



## Topic Domains for submission

The topic domains for abstract submission in each of the Aerospace & Aviation Disciplines including the Specialist topic areas **are described** below. Authors must select one of the following themes that their abstract relates to:

### Co-Chair - Design, Aerodynamics and Propulsion - A/Prof KC Wong, Sydney University

#### ***Discipline Lead – Design (Dr Rik Heslehurst, Engineering Consultant)***

Paper Domain: The Design Technical Subcommittee invites papers which present new and innovative development in aerospace systems design. Topics may include aircraft configuration design, multidisciplinary design optimisation (MDO), green aircraft technologies, life-cycle analysis, aircraft performance, stability & control and design methodologies.

#### ***Discipline Lead – Aerodynamics (Associate Professor Con Doolan, UNSW)***

Paper Domain: The Aerodynamics Technical Subcommittee invites papers which present new and innovative development in analytical and experimental aerodynamics. Topics may include CFD methodologies and applications, hypersonic aerodynamics, laminar flow, experimental aerodynamics, low Reynolds Number flow, aero acoustics, fluidic and boundary layer control.

#### ***Discipline Lead – Propulsion (Dr Dries Verstraete, Sydney University)***

Paper Domain: The Propulsion Technical Subcommittee invites papers which present new and innovative design and developments in propulsion systems. Topics for this includes engines, drive systems, platform energy requirements, green technologies, propulsion system integration and related airframe/engine technologies.

### Co-Chair - Structures & Materials, Systems, Avionics/Mission Systems – John Mo, RMIT University

#### ***Discipline Lead – Structures & Materials (Dr Andrey Molotnikov, Monash University)***

Paper Domain: The Structures and Materials Technical Sub-committee invites abstracts on the development, design, analysis, testing, service experiences, or novel applications of structures and materials. The topics include; advanced metallic & Composite Materials and Structures (CMS), their durability & damage tolerance, fatigue & failure, impact behaviour, probabilistic mechanics and structural reliability methods.

An Incorporated and **specialist** conference, the 1<sup>st</sup> AHS Composites and Additive Manufacturing, (Chair, Dr Andrey Molotnikov, Monash University) will be organised. *Abstracts are invited covering the areas of design, manufacturing, operation and support. The durability and degradation of the structure and materials due to various loads and operational environment will form the key focus of the conference. Methods adopted for NDI and NDT, including prognostic lay-ups/tools covering de-lamination, crack growths & corrosion; and its associated modes of repair and structural modifications may also be covered*

#### ***Discipline Lead – Systems (Onboard and Off-Board) (Prof Javaan Chahl, Univ. of South Australia)***

Paper Domain: The Systems Technical Subcommittee invites papers which present new and innovative design and development in aircraft systems. Topics may include, flight control systems, electrical systems, power supply systems, communications systems, navigation systems and ground support/control systems.

#### ***Discipline Lead– Avionics & Mission Systems Session Program (Kevin Goldsmith, DSTG & Prof. Roberto Sabatini)***

Paper Domain: The Avionics and Mission Systems Technical Subcommittee invites papers which present new and

innovative design and development in Avionics & Mission Systems (MS), that will aircraft avionic displays, sensors & instruments, human factors and air traffic management.

Incorporated and specialist conference, *1<sup>st</sup> AHS Asia Australia Regional Conference on Mission Systems* (Chair Dr Arvind Sinha CASG ) will be organised. Abstracts are invited covering communications, weapons systems, fire control architecture, software, survivability equipment and associated systems critical to successful accomplishment of missions. Methods for addressing the obsolescence of such systems and its timely upgrade including modifications, for capability enhancement may also be covered.

An Incorporated and **Specialist conference**, *the 10th DST-Group International Conference on Health & Usage Monitoring Systems (HUMS)* will be organised, with Dr Wenyi Wang (DST Group) as chair. Abstracts are invited covering health and usage monitoring and management for helicopters, fixed-wing aircraft, land and sea vehicles and other mechanical equipment. Specific (**but not limited**) topics include: condition monitoring and health management; life and usage management; condition based maintenance (CBM); diagnostics and prognostics; rotor track and balance; vibration and acoustic analysis; wear debris analysis; structural loads & health monitoring; cost-benefit models; HUMS data management schemes; sustainment asset management; HUMS certification, qualification or Validation & Verification (V&V).

### **Co-Chair - Operations & Support and Airworthiness & Regulations – WGCDR Ashley Howell, DGTA**

#### ***Discipline Lead – Operations (GPCAPT (Retd) Anthony Veliath)***

Paper Domain: The Operations Technical Subcommittee invites abstracts covering both military & civil in the areas of concepts-of-operation; tactics & techniques, vulnerability & survivability; operational effectiveness; decision aiding; command & control; intelligence & electronic data gathering applications; continued operational safety and associated Safety Management Systems (SMS).

#### ***Discipline Lead – Product Support (Mr David Pierce, CASG, HSD)***

Paper Domain: The Support Technical Subcommittee invites abstracts covering both military & civil aircraft supportability that requires new and innovative support concepts. The topic areas range from Platform Maintenance Applications (PMA); Maintenance Requirements Determination (MRD); Reliability Availability Maintainability (RAM); Performance Based Logistics (PBL), Condition Based Maintenance (CBM); Contractor Logistics Support (CLS); and Fleet Information Management (FIM).

#### ***Discipline Lead– Airworthiness and Regulations (Mr Mike Broom, CASA)***

Paper Domain: The Airworthiness & Regulations Technical Subcommittee invites abstracts covering both military & civil aircraft regulations that require alignment nationally and internationally. The topic areas range from design development, approval, acceptance and continuing airworthiness.

### **Co-Chair - Young Engineers & Students - Trent Hollier, DMO**

#### ***Young Engineer Lead - Tom Sterling***

#### ***Student Lead - Joshua Yen***

Paper Domain: The Young Engineers & Students Subcommittee invites papers from undergraduate/postgraduate students, including young engineers in various organisations. The papers may cover any of the aerospace and aviation domains addressed by AIAC17 disciplines, which include: Design, Aerodynamics, Propulsion; Structures & Materials, Systems, Avionics/Mission Systems; Operations & Support and Airworthiness & Regulations.

### **Co-Chair - Application Technologies – Dr Madabhushi (Jana) Janardhana**

Presentation Domain: The Application Technologies Subcommittee invites papers which present new and innovative programs/projects/tasks at various stages of design & development; operational test & validation; airworthiness & certification; and induction in-service. Topics to include airframe structures & materials; power-plants; and avionics & systems.