

# INCOSE Architecture Working Group

Introduction for Chicagoland Chapter

# AWG Charter (2018 version)



- 1 Purpose**  
To expand the practice of architecture and advance the body of knowledge
- 2 Goals**  
Standing goals as follows are pursued in conjunction with other bodies as appropriate
  - Advance and evolve the body of knowledge on architecture
  - Promote the use and practice of architecture
  - Share best practices for the use of architecture
  - Expand the effort in architecture related standards and specifications
- 3 Scope**  
The *AWG* will address *Architecture* in relevant areas (such as *Traditional Systems, Enterprises and Software*) as it relates to *Systems Engineering* applied to all levels and types of systems

# Membership and meeting management



- Email distribution list of 150 - targeting GDPR compliance
- Full AWG and project specific lists, including some INCOSE Liaison partners (OMG, IEEE, ISO)
- Meet at IW and IS events, also conduct panel sessions
- Coordinate review and comment for international standards related to enterprise and system architecture
- Collaborate with activities of INCOSE Chapters when related to architecture
- Maintain web presence through INCOSE Connect
- Contribute to SEBOK and Handbook updates
- Publish presentations and appropriate products

# AWG 2019 operations



- **AWG Management**
  - Mike Wilkinson: [michael.wilkinson@incose.org](mailto:michael.wilkinson@incose.org)
  - Richard Martin: [richardm@tinwisle.com](mailto:richardm@tinwisle.com)
  - Anand Kumar: [anand.ar@tcs.com](mailto:anand.ar@tcs.com)
  - Jean-Luc Garnier: [jean-luc.garnier@thalesgroup.com](mailto:jean-luc.garnier@thalesgroup.com)
- **INCOSE Connect**
  - <https://connect.incose.org/WorkingGroups/awg/Pages/Home.aspx>
  - Contains records of meetings, WG products, other information
- **AWG Public Website**
  - <http://www.incose.org/ChaptersGroups/WorkingGroups/process/architecture>
  - Contains high level overview of recent work and future plans

# International Workshop'19 Outcomes



- Total attendance - 34
- Presentation from editors of both SE Handbook and SE Body of Knowledge
- Agreed to
  - respond to Tools Database inquiries as a WG rather than individually
  - continue supporting UK Architecture Styles initiative
  - support work by UK and India Chapters to produce guides/primer for System Architecting and encourage both chapters to work with INCOSE on international distribution
  - support continued work to complete standards documents in process - ISO/IEC/IEEE/WD 42010 Ed2, 42020, 42030, ISO 15704 Ed2, and ISO/IEC/NW 42021
- Discussed
  - alignment and convergence of the various civil and military oriented architecture frameworks (i.e. NAF, UAF, TOGAF, Archimate, etc.) avoid confusion in user community
  - ways in which architecture facilitates dialog between system science and system engineering communities (result of presentation on use of Effects-based Models)
  - 420xx standards and UK styles approaches to architecture in context of product lines
  - terminology concerns of INCOSE liaison w.r.t. ISO 15704.2 and need for better explanation of term use and meaning

# UK Chapter AWG updates for IW'19



- Events
  - ASEC 18 Poster on AWG activities
  - Joint meeting with WG42/OMG/AFNOR
  - Participation in Systems Science Mini Conversation
- Products: "Introductory Guide to Architecture"
  - Now completed (currently with UK publications)
- Active Workstreams
  - Architecting Styles (in conjunction with Intl AWG)
  - Competencies
    - Resource matching and career pathways
  - Support to standardisation activities
  - State of the art in architecting
    - Comprehensive analysis of Wiley SE Journal undertaken
  - Architecture Landscape
    - Types of systems, frameworks, notations, processes, etc
  - Architecture Centric Systems Engineering
    - Mathematical underpinnings paper published to support WG42 Joint Meeting (not AWG paper)

# International Symposium'19 Outcomes



- Total attendance - 23
- Presentations of current work
  - Jean-Luc Garneir reported on recent work related to architecture frameworks as:
    - Convergence of architecture frameworks
    - Architecture track of the OMG Technical Meeting
    - NAF V4 metamodels and profile
  - James Martin reported on the current status of work on ISO/IEC/IEEE 42010 revision.
  - Anand Kumar reported on the smart cities standardization effort (IEC 63188) that, while much information is now available, the structure of the content is lacking consistency and focus.
  - Richard Martin reported on
    - progress in ISO TC184 - IEC TC65 JWG21 Smart Manufacturing Reference Model for Technical Report: A meta-modelling analysis approach to Smart Manufacturing Reference Models
    - ISO/FDIS 15704 Ed2 Requirements for enterprise-referencing architecture and methodologies
    - ISO/DIS 19440 Ed 2 Constructs for enterprise modelling



# More IS'19 Outcomes



- Richard Martin reported on recent activity with the Federation of Enterprise Architecture Professional Organizations (FEAPO). AWG agreed to assume a leadership role in a project to revise the FEAPO white paper on enterprise architecture - *Common Perspective on Enterprise Architecture*.
- J. Nallon presented an update on the INCOSE Tools database initiative
- Richard Martin reported on new publications in ISO/IEC JTC1 SC7
  - ISO/IEC/IEEE 42020 Architecture processes - July 8, 2019
  - ISO/IEC/IEEE 42030 Architecture evaluation - Awaiting final draft proof
- New review and comment opportunities
  - ISO/IEC TR Technical Report: A meta-modelling analysis approach to Smart Manufacturing Reference Models (SMRMs)
  - ISO/IEC/WD 42010 (Ed 2) Architecture Description
- Anand Kumar made available a report on Architecture Literacy
- Received National Chapter Updates:
  - France for AFIS - JLGarnier
  - India for India AWG - A Kumar



# India Chapter AWG Architecture Primer



- 1) Introduction
  - a. What, Why, When, Impact, How
- 2) Architecture Essentials
  - a. Architecture Processes
  - b. Architecture Description
  - c. Architecture Evaluation
  - d. Architecture Governance
  - e. Architecture Management
  - f. Architecture Patterns & Styles
  - g. Architecture Views & Models
- 3) Qualities
  - a. Architecture Qualities
  - b. System Qualities
  - c. Service Qualities
- 4) Requirements
  - a. Functional
  - b. Non-Functional
  - c. Domain
- 5) Architecture Layers
  - a. Business
  - b. Capability
  - c. Service
  - d. Information
  - e. Technology
- 6) Tools, Methods, Methodologies
- 7) Reference Architectures
- 8) Architecture Frameworks
- 9) Architecture Standards

# INCOSE Architecture Working Group



- *Get involved - we have many opportunities to contribute and to learn*

Thank you this opportunity