



Data & Analysis Center for Software

DACS Overview

<http://iac.dtic.mil/dacs>

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Information for the Defense Community 

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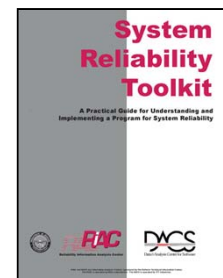
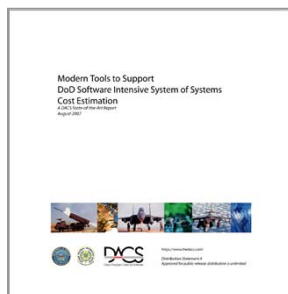
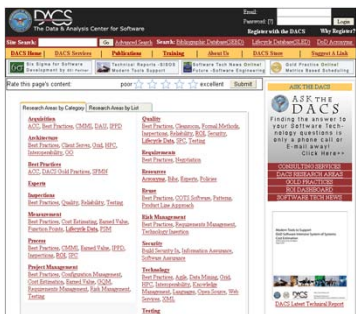
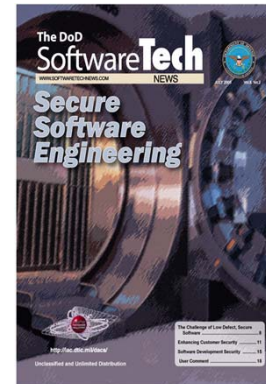
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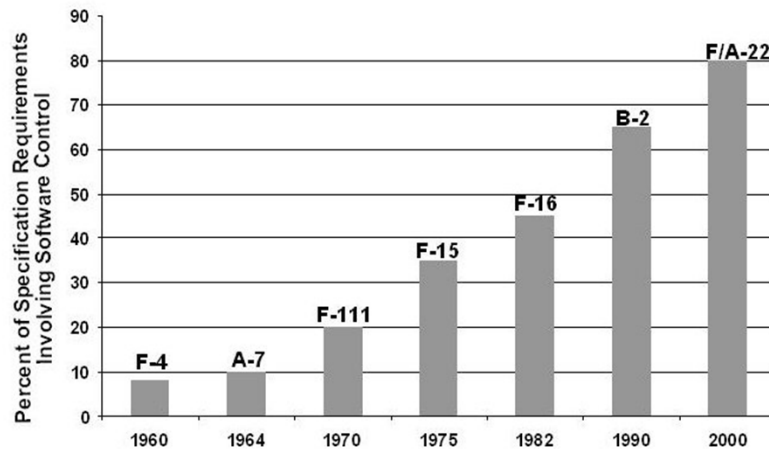
DACS Overview

- ▶ The DACS technical area of focus is Software Technology and Software Engineering, in its broadest sense.
- ▶ Central distribution hub for the latest software technology information sources.
- ▶ Wide variety of Technical Services to support the R&D, development, testing, validation, and transitioning of Software Engineering technology.





DACS STINFO Addresses Current Software Challenges



Ref: Defense Systems Management College

System Characteristics

- 10-100 MLOC
- 30-300 Ext. I/F
- Depth of Supplier Tier: 6-12
- 20-200 Coordination Groups

Future Combat Systems:

- 12,000 SoS Requirements - > 90,000
- 50 Critical Technologies
- 52 Complimentary Programs
- 40 Million Lines of Code

► Software Context in 2008

- Model Based Development Paradigm
- Net Centric Integration of Existing Systems
- COTS Integration
- Systems of Systems
- Ultra Large Systems



DACS STINFO Addresses DoD Software Needs

- **Technology**
 - Lifecycle Development
 - State of the Art
 - Trends
- **Best Practices in Software Engineering**
- **Emerging Practices**
- **Acquisition Issues**
- **Software Project Management**

Customers

- JIEDDO
- AFRL
- DARPA
- ODUSD(A&T)
- AAMDC
- DDR&E
- NSWC
- USACE
- ONR
- MDA

Classes of Users

- Developers
- Researchers
- Acquirers
- Managers

Rich Resources for Users from the DACS



Hundreds of Resources

ASK THE DACS

Finding the answer to your Software Technology questions is only a phone call or E-mail away!
Click Here >>



June 2007
Vol. 10, Number 2

Open Source - The future is open

Articles in this issue:
TechViews - CTR Warns: Don't Technologies and the Business of War
Open Source Software (OSS) in U.S. Government Acquisitions
Keeping Software Secure in a Networked World
Open Source Software and the Long Road to Sustainability within U.S. DoD IT Systems

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Research Areas by Category | Research Areas by List

Acquisition
ACI, Best Practices, CMMI, DAU, IPRD

Quality
Best Practices, Cleanroom, Formal Methods

4 Hours Free

Welcome to the DACS Gold Practices(GP) web site

This site exists to provide information about prevalent software acquisition and development 'best' practices that may have a positive impact on program risks and ROI.

The menu options at the top provide access to the general features of the site. [Click here](#) for more detailed information about the menu functionality.

Use the links in the table below for direct access to data and information about specific practices (or practice areas). [Click here](#) for further details about the content and functionality of the table. To display definitions of the practice hover your mouse over the practice name.

Practice Name	DACS Focus Area	Data	Survey Results	Discussion Forum	Printable Version
Acquisition Process Improvement	Process	☑	☑		☑
Architecture-First Approach	Process		☑		☑
Assess Risks and Costs	Risk			☑	☑
Binary Quality Gates at the Joint-Hostile Level	Quality				☑
Commercial Specifications and Standards/Open Systems	Requirements				☑
Demonstration-Based Reviews	Performance	☑	☑		☑
Develop and Maintain a Life-cycle Business Case	Management	☑	☑		☑
Driver Interoperability	Performance				☑
Formal Inspections	Quality				☑
Formal Risk Management	Risk				☑
Goal-Question-Metric Approach	Process				☑
Independent Expert Reviews	Performance	☑	☑		☑
Integrated Product and Process Development	Process		☑		☑
Manage Requirements	Requirements				☑
Metric-based Scheduling	Management				☑
Model-Based Testing	Quality		☑		☑
Plan for Technological Insertion	Management				☑
Requirements Trade-Off/Negotiation	Requirements	☑	☑		☑

Metrics Based Scheduling
The Latest Gold Practice Developed by the DACS

Research Areas by Category | Research Areas by List

Acquisition: ACI, Best Practices, CMMI, DAU, IPRD

Architecture: Architecture-First Approach, Assess Risks and Costs, Binary Quality Gates at the Joint-Hostile Level, Commercial Specifications and Standards/Open Systems, Demonstration-Based Reviews, Develop and Maintain a Life-cycle Business Case, Driver Interoperability, Formal Inspections, Formal Risk Management, Goal-Question-Metric Approach, Independent Expert Reviews, Integrated Product and Process Development, Manage Requirements, Metric-based Scheduling, Model-Based Testing, Plan for Technological Insertion, Requirements Trade-Off/Negotiation

Quality: Best Practices, Cleanroom, Formal Methods

Requirements: Best Practices, Cleanroom, Formal Methods

Performance: Best Practices, Cleanroom, Formal Methods

Risk: Best Practices, Cleanroom, Formal Methods

Management: Best Practices, Cleanroom, Formal Methods

Process: Best Practices, Cleanroom, Formal Methods

Measurement: Best Practices, Cleanroom, Formal Methods

Inspection: Best Practices, Cleanroom, Formal Methods

Project Management: Best Practices, Cleanroom, Formal Methods

Interoperability: Best Practices, Cleanroom, Formal Methods

Formal Inspections: Best Practices, Cleanroom, Formal Methods

Formal Risk Management: Best Practices, Cleanroom, Formal Methods

Goal-Question-Metric Approach: Best Practices, Cleanroom, Formal Methods

Independent Expert Reviews: Best Practices, Cleanroom, Formal Methods

Integrated Product and Process Development: Best Practices, Cleanroom, Formal Methods

Manage Requirements: Best Practices, Cleanroom, Formal Methods

Metric-based Scheduling: Best Practices, Cleanroom, Formal Methods

Model-Based Testing: Best Practices, Cleanroom, Formal Methods

Plan for Technological Insertion: Best Practices, Cleanroom, Formal Methods

Requirements Trade-Off/Negotiation: Best Practices, Cleanroom, Formal Methods

DACS ROI Dashboard

In response to increasing interest and attention from the software engineering and software acquisition community for benefits data from software technical and management improvements, the DACS presents the ROI Dashboard. The ROI Dashboard augments and updates the DACS Report "A Business Case for Software Process Improvement" with the latest published data on benefits. The ROI Dashboard graphically displays open and publicly available data and provides standard statistical analysis of the data. To learn more about the features and usage of the ROI Dashboard please read the [software](#) OR [FAQs](#).

Step 1: Select the improvement areas you are interested in examining (select up to four by using the control key). Note: Improvements are split into two groups: those with extensive benefit data and those with only limited data. To view what improvements organizations have implemented concurrently, please view our [improvement area matrix](#). To view more details about CMM and CMMI improvements click here.

Step 2: What type of display are you interested in?

☑ Extensive Data Available
☑ Agile Development
☑ CMM Software Process Improvement
☑ CMMI Process Improvement
☑ Cleanroom
☑ Inspections
☑ Measurement Program
☑ PSP / TSP
☑ Reviews
☑ Limited Data Available

Submit

Benefits of SPI

Gold Practices – Practical Guidance

The DACS Software Reliability Sourcebook

Modern Tools to Support DoD Software Intensive System of Systems Cost Estimation
A DACS State-of-the-Art Report
August 2007

ROI

https://www.dacs.com/

Distribution Statement A
Approved for public release; distribution is unlimited

DACS On-line Learning Center

- Over 450 Classes
- Over 12,000 Topics

Software & Web Development Online Training

Complete Reports

Agile Software Development (Abstract and PDF)	A Business Case for Software Process Improvement REVISED (HTML and PDF)
A History of Software Measurement at Rome Laboratory (HTML)	A Review of Formal Methods (HTML)
A Review of Non-Ada to Ada Conversion (HTML)	A Study of Software Management: The State of Practice in the United States and Japan (HTML)
An Analysis of 2 Formal Methods: VDM and Z (HTML and PDF)	Analyzing Quantitative Data Through the Web (HTML)
Artificial Neural Networks Technology (HTML)	COTS Based Software Development and Integration (HTML and PDF)
Embedded Software Maintenance (Abstract and PDF)	Mining Software Engineering Data: A Survey (HTML and PDF)
Knowledge Management in Software Engineering (Abstract and PDF)	Software Tools for Knowledge Management (Abstract and PDF)
Modern Empirical Cost and Schedule Estimation Tools (HTML and PDF)	Object-Oriented Database Management Systems Rewritten (HTML and PDF)
Present Value of Software Maintenance (HTML)	Rome Laboratory Research in Software Measurement (HTML)

System Reliability Toolkit

A Practical Guide for Understanding and Implementing a Program for System Reliability

FAC DACS



STINFO Resources of Interest to Software Acquisition Community

- Reports
 - System of Systems Cost Estimation
 - Software Reliability
 - ROI of Process Improvement
 - Gold Practices
 - Formal Risk Management
 - Standards/Open Systems
 - Manage Requirements
 - Metrics Based Scheduling
 - Track Earned Value
- Training
 - Software Affordability
 - On-Line Training
- Newsletters
 - IP and Software
 - Service Oriented Architectures
 - Open Source
 - Performance Results from CMMI
 - Measurement
 - many more...





DACS Expertise

Focus Areas

- Software Testing
- Software Quality
- Software Reliability
- Agile Development
- Software Architecture
- Process Improvement
- Measurement
- Cost Estimation
- Information Technology
- Software/IT Training
- Net Centric Operations
- Software Economic Analysis
- Information Fusion
- Software Producibility
- Software Intensive Systems Engineering
- Software Assurance
- Advanced Computing Architectures
- System Modeling and Simulation

Established Relationships with World Class Experts Provides State of the Art and Timely Scientific and Technical Information

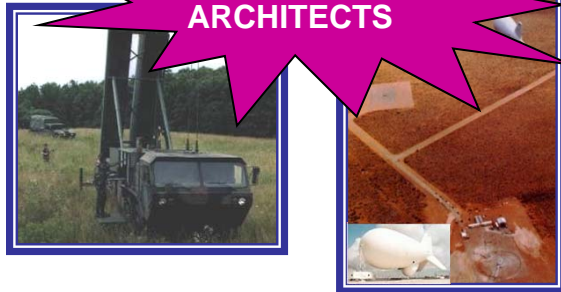


ADA School, FCS, and Warfighter Support

Combat Architectures

- Supported Multiple Major Army Studies over 25 Years
- Supported Development of Requirements / JCIDS Documentation for Major Army Combat and C2 Systems
- Supported Organizational Design
- Support Future Army BMC4I Architecture / Concepts Design
- Performed Integrated Systems Analysis
- Performed Regional Coverage Analysis

FUTURE FORCE ARCHITECTS



Training Development

- Support Development of Training and Doctrinal Products:
 - Field Manuals
 - Graduate Level Training Courses
 - OIF Lessons Learned Database / Tracking
 - Training Plans and Support Packages
 - Scenario Generation for Multi-Echelon Training
- Web page design and implementation

FUTURE / CURRENT FORCE TRAINING PRODUCTS



Operational AMD Unit

- Support to 32d AAMDC and ADA Brigades / Battalions in:
 - Training, Operations, Personnel, Communications (JTIDS), and Logistics
 - Executed AMD Training -30 exercises per year at Drive Up System Training Facility
 - Contingency Operations
 - OIF (Deployed)
 - ONE (Deployed)
 - OEF
 - Provide Information Technology services

SUPPORTS THE WARFIGHTER





For More Information...

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