

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Lift Off - Secondary Space Education (2) (2B)

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IMPLEMENTATION OF SPACE-ORIENTED INTERACTIVE CURRICULUM UNITS IN
AUSTRALIAN SECONDARY SCHOOLS

Abstract

The growth of the Australian space industry requires a strong academic base that must begin at the secondary education level. Building on previous work introducing the system architecture of the MISTER Aussie earth observation mission, two example curriculum units have been developed to demonstrate the integration of a highly interactive space system into classrooms. The units were initially developed following the Australian Curriculum, and are then focused within the Victorian Curriculum F-10. The first unit has a 'traditional' STEM focus and is to be used to teach Level 10/10A students the 'Pythagoras and trigonometry' and 'Linear and non-linear relationships' sequences. The second unit is intended to demonstrate the applicability of space technology outside of STEM units, and contains the Level 9 and 10 history sequence, 'The Modern World and Australia'. Each unit culminates in an incursion activity allowing students to interact directly with either the MISTER Aussie satellite, or data products from the space segment.

Both units are described, and their implementation into classrooms is discussed. Each unit is analysed for its applicability to the 'concepts and skills' and 'knowledge' as defined in the Victorian Curriculum F-10. The potential impact of the incursion activity is investigated as it relates to inspiring students to further involvement in the space industry. Finally, a concept for a cross-curriculum unit combining the two units is presented. Cross-curriculum units are gaining popularity as a method of achieving a more complete student education by increasing inter-subject links and applications. The cross-curriculum unit design more effectively consolidates space elements into non-STEM subjects, as non-STEM students gain more exposure to space elements than they would solely within the non-STEM unit. In this case, the space system is used to bridge the subjects together, both in terms of producing data for the history unit and the involvement of space technology in the historical contexts taught.