INCSE Architecture Working Group

Introduction for Chicagoland Chapter
Purpose
To expand the practice of architecture and advance the body of knowledge

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

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
  – Richard Martin: richardm@tinwisle.com
  – Anand Kumar: anand.ar@tcs.com
  – Jean-Luc Garnier: jean-luc.garnier@thalesgroup.com

• **INCOSE Connect**
  – [https://connect.incose.org/WorkingGroups/awg/Pages/Home.aspx](https://connect.incose.org/WorkingGroups/awg/Pages/Home.aspx)
  – Contains records of meetings, WG products, other information

• **AWG Public Website**
  – 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
- 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
    • 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 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

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