




The IEEE Systems Council Theoretically Speaking

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Q & A

- 🌐 **What does an engineer do for/in the Systems Council?**
- 🌐 **Proposed answer: Exploits an infrastructure that enables the technical solution to a complex problem**

Enabling Engineers

-  Existing Technical Committee Structure
-  Proposed Technical Committee Structure
-  TC Structure - in pursuit









Existing Technical Committee Structure

-  Standards
-  Systems Engineering Education
-  Large Scale Systems Integration Monitoring Critical Infrastructure
-  Security and Privacy in Complex Information Systems

Proposed Technical Committee Structure

- 🌐 Those that “exist” today plus...
- 🌐 Systems Biology TC
- 🌐 Intelligent Transportation Design TC
- 🌐 Workforce Development TC
- 🌐 Industrial Interface (Systems Engineering in Business and Finance) TC

TC Structure - In Pursuit

-  Geospatial
-  Information Fusion
-  Nuclear Energy Safety
-  High Speed Rail
-  Smart Integration (of Evolving Battery and Fuel Cell Technology)
-  GEOSS
-  Linking Physical Sciences to Systems Engineering
-  Service Engineering

Systems Coming Soon

- Oil and Gas
- Mass Transit
- Privacy and Intellectual Property vs. Security
- Personalized Medicine
- Space Exploration
- Surveillance (RADAR and others)
- STEM and Focused Education
- Embedded Systems
- Unnecessary Software Complexity
- Electric Vehicles (Ground, Air, Space, and Sea)
- Nuclear Energy Safeguards
- Engineering Applications from CERN – Dark Matter
- Air Traffic Management
- Smart Grid
- UAV's
- Access to Space - \$200/pound
- Brain – Machine Interface

BACKUP SLIDES

SC: Which Societies “should” be Represented? Other Organizations?

- 🌐 There are a total of 38 IEEE Societies:
http://www.ieee.org/membership_services/membership/societies/index.html
- 🌐 What about cross-over to other Organizations?
 - 🌐 ASME (<http://www.asme.org/>)
 - 🌐 AIAA (<https://www.aiaa.org/>)
 - 🌐 INCOSE (<http://www.incose.org/>)
 - 🌐 ACS (<http://portal.acs.org/portal/acs/corg/content>)
 - 🌐 AMA (<http://www.ama-assn.org/ama>)

Participating Societies

Aerospace and Electronic Systems

Circuits & Systems

Communications

Computational Intelligence

Control Systems

Instrumentation & Measurement

Microwave Theory & Techniques

Oceanic Engineering

Power Electronics

Product Safety Engineering

Robotics & Automation

Systems, Man, and Cybernetics




Value Added

- 🌐 Enable coordination and concurrent engineering between subject matter experts spanning various societies
- 🌐 Enable decision analysis and support
- 🌐 Defines the state-of-the-art in systems engineering
- 🌐 Provides collaboration opportunities and lessons learned

Foundations

- Systems Engineering education, standards, processes, methodologies
 - Systems Modeling, simulation, integration, resilience
 - Robust design, safety & human factors, security, usability, environmental
 - Product transition: design, production, test, deployment, disposal
 - Program/project management
 - Quality Assurance
 - Mission Assurance
 - Requirements Development & Management
 - Risk Management
 - Systems Architecture
 - Systems-of-Systems
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Goals? Objectives?

-  Survey membership?
-  Develop more Chapters?
-  Establish tangible collaborative efforts?