

Panel: Commercial Off-the-Shelf (COTS) Integration & Support

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Key Words: Commercial off-the-shelf items (COTS), Non-developmental items (NDI)

Trends indicate increasing system complexity with the addition of new technologies in a changing environment; increasing costs associated with developing, producing, using, and supporting systems; and a continuing scarcity of resources. The need is rapidly to develop & deliver new systems that are:

- responsive to user requirements,
- cost-effective to operate & support.

In recognition of these trends, the US Federal Government in general and its Department of Defense (DoD) in particular has initiated an effort to review and re-evaluate its system acquisition practices. A specific objective in this acquisition-reform movement is to design new systems which make maximum use of:

- Commercial Off-The-Shelf (COTS) items, or
- Non-Developmental Items (NDI).

As specific requirements are identified for major sub-systems, system elements, configuration items, components, *etc*, the objective is to select commercially available equipment, reusable software, existing facilities, *etc*, in lieu of unique newly developed items.

If implemented with prudence and in concert with system engineering principles, this approach should enable reduction in system acquisition times, as well as a reduction in the cost to acquire, operate, and support a system throughout its life cycle.

The anticipated benefits of NDI/COTS notwithstanding, this emphasis results in unique design challenges. This is largely due to:

- the lack of control (*eg*, in terms of configuration management, and version control) on the part of the development team,
- an increased dependence of the overall design & development effort on the environment (*eg*, in terms of the economic environment, the technology environment, the vendor/supplier environment).

Prediction & estimation approaches need to be adapted to this shifting scenario. Further, supportability issues become magnified, with system upgrades and engineering changes being driven often by support-related considerations along with evolving performance requirements.

Given the trend towards an increasing use of NDI/COTS, this panel seeks to provide insight into the necessary adaptation of:

- systems engineering/integration approach, (presentation by Robert McCaig);
- supportability engineering approach, (presentation by Gordon Shaffer);
- life-cycle cost (design-to-affordability) approach, (presented by Lynn Hansen);
- provisioning approach, (presented by George Brown).

These 4 panelists will talk to these diverse, yet interconnected, set of issues as they are being resolved and implemented on the program, the New Attack Submarine Program (NSSN). This will give the audience a good appreciation for the synergy & interdependencies between system engineering, supportability engineering, system affordability, and support provisioning.

MODERATOR

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Mr. Robert McCaig: Systems Engineering/Integration

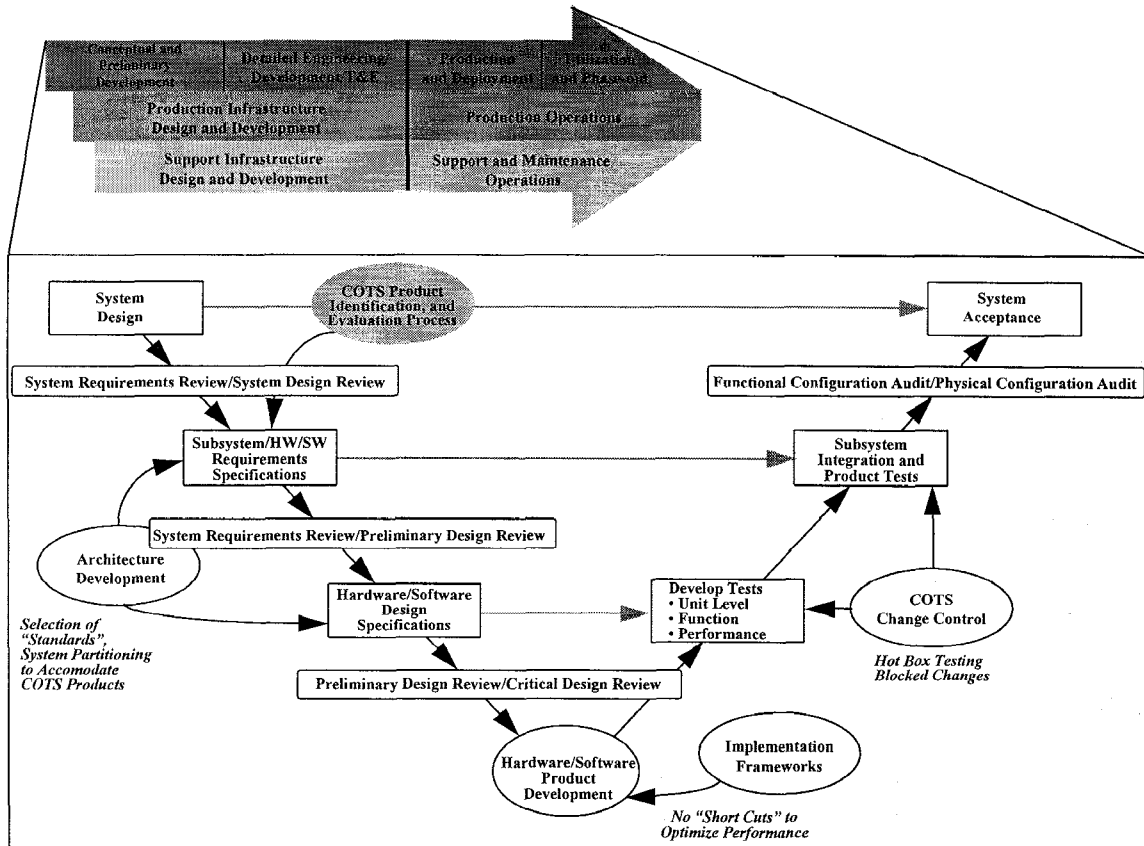


Figure 1. Adapting the systems engineering process to exploit/maximize use of COTS/NDI.

Mr. Lynn Hansen: System Life Cycle Costing/Design to Affordability

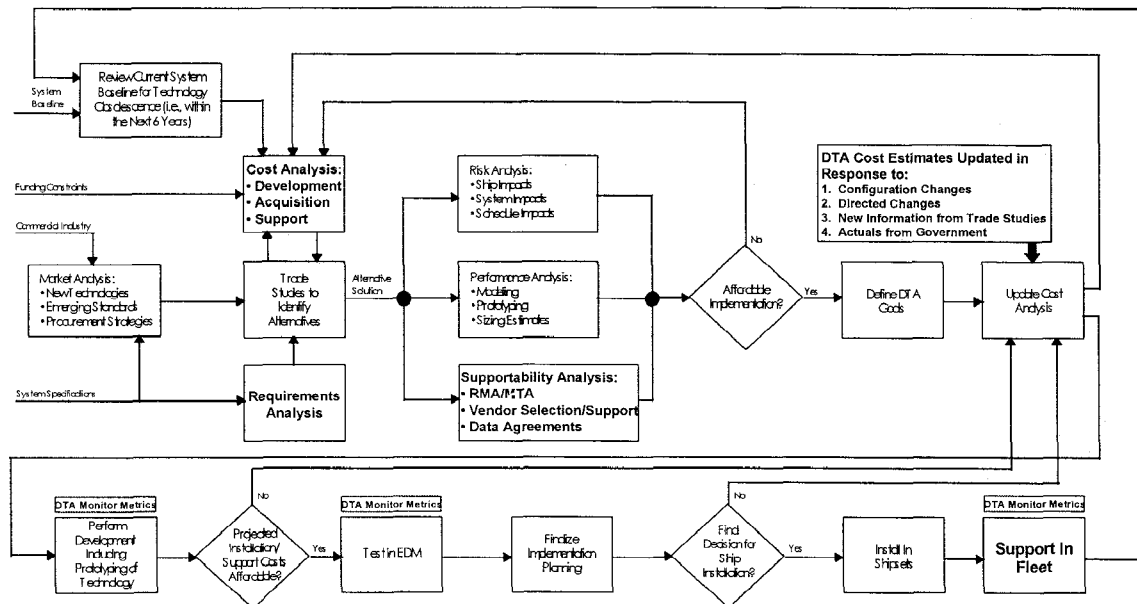


Figure 2. Adapting the system life-cycle cost/design to affordability process for NDI/COTS.

Mr. Gordon Shaffer: Supportability Engineering

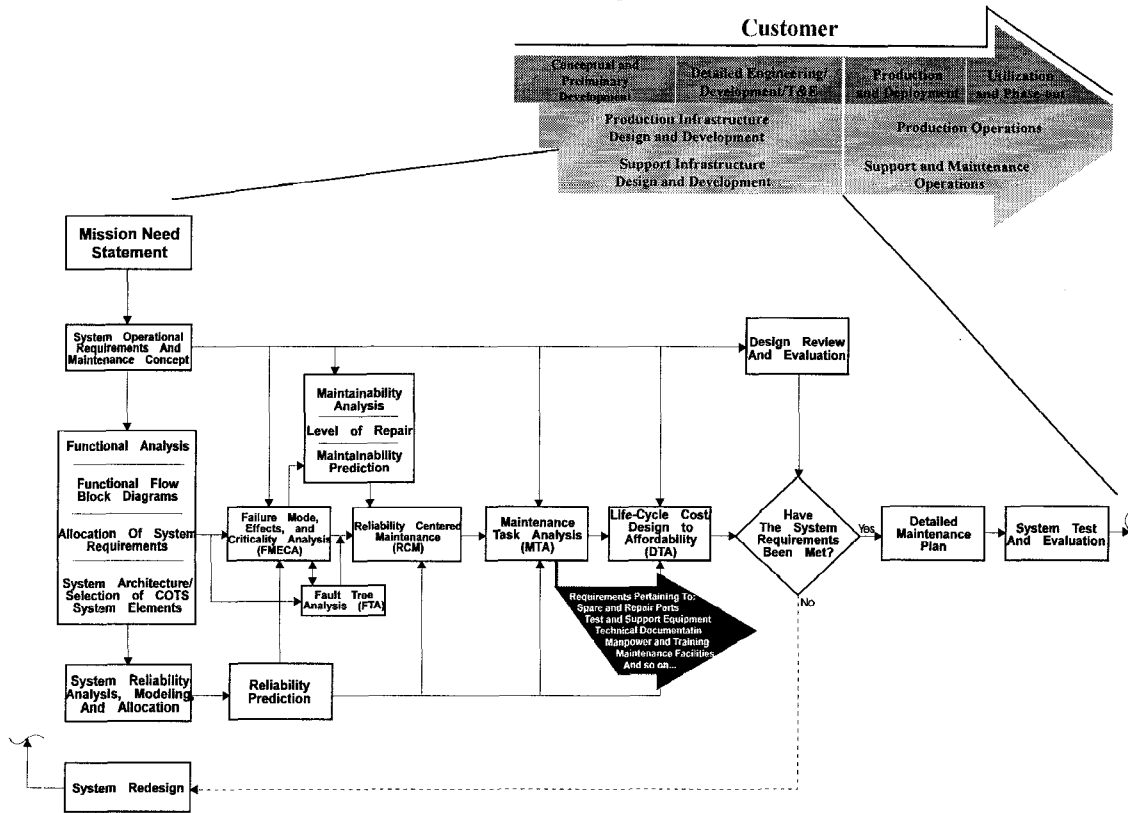


Figure 3. Adapting the supportability engineering process for NDI/COTS.

Mr. George Brown: NDI/COTS provisioning: Material Readiness Guarantee

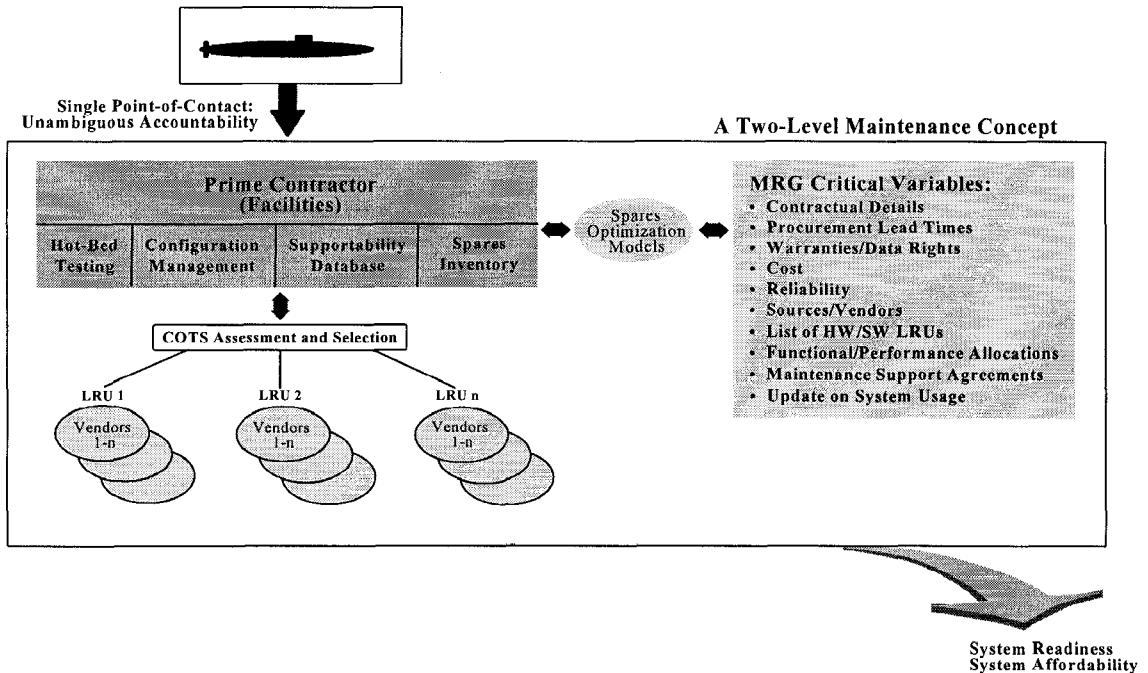


Figure 4. Material Readiness Guarantee.