall due to engineering complexity, resource limitations, or regulatory hurdles.

### Early stages:

- TRL 1–3: Research and theoretical work, often lab-based

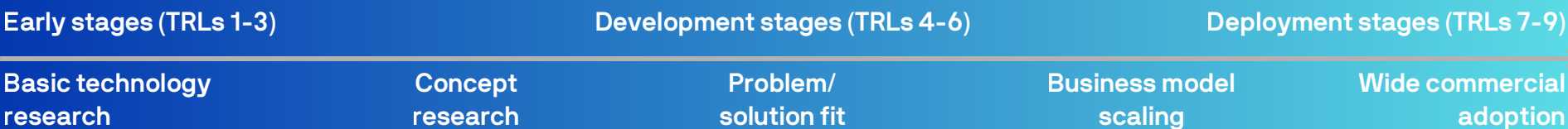
### Development stages:

- TRL 4–6: Proof of concept and prototype development in simulated or real environments

### Deployment stages:

- TRL 7–9: Demonstration, validation and full-scale implementation in operational settings

## Technology readiness level (TRL) scale





# Industry focus

Whether you're a start-up, SME, large corporation or not-for-profit, UTS Rapido helps turn ideas into real-world outcomes. We provide access to leading engineering and digital expertise, supported by cutting-edge facilities and a deep understanding of commercial and social impact needs.

## Broad sector expertise

Our work spans agriculture, healthcare, infrastructure, defence, manufacturing, mining, retail, technology, transport and education. We collaborate with organisations and government bodies of all sizes to deliver tailored innovation solutions.

## How we work with industry

- We deliver end-to-end innovation or provide targeted support to fill an expertise gap.
- We apply research insight to real-world problems with professional project delivery.
- We bring together expertise in software, UX, mechatronics and additive manufacturing.
- We work from within UTS, giving partners access to academic knowledge and facilities.

## Intellectual property

- Partners typically retain ownership of the Intellectual Property (IP) generated through the projects they fund. This supports clear commercial pathways and long-term value.

# Award winning impact

UTS Rapido has been recognised nationally for excellence in research, innovation and community impact across a wide range of sectors.

## 2025

- **Winner**, Australian Space Awards – Academic Research Team of the Year, LEO-SAT-CONNECT project, led by Distinguished Professor Karu Esselle
- **Finalist**, Consult Australia Awards for Excellence – Planning a Digital Future, Bowen Calculator Project

## 2024

- **Finalist**, Australian Space Awards – Academic Research Team of the Year, SBIR project, led by Distinguished Professor Karu Esselle
- **Finalist**, Indian Ocean Defence and Security (IODS) Innovation Award, Collaboration with Marintec and Navantia Australia – Ship Routing System

## 2023

- **Winner**, Consult Australia Awards for Excellence – Planning a Digital Future, Gmetrik platform
- **Winner**, Australian Not-for-Profit Technology Awards – Best Use of Technology for Community Impact, StreetKind project
- **Finalist**, UTS Vice-Chancellor’s Research Awards – Research Excellence through Collaboration, Gender Legislative Index, led by Professor Ramona Vijeyarasa
- **Distinguished Recognition for Innovation**, International Society of Service Innovation Professionals (ISSIP), SWAMSapp project

## Earlier recognition

- **2022, Finalist** – UTS Vice-Chancellor’s Research Awards Research Excellence through Collaboration – Confidential project, led by Distinguished Professor Karu Esselle
- **2021, Finalist** – IoT Awards, Manufacturing Category, IoT Alliance Australia
- **2021, Finalist** – Australian Not-for-Profit Technology Awards – Best Use of Technology for Community Impact
- **2019, Winner** – CRC Association Excellence in Innovation Award, DwellTrack project
- **2018, Winner** – UTS Vice-Chancellor’s Research Awards, Research Excellence through Collaboration – Responsive Passenger Information System



Hervé Harvard,  
Executive Director,  
UTS Rapido

Since 2016, we have worked with over 60 industry or social impact organisations, and 50 academic partners, leveraging technologies such as AI, machine learning, data science, digital UX solutions and additive manufacturing – often delivering multiple projects for each client.





# Recognised by the Australian NFP Technology Awards UTS Rapido Social Impact – Winner in 2023. Finalist



Raj Calisa, Principal Delivery Manager – presenting at the UTS Social Impact Showcase

## Rapido Social Impact – Engineering for good

At UTS Rapido, we believe technology should be accessible to those working to make a difference. We work with not-for-profits and socially conscious organisations to co-design affordable, technology-driven solutions that deliver lasting community impact.

### Affordable innovation for organisations creating positive change

Our team brings engineering and digital expertise, academic knowledge and access to advanced facilities. We help overcome common barriers such as limited budgets or lack of in-house technical capability. Since 2017, we've contributed time, skills and resources to help purposeful organisations turn ideas into practical outcomes.

### For-purpose partnerships

- AbilityMade
- Aboriginal Legal Service
- Anti-Slavery Australia
- Cercle
- DARTA
- EPIC Lab, Westmead Hospital
- Field Ready
- Gender Legislative Index
- Northcott Innovation
- PolySpine
- Respect. Now. Always.
- Seabin Foundation
- SW Aboriginal Medical Service
- Stay Kind
- Starlight Foundation
- StreetKind
- Suicide Prevention Australia
- #thismymob
- Uniting Harris Community Centre
- Waste Free Systems
- WV Technologies

### We help purposeful partners:

- Access affordable, engineering-led innovation
- Overcome budget or capability constraints
- Co-design solutions that meet real community needs
- Apply emerging technologies such as:
  - Digital UX and interface design
  - Artificial intelligence and machine learning
  - Data science and automation
  - Prototyping, mechatronics and 3D printing

Whether you're an NFP, a social enterprise or a for-purpose business, UTS Rapido can help you shape, build and deliver technology for good.



Natalie Zelinsky  
Founder Director  
StreetKind



UTS Rapido has set a benchmark for NFP technological support that now challenges other universities to come to the party.



# Multidisciplinary innovation hub with professional R&D engagement and project management



Impact focused  
R&D Engineering  
and IT innovation hub



Rapido Social Impact



Bridging the gap between  
academia and industry



Research translation



Software, mechatronics,  
UX & digital experts



Grant application support

“It's crucial for us to partner with leading tech experts to enhance the adoption and efficiency of tools designed to significantly diminish modern slavery. This collaboration with UTS Rapido is helping us deliver impactful solutions.”

– Nicholas Bernhardt, CEO, Informed 365

“The Rapido team integrated seamlessly into our business and into the role of a trusted advisor. We recommend any company looking for similar support to seek out a discussion with UTS and explore the opportunities the UTS Rapido team has to offer.”

– Bob Dixon, CEO, Water Gas Renew

“UTS Rapido has greatly assisted us with the logic of the coding and delivery of the project, which was a challenge we needed to address.”

– Peter Geoghegan, Managing Director  
Geotron

“UTS Rapido had the knowledge, passion, commitment, and will to try something previously untested in creating the GLI.”

– Professor Ramona Vijeyarasa  
Chief Investigator, Gender Legislative Index

“The work we're doing with UTS Rapido is a quantum shift in our industry and it will allow us to make smarter and more efficient investment decisions.”

– Philip Byrum, Director, Orion Consulting

“Working with Rapido was a seamless process. They were just so competent; they understood exactly what we needed to achieve.”

– Jasmine Sayour, Managing Director, PolySpine

CONTACT US

Ready to discuss a project, partnership or find out more  
about our R&D expertise, labs and facilities?  
Get in touch: [rapido@uts.edu.au](mailto:rapido@uts.edu.au) / [www.rapido.uts.edu.au](http://www.rapido.uts.edu.au)

