



# We'll stop at nothing to launch your space potential.

## UniSA is a pioneer in Australia's space industry.

Our world-class research and enterprising capabilities produce economic and societal advancements for the commercial space sector. We're also a core partner of the SmartSat Cooperative Research Centre and the national iLAUNCH program, and we run Australia's premier annual space accelerator program, Venture Catalyst Space.

## Our team has world-leading expertise in:

- **surveillance and space intelligence** – artificial intelligence, data analytics, cybersecurity, telecommunications, signal processing, sensor systems and photonics
- **psychology and human factors** – AR/VR and user interface, human-machine interactions, confined habitats study, cognitive neurosciences, humanities and social sciences
- **advanced manufacturing and monitoring** – nanofabrication, additive manufacturing, digital twinning, remote operations, autonomous systems and material testing
- **core infrastructure operation** – satellite ground station facilities, free space optical test range, structural testing lab, surface engineering equipment, plus much more
- **education** – Global Executive Master of Business Administration (Defence and Space) and the Southern Hemisphere Space Studies Program
- **entrepreneurship** – Venture Catalyst Space, a 12-month program supporting space startups from around the world.

## When you connect with us, you'll have access to:

- **Future Industries Institute (FII)** – FII houses more than \$80 million of specialised advanced manufacturing infrastructure, including a suite of world-class 3D printing, microfabrication, nanofabrication facilities, thin film coating facilities, cleanrooms and laboratories.
- **Industrial AI Research Centre (IAI)** – IAI combines artificial intelligence, machine learning, industry 4.0 and internet-of-things technologies to produce cutting-edge solutions, including digital twin systems, environmental modelling, data fusion and simulation technologies.
- **Australian Research Centre for Interactive and Virtual Environments (IVE)** – IVE specialises in immersive technologies to solve challenges for the space and defence industry like data visualisation of infrastructure, 3D holographic training environments to improve human performance, and wearable computers.

## UniSA in action – powering devices in space with clean energy

### UniSA's and entX Limited's partnership has:

- supported initial development of a unique battery prototype that remotely powers devices in space for decades
- led to integrated staff exchanges to upskill both entX and UniSA personnel on relevant manufacturing processes
- advanced product commercialisation for the space and defence industry.

entX develops and deploys innovative green-energy technologies that use waste or unconventional resources to generate value and with this philosophy, wanted to create a battery that could power devices, like satellites, for decades. Knowing they could combine radioisotopes with modern semiconductor technology to produce power, entX needed to create a system architecture that would be efficient, scalable and durable in the presence of radiation.

To create this battery, known as a betavoltaic device, they needed to produce a multilayered metal semiconductor. If successful, this structure would convert radioactive particle energy into electric power.

While entX possessed intellectual property on a suitable betavoltaic system, they needed help to develop the material combination and the methods to deposit these into an effective, active system.

entX connected with UniSA's research experts in thin film coatings, gaining access to the university's research facilities at Future Industries Institute. Together, entX and UniSA produced and evaluated numerous semiconductor polymer composite candidates, resulting in a proof-of-concept multilayer structure, named GenX. The teams also developed a scalable manufacturing process.

***"The ability for entX to seamlessly engage with UniSA to validate and consolidate this concept has been invaluable. With UniSA support, we've secured \$2.4M in funding from an Australian Government Cooperative Research Project Grant to advance GenX commercialisation towards prototype devices for the space and defence industries."***

entX

Dr Scott Edwards, General Manager  
Space and Defence, entX

# UniSA's Enterprise Hub

## World-leading technology and research expertise at your side

### Opportunities to innovate are open for government agencies and businesses who want to explore new frontiers in space.

The Enterprise Hub can connect you to experts in artificial intelligence and machine learning, engineering, telecommunications, advanced materials, human-machine interactions, photonics, data management, cognitive neuroscience and cybersecurity.

3,000 expert academics, 30+ world class research institutes, 37,000+ students and 2,500+ industry partners are all within your reach.

UniSA is also a leader in space education and space entrepreneurship, delivering programs to support learning in space science, policy, law, project management and business development. Our graduates are equipped with the latest knowledge on engineering, cyber security, systems engineering and data analytics.

We will help you solve problems, whether it's a knowledge gap that's holding you back, access to experts and the latest facilities, or discovering the right talent and support you need to grow.

Partner with us to uncover the ideas, solutions and connections that will make your business unstoppable.

To learn more, visit [unisa.edu.au/enterprisehub](http://unisa.edu.au/enterprisehub)

Through the Enterprise Hub you can:



#### Put unstoppable research teams to work

100% of our research is world-class or above. Imagine what could be possible if our team partnered with yours.



#### Build your best team

Bespoke training (from a three-hour webinar to a three-year degree), internships, co-located researchers, and access to talent for workforce planning. Our people are our strength, they can be yours too.



#### Push boundaries with access to state-of-the-art equipment, systems, and places

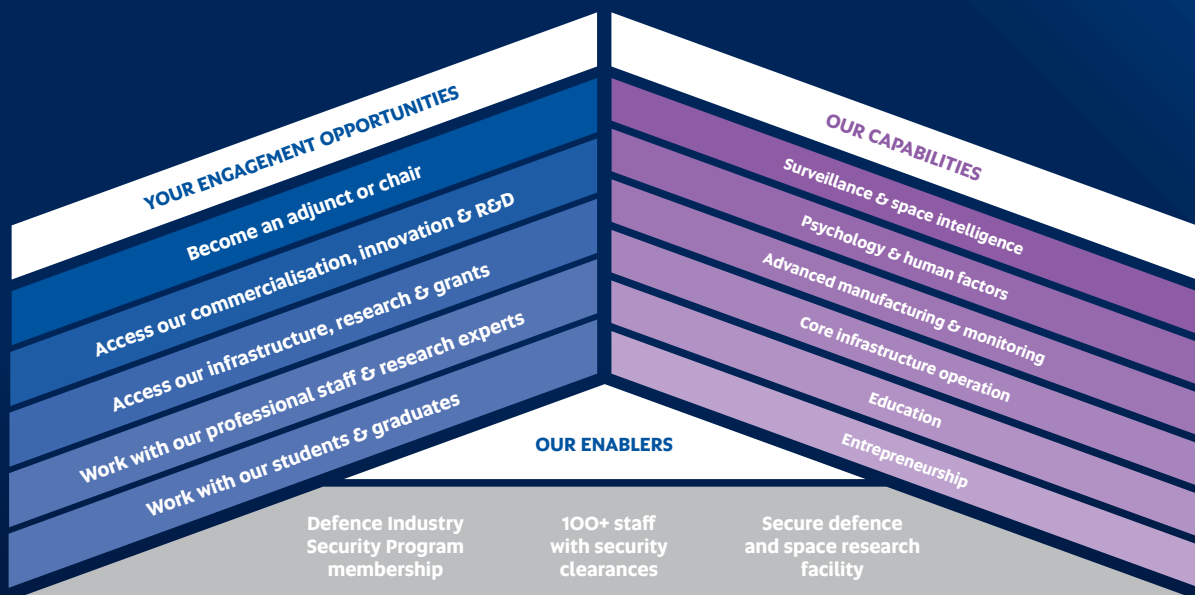
Our doors are open. Access technology and resources out of commercial reach and unlock your organisational potential.



#### Explore unexpected connections

We're nurturing more than 6,500 relationships and 2,500 partnerships in a creative and collaborative space. Be part of our global ideas network that's breaking with tradition.

### Launch your space potential with UniSA



*"Our dedicated Space and Defence Business Development team are ready to support you on your journey. With 13 industry sectors, all under one roof, we have a wide-reaching capability that can be engaged with in multiple ways. Get in touch today." - Jennifer Kelly*



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