# 9th AUSTRALIAN **SPACE FORUM 19 FEBRUARY 2020**







SOUTH AUSTRALIAN SPACE INDUSTRY CENTRE

Supported by the:









#### 9th AUSTRALIAN SPACE FORUM

#### WEDNESDAY 19 FEBRUARY 2020 ADELAIDE CONVENTION CENTRE HALLS L, M & N, GROUND FLOOR, WEST BUILDING

Facilitated by: Mr Nicola Sasanelli AM, Senior Advisor South Australian Space Industry Centre

#### Session recordings will be available via our YouTube Channel, South Australian Space Industry Centre:

https://bit.ly/2H2tvgM

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#### JOIN THE CONVERSATION: **#SASPACEFORUM**



South Australian Space Industry Centre

# **PREMIER'S WELCOME**



### **IT IS MY PLEASURE TO WELCOME** YOU TO THE 9TH **AUSTRALIAN SPACE** FORUM.

2020 will be another exciting year for South Australia and the nation's space odyssey.

We begin the year with the opening of the headquarters of both the Australian Space Agency and the SmartSat Cooperative Research Centre (CRC), signalling the start of a new chapter in the history of our country's space endeavours.

The Agency and SmartSat CRC are now placed at the heart of South Australia's thriving space economy and will ultimately be the centrepiece of the vibrant entrepreneurial ecosystem developing at Lot Fourteen.

The future for South Australia's space industry is bright, and we have an opportunity to put our nation on the map alobally, and drive growth across the space sector.

The South Australian Government has an absolute focus of growing the state's economy and the continued growth and development of the space sector is a priority for us. We're consolidating and refining our activities to best support South Australia's space industry, in collaboration with the Australian Space Agency.

This year our collaboration with keyinternational space partners is expected to reach new heights as we support future space exploration activities, push the boundaries of innovation and expand scientific and technical knowledge together.

In another major opportunity for collaboration, Australia's participation in NASA's historic mission to the Moon and then Mars opens new avenues for our companies and researchers to get involved in the global sector.

There are so many passionate and energetic young Australians who want to be involved in space. Their dreams will only be further encouraged by this investment.

The South Australian Government is committed to building on this momentum in the space sector and ensuring the next generation take advantage of the opportunities in the growing space industry. Thank you to our sponsors, speakers and the range of organisations for their support and commitment to this important event, which provides a fantastic

platform for networking across this rapidly developing industry.

The Hon. Steven Marshall MP Premier of South Australia

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## A MESSAGE FROM THE PRIME MINISTER



From humanity's first steps on the Moon, to flying past Pluto, and navigating Cassini's descent into Saturn, Australia has been an essential part of many of the world's space achievements for more than 50 years—and that is set to continue.

Today, we find ourselves on the cusp of a new era of collaboration, exploration and commercialisation. Since the launch of the Australian Space Agency in July 2018, we have seen huge momentum in the space sector—drawing on our strengths in areas such as communication technologies, Earth observations, robotics and automation.

The space industry is a long-term economic opportunity for Australia. Since 2018-19, the Government has invested more than half a billion dollars to support the creation of another 20,000 jobs and contribute to tripling the size of the sector in Australia to \$12 billion by 2030.

This investment includes \$150 million for Australian businesses and researchers to support NASA's ambition to return to the Moon and on to Mars.

Our strong investment in the space industry benefits all Australians with more jobs, new opportunities and stronger businesses that lift our economy. A dynamic space sector also drives technology, which has a real impact on people's lives—from helping farmers with managing their land, to tracking bushfires and improving GPS. Australia is a nation of great vision and optimism. That's why in coming years, I'm looking forward to seeing the Australian space industry develop and grow, underpinned by the strong investment of industry and supported by a world-class research sector and government.

The 9th Australian Space Forum is a wonderful opportunity to strengthen cooperation and investment both here and internationally to create the conditions for this important industry to thrive.

As you gather in Adelaide this year, I wish you well for your deliberations and trust that your involvement will only strengthen your passion for space and the future of Australian science and technology.

The Hon. Scott Morrison MP Prime Minister of Australia

## A MESSAGE FROM THE MINISTER FOR INDUSTRY, SCIENCE AND TECHNOLOGY

Australian industry is transforming rapidly to meet the demands of new frontiers and is using innovative technology to realise enormous economic and market potential.

Our growing space industry is the perfect example and it is putting Australia firmly on the global map.

The Australian Government recognises the importance the space sector has for the broader economy and in supporting the growth of jobs across traditional and emerging industry.

For example, arowing the industry and applying space technology can improve other areas of our economy, including in emergency management, agriculture and mining. By using space capabilities, emergency workers can better plan and respond to bushfires, farmers can monitor the health of their crops and scientists are able to study the effects and impact of droughts. Space activities also create opportunities across industry; precision health and remote medicine expertise can be applied to astronauts and space tourists, while experience with advanced manufacturing, 3D printing and high-tech materials is relevant to manufacturing in space.

The opportunities on offer by supporting the growth and transformation of the space industry is why we have committed over \$600 million to the sector since establishing the Australian Space Agency in July 2018.



That includes \$150 million to help Australian businesses leverage opportunities so they can thrive in international supply chains and support NASA on its inspirational campaign to return to the Moon and travel on to Mars.

The Australian Space Agency – our national advocate for the space industry – is going from strength to strength, and now with the opening of its headquarters at Lot Fourteen here in Adelaide, it will continue to build tremendous momentum throughout 2020 and beyond.

We are well on the way to accelerating the growth of Australia's space sector and realising our target to triple the size of the space economy to \$12 billion and creating another 20,000 jobs by 2030.

It is wonderful to be in Adelaide for the Australian Space Forum and I look forward to working with Australian space businesses, entrepreneurs and the next generation of space leaders as we bring the benefits of the space industry to all Australians now and into the future.

The Hon. Karen Andrews MP Minister for Industry, Science and Technology



Australian Government

# Transforming and growing the Australian space industry

Australian Space Agency

Building a globally responsible and respected space sector that lifts the broader economy, and inspires and improves the lives of Australians.

The Australian Civil Space Strategy 2019-2028, released by the Agency in 2019, provides the space industry with the certainty of a long-term framework around which to plan its activities towards the transformation and growth of the industry. Our seven National Civil Space Priorities guide activities in these areas:

Position, navigation and timing

#### Earth observation

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Communications technologies and services

- Space situational awareness and debris monitoring
- Eapfrog R&D
  - Robotics and automation on Earth and in space
  - Access to space

#### Engage with us

E: enquiries@space.gov.au P: +61 2 6276 1166 Subscribe to our newsletter: space.gov.au

# **ABOUT SASIC**

SOUTH AUSTRALIAN SPACE INDUSTRY CENTRE

It's a pivotal time to be engaged in the space sector in Australia, particularly in the vibrant space economy emerging in South Australia. Already home to over 80 spacerelated organisations, South Australia is committed to further growing the local industry and build on the state's history of space activity.

Established in 2017 by the South Australian Government, the South Australian Space Industry Centre (SASIC) was created to drive space industry innovation, research and entrepreneurial development.

SASIC is supporting the state's emerging space industry by providing funding every year to grow jobs and build South Australia's space ecosystem through the Space Innovation Fund. The Fund is responsible for invigorating South Australia's space innovation ecosystem by supporting promising entrepreneurs, new start-ups and early stage businesses to scale-up and activate their ideas.

SASIC is now focused on growing a sustainable space industry, challenging the innovative skills of our best researchers and engineers, and inspiring young people to develop the skills to push the frontiers of scientific knowledge. The industry will also continue its contribution to the development of other priority sectors for South Australia, including Defence, agriculture, mining and tourism, and services for the community such as health and education. SASIC will continue to exploit disruption, harness innovation, and leverage strong support to strengthen our space industry

For more information please contact SASIC via:

#### SASIC.SA.GOV.AU

**T** +61 8 8463 7140 **E** spaceoffice@sa.gov.au

#### Darin Lovett

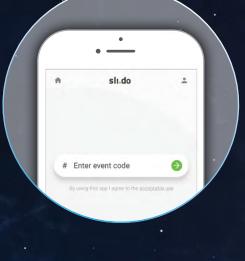
Director, Space South Australian Space Industry Centre

# JOIN THE Q&A

# FORUM SCHEDULE

Facilitated by Nicola Sasanelli, Senior Advisor, South Australian Space Industry Centre

TIME	SESSION	ROOM
8.00	<b>REGISTRATION OPEN</b> Tea and coffee on arrival	Foyer M
9.10	Welcome from the Premier of South Australia – The Hon. Steven Marshall MP Welcome from the Prime Minister of Australia – The Hon. Scott Morrison MP	Hall L
9.20	NATIONAL AND INTERNATIONAL SPACE TRENDS This session will feature a number of presentations covering policy and trends within the national and international space domain. The session will also feature the Forum's keynote presentation.	Hall L
9.20	The Hon. Karen Andrews MP, Minister for Industry, Science and Technology	
9.30	Dr Megan Clark AC, Head, Australian Space Agency	
9.40	Dr Giorgio Saccoccia, President, Italian Space Agency	
10.00	MORNING TEA - SPONSORED BY EOS SPACE SYSTEMS	Exhibition Hall MN
10.30	RESEARCH AND DEVELOPMENT         SmartSat Cooperative Research Centre: Leap-frogging R&D to help build Australia's Space Industry         Facilitator:         Dr Christyl Johnson, Deputy Center Director for Technology and Research Investments, NASA Goddard Space Flight Center         Panellists:         Prof Andy Koronios, Chief Executive Officer, SmartSat Cooperative Research Centre         Prof Craig Smith, Chief Executive Officer, EOS Space Systems         Dr Sarah Pearce, Deputy Director, CSIRO Astronomy and Space Science         Bruno Versini, Chief Operating Officer, e-GEOS Dr Peter Woodgate, Chair, SmartSat CRC Board	Hall L
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12.00	LUNCH - SPONSORED BY BOEING	Exhibition Hall MN



### USE YOUR DEVICE TO JOIN IN THE Q&A SESSIONS. OPEN YOUR BROWSER,

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**#SASPACEFORUM** 

# FORUM SCHEDULE

TIME	SESSION	ROOM
13.30	<ul> <li>EDUCATION</li> <li>Space continues to inspire the next generation, planting the seed of a future career in STEM. How can we enhance this trend among our community?</li> <li>Facilitator:</li> <li>Anthony Murfett, Deputy Head, Australian Space Agency</li> <li>Panellists:</li> <li>Dr Lisa Harvey-Smith, Australia's first Women in STEM Ambassador</li> <li>Michael Pakakis, Director, Victorian Space Science Education Centre</li> <li>Peta Kourbelis, Principal, Hamilton Secondary College</li> <li>Dr Graham Durant, Director, Questacon</li> <li>Vienna Tran, Student, Southern Hemisphere Space Studies Program</li> </ul>	Hall L
14.50	AFTERNOON TEA - SPONSORED BY MDA	Exhibition Hall MN
15.30	ACCESS TO SPACE FOR AUSTRALIA With the newly established Australian Space Agency and hundreds of start-ups entering the Australian market, how can we ensure the benefits of space are made available to everyone, everywhere? Access to space from Australia can facilitate growth of the space economy. Facilitator: Richard Price, Chief Executive, South Australian Space Industry Centre Panellists: Dr Lloyd Damp, Chief Executive Officer, Southern Launch Carley Scott ACECD, Chief Executive Officer, Equatorial Launch Australia Adam Gilmour, Chief Executive Officer, Gilmour Space Blake Nikolic, Chief Executive Officer, Black Sky Aerospace	Hall L
16.45	CONCLUSION	Hall L
17.00	NETWORKING EVENT - SPONSORED BY ANU INSPACE	Exhibition Halls MN



### Australian Space Industry Conference 2021



AIRBUS

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# SPEAKER BIOGRAPHIES

### DR MEGAN CLARK AC

HEAD | AUSTRALIAN SPACE AGENCY

#### Dr Clark is currently Head of the Australian Space Agency and a director of Rio Tinto, CSL Limited and CARE Australia. She is a member of the Australian advisory board of the Bank of America Merrill Lynch. Dr Clark recently chaired the Expert Working Group into the Review of Australia's Space Industry Capability. She was Chief Executive of the Commonwealth Scientific and Industrial Research Organisation (CSIRO) from 2009 to 2014. Prior to CSIRO, she was a Director at NM Rothschild and Sons (Australia) and was Vice President Technology and subsequently Vice President Health, Safety and Environment at BHP Billiton from 2003 to 2008.

Dr Clark holds a BSc from the University of Western Australia and a PhD from Queen's University, Canada and is a Fellow of the Australian Academy of Technology and Engineering, a Fellow of the AusIMM and a Fellow of the Australian Institute of Company Directors. In 2014, she was appointed a Companion of the Order of Australia. COMPARINI CHIEF EXECUTIVE OFFICER | E-GEOS TELESPAZIO

**MASSIMO** 



Massimo Claudio Comparini has a Master's Degree in Electrical Engineering, Remote Sensing and Radar Systems, University of Rome "La Sapienza", and a Degree in Strategy from the Graduate School of Business, Stanford University, CA.

He began his career in the space industry in 1983 at Selenia Spazio reaching the role of Chief Technology Officer.

In Thales Alenia Space, he took up the role of Deputy Chief Technical Officer, CTO and VP for R&D, Technology, Product Policy and IPR. In 2013 he was appointed Chief Technical Officer at Telespazio.

He is also the Chairman of Space Innovation in the Italian Technology Platform SPIN IT.

In 2016, he was appointed as Head of Geoinformation Business Unit of Telespazio and as CEO of e-GEOS.

Please note: Due to unforeseen circumstances Massimo Comparini was unable to attend the forum and Bruno Versini, Chief Operating Officer, e-GEOS will be presenting on his behalf.

#### DR LLOYD DAMP CHIEF EXECUTIVE OFFICER | SOUTHERN LAUNCH

### DR GRAHAM DURANT

**DIRECTOR** | QUESTACON

### DR GRAHAM DURANT (CONTINUED)

#### ADAM GILMOUR CHIEF EXECUTIVE OFFICER | GILMOUR SPACE





Prior to starting Southern Launch Lloyd spent over 12 years in Defence Science and Technology Group specialising in complex program design and delivery focusing on weapons and space launch vehicles. While at DST, Lloyd played his small part in helping Defence undertake regular rocket launches into space from Woomera.

In 2017, Lloyd founded Southern Launch to capture part of the projected US\$30.1B space launch market by providing the rocket launch infrastructure and associated launch services to enable commercial customers to launch their rockets into polar and sun synchronous orbits. The launch facility will be established at Whalers Way on the Eyre Peninsula of South Australia, allowing unhindered launch azimuths southwards out over the Great Australian Bight.

Australia, and Australians need information from space. Be it monitoring our borders, more efficient ways to track transportation, or alerting people about imminent fire dangers, Lloyd is committed to making sure Australia has a sovereign launch capability to control our own space enabled future.

Now a company of 13 staff across 3 States, Southern Launch staff come from a vast background covering orbital launch range safety, rocket design, rocket operation and logistics.

Southern Launch aims to celebrate Australia's first commercial space launch in 2020. Graham Durant is the Director of Questacon, Australia's National Science and Technology Centre. He is an experienced museum and science centre leader with a distinguished academic background. Originally trained as a geologist at the University of Wales, Graham spent 25 years at the University of Glasgow in a post at the University's

Hunterian Museum and Art Gallery prior to arriving in Australia in 2003.

Graham is a member of the Australian Government's Senior Executive Service and as Director of Questacon, he serves as a Divisional Head in the Australian Government Department of Industry, Innovation and Science. From 2010 he has been leading the *Inspiring Australia* national science communication strategy. In addition to his role as Director

of Questacon, Graham is an Honorary Professor at the Centre for the Public

- Awareness of Science at the Australian
- National University. He has a demonstrable commitment to informal learning in science over many years and has presented many lectures, talks and science shows. He is frequently invited to speak at national and
- international science centre conferences.



He has served on several boards including the Board of Directors of the US-based Association of Science and Technology Centres (ASTC) 2005-2011 and the Australian Science Media Centre (2012-). He is currently Vice President of ASPAC, the Asia-Pacific network of science centres.

He is one of the principal advocates for the global cooperative work of the science centre sector examining ways that science educational activities can contribute to the fostering of understanding across geographical, economic, religious and political boundaries. Adam Gilmour is the CEO and Founder of Gilmour Space Technologies, a venturefunded rocket company in Queensland that is developing more affordable launch vehicles for small satellite/payload customers. A lifelong space fan, Adam believes that rockets can be made smaller, cheaper, faster, and that the New Space industry, and Australia, would benefit greatly from having more dedicated access to space. Targeting to launch our first commercial launch in 2022.

### DR LISA HARVEY-SMITH

AUSTRALIA'S FIRST WOMEN IN STEM AMBASSADOR | AUSTRALIAN GOVERNMENT



DR CHRISTYL JOHNSON

DEPUTY CENTER DIRECTOR FOR TECHNOLOGY AND RESEARCH INVESTMENTS | NASA GODDARD SPACE FLIGHT CENTER



Dr Lisa Harvey-Smith is the Australian Government's Women in STEM Ambassador and a Professor of Practice in Science Communication at UNSW Sydney.

In her role as the Women in STEM Ambassador, Lisa is responsible for increasing the participation of women and girls in STEM studies and careers across Australia. She is an award-winning astronomer with research interests in the birth and death of stars and supermassive black holes and serves on the Australian Space Agency's Advisory Group.

She previously worked on the megatelescope project the Square Kilometre Array – a continent-spanning nextgeneration radio telescope that will survey billions of years of cosmic history.

Lisa is a TEDx speaker, a regular science commentator on TV and radio and has appeared on stage with Apollo astronauts including Buzz Aldrin. She is author of the popular science book When Galaxies Collide and the children's book Under the Stars: Astrophysics for Bedtime. Dr Christyl Johnson joined NASA Goddard as Deputy Center Director for Technology and Research Investments in December 2010. She manages the Center's research and development portfolio, formulates the Center's future science and technology goals, and leads an integrated program of investments aligned to meet those goals.

Dr Johnson came to NASA Goddard from the White House Office of Science and Technology Policy, where she served as the Executive Director of the National Science and Technology Council, and was responsible for ensuring the establishment of clear national goals for Federal science and technology investments in a broad array of areas across the executive branch.

### PROF ANDY KORONIOS

CHIEF EXECUTIVE OFFICER | SMARTSAT COOPERATIVE RESEARCH CENTRE



Professor Andy Koronios is the CEO of the SmartSat CRC, a consortium of industry and research organisations developing game changing satellite technologies to catapult Australia into the global space economy.

Previously Andy held the positions of Dean: Industry & Enterprise and Head of the School of Information Technology & Mathematical Sciences, at UniSA.

Andy is a professor of information systems and holds academic qualifications in Electrical Engineering, Computing and Education as well as a PhD from the University of Queensland.

He has extensive experience in both commercial and academic environments and his research areas include data quality, information management & governance, data analytics and the strategic exploitation of information.

Andy has led the establishment of several research concentrations, labs & research centres. He served as the Research Program Leader for System Integration & Interoperability in the CIEAM CRC. He is internationally known for his work in data quality, has been an adjudicator for the European Corporate Data Quality Awards for several years and is the Editor-In-Chief of the International Journal of Information Quality. He has worked both as a consultant as well as a professional speaker on IT issues in Australia and South East Asia and has over twenty five years' experience in the academic environment. He is a Fellow of the Australian Computer Society, a Founding Fellow of the International Institute of Engineering Asset Management and a Distinguished Speaker of the ACM.

### **PETA KOURBELIS**

PRINCIPAL | HAMILTON SECONDARY COLLEGE

### **ANTHONY MURFETT**

**DEPUTY HEAD** | AUSTRALIAN SPACE AGENCY



Peta Kourbelis is beginning her 6th year as Principal of Hamilton Secondary College.

Before coming to Hamilton, she had the opportunity to spend 7 years as the Principal at Playford International College.

Peta obtained her Bachelor Degree and Diploma in Teaching from the University of Adelaide. She has extensive leadership experience in education having held numerous senior positions in a range of educational schools across Adelaide.

Her vision and passion to inspire students to engage deeply with STEM learning to support their future careers, led her to provide integral leadership in the establishment the Mike Roach Space Education Centre (MRSEC) at Hamilton Secondary College.

Since the opening of the MRSEC, Peta has shared her passion for Space Education by actively collaborating with others to strengthen and diversify the space curriculum aligned with the Centre.

In doing so, she has achieved numerous milestones including, the integration of Space related curriculum across all learning areas, the development of an outreach program for primary and secondary students and set up local, national, international and tertiary partnerships, based on the credibility of the Space Education Program.



Anthony Murfett is Deputy Head of the Australian Space Agency, where Anthony has oversight of strategy, policy and dayto-day operations and supports the Agency Head in monitoring the performance of the Agency.

Anthony has worked as Minister Counsellor, Industry, Science and Education at the Australian Embassy in Washington DC and as General Manager of the Growth Centres Branch within the Department of Industry, Innovation and Science in Canberra.

Anthony ensures the Agency delivers on its purpose to transform and grow a globally respected Australian space industry that contributes to productivity and employment across the Australian economy.

Dedicated to purpose, Anthony brings an entrepreneurial spirit to the Agency, valuing partnerships while drawing strength from diversity and pushing the boundaries of our knowledge.

As a road bike enthusiast, Anthony is not only at the forefront of space industry development, he is well on his way to cycling the distance to the moon (238,855 miles or 384,400 km), having ridden and competed across the country and the globe.

TO NEW WORLDS.

Our planet is just one among billions. Just like every great idea, it's our starting place to find the next one. Boeing is proud to support those who are dedicated to finding new horizons.



#### BLAKE NIKOLIC CHIEF EXECUTIVE OFFICER | BLACK SKY AEROSPACE

### **MICHAEL PAKAKIS**

**DIRECTOR** | VICTORIAN SPACE SCIENCE EDUCATION CENTRE

Michael Pakakis has been a teacher of

Science and Mathematics since 1985.

During this time, he has held a number

He has also worked in a variety of

Science to Curriculum Co-ordinator.

of positions of responsibility from Head of



Blake has been involved in information technology, explosives and aviation industries for over 20 years. Blake holds a number of qualifications in risk management, quality management and product development.

Blake has worked in various explosive processes including manufacturing, logistics and use. These experiences have seen him travel around the globe managing programs for civilian and government events.

Combining his extensive explosives knowledge and experience as a pilot in the Australian Army, Blake has applied these to Black Sky Aerospace's foundations to create a viable launch company.

Recognising the importance to engage with Australian youth to ensure Australia's space industry will have a sustainable workforce, Blake works closely with a variety of STEM based organisations. This included the operations for Thunda 2019 rocket launch that hosted the inaugural Australian Universities Rocket Competition.

Blake sits on the board of various rocketry organisations in Australia, is well versed in ITAR/EAR regulations as well as Australian legislation and is the primary contact to state and national regulators. Blake has consulted for numerous programs including the NASA Sounding Rocket Program on Wallops Island.

With Australia's growing interest in the space sector, Blake looks forward to continuing to play a pivotal role in a thriving industry.

Desive Government schools and is presently employed at Strathmore Secondary College as a Leading Teacher occupying the position of Director of the Victorian Space Science Education Centre (VSSEC). During 2007 he was awarded by

Latrobe University the Deans' Medal for his contributions to Science Education in Victoria. Through his role as Director of VSSEC he has been involved in providing teacher professional learning programs and establishing collaborative working relationships with many of Australia's universities.

Internationally he is recognised as a leader in STEM Education working with the Chief Scientists office at NASA Ames Research Centre and with NASA, ESA and JAXA Education Head Quarters to develop STEM teaching resources.

He is also a member (since 2010) of the International Space Science Education Board. This group includes all the Heads of Education of the major world space agencies and is dedicated to the global promotion of STEM Education. This experience has given him an understanding of the Department of Education's future teaching and learning strategy and its implications for the evolving school environment and the skills needed to implement policy.

### DR SARAH PEARCE

DEPUTY DIRECTOR | CSIRO ASTRONOMY AND SPACE SCIENCE

### **RICHARD PRICE**

CHIEF EXECUTIVE | SOUTH AUSTRALIAN SPACE INDUSTRY CENTRE





Prior to joining CSIRO, Sarah was project manager of the UK's computing for particle physics program and a science advisor in the UK Parliament. She holds a PhD from the University of Leicester and an undergraduate degree in Physics from the University of Oxford.



Richard Price was appointed Defence SA Chief Executive in October 2017. In this role, he was simultaneously appointed to the position of Chief Executive of the South Australian Space Industry Centre (SASIC).

Richard has worked within the defence and public safety sectors for over 25 years and has international industry experience in leadership, business development and engineering.

Prior to joining Defence SA and SASIC, Richard led a Stockholm based business unit for Saab AB with operations in Sweden, Denmark, Australia, South Africa and the UK. The focus was the global market for communication and control room solutions.

Before moving to Sweden in 2013, Richard was Managing Director of Saab's Australian operations.

Richard is an engineering graduate of the University of Wales (BSc Hons, 1985) and a graduate of the Melbourne Business School Advanced Management Program (2006) and the Australian Institute of Company Directors (2010).

Richard is the Chair of Autism SA who help each person on the autism spectrum live the life they choose in an inclusive society.

### DR GIORGIO SACCOCCIA

PRESIDENT | ITALIAN SPACE AGENCY



NICOLA SASANELLI AM

SENIOR ADVISOR | SASIC DIRECTOR | COMMUNICATIONS & OUTREACH SMARTSAT CRC



Born in Belluno, on January 11 1963, Giorgio Saccoccia is the President of the Italian Space Agency. He graduated from the University of Pisa (Italy) with a degree in Aerospace Engineering and from Webster University at Leiden (The Netherlands) with a Master in Business Administration.

He has been Head of the Electric Propulsion Section of ESA between Mar 1997 - Jan 2003 and subsequently, until now, Head of the Propulsion and Aerothermodynamics Division of ESA. Over the same period, he has been also Acting Head of the Mechanical Engineering Department of ESA (Jan 2016 - Nov 2016).

Giorgio Saccoccia is an Associate Fellow of the AIAA (American Association for Aeronautics and Astronautics), Full Member of the International Academy of Astronautics (IAA) and Emeritus Member of French Aeronautics and Astronautics Association. Nicola Sasanelli joined SmartSat CRC in July 2019 as Director: Communications & Outreach and Defence SA in April 2016 as Director of the Space Industry and R&D Collaborations project.

In September 2017 the South Australian Space Industry Centre was created, with Nicola as Director. His focus is to support space industry growth and increase international R&D collaborations in South Australia's space sector. In September 2019 Nicola became a Senior Advisor at SASIC.

In 2018 Nicola was appointed Adjunct Professor at the University of South Australia - Division of Information Technology, Engineering and the Environment and he was appointed on the board of the Space Industry Association of Australia (SIAA).

Nicola graduated from the University of Bari, Italy in 1987 with a degree in Electronic Engineering. He went on to work as a researcher in microelectronics highreliability components at Tecnopolis S&T Park, Bari before being appointed as Scientific Attaché at the Embassy of Italy in Canberra from 2001 to 2008.

In 2009, Nicola joined the South Australian Government as a Special Envoy for higher education research and technology transfer to Europe with the Department of Premier and Cabinet and later joined the Department of State Development as Director for International R&D Collaborations.

From 2003 to 2013 he was appointed as Adjunct Professor of Science and

- Technology at the University of Canberra,
- Australia, and in 2007 he became an
- Honorary Member of the Order of Australia.

### CARLEY SCOTT MAICD, ACECD

CHIEF EXECUTIVE OFFICER | EQUATORIAL LAUNCH AUSTRALIA



PROF CRAIG SMITH CHIEF EXECUTIVE OFFICER | EOS SPACE SYSTEMS



Carley is known for building strong businesses in fast changing environments. She is currently leading the development of Australia's national spaceport, securing a world first with NASA planning to launch from the site. Carley is an advisor to the CSIRO (advanced manufacturing); the Space Industry Association of Australia, the SmartSat CRC startup company, and Melbourne Metropolitan Partnerships Committee.

Previously living in the NT, Carley was entrusted by Rio Tinto and the Northern Territory Government as the inaugural CEO building Developing East Arnhem Limited, an award-winning multi-million dollar economic development company now internationally referred to as best practice.

In 2017, Carley won the Telstra Business Women's Award (For Purpose, Northern Territory). In 2018, Carley was nominated as Australian of the Year and in 2019, Carley was listed in the Australian Financial Review's 100 Women of Influence.

Carley is passionate about technology, space, investment and international trade; and talking to the opportunities for Australia's fast growth companies Professor Craig Smith is the CEO for EOS Space Systems. He leads a multidisciplinary team of science and engineering innovators developing lasers, beam directors, precision timing systems, sensors, and control systems for the laser tracking products.

Professor Smith has also held positions within EOS as CEO EOS Technologies (the US subsidiary of EOS) and Head of Research and Development.

Prior to joining EOS Professor Smith was a Senior Research Fellow at the Australian Defence Force Academy. There he developed novel techniques for imagingpolarimetry and spectro-polarimetry at thermal IR wavelengths.

Professor Smith has lectured in Physics, Electronics and Military Ballistics and is an Adjunct Professor at RMIT University. He obtained Bachelors and PhD degrees in Physics from the University of Melbourne.

22 9TH AUSTRALIAN SPACE FORUM

#### VIENNA TRAN SOUTHERN HEMISPHERE SPACE STUDIES PROGRAM

### DR PETER WOODGATE CHAIR | SMARTSAT CRC BOARD

# EXHIBITOR PROFILES





Vienna Tran is an aspiring space doctor studying the Bachelor of Medicine / Bachelor of Surgery at the University of Adelaide. This year she is doing an Honours degree in the area of postflight musculoskeletal rehabilitation for astronauts, which will be supervised by Associate Professor Gordon Cable and Professor Julie Hides.

She is a graduate of South Australian Space School, National Space Camp, and the International Space University Southern Hemisphere Space Studies Program (ISU SHSSP). Alongside her studies, she enjoys reviewing space medicine literature, mentoring at Hamilton Secondary College Space School, and tutoring STEM subjects. Peter is Chair of SmartSat CRC, Chair of the Australian Urban Research Infrastructure Network, Co-Chair of the

2026 Spatial Industries Transformation and

Growth Agenda, Board member of the

Public Sector Mapping Agency Ltd, and is a member of the Council of Charles Sturt University.

He has been involved with the spatial and space industries for over 30 years, created several companies and managed an industry cluster of over 100 companies translating applied research into commercial outcomes.

Peter is an Honorary Fellow of the Surveying and Spatial Sciences Institute and a life member of the International Society for Digital Earth.

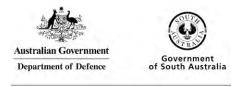
He has a Doctorate of Business Administration (RMIT University), a Masters of Applied Science (University of New South Wales) and a Bachelor of Forest Science (University of Melbourne).



### ADVANCED TECHNOLOGY PROGRAM

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# AEON CX

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The Advanced Technology Program (ATP) is funded as part of the Defence Industry Skilling and STEM Strategy School Pathways Program. Our aim is to help reduce skills shortages in defence industry by increasing the pool of STEM educated students, informing Australia's youth about industry employment opportunities and pathways and increase student awareness of defence industry (including Space) as an employer of choice. We provide secondary students with positive career experiences in defence (and allied) industries through programs such as Space Industry Work Experience. ATP also provides student activities and teacher professional development opportunities to enhance STEM capability, education and enterprise skills as well as enhancing student engagement, participation and enrolment in STEM subjects. We aim to increase focus on indigenous and female participation within all our activities and events. The ATP team is very excited about the Space Industry career opportunities for our students both in South Australia and nationally.

Launch your next DApp into orbit aboard our October 2020 mission to space. AEON is a Platform as a Service and cloud computing environment for developing and hosting secure blockchain applications on spacecraft in low earth orbit. Applications are sandboxed and run across multiple spacecraft. AEON offers an easy to use development environment, integrated space launch services and proof-of-location security.

The growing trend of moving the edge of healthcare from clinics into the home presents unique security challenges. AEON is facilitating this movement by securing and making medical records accessible anywhere on earth.

Platform training packages for beginners are available to schools and higher education institutions.

### AMDA FOUNDATION LIMITED

#### AMDA.COM.AU

Contact: Chris Macfarlane E expo@amda.com.au T +61 (0) 3 5282 0500



### PLATINUM SPONSOR

AMDA FOUNDATION LIMITED is an Australian not-for-profit corporation promoting development of aviation and Australia's industrial, manufacturing and information/ communications technology resources in the fields of aviation, aerospace, maritime, defence and security.

# ANU INSPACE

#### INSPACE.ANU.EDU.AU

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### NETWORKING HOUR SPONSOR

AMDA achieves these goals by delivering Australia's most prominent and respected world-class biennial industry expositions as platforms for interaction between industry, defence, government and academia. They include:

- Australian International Airshow and Aerospace & Defence Exposition (Avalon)
- Pacific International Maritime Exposition
- Land Forces International Land Defence Exposition

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- Rotortech Helicopter and Unmanned Flight Exposition
- Civsec Civil Security Conference
   AMDA Foundation is committed to

supporting the Australian space industry. In conjunction with The Space Industry Association of Australia (SIAA), AVALON 2019 featured the inaugural Australian Space Industry Conference, an event focused on business development. The success of this event has ensured it will be a major part of the event program for AVALON 2021, providing a promotional and marketing platform for the Australian space industry.

The ANU Institute for Space (InSpace) consolidates, streamlines and coordinates all space-related activity across the ANU and supports the Australian Government's objective to transform the Australian space industry and treble its workforce by 2030. InSpace bridges academia and industry and is driving industry and government co-investment in projects that support the growth of a globally-competitive and respected Australian space industry.

### AUSTEST LABORATORIES

#### AUSTEST.COM.AU

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AUSTEST Laboratories is an independent, product and component testing and certification company offering the most comprehensive and publicly available environmental, EMC and electrical testing facilities in Australia and NZ.

Fully accredited MIL-STD Testing includes environmental product and component standards ranging from vibration and shock, drop, temperature and humidity, UV, ingress protection for dust and water and corrosion, altitude and pressure, through to electrical safety and EMC radio frequency interference emissions (40GHz) and susceptibility (up to 200V per metre to 18GHz).

### AUSTRALIAN SPACE AGENCY

#### SPACE.GOV.AU

**E** enquiries@space.gov.au **T** +61 (0) 2 6276 1166



SUPPORTING SPONSOR

The Australian Space Agency is responsible for whole-of-government coordination of civil space matters. The Agency will transform and grow a globally respected space industry, and to reach and inspire all Australians through seven National Civil Space Priorities - Position, navigation and timing; Earth observation; Communication technologies services, Leapfrog R&D, Space situational awareness, Robotics and automation, and Access to space. Through the Agency, Australia aims to significantly grow its market segment from 10,000 jobs and a market size of \$3.9 billion to 30,000 jobs and \$12 billion by 2030.

### AUSTRALASIAN SOCIETY OF AEROSPACE MEDICINE

#### ASAM.ORG.AU

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of Aerospace Medicine (ASAM) are to cultivate and promote aerospace medicine and related sciences, to provide an authoritative body of opinion on matters of aeromedical significance, and to increase the awareness of the aerospace industry, aovernment, and the aeneral public of the importance of aerospace medicine to flight safety. ASAM convenes annual scientific meetings in Australasia, publishes a peer-reviewed scientific journal and sponsors awards for excellence in aerospace medicine at postgraduate and undergraduate levels. ASAM convenes the annual "Humans in Space: Challenges for Exploration" short course addressing the physiological, medical, and psychosociological issues that are unique to space flight and planetary exploration as well as the challenges these issues present to human mission success. It represents the residential component of a Space Medicine unit of study, as part of the Healthcare of Remote and Extreme Environments program run by the University of Tasmania (UTAS).

The aims of the Australasian Society

### AVALON 2021 - AUSTRALIAN INTERNATIONAL AIRSHOW AND AEROSPACE & DEFENCE EXPOSITION

#### AIRSHOW.COM.AU

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As the cornerstone event of the Royal Australian Air Force's Centenary Year, the 2021 Australian International Airshow and Aerospace & Defence Exposition (AVALON 2021) will be a truly global business event, attracting senior civil aviation, air transport, aerospace and defence industry, military and government decision-makers.

The 2019 event attracted more than 38,000 industry attendances, 698 participating companies and 161 official industry, scientific and government delegations.

AVALON 2021 will showcase Australia's burgeoning space industry, through the Australian Space Industry Conference 2021.

Delivered by AVALON 2021 organiser AMDA Foundation Limited and the Space Industry Association of Australia (SIAA), the Australian Space Industry Conference 2021 will serve operators, policymakers, industry professionals and end users of space-enabled services and technology, focussing on opportunities for business development.

It will address the needs of both the space industry and the downstream spaceenabled industries that benefit from space based assets. For more information, go to **airshow.com.au** 

### BAE SYSTEMS AUSTRALIA

#### BAESYSTEMS.COM

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### BAE SYSTEMS

BAE Systems' advanced defence technology solutions protect people and national security, keeping critical information and infrastructure secure.

For more than 65 years we have searched for new ways to provide our customers in Australia with a competitive edge across air, land, sea, cyber, space and electronic domains. BAE Systems provides innovative solutions and critical capabilities that perform optimally in complex environments, ensuring the customer maintains the capability edge required.

We employ a skilled workforce of some 4,100 people in more than 40 locations across Australia and work closely with local partners to support economic development by transferring knowledge, skills and technology.

Our space solutions specialists deliver a broad range of mature satellite communications and astronomy technologies for customers around the world. In Australia we focus on communications and intelligence, surveillance and reconnaissance (ISR) technologies.

Our work helps keep Australia safe and contributes to creating a more prosperous and innovative nation.

### BOEING

#### BOEING.COM.AU

Contact: Jason Armstrong E jason.w.armstrong@boeing.com T +61 (0) 7 3306 3098



#### GOLD SPONSOR

Boeing has a long history of space-related projects in Australia. The company's defence programs include the Boeingbuilt Wideband Global SATCOM (WGS) and IS-22 satellites used by the Australian Defence Force (ADF) and the Currawong Battlespace Communications System, which includes Australian-developed satellite terminals for accessing the WGS network. Boeing Australia is also developing innovative approaches to astronaut training, spacecraft design and crew health that will be transitioned to the United States and applies its industry leading modelling and simulation capabilities to enhance decision support and concept exploration in the space domain. Our research partnerships span CSIRO, the Air Force Research Laboratory, Defence Science and Technology Group, University of Queensland and Adelaide-based Myriota to help develop technology that will build new jobs for Australia's future.

Boeing Australia continues to make strategic R&D investments to support the Australian Space Agency to grow Australia's space industry and the ADF expand its space-based and spaceenabled capabilities.

### **BENTLEYS R&D INCENTIVES**

#### BENTLEYS.COM.AU/SOLUTIONS/ RD-INCENTIVES-INNOVATION/

Contact: Mal Lowen E mlowen@adel.bentleys.com.au T +61 477 353 199



The R&D Tax Incentive is a Government program that rewards Australian businesses that invest in innovation. It is the largest source of government funding currently available. If you are looking to grow your business and actively invest in its future through developing new or improved products, systems, processes, devices or services, then you may be eligible for the R&D Tax Incentive.

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From our offices in Adelaide, South Australia, the Bentleys Research & Development Advisory practice supports a national network of independent professional firms to advise on the R&D Tax Incentive for both Australian and overseas based organisations.

Our advice for international companies considering entering the Australian market not only includes the R&D Tax Incentive, but also Federal and State tax legislation, Compliance Requirements, Eligible R&D expenditure, Debt/Equity Structuring, Thin Capitalisation, Transfer Pricing, Tax effective repatriation of profits, Withholding Tax, Foreign Exchange Rules and Company Incorporation.

# AROSE

**Remote.** Connected.

Australian Remote Operations for Space and Earth harnesses our cross-sector strengths to grow our industries.

arose.org.au

### CAPRICORN SPACE

#### CAPRICORNSPACE.COM.AU

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### COPERNICUS AUSTRALASIA REGIONAL DATA HUB

#### COPERNICUS.GOV.AU

Contact: Alla Metlenko E earth.observation@ga.gov.au T +61 (0) 2 6249 9111





The Copernicus Australasia Regional Data Hub shares free and open satellite data from Europe's most ambitious and multifaceted Copernicus Programme. Capricorn Space is an Australian owned and operated ground segment service provider for the space industry. We are the only Ground Segment as a Service provider in the Australasian region to offer Retail (airtime on our antennas), Landlord (place your indoor/outdoor equipment at our site) and Hybrid (your specialist indoor equipment connected to our antennas) services.

We also understand that mission success equates to site availability, therefore, our sites operate with redundant power and redundant high-speed communications services. Our initial site near Geraldton, Western Australia, is ideally located for servicing LEO, MEO and GEO missions and offers many benefits including all-sky visibility, pristine atmospherics and interference protection under ACMA Embargo 49.

If mission success is important to you then visit our website to see our systems and antennas in action and please drop by our booth at the Australian Space Forum to discuss your mission needs.

The Hub aims to support government information requirements; enhance access to Earth observation data by research, industry and civil society; and facilitate collaboration between Australia, New Zealand, Europe, South-East Asia and the South Pacific.

The Hub uses existing government research and digital infrastructure to move large volumes of satellite data across the globe cost-effectively and provides access to Sentinel imagery over our region in a timely fashion.

Sponsored by Australian and New Zealand government organisations, the Hub supports programs which are reliant on Earth observation satellite imagery, including: Geoscience Australia's Digital Earth Australia program; monitoring land management activities and providing landcover information in New South Wales and Queensland; Western Australia's LandMonitor and FireWatch programs and many CSIRO research programs. New Zealand has now joined the consortium, providing data access to NZ users via the Xerra Earth Observation Institute.

### **CSIRO**

#### CSIRO.AU

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### REGISTRATION SPONSOR

As Australia's national science agency, we are focused on solving the greatest challenges through innovative science and technology.

CSIRO have a range of industry support mechanisms to help businesses – both large and small – overcome barriers to innovation. We collaborate with industry, including the start-up sector, providing technical support based on our leading-edge capabilities in

DEPARTMENT OF TRADE, BUSINESS AND INNOVATION, NORTHERN TERRITORY GOVERNMENT



#### BUSINESS.NT.GOV.AU

Contact: Rick Burgess E rick.burgess@nt.gov.au T +61 408 958 428

Australia's Northern Territory is the ideal place to meet the future demands of the space industry. The Territory is already home to globally significant space infrastructure including: space technologies to help streamline and enhance both the R & D and the operation of projects.

We have a long and accomplished heritage in the space sector including our work with NASA and other international space agencies, exploring our Solar System and beyond, providing mission support activities and managing complex facilities for space object tracking.

We're also a world leader in advanced manufacturing technologies, radio astronomy and recognised experts in remote sensing technologies used for Earth observation as well as our work in data modelling, analytics and development of applications such as Data Cubes.

Our investment in high-performance computing infrastructure and expertise in handling big data allows us to develop insights and solutions to tackle Australia's biggest challenges and opportunities.

Whatever your challenge, we're here to help you secure your innovation footprint in the space economy. Let's work together to help you achieve your space technology goals. CSIRO is your partner in space.

• Equatorial Launch Australia's Arnhem Space Centre: Australia's first commercial launch facility, from which NASA plans to conduct a sub-orbital sounding rocket campaign.

• NASA's Alice Springs Ballooning Facility: managed by CSIRO, the facility regularly hosts international space agencies for scientific ballooning campaigns.

• Geoscience Australia's Alice Springs ground station – part of the Landsat Network.

• Viasat's Real-Time Earth Facility – the US multinational is currently constructing a new ground station in Alice Springs to expand its Real-Time Earth network.

The Territory's geographic location provides a host of benefits for launch facilities, ground stations and technology development and testing facilities due to its:

• proximity to the equator (creating cost efficiencies for launch operators)

• low population (supporting safe launch and payload recovery)

• clear skies, low light pollution and limited noise interference (ideal for hosting ground stations)

• ideal wind conditions for stratospheric balloon launches.

### **DEWC SYSTEMS**

#### DEWC.COM

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DEWC Systems a wholly South Australian owned and operated technology company established to develop innovative, stateof-the-art systems for Defence and Space applications.

# E-GEOS.IT

Contact: Roberto Gigotti E roberto.gigotti@e-geos.it T +39 337 1635749



e-GEOS, an ASI (20%) / Telespazio (80%) company, is a leading international player in the Earth Observation and Geo-Spatial Information business.

e-GEOS offers a unique portfolio of application services, also thanks to the superior monitoring capabilities of COSMO-SkyMed constellation, and has acquired leading position within European Copernicus Program.

based technologies that give Australia the technological advantage in the electromagnetic battlespace. The first DEWC Systems Space Mission (DSX-001) is due for launch in March 2020 and will deploy a miniaturised rada

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2020 and will deploy a miniaturised radar sensing payload (DEWC-SP1) to the edge of space to provide vital space weather and electromagnetic spectrum data to our Space R&D team.

Working with our partners in academia

and the Defence Science Technology

(DST), DEWC Systems is developing space-

DEWC Systems is part of the DEWC family of companies dedicated to providing Australia with the technological superiority to ensure dominance of the electromagnetic battlespace.

DEWC engineers, technicians and researches are all highly experienced professionals with backgrounds in all areas of Defence and across the engineering disciplines. DEWC Systems operates out of DEWC HQ in Mawson Lakes.

Covering the whole value chain, from data acquisition to the generation of analytics reports, e-GEOS is working for big data analytics, based on the integration of different sources.

e-GEOS application platforms are based on CLEOS, the Data and Information Cloud platform to unlock geoinformation value in Al-powered applications accessible through an enhanced user experience. The e-GEOS application platforms serve vertical markets like environmental protection, rush mapping in support to natural disaster management (Mapcy), specialised products for defense and intelligence (braint), oil spill and ship detection for maritime surveillance (SEonSE), interferometric measurements for landslides and ground subsidence analysis (AWARE), thematic mapping for agriculture (AGRIGEO) and forestry.

In support to its operational applications, e-GEOS operates the Matera Space Centre for acquisition, archiving and processing of multi-mission satellite data including COSMO-SkyMed and ESA Sentinels.

### **ELMTEK PTY LTD**

#### ELMTEK.COM.AU

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Systems Engineered

# EOS SPACE SYSTEMS

#### EOS-AUS.COM/SPACE

Contact: Craig Smith E csmith@eosspacesystems.com T +61 (0) 2 6298 8098



#### SILVER SPONSOR

EOS Space Systems has been pioneering the use of laser technology for space domain awareness (SDA) and space traffic management for over 35 years.

Established in 2012, elmTEK is a leader in Modelling and Simulation, Human Factors and Systems Engineering. elmTEK is a key supplier to the Australian Defence Science & Technology market in Air, Land, Sea & Space Domains.

Space-related examples of technology include:

• Apparatus to test proprioception pre/ post space flight (or analogous activity)

• Tactile Situational Awareness (for guidance/warning)

 Operator Workload Assessment (to NASA MATB-II))

• Software Assurance services for mission critical systems

elmTEK HQ is a modern facility at Mawson Lakes (SA), with a laboratory/ workshop and Defence approved computer networks. elmTEK also has staff deployed to customer sites in SA, VIC and WA. elmTEK is a member of the new Defence Industry Security Program.

The elmTEK quality management system is certified to AS/NZS ISO9001:2016

We provide space debris and satellite management solutions, with design, manufacture and installation of specialised observatories for optical and laser tracking.

Our advanced SDA capability allows users to monitor, measure and interpret activities in space, which may be conducted by commercial operators, partner countries or potential adversaries.

EOS collects qualified and trusted information to generate actionable knowledge for use in both the civilian and defence domains.

Our space based asset supports the calibration of laser systems and is an optical communications testbed. EOSCOM has been in orbit and operable since 1998.

Our ground-based space tracking infrastructure employs Australian designs for high accuracy beam director telescopes, high-power laser systems, diffraction-limited imaging systems and high accuracy timing and positioning systems.

### **EU SPACE PROGRAMS**

#### EC.EUROPA.EU/GROWTH/ SECTORS/SPACE\_EN

**Contact:** Jonas Rupp **E** jonas.rupp@eeas.europa.eu **T** +61 (0) 2 6271 2734





Delegation to Australia

EU space policy and programs aim to tackle some of the most pressing challenges today: fighting climate change, helping to stimulate technological innovation, and providing socio-economic benefits to citizens. The EU has three flagship space programmes:

### EXOS AEROSPACE AU PTY LTD

#### EXOSAERO.COM

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• **Copernicus** is a leading provider of Earth observation data. It helps save lives at sea, improves responses to natural disasters, and allows farmers to better manage their crops.

• Galileo is Europe's global satellite navigation system. It provides more accurate and reliable positioning and timing information for autonomous and connected cars, railways, aviation and other sectors.

• EGNOS (the European Geostationary Navigation Overlay Service) provides "safety of life" navigation services to aviation, maritime and land-based users over most of Europe.

The EU space programmes are implemented in close cooperation with EU countries, the European Space Agency (ESA), EUMETSAT, the European GNSS Agency and many other stakeholders.

With the infrastructure of EU space programmes well advanced, the focus has shifted to ensuring strong market uptake of space data and services by the public and private sectors.

Exos Aerospace is a privately-owned space hardware and operations company that delivers Suborbital payloads to space and returns them aboard our SARGE Suborbital Reusable Launch Vehicle (SRLV). Exos is expanding our business through our National Charter Enterprise (NCE) model, and our Jaquar reusable LEO launcher will be developed under an Italian NCE to serve commercial markets by placina 100-150Kg in orbit at 200-400km @ \$5M per launch. To add to the excitement, Exos will use mobile launch and Towed Glider Air Launch (TGALS) to make On-Demand space launch a reality. In the last vear, Exos Aerospace has flown its SARGE rocket on three test flights and recovered the vehicle intact each time. SpaceX and Blue Oriain can also make that claim with 6000+ and 2500+ employees, respectively. Exos Aerospace did it with 12 employees, and as we evolve our SARGE vehicle. we will continue to forge forward to make space available...

### HAMILTON SECONDARY COLLEGE

#### HAMCOLL.SA.EDU.AU

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Hamilton Secondary College is a STEM school with a focus on space education. With a hands-on practice in the space domain, students experience a virtual

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### INOVOR TECHNOLOGIES

INOVOR.COM.AU

E info@inovor.com



Inovor Technologies is a world-leading supplier of next generation nanosatellite technology.

Our unique low-cost, disaggregated technology has the flexibility to host an extensive range of technical applications including communications, remote sensing, imaging and scientific payloads. launch from Earth in the Mars Explorer space ship, travel to Mars, soft land, then simulate a surface walk in space suits on the red planet.

Students work in teams to resolve replicated challenges encountered when acting as mission control scientists on Earth and Mars astronauts exploring the various scenarios involved. Surface samples collected by astronauts are examined in the space lab by teams of physicists, engineers, geologists and chemists.

The Hamilton Space Program is reinventing the classroom experience via curriculum written for every area with a specialist space emphasis such to create engaging, hands-on classroom environments which empower students to develop in-demand knowledge and skills they need to thrive into their futures.

The Hamilton Space Program is supported by industry and university partners who share the vision to be global leaders in school space education. The SmartSat Cooperative Research Centre is partnering with Hamilton students to assist space scientists in tackling the United Nation's Sustainable Development Goals.

We are positioned at the centre of Australia's growing space hub, and uniquely, all hardware is manufactured in Australia.

In addition to providing turnkey solutions for commercial, government and research clients wanting missions flown in space, Inovor is also developing a nanosatellite based Space Situational Awareness (SSA) mission called Hyperion, to enhance Australia's SSA capability. Further missions in Earth Imaging and Remote Sensing are also under development.

Inovor has developed significant intellectual property related to satellite platform and SSA mission technology.

We have a robust Engineering Management System to support the delivery of reliable, world class satellites and we do it all in Australia.

### MDA

#### MDACORPORATION.COM

E info@mdacorporation.com T +1 604 278 3411



SILVER SPONSOR

MDA is an internationally recognized leader in space robotics, space sensors, satellite payloads, antennas and subsystems, surveillance and intelligence systems, defence and maritime systems, and geospatial radar imagery. MDA's extensive space expertise and heritage translates into mission-critical defence and commercial applications that include multi-platform command, control and surveillance systems, aeronautical information systems, land administration systems and terrestrial robotics. MDA is also a leading supplier of actionable mission-critical information and insights derived from multiple data sources. Founded in 1969, MDA is recognized as one of Canada's most successful technology ventures with locations in Richmond. Ottawa, Brampton, Montreal, Halifax and the United Kinadom. For more information, visit mdacorporation.com

### **MYRIOTA**

#### MYRIOTA.COM

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Myriota is the global leader in low-cost, low-power, secure direct-to-orbit satellite connectivity for the Internet of Things. Leveraging years of customer focused R&D and an extensive suite of patented innovations, Myriota has pioneered a new way to retrieve data from anywhere on earth, either on land or at sea. Myriota, Everywhere.

### METASENSING

#### **METASENSING.COM**

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MetaSensing is an Italian-Dutch SME developing Synthetic Aperture Radar (SAR) and Electronic Warfare (EW) systems for spaceborne, airborne and ground platforms. MetaSensing offers high-resolution SAR/EW sensors and services for Earth Observation, surveillance and defense through all the relevant radiofrequency bands. The frequency bands covered in MetaSensing portfolio are: VHF, P, L, S, C, X, Ku, Ka.

MetaSensing products are deployed for ground and airborne high-resolution imaging and patrolling, coastal and maritime surveillance, drone detection and jamming.

MetaSensing solutions for the space sector are the ECR-C for DInSAR applications with Sentinel-1/Radarsat and its StarSAR-X, the high-resolution SAR payload for Small Satellite platforms.

Finally, MetaSensing supports universities, research institutes and space agencies with technical assistance in developing satellite airborne demonstrators, in acquiring complete SAR datasets, in developing advanced simulators and in performing SAR mission study, analysis and design.

MetaSensing has offices in the Italy, Netherlands, Singapore and South Korea.

### NANO VACUUM PTY LTD

#### NANOVACTECH.COM

Contact: James Carter E info@nanovactech.com T 1800 560 820

### NAN®VACUUM

Nano Vacuum offer turnkey solutions for the Australian & New Zealand Space, Aerospace & Defence industry including:

• Space simulation thermal vacuum systems with heating/cooling control including instrumentation feedthroughs and data logging.

 Portable & temporary cleanrooms rated to Class 100/ISO 5 standards for assembly of particle sensitive devices.

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• Helium leak detectors, wire & die bonders, 3D non-contact metrology testing tools.

• Thin-film deposition and etching tools for fabricating Photonics, MEMs, Lab-On-Chip devices,

• Gloveboxes for laser welding, battery research and assembly of oxygen and moisture sensitive components

• Rapid thermal annealers for high temperature stress relief and reactive gas processing

• Maskless lithography systems.

With over 20 years of experience we have the knowledge and references to help you succeed with your next project. Please feel free to contact Nano

Vacuum at info@nanovactech.com or visit our website: nanovactech.com

### **NEUMANN SPACE**

#### **NEUMANNSPACE.COM**

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Neumann Space is a South Australian company developing an efficient and scalable in-space electric propulsion system for satellites. The Neumann Space thruster marks a revolution in the field of satellite propulsion. Our lightweight products use our patented Centre-Triggered Pulsed Cathodic Arc Thruster (CT-PCAT) technology to convert solid conductive propellants into plasma and produce thrust.

Our product range creates value for our customers in all space operations and travel. For example, our thruster can fulfil all requirements for Low Earth Orbit (LEO) mission profiles such as extending mission lifetimes, station keeping, orbit raising, constellation phasing, inclination changes, de-orbiting and more.

Neumann Space is the only Australian company able to provide a sovereign inspace electric propulsion system capability. With Neumann Space, Australia will be poised to take advantage of the rapidly growing global CubeSat market.

Neumann Space – Plasma Propulsion for your mission.

### NOVA SYSTEMS

#### NOVASYSTEMS.COM

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Nova Systems is an Australian owned and operated Global Professional Service Provider, specialising in the provision of technology enabling solutions and world class expertise to deliver complex capabilities and systems and solve technologically challenging problems. Nova Systems has a strategic interest in solving problems of national interest through enabling satellite communications, next generation ground stations, space situational technologies and space launch.

In-depth specialist space segment knowledge and experience in the acquisition, introduction into service, and certification of large, space-based capabilities, uniquely equips Nova Systems to provide training, certification, systems safety and engineering support to the nation's space sector in the strategic areas of communications, operations and ground segment, and space situational awareness.

Committed to enhancing the capability and competitiveness of the Australian space sector, Nova Systems signed a Statement of Strategic Intent with the Australian Space Agency in 2018.

We solve the problems that really matter.

### PERIGEE AEROSPACE INC.

#### PERIGEE.KR

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# PLUG IN

Contact: Christian Maini E cmaini@plugin.fr T office +33 563 825 060 T mobile +33 671 494 537



Established 20 years ago, PLUG IN is considered today as a reference in designing and manufacturing original and reliable vacuum feedthroughs. Perigee Aerospace Inc is a Korean start-up designing and building the smallest launch vehicle in the world. Founded in 2018, Perigee has been developing innovative technologies that maximize the micro launcher's payload capability.

The company's first launch vehicle, Blue Whale 1, will be a launcher capable of sending 50kg payload into 500km SSO, yet weighing only 1,800 kg at lift-off with a total length of just 8.5m.

Even for a small and most efficient launch vehicle, there must be a launch site capable of rapid launch frequency and safe operations. Perigee believes the Whalers Way Launch Complex, currently being constructed by a South Australian start-up, Southern Launch, will be the ultimate answer for it.

Perigee is closely working with Southern Launch to complete the development of the vehicle and the launch site and plans to launch the very first BW1 from the Australian soil by the end of 2020.

We are offering modular and custom designed items fitting exactly your needs, for current more than 1 kA, voltage up to 125 kV and frequency up to 65 GHz.

Based on our unique epoxy compound sealing process, we can seal almost any type of connector, including full D Sub range,  $\mu$ D, USB A 2.0 and 3.0, USB C, RJ45, HDMI, VHDCI, DVI, IEEE 1394, 1553B and many more.

Regarding the RF plugs we do supply feedthroughs with BNC, SHV, N, TNC, SMA, PC 2.92, 2.4 and 1.85.

On the top of that we are specialised in thermal measurement items with thermocouples or Pt sensors.

Our hermetic feedthroughs are used by the most famous laboratories and largest space manufacturers for their thermo vacuum chambers all around the world, including Australia.

Do not hesitate to visit our web site and contact us for any need.

### **ROHDE & SCHWARZ**

#### **ROHDE-SCHWARZ.COM**

Contact: Boris Tovirac E boris.tovirac@rohde-schwarz.com T +61 402 590 264



The Australian subsidiary of Rohde & Schwarz has been operating in Australia since 1981. Rohde and Schwarz develops and manufactures electronic goods for Defence, space industry, infrastructure operators and government customers. The independent group is among the world's technology leaders in RF test and

measurement including:

• Satellite payload testing - test and validate performance at component, subsystem and system level

• Antenna testing - active phased array, beam forming, transmit and receive and GNSS testing including multi-constellation GNSS simulation

• Ground station and ground terminal testing - validating quality of service.

### SITAEL AUSTRALIA

#### SITAELAUSTRALIA.COM

**Contact:** Mark Ramsey **E** info@sitaelaustralia.com



Sitael is the largest privately-owned space company in Italy, and is a worldwide leader in the small satellites sector. With highly qualified employees and state-of-the-art facilities, Sitael covers a wide range of activities in development of small satellite platforms, advanced propulsion systems and on board avionics, providing turn-key solutions for Observation, Telecom and Science applications.

Sitael offers a complete new-generation small satellite product line, based on smart, modular, scalable, all-electric platform solutions in the class range from 50kg to 300kg.

Sitael Australia was established in 2018, to facilitate the building of Australian small-satellites in the 50- 300kg class.

Sitael Australia is currently growing its team in Adelaide, to allow sovereign design, manufacture, integration and test of 50-300kg class spacecraft locally.

### SCITEK AUSTRALIA PTY LTD

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#### SCITEK.COM.AU

Contact: Kelvin Ho E kelvin@scitek.com.au T +61 437 676 491



Scitek has been a vacuum technology and temperature control specialist business for 30 years' experience. To date we have already supplied 10-15 customised chambers that are directly and indirectly related to space research.

We design, fabricate and supply space simulation chambers and related technologies for space research.

Our capability includes vacuum systems down to 10<sup>^</sup>-12mbar pressure and a temperature range from near absolute zero (near 0° Kelvin or -273° Celsius) to 400° Celsius.

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### **SMARTSAT CRC**

#### SMARTSATCRC.COM

**Contact:** Andy Koronios **E** info@smartsatcrc.com



The SmartSat CRC is a consortium of universities and other research organisations, partnered with industry that has been funded by the Australian Government to develop know-how and technologies in advanced telecommunications and IoT connectivity, intelligent satellite systems and Earth observation next generation data services. The impact of this research will be to develop intellectual property and a specialist industry expertise that will spawn new businesses, create export economic value and generate new high-tech jobs for all Australians.

### SUPPORTING SPONSOR

### SPACE INDUSTRY ASSOCIATION OF AUSTRALIA

#### SPACEINDUSTRY.COM.AU

Contact: Sherri Dawson E operations@spaceindustry.com.au T +61 488 105 775



EXHIBTION LOUNGE SPONSOR

The Space Industry Association of Australia (SIAA) is a national organisation formed to promote the growth of the Australian space industry. We speak with authority and credibility on behalf of our members on policy and commercial issues connected with the Australian space industry.

The SIAA has a lead role in advising government on behalf of the space industry. With the establishment of the Australian Space Agency in Australia, there has never been a more crucial need to have a strong national voice for the space industry.

### **SOUTHERN LAUNCH**

#### SOUTHERNLAUNCH.SPACE

Contact: Lloyd Damp / Elisha Buckley E lloyd.damp@southernlaunch.space E elisha.buckley@southernlaunch.space T +61 402 946 945 / +61 436 320 715



Southern Launch is an innovative space company providing the infrastructure and logistics support for orbital and sub-orbital launches of satellites and space payloads. We offer two multi-user launch sites located in South Australia.

Both sites are close to established industry infrastructure, have good yearround weather, and are unhindered in terms of population areas and aeronautical and maritime traffic lanes.

Our sites provide customers with greater launch window availability and launch schedule flexibility compared to any other location around the world.

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### SQA SERVICES, INC. SQASERVICES.COM

Contact: Brad Shultz E improve@sqaservices.com T +1 310 544 6888



SQA provides global supplier quality solutions to clients in aerospace and other quality-critical industries.

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SQA delivers services by deploying associates located throughout the world to nearby supplier sites. Our associates are quality assurance professionals who provide faster on-site response, eliminate travel budgets, and work only when required.

Finally, SQA delivers 'Supplier Intelligence' through our secure, proprietary operations portal. Supplier information and performance data are collected, collated, analyzed, and reported in real-time.

At SQA, we aim to maximize the resources that clients invest in supply partners and minimize the cost of supplier management.

With SQA's global reach, and proven people, processes and technology, we are the ideal solution to help clients extend their organization and maintain global quality assurance.

### ΤΕ ΡŪΝΑΗΑ ΑΤΕΑ -SPACE INSTITUTE

#### SPACE.AC.NZ

Contact: Catherine Qualtrough E catherine.gualtrough@auckland.ac.nz **T**+64 9 923 8029

Te Pūnaha Ātea - Space Institute is a multifaculty space science and engineering initiative based at the University of Auckland. As New Zealand starts to define its place in the fast-growing international space sector, we are ensuring that researchers and students are equipped



with the knowledge to participate in an industry that will have a strong impact on our technological, economic and social future. The Institute is committed to expanding New Zealand's innovative capacities to the frontiers of space.

Our current research includes work on developing satellite hardware for the Cubesat platform, innovative synthetic aperture radar technology, novel plasma micro-propulsion systems, satellites structural dynamic including vibration testing and microvibrations, lightweight deployable structures, optical payloads mechanism, thermal shielding for sample return missions and supporting the development of an Australasian optical communication around station network.

#### ΤΕ ΡŪΝΑΗΑ ΑΤΕΑ AUCKLAND SPACE INSTITUTE

As a globally engaged, world-class research institution, the University of Adelaide

collaborates with industry and government to deliver high-impact, cross-disciplinary

research across many aspects of Space. With over 50 years of space R&D,

we have a proud history of collaborating

range of disciplines including: science, mathematics, computer science, health

Our expertise in this area spans a wide

sciences, law and policy, and engineering.

with Australia's space sector.

### THE UNIVERSITY **OF ADELAIDE**

#### ADELAIDE.EDU.AU

Contact: Professor Michael R. Webb. Director, Defence, Cyber & Space E defence@adelaide.edu.au **T**+61 (0) 8 8313 8261



The University of Adelaide is a destination of choice for world-leading researchers, high-achieving students, and government and industry partners.

Our newest endeavour. The Centre for Sustainable Planetary and Space Resources (CSPSR) is addressing the challenges faced by long term planetary exploration, while ensuring the near-term application here on Earth. From the design of nanosatellites, communication networks & deep-space sensing, through to the challenges of global security and law, our impact in Space is immense. In all fields of endeavour, we're working to expand the boundaries of knowledge to benefit people and planet.

### **VENTURE CATALYST SPACE - UNISA**

#### ICC.UNISA.EDU.AU

Contact: Georgia Minarelli E georgia.minarelli@unisa.edu.au T+61 (0) 8 8302 7620





University of South Australia Venture Catalyst Space is a globally competitive program which supports founders, entrepreneurs and startups, to develop and grow innovative or disruptive ideas in the space sector.

Delivered by the University of South Australia's Innovation & Collaboration Centre and supported by the State Government's Space Innovation Fund, the equity-free program gives founders the support and tools they need to plan and successfully build a scalable and investment ready business.

The one-of-a-kind program delivers tailored support and guidance working with a global pool of expert advisors including former NASA astronaut Pam Melroy, the Australian Space Agency, Airbus, Nova Systems, Fleet, Myriota and the SmartSat CRC as well as a stipend and other support services. Applications for 2020 are open now.

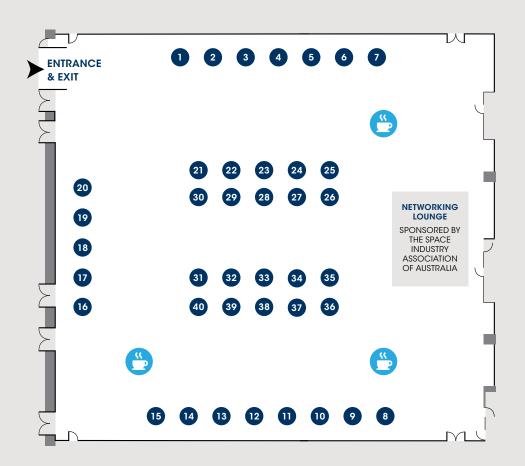


Serafino Wines, a family owned business since 1972, has developed a reputation as one of Australia's most respected wineries and leading producers.

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# **EXHIBITION FLOORPLAN**

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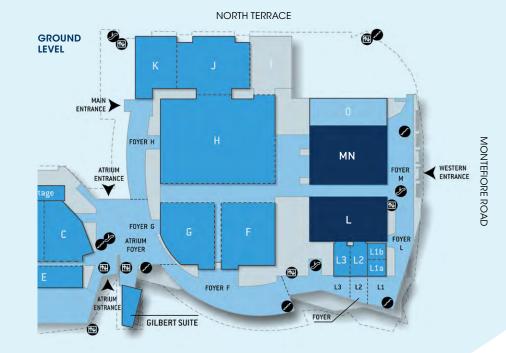
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# **CONFERENCE MAP**



ADELAIDE CONVENTION CENTRE WEST BUILDING, GROUND LEVEL HALLS L, M & N

Best access via Western entrance. off Montefiore Road.

Halls M & N Exhibition Hall L Sessions . . . . . . . . 





















# **NOTES**

 If you want to reach the Moon and beyond, ask the people who know the Universe.

CSIRO's Parkes Radio Telescope relayed live footage of the first Moon walk in 1969

> We understand the power of Earth observation data to inform policy, manage natural environments and generate opportunities. Seen here is the Lucinda Jetty Coastal Observatory in Queensland. Image Credit: ESA's Sentinal?

Work with us - your partner in space - to solve the greatest challenges through innovative science and technology to unlock a better future.

CSIRO is a proud sponsor of the Australian Space Forum

Australia's National Science Agency

# The brightest stars are in South Australia.

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Government of South Australia

