JT/99-0249 J

JTC 1 TAG, U.S. Technical Advisory Group to ANSI,
National Body Member of ISO/IEC JTC 1, Information Technology

JTC 1 TAG Administrator, Information Technology Industry Council (ITI)
1250 Eye St. NW, Suite 200, Washington, DC 20005
Telephone 202-737-8888; Fax 202-638-4922
Email: jtc1tag@itic.org

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Reply to:	Jennifer T. Garner
Phone:	202-626-5737
Email:	jgarner@itic.org

To: Robert Pritchard, IEEE TAG Administrator, US TAG to JTC 1/SC 7
Rowena Chester, Chairman, US TAG to JTC 1/SC 27
Elizabeth Carter, Administrator, US TAG to ISO/TC 20/SC 14
Patricia Kopp, Administrator, US TAG to ISO/TC 176
Norm Provost, Technical Advisor, US TAG to IEC/TC 65A
Chairmen and Administrators, US TAGs to JTC 1 Subcommittees and Working Groups
JTC 1 TAG Members

Subject: **Proposal for the Establishment of a New JTC 1 Subcommittee on Systems Engineering**

From: Jennifer Garner, JTC 1 TAG Administrator

At the June 15-16, 1999 meeting of the JTC 1 TAG, a proposal for the establishment of a new JTC 1 Subcommittee on Systems Engineering was presented. The JTC 1 TAG Ad Hoc on Systems Engineering was established and will be chaired by Dr. Raghu Singh (Federal Aviation Administration). The following JTC 1 TAG members volunteered to participate on the ad hoc: Mr. Cargill (Sun Microsystems), Mr. Smith (US DoD/DISA) and Mr. Zemrowski (ICCP).

As an action item from the June JTC 1 TAG meeting, the JTC 1 TAG Administrator was instructed to circulate the proposal for the establishment of a new JTC 1 Subcommittee on Systems Engineering (JT/99-0213Rev.) to the JTC 1 subsidiary TAGs and other US TAGs mentioned in the proposal.

At this time, the proposal (JT/99-0213Rev.) is being distributed for information only.

The JTC 1 TAG Ad Hoc on Systems Engineering will develop and submit a proposed US contribution on the establishment of a JTC 1/SC on Systems Engineering and a business plan by July 15, 1999. Upon receipt of the proposed US contribution and business plan for the establishment of a new SC on Systems Engineering, the JTC 1 TAG Administrator will circulate the documentation to the JTC 1 subsidiary TAGs and other TAGs detailed above for a 30-day comment period closing on August 15, 1999.

Upon close of the comment period, the JTC 1 TAG Administrator will issue a 30-day letter ballot (containing the submitted comments) on the approval of the proposed US contribution recommending the establishment of a new JTC Subcommittee on Systems Engineering. If approved, the US contribution will be considered at the November 1999 JTC 1 Plenary in Seoul, Korea.

Please do not hesitate to contact me with any questions on this matter.

JT/99-0213Rev J

June 14, 1999

Subject: Proposal for the Establishment of a New JTC 1/SC on Systems Engineering
From: Dr. Jerry Lake, SMI and Dr. Raghu Singh, FAA

Proposal for a new SC on Systems Engineering

1. JTC1 establish a new SC on *Systems Engineering.*
2. Develop a standard on System Life Cycle.
    a) The life cycle architecture in terms of phases and processes.
    b) Adequate details for the phases.
    c) High-level descriptions of the processes.
3. Develop a Guide on the System Life Cycle Standard.
    a) Interpretations, examples, and introductions.
    b) Introduction to the following accompanying series.
4. Develop the following standards or guides on the phases:
    a) Concept analysis
    b) Systems development and engineering
    c) Systems operations and use
    d) Systems productions and manufacturing
    e) Systems maintenance and support
    f) Systems disposal, archiving, and retirement.
5. Develop standards or guides on the processes, as needed.

6. Check if a country, an organization, or a professional society has a “standard” on a phase or a process. If so, harmonize it with the life cycle standards or guides above and fast-track it to an ISO/IEC standard.

7. Ensure hardware, computers, software, and humans are addressed and integrated in all of the above.

8. **Product line.** Consolidate the above in one seamless series:

    a) ISO/IEC n: System life cycle

    b) ISO/IEC n+1: Guide for ISO/IEC n

    c) ISO/IEC n+2: Part 1 … 6 for the phases.

    d) ISO/IEC n+3: Part 1 … m for the m processes as needed.

USTAG JTC1

PROPOSAL FOR A NEW SC ON SYSTEMS ENGINEERING

Mr. David Kellogg, Electronics Industries Alliance
Dr. Jerry Lake, Systems Management international
Mr. Tom Parry, OSD(DTSE&E)
Mr. Richard Schmidt, Vitech
Dr. Raghu Singh, FAA

June 15-16, 1999

THE PROPOSAL

The JTC1 create a new SC on

Systems Engineering

CHARTER

1. **Foster system thinking:**
   - Synergistic components: integration & interoperability
   - Cooperating stakeholders: all interested parties
   - Interacting life cycle phases: “lust” to “dust” concerns

2. **For world trade**
   - One global economy

3. **For the modern system:**
   - Operational and life cycle enabling elements
     - People: humans
     - Products: hardware, software, facilities, data, materials
     - Processes: services and techniques

Areas of Focus

1. **System life cycle phases and milestones**
   - Phase objectives and expectations
   - Synchronization points

2. **Integrated processes work flow**
   - Processes selectively applied within a phase

3. **Work products**
   - Classes of data and document templates that capture work flow outputs

4. **System life cycle products and services**
   - Outputs of processes work flow to satisfy phase objectives
   - Described by work products

SC PRODUCTS

1. **A system life-cycle standard:**
   - Top level, comprehensive
   - Life-cycle architecture:
     - Conception through disposition phases
   - Processes:
     - Technical, enabling, and management
   - For stakeholders use:
     - Acquirers, suppliers, engineers, producers, users, logisticians, …
2. **A guidebook on the system life cycle standard**
   - For application and planning
3. **Standards or TRs on phases, as needed**
4. **Standards or TRs on processes, as needed**
5. **Standard or TR on capability assessment**

Note: Fast-tracks for some in 3 and 4 above.

System Life Cycle Standard

Purpose:

To provide enterprises, and organizations within enterprises:

1. **An holistic structured approach for conceptualization, creation, realization, utilization, and/or disposition of man-made systems**
2. **A baseline for assessing capability and maturity**

RATIONALE

- **There is a need for an SC with systems thinking & approach**
  - From a general, comprehensive life-cycle perspective
  - An encompassing system framework for phase managers
- **No SCs or TCs on systems engineering**
- **Existing SCs and TCs on specialty domains:**
  - Space (TC20/SC14, ECSS-E-10), quality (TC 176, ISO 9000 family), measurement (JTC1-SC7), safety (IEC 61511-1), security, software (ISO/IEC 12207), information (CEN/TC 311), ...
  - Not focused on or equipped for total life cycle approach from an overall system perspective
- **Projects need right names and right experts for success**
  - International Council on Systems Engineering source of system experts
  - Members from over 18 countries
- **A higher vision under a component discipline is limited**

RECOMMENDATION

- **The USTAG JTC1 favorably consider this proposal**
- **The USA chair and lead the new SC**