



University of
South Australia

TRANSCENDING INNOVATION

SPACE INDUSTRY RESEARCH EXPERTISE AND EDUCATION
AT THE UNIVERSITY OF SOUTH AUSTRALIA

WELCOME TO AUSTRALIA'S UNIVERSITY OF ENTERPRISE

The University of South Australia, Australia's University of Enterprise, is a globally connected and engaged university helping solve the problems of industry and the professions.

We are a university for the 21st century and our reputation continues to grow, with both the Times Higher Education and QS ranking the University in the top 50 world universities under 50 years old.

Committed to a future-focused Australia, we implement unique and innovative approaches in teaching, research and engagement, including space-related initiatives and ingenuities that seek to embed South Australia as a leader in space-related endeavours.

Read on to discover more.

INNOVATION THROUGH WORLD CLASS RESEARCH

Research at UniSA is inspired by challenges, partnered with end-users and communities, and underpinned by excellence, with 97% of its research rated at or above world class standard.* We pride ourselves on our capacity to create interdisciplinary teams that tackle significant real world problems and create opportunities to build capacity and translate research into tangible outcomes and innovative real world impact.

Our research strengths span the spectrum – from fundamental to

applied and translational research – and cross many areas of impact in the space sector, including telecommunications and signal processing, satellites and remote sensing, engineering and systems integration and data analytics and intelligence.

Earth observation and planetary science

Our researchers focus upon investigating other planets within our solar system, utilising data from NASA and ESA, as well as ground penetrating radar.

OUR SPACE-RELATED RESEARCH CAPABILITIES

- Telecommunications and signals processing
 - Satellites and remote sensing
 - Engineering and system integration
 - Autonomous and unmanned systems
 - Big data advanced analytics and predictive modelling
 - Cybersecurity and information assurance
 - Earth observation and planetary science
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**AUSTRALIA'S YOUNGEST
UNIVERSITY TO RECEIVE
FIVE-STARS IN RESEARCH**

QS Stars Ratings 2017



**97% OF OUR ASSESSED
RESEARCH RATED AT OR
ABOVE WORLD STANDARD**

2015 Excellence in Research for Australia (ERA)



**SA'S NUMBER 1
UNIVERSITY FOR
ENGINEERING RESEARCH**

2015 Excellence in Research for Australia (ERA)

Institute for Telecommunications Research (ITR)

ITR is an internationally recognised research centre with more than 25 years' expertise in satellite communications applied to telecommunication services, earth observation, remote sensing and defence.

ITR is home to a range of teaching and research laboratories, including multi-band satellite ground station facilities. It works extensively with the space industry, on projects such as tracking Autonomous Transfer Vehicles to the International Space Station, improving satellite based Search & Rescue systems and increasing the data rates for earth observation satellites.

>> unisa.edu.au/itr

Defence and Systems Institute (DASI)

Cutting edge research performed in DASI informs industry and defence in the design, integration, and modelling of complex defence and engineering systems. With projects ranging from autonomous and unmanned systems to exploitation of biology for sensing systems, micro air vehicles (MAV), acoustic propagation, tomography, and multi-user/multi-vehicle autonomy.

>> unisa.edu.au/dasi

Advanced Computing Research Centre (ACRC)

ACRC focuses upon innovative research across intelligent software engineering, visualisation and augmented reality, health informatics, security and information assurance, data analytics and business intelligence.

>> unisa.edu.au/acrc

Future Industries Institute (FII)

FII represents UniSA's largest single investment in research and builds on the significant capability, infrastructure and reputation of the University's existing research strengths and substantial research infrastructure across four research strands:

- Minerals and resources engineering;
- Energy and advanced manufacturing;
- Environmental science and engineering; and
- Biomaterials engineering and nanomedicine.

>> unisa.edu.au/fii

GLOBAL PARTNERSHIPS AND COLLABORATIONS

With more than 2500 industry partners around the world, UniSA offers a pragmatic, flexible and distinctive approach to engagement and collaboration. Our ability to drive global research impact is enabled by our long-standing and distinctive approach to intellectual property. Our IP principles outline a

commitment to providing timely and commercially-reasonable access to our IP, expertise and capabilities as well as being flexible and easy to do business with.

We invite you to reach out and explore the opportunities for your organisation to partner with UniSA.

2500
INDUSTRY PARTNERS
WORLDWIDE

500
INTERNATIONAL
RESEARCH
COLLABORATIONS

45
INTERNATIONAL
COMMERCIALISATIONS



CASE STUDY: MYRIOTA

Myriota founded in 2015, seeks to revolutionise machine-to-machine (M2M) communications across a range of industries, capitalising on the University of South Australia's telecommunications research.

Commercialising new technologies developed by UniSA's Institute for Telecommunications Research, Myriota Pty Ltd uses low earth orbit satellites to provide two-way data connectivity for remote sensors and devices.

Industry analysts have estimated that global M2M revenue will grow to \$1.2 trillion by 2022.

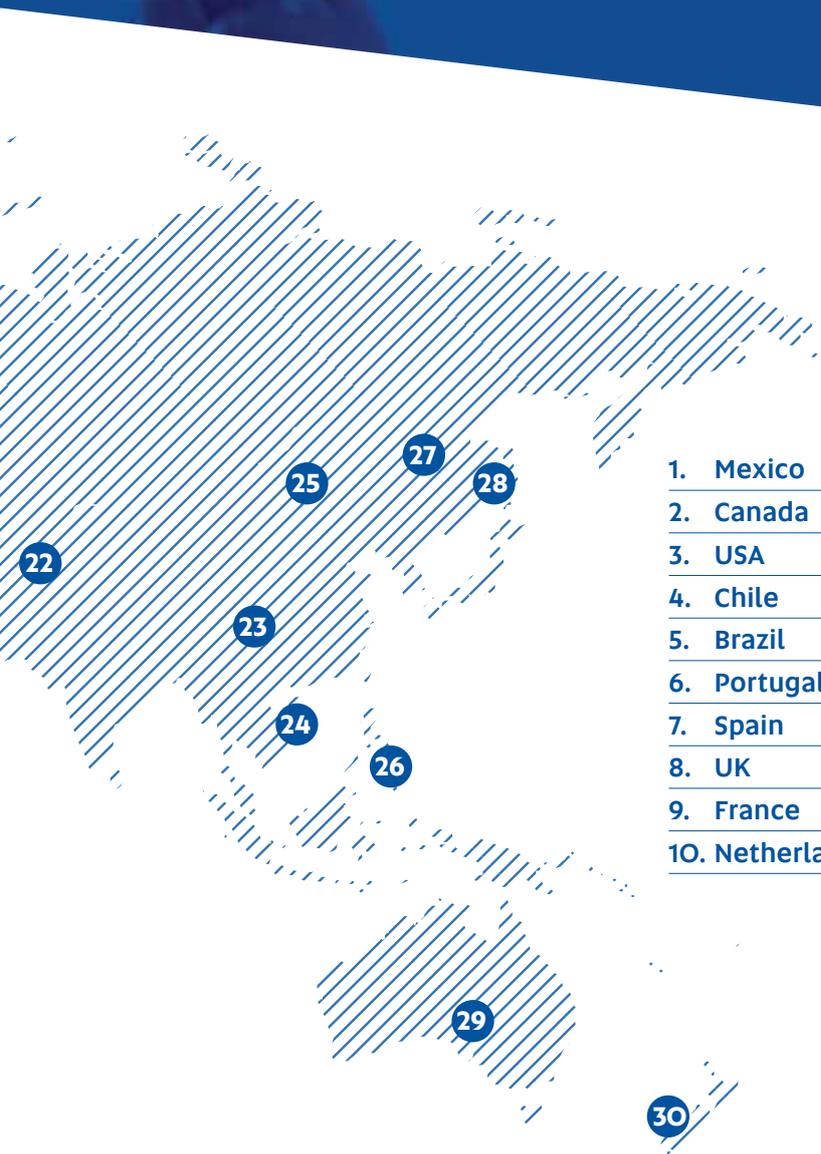
Dr Alex Grant, Chief Executive Officer of Myriota, says these services have a range of applications which can benefit ecosystem management, monitoring of climates, defence, national security, maritime, mining, agriculture and more.

UniSA Vice Chancellor, Professor David Lloyd describes the formation of Myriota Pty Ltd as one of the most significant industry and university collaborations to take place in Australia.

**WINNER OF WESTPAC
200 BUSINESSES OF
TOMORROW 2017**

**BEST INDUSTRIAL
INTERNET OF THINGS
(IoT)
START UP COMPANY
IoT SUMMIT 2017**

**BEST NEW BUSINESS
2017 TELSTRA SA
BUSINESS AWARDS**



- | | | |
|-----------------|------------------|------------------|
| 1. Mexico | 11. Switzerland | 21. Saudi Arabia |
| 2. Canada | 12. Denmark | 22. Pakistan |
| 3. USA | 13. Germany | 23. Thailand |
| 4. Chile | 14. Norway | 24. Malaysia |
| 5. Brazil | 15. Italy | 25. China |
| 6. Portugal | 16. Sweden | 26. Indonesia |
| 7. Spain | 17. South Africa | 27. Korea |
| 8. UK | 18. Austria | 28. Japan |
| 9. France | 19. Poland | 29. Australia |
| 10. Netherlands | 20. Israel | 30. New Zealand |

BUILDING A CULTURE OF INNOVATION THROUGH EDUCATION

With more than 32,000 students, around 6,000 of whom are international students, we are the largest university in South Australia. Our programs are designed with a strong professional emphasis and in partnership with industry to ensure the career relevance of our teaching. This is why our graduate employment rates are above the national average and the highest in South Australia*.

We offer a broad range of degree programs in business, education,

arts, social sciences and health, as well as all areas of STEM – sciences, information technology, engineering and mathematics.

Our STEM programs are located at our Mawson Lakes campus – also referred to as Technology Park – Adelaide's ecosystem for innovation. Our proximity to innovative industry enriches our programs ensuring they are industry-aligned and focused on real-world outcomes of great significance to our community.

High Level Skill Development

We offer a range of postgraduate programs in Information Technology, including Cybersecurity and Data Science as well as programs in Engineering in areas such as Telecommunications, and Autonomous Systems.

Transforming the PhD

At UniSA we're transforming the PhD to connect our students to partnered grand challenges in research. Students will utilise their research expertise and creativity to gain real world experience as they partner with end users to meet the emerging needs of industry.

>> unisa.edu.au/study



THE PLANETARIUM

Celebrating its 45th birthday in 2017, UniSA's Planetarium is the only one of its kind in Adelaide. Featuring a Zeiss Jena ZPK1 star projector, you can marvel at the recreation of about 5,000 stars visible from the Southern Hemisphere.

Visit the Planetarium and learn about the universe around us through one of our many informative courses, including Stars and Planets, Ancient Skies, Aboriginal Skies, Cosmos of Ancient Egypt and All About Telescopes. School excursions and special occasion bookings are also available.

>> unisa.edu.au/planetarium

SOUTHERN HEMISPHERE SPACE STUDIES PROGRAM



Conducted in partnership with the International Space University, the **Southern Hemisphere Space Studies Program (SHSSP)** is a five week intensive, live-in experience open to Australian and international participants from all disciplines.

Providing key information relevant for a professional career in the space industry, it focuses on space applications, policy and services, while giving a well-rounded overview of the principles and concepts involved in space science, space systems engineering and technology, space business and management and space legal and regulatory issues.

Throughout the five weeks, participants will hear from a range of invited experts on the principles and concepts involved in disciplines ranging from space sciences to space humanities, and deep-space exploration to space applications for our home planet.

They will undertake hands-on workshops and field trips, including activities in areas such as local remote sensing data, GPS field exercises, satellite ground station operations and simulated legal, policy and commercial problem solving and debate. Participants will also undertake a group space research exercise and be given the opportunity to take part in authoring a White Paper.

UNISA GRADUATE CERTIFICATE IN SPACE STUDIES

The Graduate Certificate is specifically designed for those students who have completed the SHSSP Executive Certificate. Holders of the Executive Certificate will receive credit upon admission to the UniSA Graduate Certificate in Space Studies. In this program, students will have the opportunity to focus upon individual research emanating from the SHSSP White Paper.

>> unisa.edu.au/spaceprogram



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Australia's University of Enterprise



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South Australia