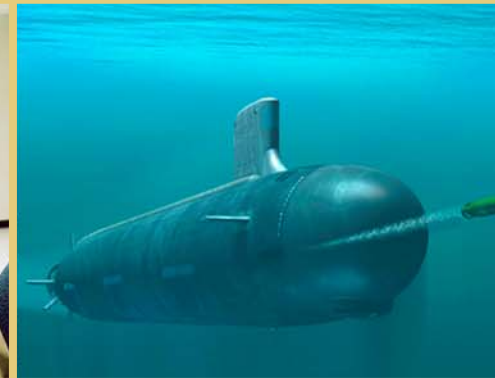




Systems and Software Technology Conference 2006

Navy Open Architecture Enterprise Standards Alignment



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Scope

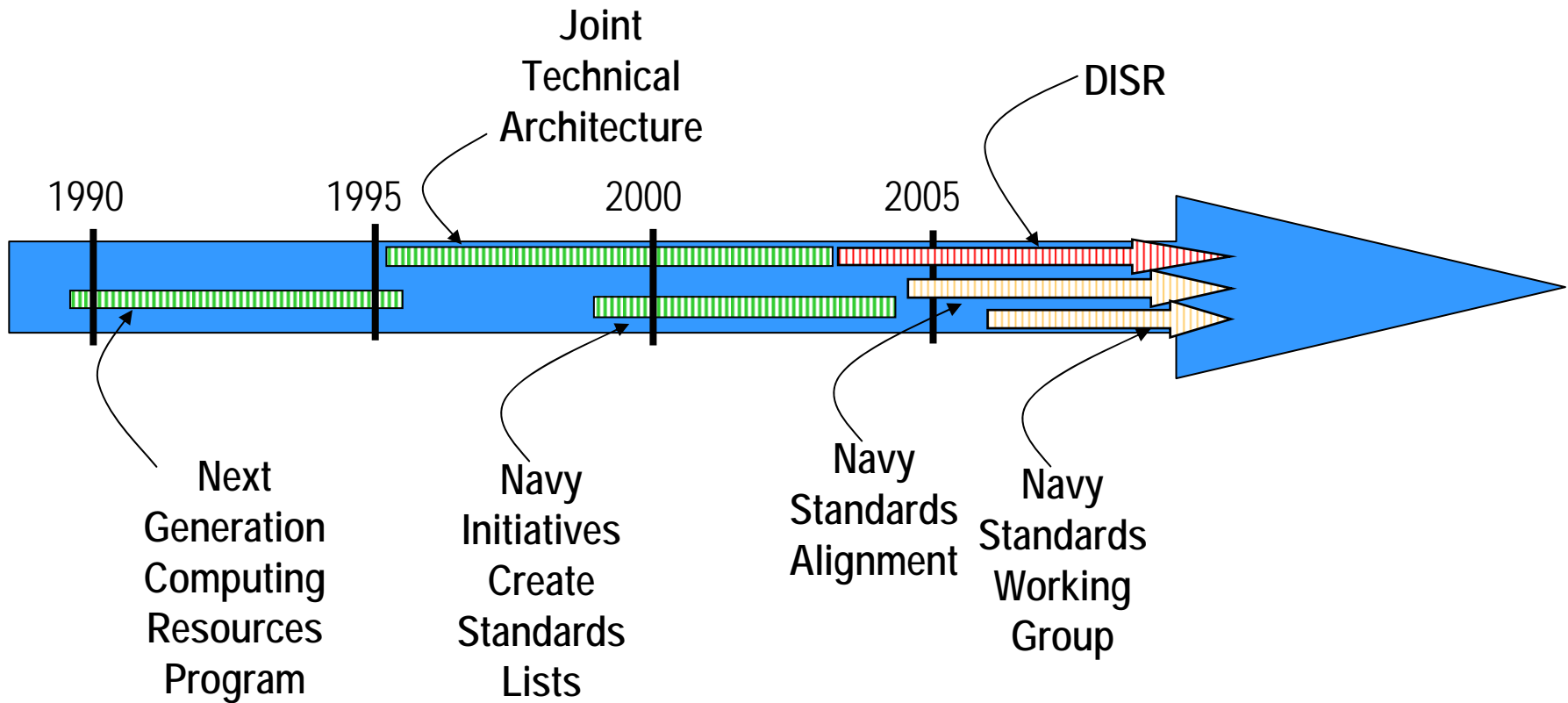
- This brief considers the Information Technology Standards used in implementing tactical Navy computer based systems
 - E.g. Information Transfer and Middleware standards
- Focus on how different Navy standards activities have been moving to align with each other to simplify what Navy Programs need to do to achieve compliance with required standards.



Current Commercial Standards Utilization Directives

- Authority for using commercial standards and participating in commercial standards groups is authorized by the following:
 - National Technology Transfer and Advancement Act 1995 Public Law 104-113
 - OMB Circular A-119 Federal Participation in the Development and Use of Voluntary Consensus Standards and In Activities 1998
 - DoD4120.24-M Defense Standardization Program Policies and Procedures

Standardization Timeline



Navy IT Historical Perspective

- Prior to Acquisition Reform (early 1990's) Navy Information Technology (IT) standards were mostly Military Standards
 - Waiver required to use commercial standards
 - Supported a tactical computing infrastructure built from Navy specified computers and software
- After Acquisition Reform the Navy moved to commercial standards
 - Waiver required to use Military Standards for IT
 - Supporting a tactical computing infrastructure which includes
 - legacy Navy computers and software and
 - newer Commercial Off-The-Shelf (COTS) computing hardware and system software
 - Moved to do this quickly



Issues in the Initial Move to Commercial Standards

- Rather than issuing standards, the Navy needed to participate in the development and maintenance activities of the industry groups
 - Time consuming process with no guarantee of success
- Many standards needs were not covered by existing commercial standards groups
- Next Generation Computing Resources (NGCR) program was a pioneering Navy effort which worked in the 1990-1996 timeframe with many lessons learned
 - The Navy should mandate *widely used, commercial* standards for its computing resources. The Navy should resist the temptation to have its own unique standards. (NRAC study conclusion)
 - Adopt vs. Adapt (NRAC study conclusion)
 - Getting capabilities documented into a standard is quite different from getting those capabilities into products



DoD IT Standards Background

- Joint Technical Architecture (JTA) provided a large list of standards
 - Provided Mandatory Standards (TV1's), Emerging Standards (TV2's),
 - JTA was released as paper documents with versions 1.0, 2.0, 3.0, 3.1, 4.0, 5.0, and 6.0.
 - JTA 6.0 was final JTA (November 2003)
 - Introduced the notion of "Sunset Standards"
- DoD IT Standards Registry (DISR) is the follow-on to the JTA
 - DoD Information Technology Standards Council (ITSC)
 - Navy is a Participating organization
 - ITSC is working an aggressive 4 month DISR update schedule First on-line registry baseline available in 2004.
 - Toolset developed to use registry efficiently



ITSC Structure for Managing the DISR

- Chief Information Officer Executive Board
- IT Standards Oversight Panel
- IT Standards Council (ITSC)
- Technical Working Groups (TWGs)
 - Business Area (4 TWGs)
 - DoD Intelligence Area (2 TWGs)
 - Enterprise Information Environment Area (13 TWGs)
 - War-fighting Area (6 TWGs)



Navy IT Standardization Activities 2004/2005

- Many Navy programs had a requirement to comply with more than one IT standardization initiative
 - FORCEnet, Open Architecture (OA), DISR, ...
- The defining documents each addressed only one initiative
 - Standards are developed by individual activities
 - Each Initiative's standardization documentation was kept simple
 - Complexity of complying with multiple Standardization initiatives was expected to be borne by each Navy program
- Most initiatives provided a standards "crosswalk" comparison to the DISR
 - Inconsistencies existed
 - Different update cycles led to more inconsistencies over time



OAET Standards Activities

- IT Standards had been identified by Domain (i.e. Air, C4I, Space, Subsurface and Surface) and used in procurements
 - e. g. Surface – Open Architecture Computing Environment (OACE)
- In November 2004, a standardization subgroup of the Open Architecture Enterprise Team (OAET) started meeting
 - Identify areas where standards commonality has the potential of enabling Enterprise application program reuse
 - Investigate approaches for alignment of standards across all domains
 - Coordinate the individual Domain standards organizations, extending into the realm of the Enterprise
- Recommended basing Enterprise and all Domain standards on the DISR
 - Needed to expand the Navy's DISR activity
- Joined in a common effort with the FORCEnet Standards group



Standards Initiative Goals - Driver for Differences

- JTA
 - Interoperability
 - Goals expanded over time
- ITSC/DISR
 - Net-centricity & Interoperability
- FORCEnet
 - Net-centricity & Interoperability
- OA – Surface Domain (i.e. OACE)
 - Software reuse & Interoperability
- Domain specific standards needs
 - Surface Domain - Real Time Weapons Control & Safety

Navy programs needed a unified process to ensure compliance to all of its applicable Standardization initiatives



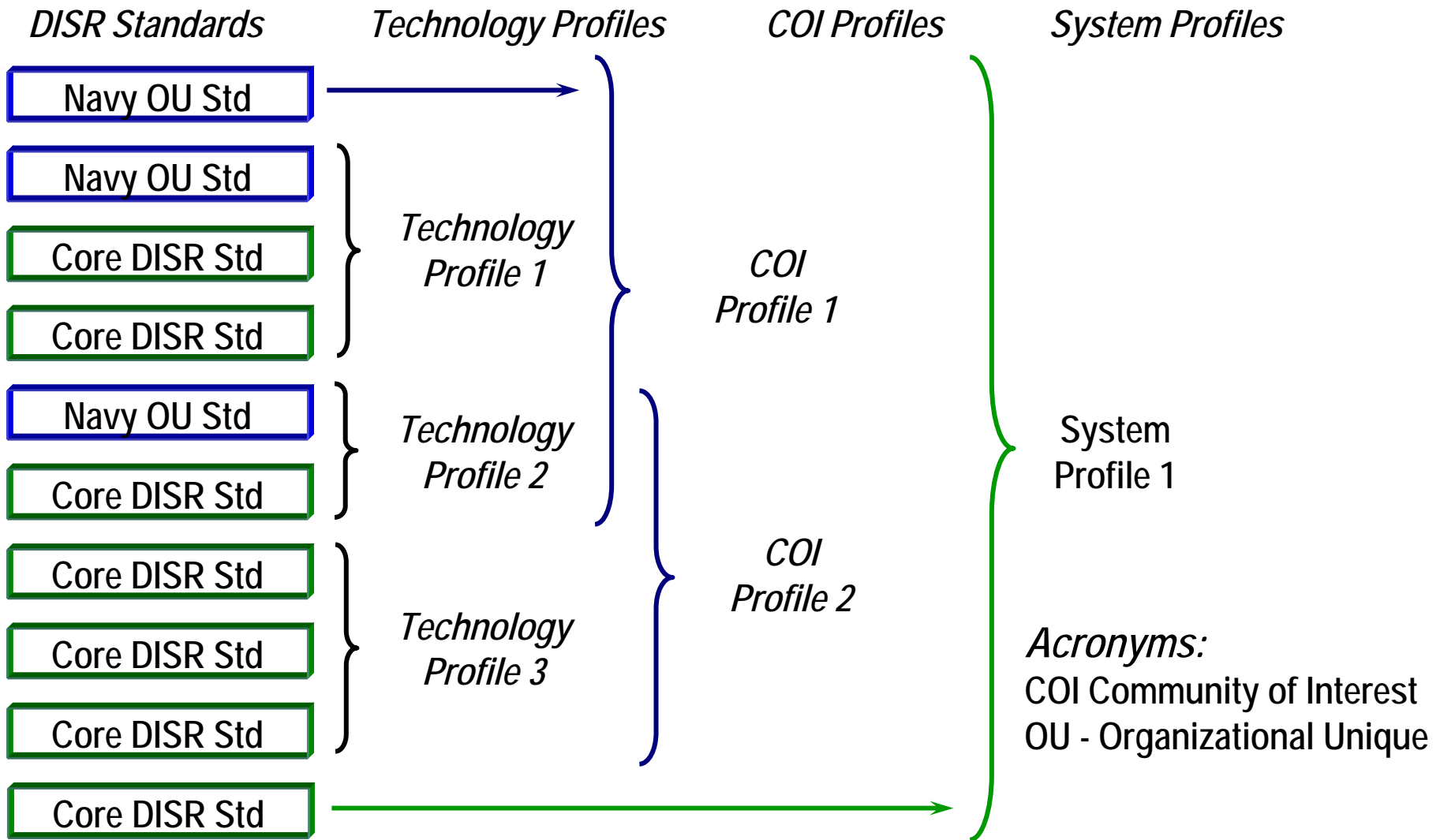
Navy Standards Alignment

- In 2005, the OAET and FORCEnet standards alignment effort was placed under the leadership of ASN RDA CHENG
- Two activities studied how the Navy should manage their industry standards activities, both recommending the standup of a Navy Standards Working Group (NSWG)
 - FORCEnet and OA Technical Warrant Holders joint recommendation
 - A Standards Process Action Team under the FORCEnet Coordination Council

Navy Standards Working Group (NSWG)

- NSWG to bring together the Navy Standards stakeholders to align Navy standards activities with an approach of:
 - Utilize the DISR with its Toolset as the basic standards building blocks
 - In cases where the Navy needed standards outside of the DISR Goals (e.g. software reuse), utilize a Navy “organizationally unique standards bin” accessible using the DISR toolset
 - Identify Navy Profiles of Standards identified by functionality (inherent performance domains, e.g. hard real time) versus organizational Domain (e.g. Surface)
- Focus the various Navy standards activities to directly supporting the DISR development
 - Lead to joint standards we can use
- Participants include
 - ASN RDA CHENG, Marine Corp, DoN CIO, FORCEnet CHENG, Program Executive Offices, System Commands and Supporting Activities
 - Industry will be brought in

Notional Standards Profiles



DoD ITSC Defined

Navy Standards Working Group Defined

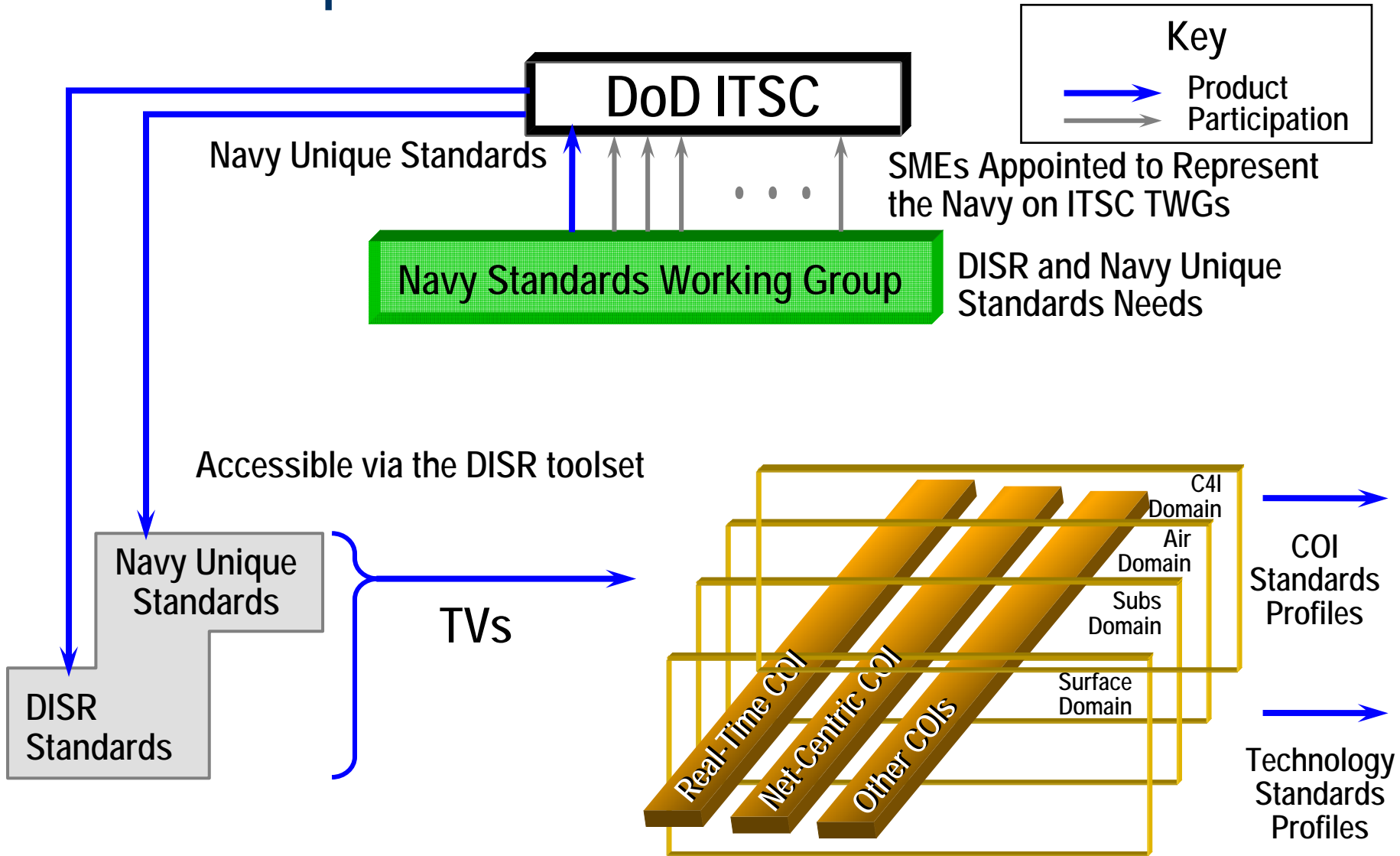
Navy Program Defined



Navy Standards Alignment Benefit

- An alignment of Joint (i.e. the DISR) and Navy standards (e.g. FORCEnet and OA efforts)
- Navy programs can have a unified process for ensuring compliance with all standards initiatives versus multiple efforts
- Participation of the Navy standards initiative communities in the ITSC working groups ensures best talent available to provide Navy inputs into the process
 - Navy involvement changes from reactive to proactive

Relationship of the Technical Standards Efforts





Standards Alignment Status

- Navy Standards Working Group first telecon on 27 February 2006.
 - Coordinate Navy ITSC/DISR activities cycle that began in March 2006
 - Initiate and manage the Navy's Organizational Unique (OU) Standards
 - Initiated a subgroup to identify Navy Standards Profiling needs
 - Coordinate Navy participation in the Industry Standards Groups
- This and other alignment and consolidation efforts are being pushed Navy-wide



Acronyms

- ASN – Assistant Secretary of the Navy
- C4I - Command, Control, Communications, Computers, and Intelligence
- CHENG – Chief Engineer
- CIO – Chief Information Officer
- COI - Community of Interest
- COTS - Commercial Off-The-Shelf
- DISR - DoD IT Standards Registry
- DoD – Department of Defense
- DON – Department of the Navy
- IT – Information Technology
- ITSC - Information Technology Standards Council
- JTA - Joint Technical Architecture
- NGCR - Next Generation Computing Resources
- NRAC - Naval Research Advisory Committee
- NSWG - Navy Standards Working Group
- OA – Open Architecture
- OACE - OA Computing Environment
- OAET – OA Enterprise Team
- OMB -Office of Management and Budget
- OU – Organizationally Unique
- RDA – Research, Development and Acquisition
- TV – Technical View
- TWG – Technical Working Group