

FCO Concept Validation Project: Australian-UK Space Bridge

Wifi username: SAvisitors
Password: interstellar dust

Submit questions @ www.slido.com
Event code: #SpaceBridge

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Foreign &
Commonwealth
Office



CATAPULT
Satellite Applications

The Rationale

“This is an important initiative for Australia and South Australia's growing space industry and will drive the development of game-changing technologies, create new businesses and high-tech jobs.”

The Honourable Steven Marshall, South Australian State Premier

10th December 2019

- UK growth target to grow global Space sector share to 10% (£40Bn) by 2030
- Australian Coalition Government investing Au\$12Bn in Space to create 20k jobs by 2030
- 70% of UK growth target needs to be generated from export revenue
- Brexit – need to establish new channels to export markets and growth opportunities
- Australia is a priority target for UK Free Trade Agreement



The 'Bridge' principle

A strategic government **framework** to strengthen **International** alliances to provide **industry** with:

- *Increased collaborative **technology development** opportunities,*
- *Access to new and global **market channels**: strategic partnerships for **commercial exploitation** into third party nations,*
- *Improved industry and market awareness and opportunity to influence **International technology** landscape.*

“The Space Tech Bridge is important to us, inherently for what it might deliver for the UK space industry, but strategically too as a potential model that we might consider replicating to support other tech’ initiatives in the future.”

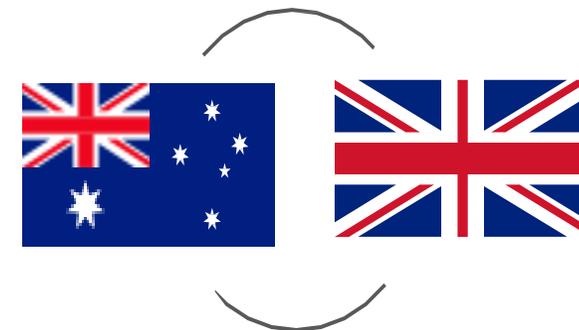
Debbie Fern - First Secretary Regulatory Diplomacy and Agriculture, British High Commission

5th December 2019



The Space Bridge concept

– Initial assumptions:



Outline structure of the Space Bridge will include four layers:

1	GOVERNMENT TO GOVERNMENT
2	REGULATOR TO REGULATOR
3	TRADE AND INVESTMENT
4	B2B - Skills, Academia, Collaboration and Commercial Exploitation

Government and Regulation:

UK SPACE AGENCY

AUSTRALIA SPACE AGENCY

Political declaration signed September 2019

Trade and Investment:

DEPARTMENT FOR INTERNATIONAL TRADE

AUSTRADE

Business (Academic, Commercial and collaborative):

SATELLITE APPLICATIONS CATAPULT as an industry leader is uniquely positioned to foster the appropriate business environment to maximise economic impact in an accelerated timeframe.

Overview and Highlights – December 2019 visit

- Significant energy and reception from all engagements from State Premier down to SMEs
- Established essential connections with British High Commission and Consulate staff
- Validation and endorsement by Australian stakeholders for a Space Bridge and its benefits obtained at all levels

State Premiers:	1
Federal Ministers:	1
High Commissioner:	1
State Ministers:	4
Chief Scientists:	3
Government Bodies / Institutions:	12
Industry Bodies / Institutions:	5
Industry (Primes, SME's and start ups):	7 bi-laterals
	30 via w/shops
Academic:	7



Australian Space Sector landscape

Federal:

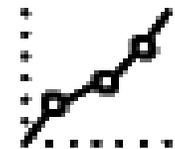
- *Strong international Space focus – national desire for Australia to accelerate Space Capability through collaboration with other nations*
- *Heavy defence bias but awareness of civilian applications market emerging strongly*
- *Space sector akin to the UK 5 years ago*
- *Each State appears unique in terms of:*
 - *Investment*
 - *Space Tech capabilities*
 - *Applications focus for space tech exploitation*
 - *Independent economic drivers and requirements*

Australian Space Sector landscape

States and Territories:

- **South Australia** – Strong defence & security supply chain (including cybersecurity) with good space tech start ups base. Looking to attract more SMEs and support scale up and support skills growth.
- **Western Australia** – Robotics and Automation + Radio Frequency Technology horizontals with very strong Extractives vertical. Looking to provide scale up incentives to broad start up base / attract medium enterprise. Data analytics and AI a weak area.
- **NSW** - Manufacturing, Agriculture and Transport high priority + early TRL tech development. Economic driver is jobs creation and attraction of large primes.
- **ACT (Canberra)** – TRL 2-5 Testing and Prototyping, Agriculture. Strong government support for start ups. UK not a priority area for export as main effort is APAC.
- **Victoria** – Communications, Sensing systems and Natural Capital. Strong international collaboration drive and strong university capability focused on commercial outputs. Space specific capability slightly lower than other States but good application in climate, deforestation and land monitoring.

Enabling Business: Strategic Opportunities



Skills growth & Research	Collaborative development	Commercial exploitation
<p>Cross certifications and recognition</p> <p>Joint CoE's, CDT and space degree programs</p> <p>Reciprocal Researcher In Residence Program</p>	<p>Secure funding competitions / mechanisms for co-funded collaborative dev projects</p> <p>Facilitate engagement with aligned partners and curate consortiums</p> <p>Identify project opportunities in response to market challenges</p> <p>Platform for visibility of bilateral opportunities</p>	<p>Landing and launch pad development</p> <p>Development of International Commercial Challenge fund opportunities</p> <p>Joint in-country accelerators</p> <p>Support establishment of Joint Ventures and commercial ventures</p> <p>Entrepreneurs in Residence</p>

“We [the UK] should pursue this initiative [SpaceTech Bridge] through the lens of space. This is as an area of substance that is mutually beneficial to both parties that we could pursue bilateral trade and commerce”

Former Minister for State for Asia and the Pacific at the FCO, Mark Field MP

April 2019

Example Pipeline Collaborative Opportunities

Title	Brief description	Market vertical	Tech horizontal
Drug Watch	Detection of Illicit material transportation to enable a more targeted approach to monitoring and law enforcement of vast areas and borders.	Security and Law enforcement	ML, AI, RF detection, AIS, Satellite Imagery
Corvus	Decision making tool for prediction (risk based analysis) and propagation modelling of wild fires for prevention of spread and holistic view for strategic management.	Environment, Agriculture	Flow modelling, risk analysis, environmental data management
SBAS mass market	Compact and complex satellite receiver development / optimisation as a mass market SBAS enabler. (Satellite Based Augmentation System (GPS and GNSS))	Transport, Urban Development, Government Services	RF engineering, Integration
GHG qualification	Quantification and qualification of methane released during open cut mining for capture management, accounting and tax control.	Mining	Geospatial intelligence, hyper spectral imaging, data analysis
Data comms for automation	Management and optimisation of ever increasing data for automated mining. Management, processing, interpretation, connectivity and security of data generated from sensors, IoT, Lidar and other automation data sources.	Mining, Logistics / Transport	Big data, IoT, 5G, AI, ML, data analysis
In-Space Mining	Exploitation of terrestrial technologies (remote and autonomous) in space and development of technology for resource civilisation	Government, Space exploration, Mining	Robotics, Automation, Communication, AI
Rail infrastructure health	Early detection / prediction of rail inflexions to enable preventative maintenance and reduce "catastrophic" failure	Mining, Transport, Government	InSAR, data analytics, ML

Next Steps for Catapult

- Analysis of outputs from Australian workshops and UK webinar survey responses
- Create a community of interest and communication mechanism for updates on opportunities
- Provide Policy recommendation report to the FCO on UK industry sustained engagement within Australian Space sector
- Identify UK partners to pursue initial business opportunities / projects
- Develop business case for third party funding to de-risk Aus – UK business to business activities

*“The Minister and I would appreciate any updates regarding progress on the Space Bridge. I would also encourage, as I am sure you will, to continue conversations with the Science and Innovation team within the Department of Jobs, Tourism, Science and Innovation. The State is keen to ensure that **SAC collaboration with Western Australian** organisations can be facilitated.”*

Office of the Hon. Dave Kelly -Minister for Water; Fisheries, Forestry; Innovation and ICT; Science

29th November 2019

A satellite with solar panels and a parabolic dish antenna is shown in orbit against the backdrop of Earth and a starry space. The Earth's horizon is visible on the left, with a bright blue glow from the sun. The satellite is positioned on the right side of the frame, angled towards the viewer.

Thank you

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