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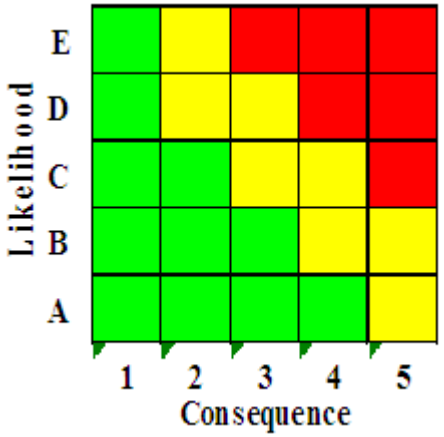
Implementation of an Enterprise Level Risk Management Process at the Naval Undersea Warfare Center Division, Newport



NDIA 14th Annual Systems Engineering Conference
27 Oct 2011

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Topics

- Naval Undersea Warfare Center Division Newport, RI (DIVNPT) Overview
- DIVNPT Risk Management Process Development
  - Background
  - Objectives
  - Approach
- DIVNPT Risk Management Process Implementation
  - Planning
  - Preparation
  - Deployment
- Lessons Learned

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NUWCDIVNPT Birdseye View

- We are the Navy's only laboratory dedicated to full spectrum Undersea Warfare (USW)
- We have both military and civilian leadership
- We have 9 technical departments aligned to support our product lines from S&T, Design, Acquisition, and In-Service Support

Customers

- Fleet
- Navy Program sponsors
- Scientific sponsors
- Intelligence community
- Defense industry
- Non-defense industry
- Foreign Navies

Assets

- 104 Buildings
- 256 Acres
- $566M Asset Value
- Unique National Facilities

People

- 2758 Civilian employees
- 13 Technical Warrant Holders
- The nation's experts on USW
- Highly educated & dedicated to Fleet excellence
- 75% are Scientists & Engineers; 45% have advanced degrees

We are a $1B Organization that Produces Product not Profit

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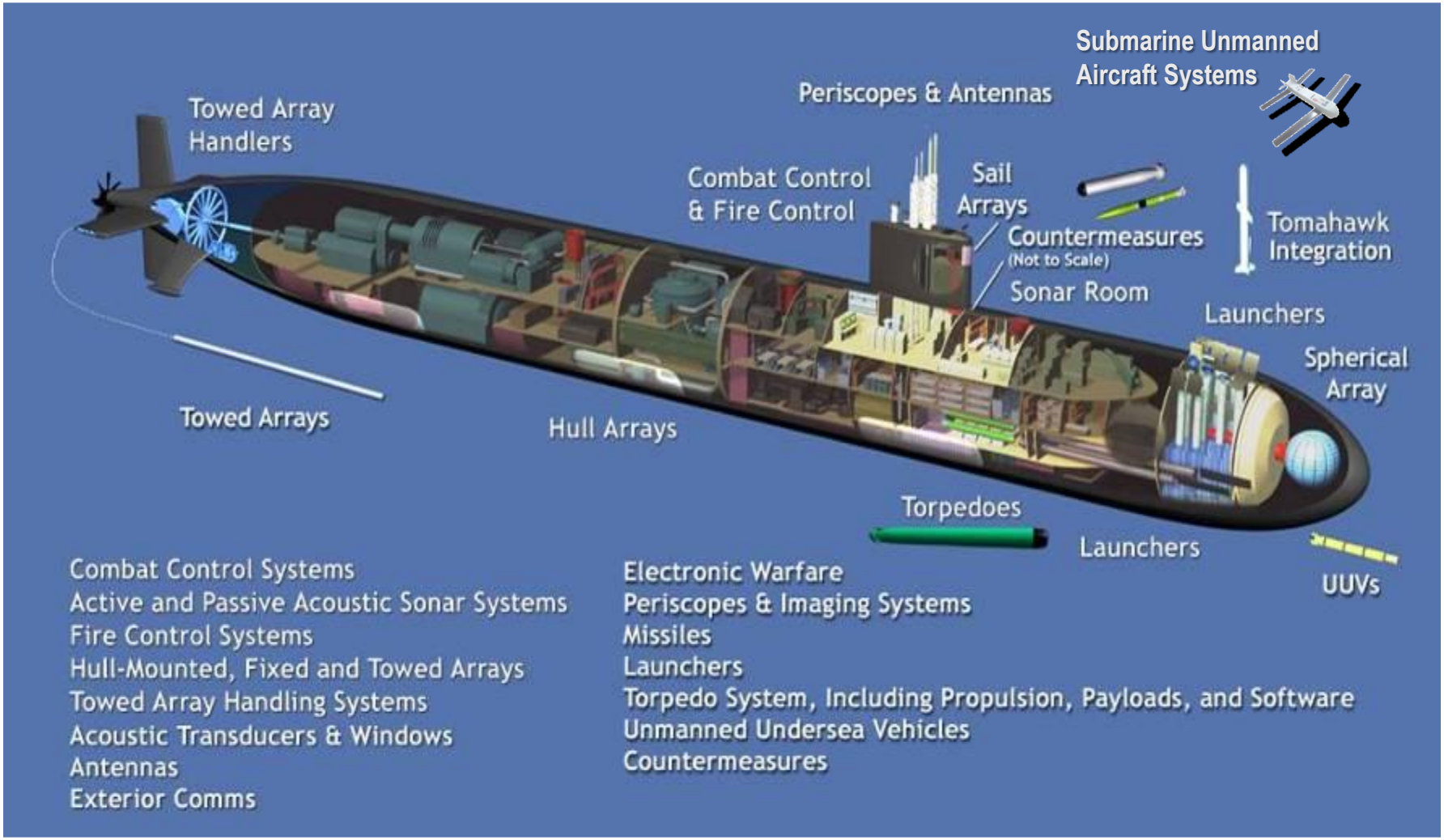
DIVNPT Areas of Expertise
Submarine Technology



Combat Control Systems
Active and Passive Acoustic Sonar Systems
Fire Control Systems
Hull-Mounted, Fixed and Towed Arrays
Towed Array Handling Systems
Acoustic Transducers & Windows
Antennas
Exterior Comms

Electronic Warfare
Periscopes & Imaging Systems
Missiles
Launchers
Torpedo System, Including Propulsion, Payloads, and Software
Unmanned Undersea Vehicles
Countermeasures

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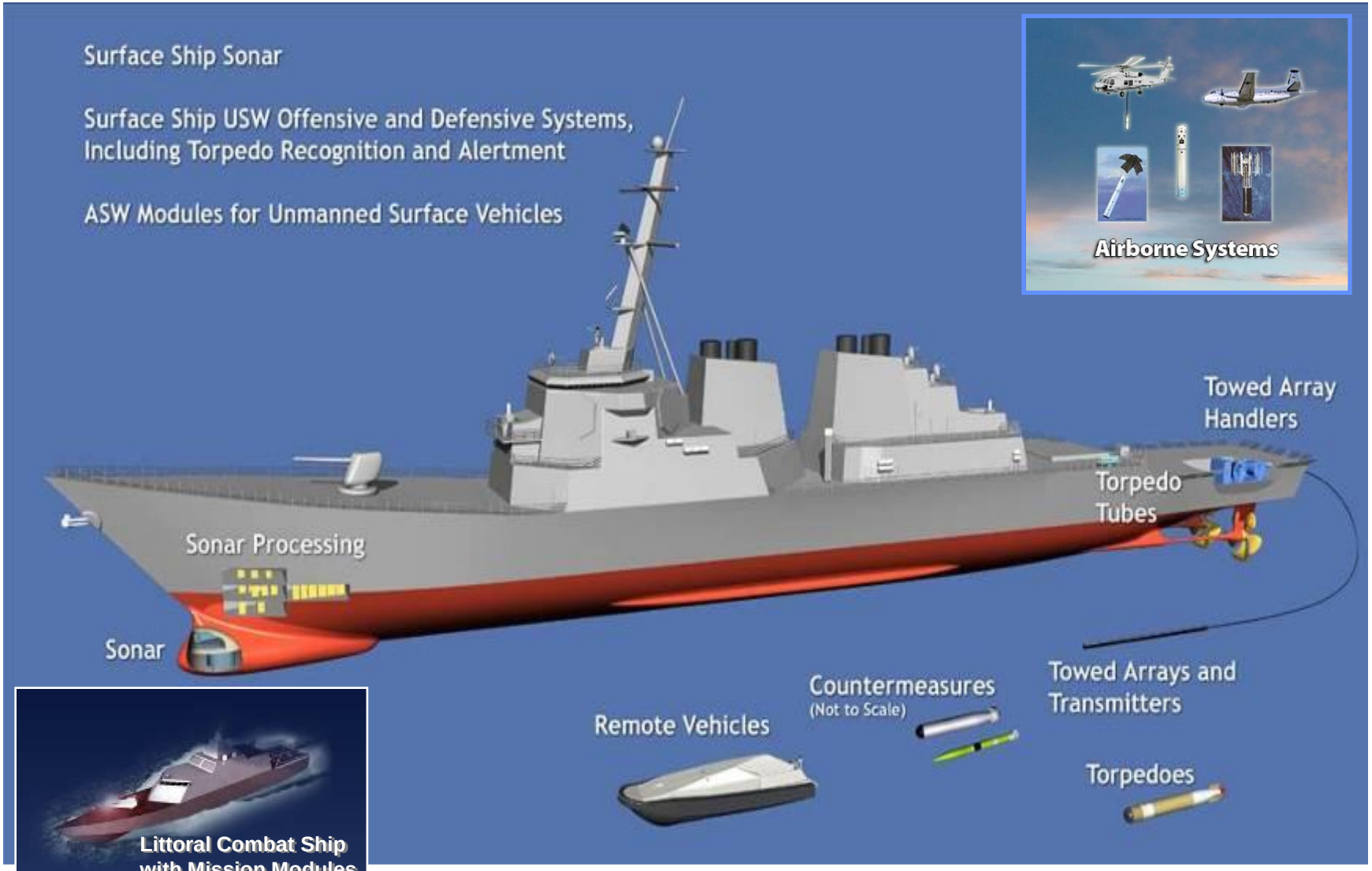
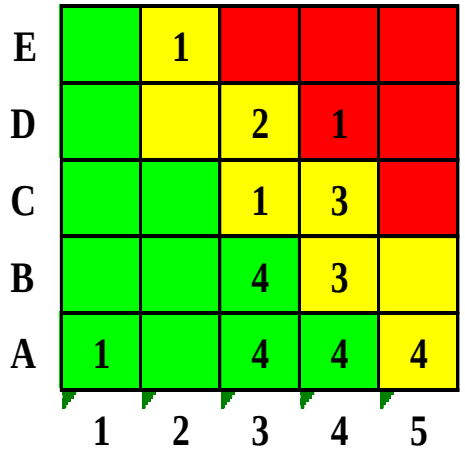
DIVNPT Areas of Expertise
Surface Ship Technology



DIVNPT Risk Management Process Development - Background

- In FY10, the Chief Engineer (CHENG) Council reviewed all system failures from the past 3 years to identify common trends and root causes
  - None of the 28 failures were being actively managed via a Risk Management Process prior to the failure
    - Post-failure risk assessments showed a high concentration in the Low likelihood / High consequence quadrant
  - Risk Management was found to be inconsistently applied from department to department and from project to project within a department
- DIVNPT management directed that an enterprise-wide Risk Management process be established



Post-failure Projected Risk Assessment

DIVNPT Risk Management Process Objectives

- Provide a common framework for the implementation of Risk Management principles across the DIVNPT enterprise
- Enable project managers to solicit input from across their team to obtain a complete risk picture
- Provide the ability to elevate significant risk items to management attention
- Provide the ability to extract risk data for technical presentations
- Provide the necessary resources to successfully sustain the process
  - e.g. training, IT resources, documentation

Accomplish all Objectives in a Cost-Effective Manner

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DIVNPT Risk Management Process Approach

- Planning
  - Assess the state of Risk Management across the enterprise
  - Requirements definition
  - Analysis of Alternatives (AoA)
- Preparation
  - Development of supporting documentation and resources
  - Software installation and configuration
  - Development of a risk reporting tool
- Deployment
  - Establishment of the Enterprise Risk Management SharePoint Site
  - Risk Management training
  - DIVNPT Risk Management Process Training

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DIVNPT Risk Management Process – Planning

- Assessed the state of risk management across the enterprise
  - Tools used ranged from COTS software to Excel spreadsheets
- Defined Requirements
  - Evaluated business models for each technical department
    - Product lines, customer base, roles and responsibilities
      - » Significant variation across the departments drives a need for flexibility
  - Identified key performance parameters
    - Fully support Risk Management, as described in NAVSEAINST 5000.8
    - Allow for wide access to the database, but with controlled access
    - Provide for risks to be rolled-up across the enterprise with ability to elevate significant risks to Management Attention
    - Compatible with DIVNPT IT infrastructure, e.g. NMCI
    - Low acquisition and sustainment costs

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DIVNPT Risk Management Process – Planning Cont'd

- Conducted AoA of various Risk Management tools
  - Reviewed COTS software, software development, and MS Office product templates
- Selected a COTS Risk Management tool – Risk Radar Enterprise by American Systems. Key features:

PROS

- User friendly with intuitive front end
- Flexibility to accommodate various business models
  - Can adapt to NAVSEAINST mandated risk cube
  - Supports user defined parameters, e.g. milestones
- Unlimited number of user accounts, license controls concurrent users
  - Practical limits encountered at approx 700 users
- Projects have private workspaces to manage risks
  - Access and permissions set by project manager
- All risks roll-up to the enterprise level
  - ID significant risks for management attention
- NMCI certified
- Reasonably priced

CONS

- Does not support PKI log-in
  - Planned future upgrade
- Risk data not readily ported to PowerPoint
  - Developed in-house tool to create slides from database
- Did not support elevation of risks to management
  - American Systems added "Oversight Level" functionality

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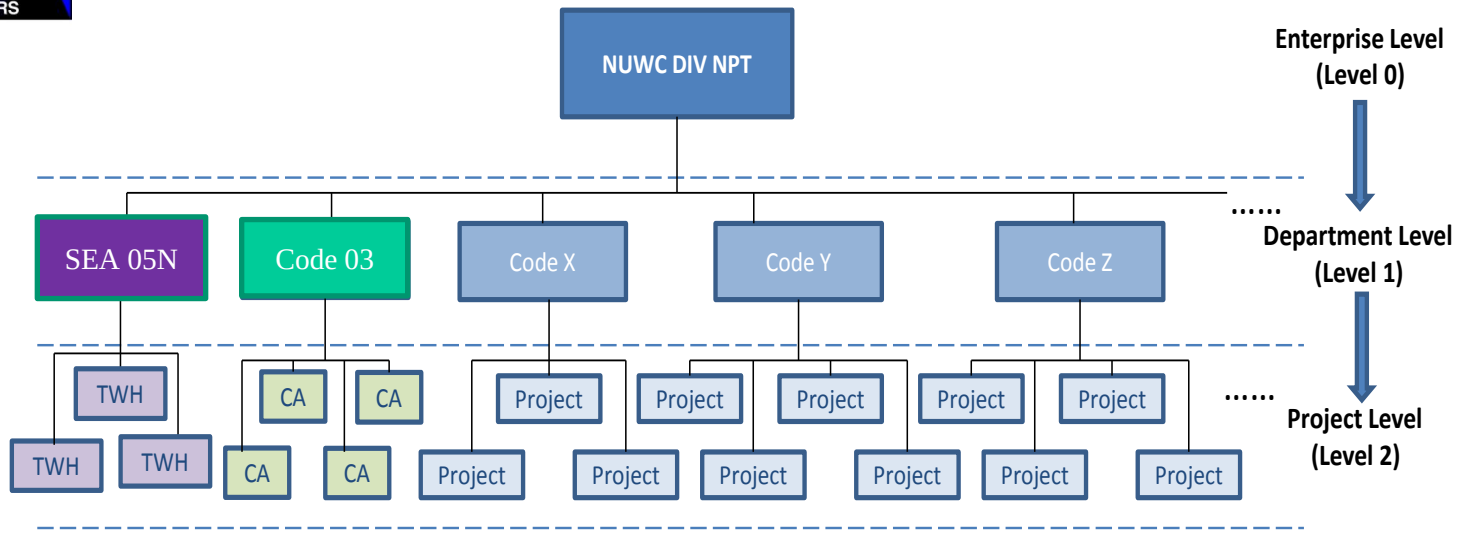
DIVNPT Risk Management Process – Preparation

- Developed supporting documentation
  - Concept of Operations (CONOPS)
    - Establishes high level roles and responsibilities
  - Standard Operating Procedures (SOP)
    - Provides guidance to standardize risk entry and define DIVNPT requirements
- Software installation and configuration
  - Installed and configured 197 Risk Radar Enterprise projects
    - Conducted stress testing that exposed software and configuration issues
- Developed a risk reporting tool
  - Risk Radar built-in reports only output in PDF
  - Created a utility that extracts risk data from Risk Radar Enterprise to create PowerPoint slides

DIVNPT Enterprise Project Structure



- Enterprise Level (Level 0) is the top level in the hierarchical structure. Risk Manager: DIVNPT CHENG
  - Project risk entry is not performed at this level
- Department Level (Level 1) project provided for all departments executing technical work. Risk Manager: Department CHENG
  - Project risk entry is not typically performed at this level
- Project Level (Level 2) project provided for all departments tasks funded ≥ $300K. Risk Manager: Technical Project Manager
  - Project risks entered and managed at this level

197 Risk Projects Established

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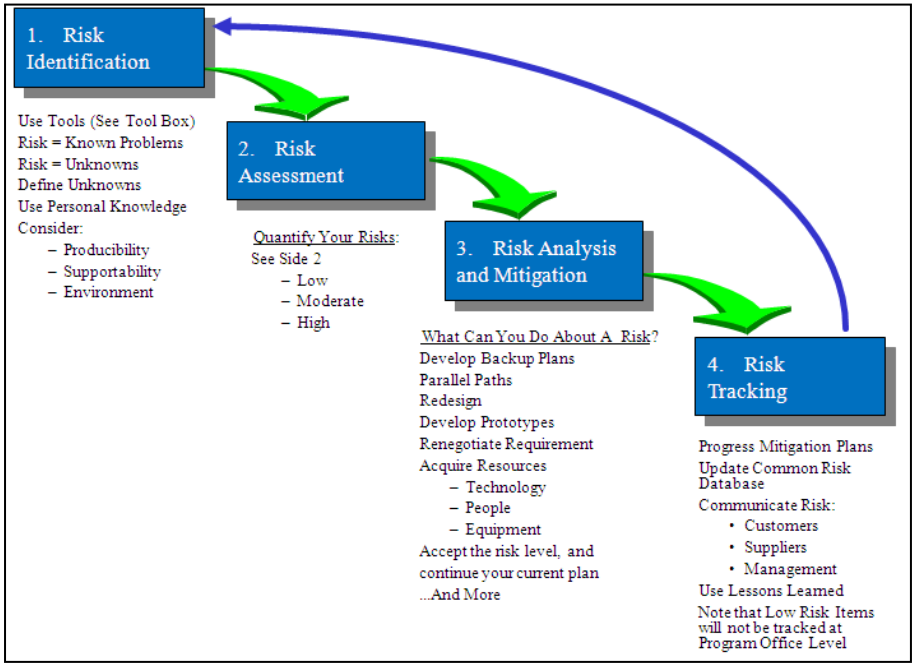
DIVNPT Risk Management Process – Deployment

- Established an Enterprise Risk Management SharePoint Site
  - Links to software and reporting tool
  - Identification of DIVNPT and Department risk POCs
  - Document repository
    - CONOPS, SOP, DoD / Navy Risk Instructions, Risk Radar User Guide
  - Training Material (Training video and software demonstration)
- DIVNPT Risk Management process went live on 22 Sep 11



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DIVNPT Risk Management Process – Lessons Learned to date

- Top Management buy-in is essential for workforce acceptance
  - All hands communication, participation in training sessions
  - Requirement for management technical reviews now include Risk Management process output
- Some project managers will resist in spite of value added to the project. Reasons include:
  - Perception of process as a new "Flavor of the month", unfunded mandate, unwanted visibility, inertia, etc.
- DIVNPT application of Risk Radar Enterprise revealed some previously unknown limits of the software
  - e.g. response time issues associated with number of user accounts
  - American Systems actively supporting resolution of limitations
    - Patches developed to date have been very effective