PROFILE

Position
Senior Systems Engineer

Market
Defence & Space

Expertise

Analysis of complex technical and non-technical problems

System definition and specification

Capability design

Conceptual design

Functional analysis

Computing and analysis tools including: CORE9, GENESYS, Strand7, ANSYS CFD, MATLAB, and SolidWorks.

Qualifications

Master of Systems Engineering (Electronic Warfare), University of NSW at Canberra (ADFA), 2018.

Bachelor of Engineering (Aeronautical), University of Sydney, 2014.

Associate Systems Engineering Professional, INCOSE, 2017.

NV2 clearance

Last updated 22 Apr 2020

SHOAL™

MATTHEW VELLA

Matthew Vella is a qualified aerospace engineer and an experienced system engineer. He has experience in the early-stage problem definition and conceptual design of major Defence capability projects, technical coordination of senior resources and conceptual design applied to research tasks, including hypersonic vehicles and satellite systems. Matthew has managed, advised and trained teams, effectively coordinating multi-discipline teams located in multiple time zones. He is an INCOSE Associate Systems Engineering Professional.

Key projects and experience

SHOAL GROUP

Aerospace & Systems Engineer ***2015 – present***

Matthew provides support to the conceptual design of major Defence capability projects. Primarily this support includes driving model-based systems engineering tools to help define the capability system.

Key responsibilities:

- The development of enterprise-wide functional analysis of two military future joint operating concepts, as part of ongoing work with the Vice Chief of the Defence Force Group
- Primary resource to the project lead supporting the development of operational concepts, system specifications and V&V plans for a surface threat training capability for ADF air crew, and for the deployable force infrastructure replacement capability for Army Headquarters
- Systems engineering expertise on the approach to capability design for the Australian Geospatial-Intelligence Organisations future space-based GEOINT capability
- Successful delivery of the capability system definition and system specification for a surface-to-air threat emulator training capability.
- Successful delivery of two functional analysis projects, delivering AUSDAF architectural views for a military future joint operating concept.
- Space engineering advice that aided in the selection of astronomy science missions for integration into space-based CubeSat vehicles
- Leading the technical development of the operational concept and solution architecture definition for a Counter IED replacement capability for Army Headquarters.

PROFILE

MATTHEW VELLA

Professional affiliations

Member, American Institute of Aeronautics and Astronautics (AIAA) - Sydney Section

Member, Systems Engineering Society of Australia (SESA)

Member, International Council on Systems Engineering (INCOSE).

Member, Australian Youth Aerospace Association (AYAA).

SHOAL GROUP

Business Development Coordinator ***2015 – 2016***

This role supported the Business Development Manager develop and implement the company domestic and international business strategy, to coordinate identify, qualify, and track potential business opportunities, and coordinate proposal development and review.

Key responsibilities:

- Coordination of business develop activities and team
- Proposal development and review
- Meeting facilitation
- Client liaison
- Development of reference and training materials

ADVANCED INSTRUMENTATION AND TECHNOLOGY CENTRE

Intern ***2014 – 2015***

This four-month project required the provision of satellite design and systems engineering assistance to the astronomy community to aid in the down selection and then development of a CubeSat mission.

Key responsibilities:

- Development of background documentation and assessments for use by the mission scientists during down-selection
- Technical assistance during selection workshop discussions on the topics of satellite engineering and the space environment
- A conceptual design of the selected mission architecture and satellites major system.

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