





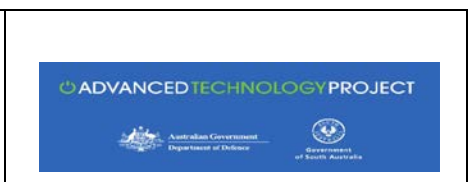
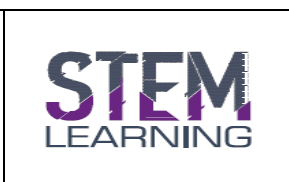
DECD-ATP-Neumann Space Partnership Understanding

SA SCHOOLS SPACE MISSION

The SA Schools Space Mission allows opportunities for partnerships with the Department for Education and Child Development (DECD) schools and Defence SA to support schools in their experimental designs and development and build “dynamic partnerships between business, industry and schools to ensure learning is relevant and contemporary and builds great career awareness” (DECD Learning Strategy). Shortlisted schools and experiments were announced in October 2017 with the final selection of experiments to be part of the Neumann Space payload aboard Bartolomeo during November 2018 for launch in October 2019.

SCHOOL	 <p>Government of South Australia Department for Education and Child Development</p>	 <p>ADVANCED TECHNOLOGY PROJECT</p>	PARTNER	
<p>Program Contact</p>	<p>Names: Advanced Technology Project (ATP), DECD, Learning Improvement Division (LID) Name: Dr Sarah Baker, ATP Manager Email: sarah.baker@sa.gov.au SASSM Website: http://dlb.sa.edu.au/ctmoodle/course/view.php?id=133</p>		<p>Partner Contact:</p>	<p>Name: Monika Stankiewicz Title: Marketing and Product Dev. Email: momo@neumannspace.com Website: http://neumannspace.com/</p>
<p>PARTNER SUMMARY</p>	<p>Neumann Space is a space start-up dedicated to making a bigger world by helping humanity to the stars. Our patented solar-electric ion drive is more efficient than anything else on the market. We are uniquely suited to delivering affordable, efficient drives that can greatly prolong the lifespan of satellites, as well as lowering the fuel and mass costs for long missions, such as space exploration and mining. We are dedicated to building the Australian space industry, and fostering a spirit of community and discovery.</p> <p>Our mission is simple: We believe humanity’s future lies in the stars. Our future home will be different worlds as government initiatives turn into corporate enterprises, and eventually tourism, mining, and colonisation. Neumann Space is on the front-line of developing the technology that will make space travel affordable and accessible through innovation and collaboration, Neumann Space will connect all of us to the stars.</p>			
<p>PARTNERSHIP PURPOSE AND TIMING</p>	<p>We’ve partnered with the South Australian Government to create the first schools space mission. Every DECD school in SA had the chance to submit a proposal to the Space Mission with the theme of “Innovation for a better future” and all DECD schools are able to join a ‘Hub’ around the 7 shortlisted experiments. The top 3 projects will be chosen in Term 4, 2018 and sit on the Bartolomeo platform outside the ISS, collecting data and performing experiments for a year. Neumann Space has signed a Memorandum of Understanding with DECD to support the SA Schools Space Mission program until 2020 by;</p> <ul style="list-style-type: none"> ● Giving expert advice on safety procedures and ISS requirements for the shortlisted and final experiments ● 1 kg payload space for SA school projects to go on to FAST-Bartolomeo via their agreement with Airbus DS ● Helping schools obtain space level equipment, technical advice and resources associated with their payload. ● Fully integrate the final student experiments into Neumann’s FAST payload by the end of 2018 for launch to the ISS in 2019 ● Launch student experiments with Neumann’s FAST payload in 2019 ● Be responsible for communications and power between the projects on the ISS and ground stations ● Collect DECD experimental data for analysis during 2019-2020 until the experiments are jettisoned 			

<p>STUDENT COHORT / SCHOOL CONTEXT</p>	<p>The SA Schools Space Mission was open for Stage 1: Expressions of Interest from all DECD schools. Fifteen schools sent in EOIs (25 experiments) and after feedback was given, 14 schools presented 16 experimental outlines at the International Astronautical Congress in Adelaide 25-29 September 2017. One experiment was shortlisted with industry votes from the IAC. An expert panel consisting of representatives from DECD, Neumann Space, Airbus Defence & Space, Uni of Adelaide, Flinders University, UniSA and TAFESA, Department of State Development and Space Industry experts judged the 5 minute presentations and portfolios from the 13 other schools to choose the final shortlisted schools and experiments. Overall 7 experiments were shortlisted: 3 primary and 4 secondary schools.</p>																																
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<p>CURRICULUM FOCUS/LINKS</p>	<p>Each SA Schools Space Mission school is responsible for linking their experiment to either and/or the Australian Curriculum and South Australian Certificate of Education (SACE) curriculum. All links for each school can be found in the original EOIs, Presentation and Portfolio at the SASSM Moodle website http://dlb.sa.edu.au/ctmoodle/course/view.php?id=133.</p> <p>Students and teachers applying for the program at any stage gain entrepreneurial knowledge through their presentation of the STEM problem-solving experiments, within one of the STEM learning categories.</p> <p>They will develop critical and creative thinking, teamwork and communication capabilities through the application process. Successful applicants develop strong STEM skills applied to a real world problem, using a thinking framework such as problem-based learning or the engineering design process such as the DECD-sanctioned “Ask-Research-Imagine-Plan-Create-Test-Improve” framework (https://www.teachengineering.org/k12engineering/designprocess)</p> <p>The program will also support schools to deliver interdisciplinary units which support STEM understandings and enable a greater awareness of STEM pathways and careers in the students undertaking the program.</p> 																																
<p>Experimental Outline</p>	<p>Further details of each experimental outline can be found at http://dlb.sa.edu.au/ctmoodle/course/view.php?id=133.</p>																																
<p>PROPOSED BUDGET</p>	<p>The SASSM has a budget of \$10,000 for shortlisted development and final experiments and \$20,000 to support professional development and/or induction processes for educators, students and industry links to develop their technical expertise and the space experiments.</p>																																





ASSESSMENT / PROGRESS MILESTONES	Milestones	Timeline
	Endorsement by Education Minister, MOU created and signed with Airbus/Neumann Space	Fri 28 April 2017
	Initial communication to DECD schools, industry and universities Information evening outlining logistics, safety and two-tiered application process: - One page expression of intent/5 minute multimedia presentation and portfolio to expert panel 'Space Experiments' Moodle is set up within STEM Learning Strategy Moodle.	Tues 13 June 2017
	Expressions of Interest submitted by DECD Schools including Principal endorsement	Fri 7 July 2017
	EOIs reviewed by Neumann space and DECD to ensure 'space-worthiness' and provide expert feedback	By Mon 24 July 2017
	Schools submit 5 minute presentations and Portfolios before IAC	By Wed 20 September 2017
	Schools present at the IAC to Space experts and delegates	Tues 26-Fri 29 September, 2017
	Expert Panel are able to votes online	Mon 2 October – Mon 9 October, 2017
	Expert Panel meeting is held to shortlist experiments	Tues 10 October, 2017
	Final 7 shortlisted experiments are announced by Email/Website	Mon 16 October, 2017
	All SA Schools Space Mission Stage 1/Stage 2 Certificates are produced and sent to schools	By Fri 24 November, 2017
	SA Schools Space Mission update meeting – Schools/Industry/Tertiary Institutions	EDC Mon 11 December, 2017
	All Stage 2 Feedback emailed to schools	By Wed 24 Jan, 2018
	Release of Week 0, Term 1 materials: <ul style="list-style-type: none"> • SASSM schedule and deliverables • SASSM ICD • Interface Board/data computer • List of approved materials/components in alignment with Airbus and ISS safety protocols • Phase 0/1 checklist • General Guidelines (Do's and don'ts) 	By Thurs 25 Jan, 2018
	Technical meeting held to discuss Week 0, Term 1 materials	T1: Wk2 at EDC*, 3-6pm Thur 8 Feb, 2018
	Progress meeting with Schools/DECD/Partnerships/Neumann Space meeting will be held	T1: Wk5 at EDC*, 3-6 pm Tues 27 Feb, 2018
	Phase 0/1 documents (template to be supplied) collected by Sarah Baker	T1: Wk10 By Fri 06 April, 2018
	Release of Term 1 feedback, Term 2 updated documents and Phase 2 checklist	T1 Break, By Wed 25 Apr, 2018
	Technical meeting held to discuss Term 1 feedback and released materials	T2: Wk2 at EDC*, 3-6pm Wed 9 May, 2018
	Progress meeting with Schools/DECD/Partnerships/Neumann Space meeting held	T2: Wk 5 at EDC*, 3-6pm Wed 30 May, 2018
	Phase 2 document (template to be supplied) will be collected by Sarah Baker	T2: Wk10, By Wed 04 July, 2018
	Release of Term 2 feedback, Term 3 updated documents and Phase 3 checklist	T2 Break, by Wed 18 July, 2018
	Technical meeting held to discuss Term 2 feedback and released materials	T3: Wk2 at EDC*, 3-6 pm Thurs 02 Aug, 2018
	Progress meeting with Schools/DECD/Partnerships/Neumann Space meeting held	T3: Wk5 at EDC*, 3-6 pm Wed 22 Aug, 2018
	Phase 3 document (template to be supplied) will be collected by Sarah Baker	T3: Wk 10, By Wed 26 Sep, 2018
	Release of Term 3 feedback and any final material	T3 Break, By Mon 08 Oct, 2018
	Preparation of final 5 minute Presentation/Portfolio and test results.	T4: Wk1-Wk2 Mon 15 Oct to Wed 24 Oct, 2018
	Submission of final 5 minute presentation, portfolio and test results.	T4: Wk2, By COB Thursday 25 Oct, 2018
	All 5 minute presentations and portfolios uploaded onto SASSM Moodle for online judging	T4: Wk2 Fri 26 Oct All Portfolios/ Presentations uploaded onto Moodle for Online Judging
	The Expert Panel judging for the three final experiments will be based on online judging and a formal meeting in Adelaide looking at; <ul style="list-style-type: none"> • A five-minute presentation(filmed/recorded – format open) • A portfolio consisting of Background, Experimental outline, Partnership collaboration, Curriculum alignment, Phase 0/1, 2,3 documents and a Conclusion. 	T4: Wk 3 (Date TBA) Expert Panel meeting for final experiment selection and announcement of finalists
	Final 3 school payloads handed over for integration	T4: Wk5, By COB Fri 9 Nov, 2018
	Launch	October, 2019
	Data from the experiments on Bartolomeo will be released to the Final Experimental schools first in 2019/2020 and then openly after a month	2019/2020
	<i>* EDC - Education Development Centre, 4 Milner Street, Hindmarsh, SA, 5007</i>	
OTHER	All DECD schools are invited to form 'Hubs' around the lead shortlisted experimental schools and industries are invited to join the current shortlisted experimental groups. Please contact Dr Sarah Baker sarah.baker@sa.gov.au for further details if you are interested.	

Executed as an updated agreement on Wednesday 24th January, 2018

Signed as:	Name and Title	Signature / Date
ATP/DECD Representative	Dr Sarah Baker Advanced Technology Project Manager/DECD	
Partnership Representative	Dr Paddy Neumann Chief Scientist, Neumann Space	