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

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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
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
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
DIVNPT Areas of Expertise
Surface Ship Technology

- Surface Ship Sonar
- Surface Ship USW Offensive and Defensive Systems, Including Torpedo Recognition and Alertment
- ASW Modules for Unmanned Surface Vehicles

Littoral Combat Ship with Mission Modules
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
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
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
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
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
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
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
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