

Systems Engineering Thrusts

**Synopsis of Current Efforts within NDIA and
IEEE**

Bob Rassa

Chair, NDIA Systems Engineering Division

National Defense Industrial Association SYSTEMS ENGINEERING DIVISION

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 open- ManTech Int'l
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 Mike Cardinale - IEEE AESS
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 Les Orlidge - IEEE SCC20
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 (IEEE)

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 (open) - FAA
 Steve Kapurch - NASA
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 Open - OSD(NII)
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 Open - Army

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 Bob Rassa, Raytheon

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 Boeing (St. Louis)

The Software
Committee
 Was
 Disbanded
 Dec 7, 2003

Quality
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Committee
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 DCMA - HQ
 Paul Thornberry
 NSWC - Corona
 Chriss Zubas
 Raytheon
 Randy Baker
 Boeing

Life Cycle Support
Committee
 Joel Moorvitch
 Raytheon
 Jerry Beck
 DUSD(AT&L)LP&P

SE Division Affiliates/Partners

- **IEEE AES Society**
- **IEEE Computer Society**
- **INCOSE**
- **SAE International**
- **GEIA**
- **AIA**
- **AIAA**
- **Software Engineering Institute, Carnegie Mellon**
- **Southern Methodist University**
- **RAND Corp**
- **MITRE Corp**

Top 5 Systems Engineering Issues

- **Lack of awareness of the importance, value, timing, accountability, and organizational structure of SE on programs**
- **Adequate, qualified SE resources are generally not available within Government and industry for allocation on major programs**
- **Insufficient SE tools and environments exist to effectively execute SE on programs**
- **Requirements definition, development and management is not applied consistently and effectively**
- **Poor initial program formulation**

OSD Interactions

- **SE Div is helping OSD with the Net Centric Operations strategy**
 - **Global Information Grid (GIG) is key enabler**
- **Capability-Based Procurement is new procurement paradigm, per CJCSI-3170, JCIDS (Joint Capability Integration Development System)**
 - **Translates “Capability” needs to executable platforms**
 - **Implies systems engineering content at Joint Staff and Service chiefs**
- **Capability-based procurement also requires good SE capability at Services acquisition/PM offices**

OSD Interactions - 2

- **NDIA SE Div works hand in hand, literally on a daily basis, with OUSD(AT&L) Defense Systems and OUSD(DS) Systems Engineering on SE strategy issues.**
 - **Policy, key messages, etc.**

Major Recent Activity

- **NDIA SE Div serves as the Industry cooperative arm of OSD and Services for systems engineering strategy on DoD programs.**
 - **Assist with policy memos & policy guidance**
 - **Conduct Workshops on comprehensive attributes of SE, especially the ancillary aspects such as Test & Evaluation, Education, Program Performance, Quality, etc. – all of which are ingredients or have relevance to good SE**
 - **Education Summit, October 2003**
 - **Program Performance Summit, June 2004**
 - **BIT/Prognostics Workshop June 2004**
 - **Test & Evaluation in SE Summit, August 2004**
 - **Systems Engineering Conference Oct 2004 (7th Annual)**
 - **Quality Summit, November 2004**

Recent Activity - 2

- **Assisted with OSD Policy memos & guidance**
 - **OSD SE Policy, Mike Wynne, Feb 20, 2004**
 - **Requires SE Plan on All DoD Programs, regardless of size**
 - **Established OSD/Services/Agencies SE Forum**
 - **NDIA SE Division is a member**
 - **OSD SE Plan Interim Guidance, Dr Lamartin, Mar 30, 2004**
 - **Enclosure 10 (SE) to DoD 5000 Instruction, ongoing**
 - **SE Plan Template, ongoing**
- **Consolidated Reviewer for IEEE-STD-1220, July 04**
- **Performed Review of DoD Modeling & Simulation Strategy, submitted formal report March 2004**

CMMI®

- **Capability Maturity Model Integration**
- **Developed to cause Integration of software engineering, systems engineering, and general hardware/design engineering**
- **NDIA SE Div is overall Industry sponsor and CMMI Steering Group Chair**
- **OSD Defense Systems/Systems Engineering is DoD sponsor**
- **Software Engineering Inst. is designated custodian**
- **Released Dec 2001**
- **Update v1.2 in process, due for release 1Q06**
- **There is room for IEEE AES to play a role in v1.2**

IEEE SE Council

- **IEEE Societies are focused almost 100% focused on Technology and Application**
- **Systems Engineering is a critical activity on all major programs, commercial or defense.**
- **Effective SE can make the difference between success and failure**
- **IEEE should recognize their potential role in helping with successful technology transition and application effectiveness via an SE Council**
- **SE Council could bring tremendous leverage to our industry community (65% of all IEEE members are industry)**

What next for AES re:SE?

- **AES should be a lead Society in the formulation of an SE Council and play a lead role in its strategy, if we agree in the overall concept of an SE Council**
- **AES SE Panel could start looking at ways to strengthen SE within its purview areas (Radar etc)**
- **AES should play a larger role in the efforts of NDIA SE Division**
- **AES could play a role in the evolution of CMMI v1.2**
- **Other**

Discussion