

INTEGRATION OF A GIS NAUTICAL SOLUTION

Nautical Chart System II Project
ESRI / NOAA MCD / ManTech

ESRI Federal User Conference 2010

February 18, 2010



Agenda

- Background
- System Overview
- Project Execution
- Current State of the Project

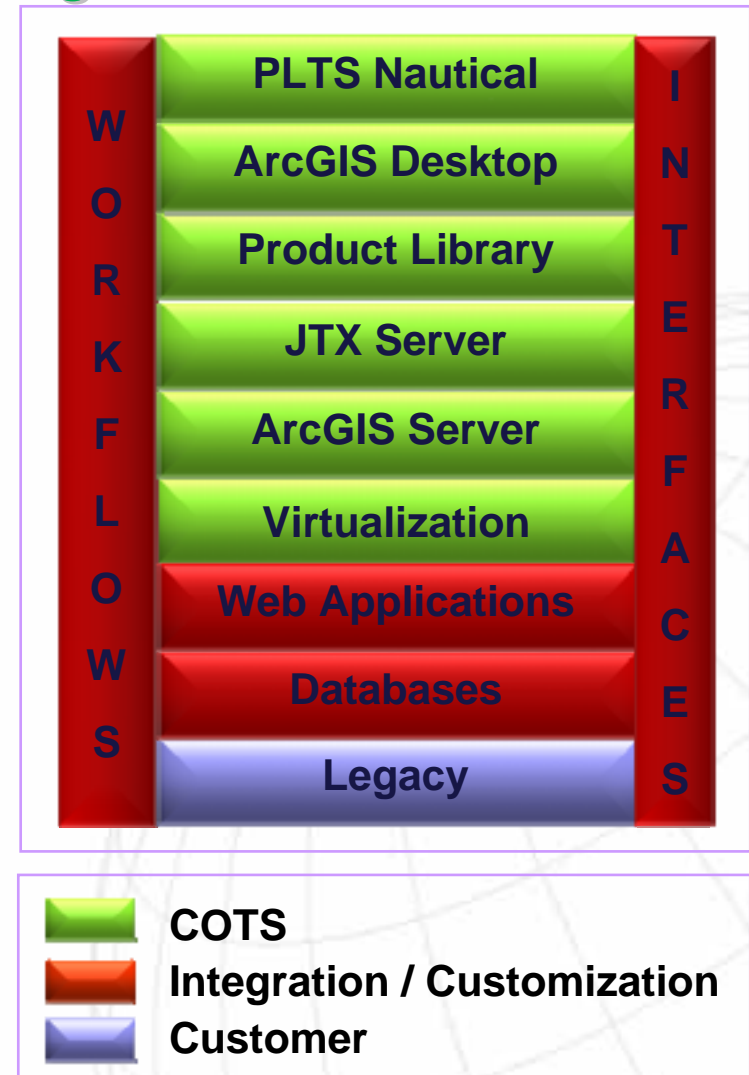


- Objective
 - Maximize Chart Product Development and Maintenance Efficiency and Effectiveness
- Goals
 - Comprehensive DB System
 - Minimize Redundant Application of Source
 - Improve Cartographic Consistency Across Products
 - System w/ Single Front End
- Integration of a GIS COTS Nautical Solution
 - Realize Benefit of COTS with Limited Customization
 - Facilitate Maximum ROI related to System Enhancement, Maintenance and Training

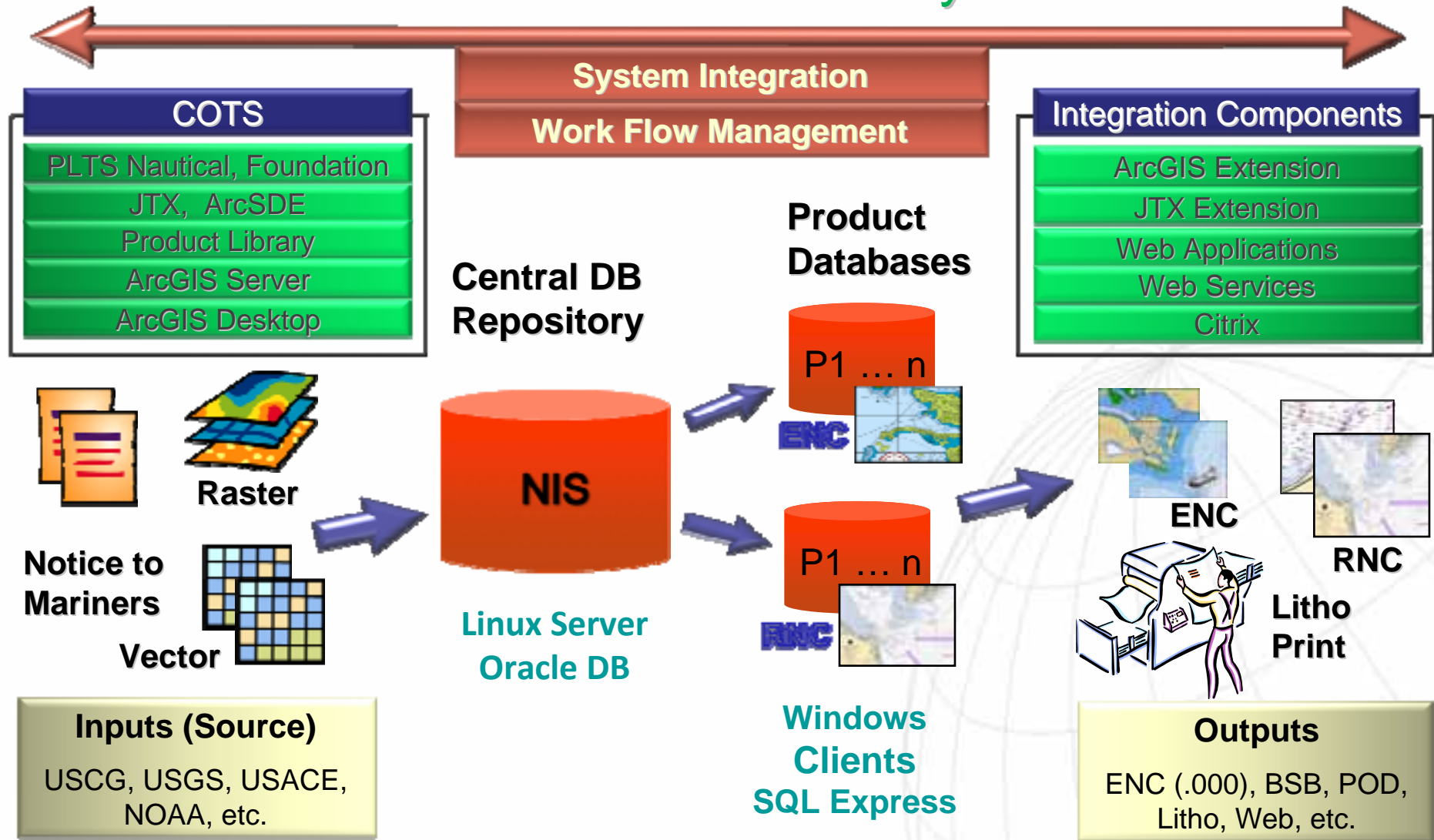


High Level Architecture

- Full Integration of COTS Based Solution
- Workflow Management
 - Main Access Point
 - Flow and Operation Control
- Leading Edge GeoDatabase Technology
 - Central Nautical DB
 - Middleware Custom Components
- Interfaces to Legacy Systems



End-to-End System Architecture



Overview

- Requirements Analysis
- Trade Study / Vendor Selection
- System Integration
- Challenge Resolution



Nautical Solution Integration

Requirements Analysis

- Understand the Business Organization
- Identify the Subject Matter Experts
- Provide Requirements Analysis Training
- Develop Use Cases, Activity and Context Diagrams
- Develop the Discrete Functional, Interface, Operational, Quality, and Performance Requirements



Trade Study / Vendor Selection

- Identify Potential Industry Vendors
- Develop and Issue a Request For Proposal (RFP)
- Establish the Evaluation Methodology: EA Conformance, Vendor Viability, TCO, Ability to Deliver, and Function
- Vendor On-Site Demonstration / Test / BAFO
- Proof of Concept / Prototype – Central Nautical Database
- ESRI's Nautical Solution Selected in 2007 with Contingencies



Nautical Solution Integration

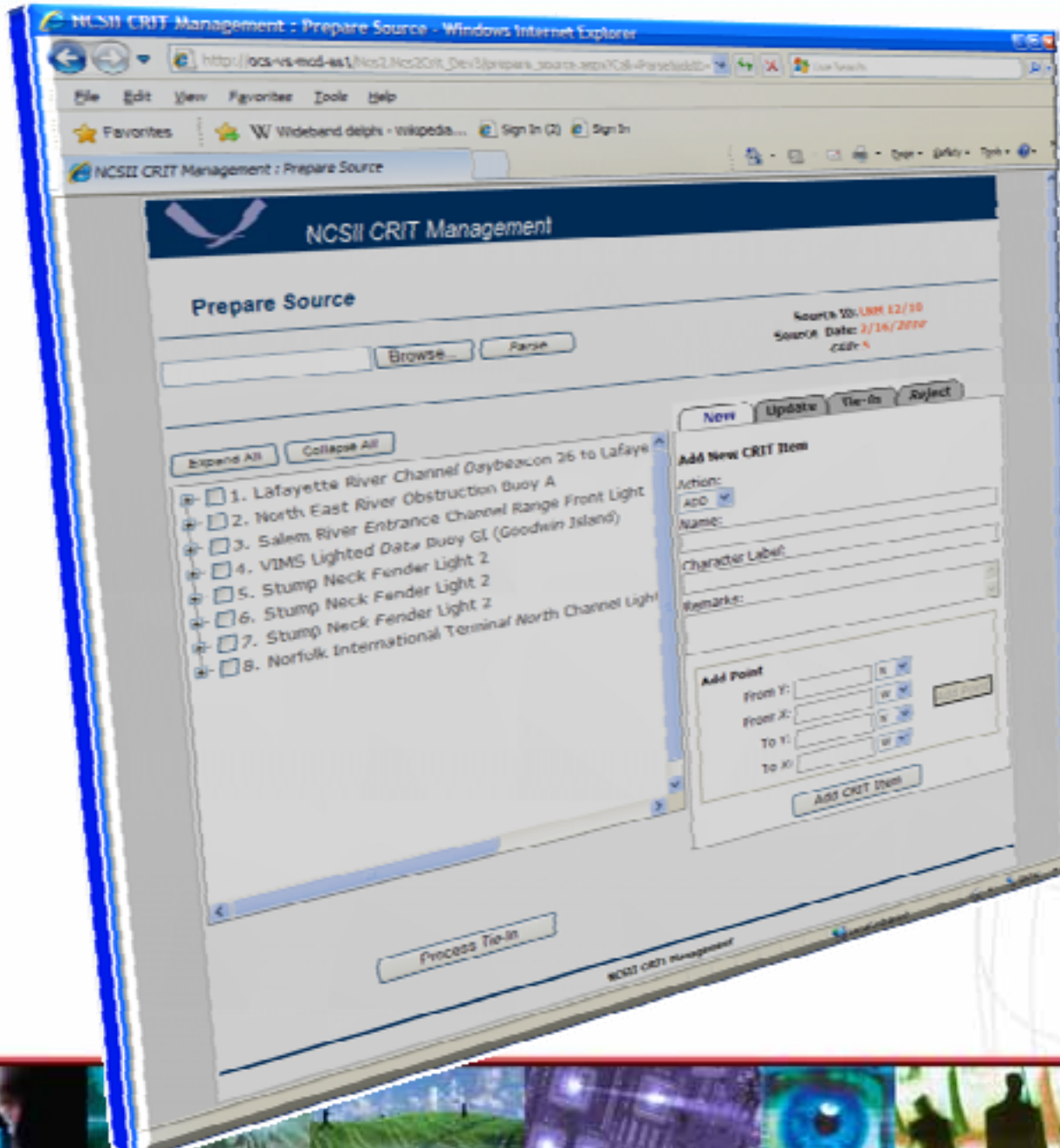
System Integration

- Custom Application Development
 - Web Applications
 - Critical Data Changes “Notice to Mariners”
 - HO Specific Functionality
 - NOAA’s HO Unique Requirements
 - Integrate and Maintain Integrity of the COTS
- Workflows and Interfaces Development
 - Iterative Approach – Worked closely w/ NOAA & ESRI
 - Structured Workflow to manage Jobs and Resources
 - Interface with Legacy Systems



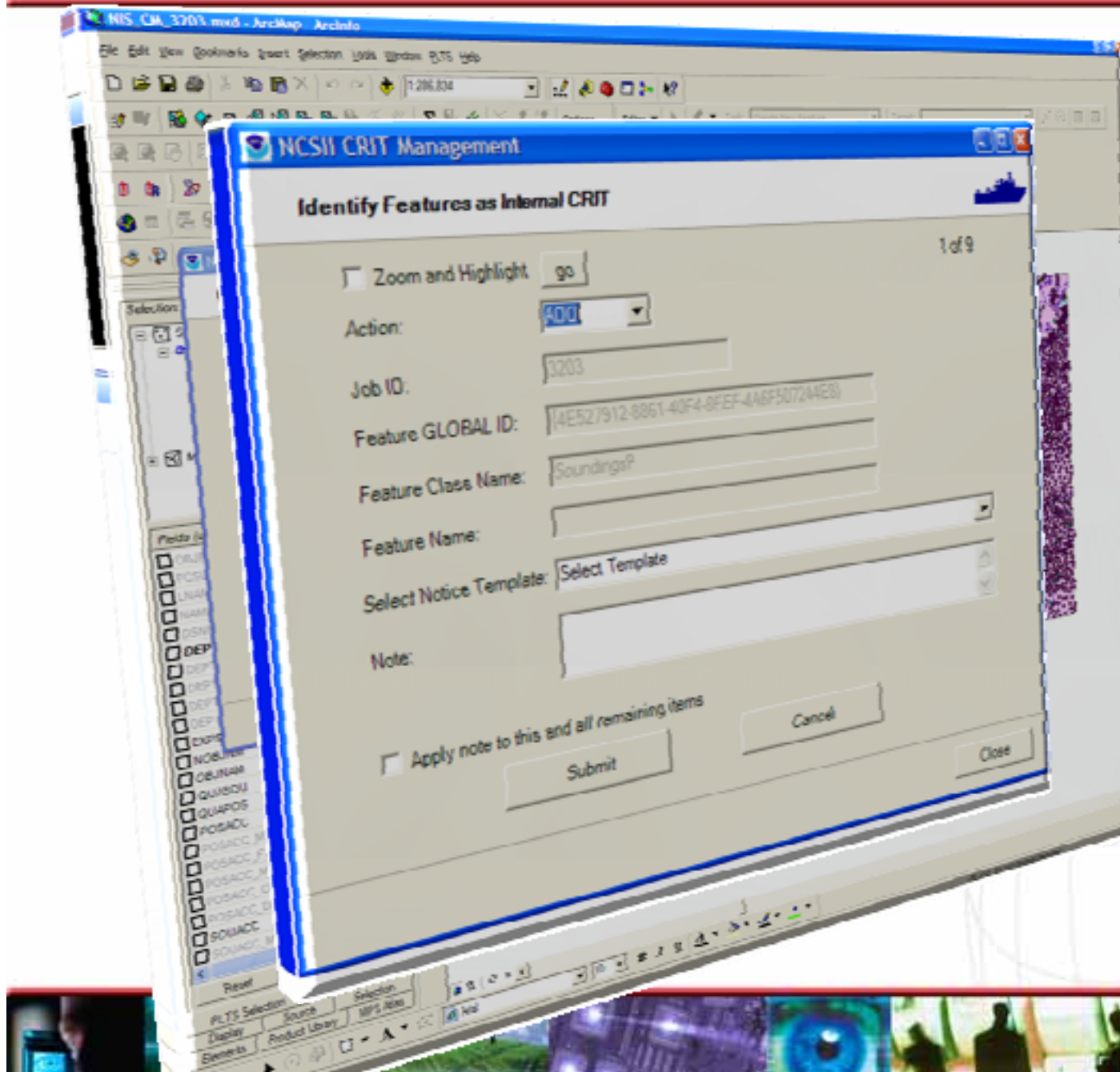
System
Integration

Custom
Application



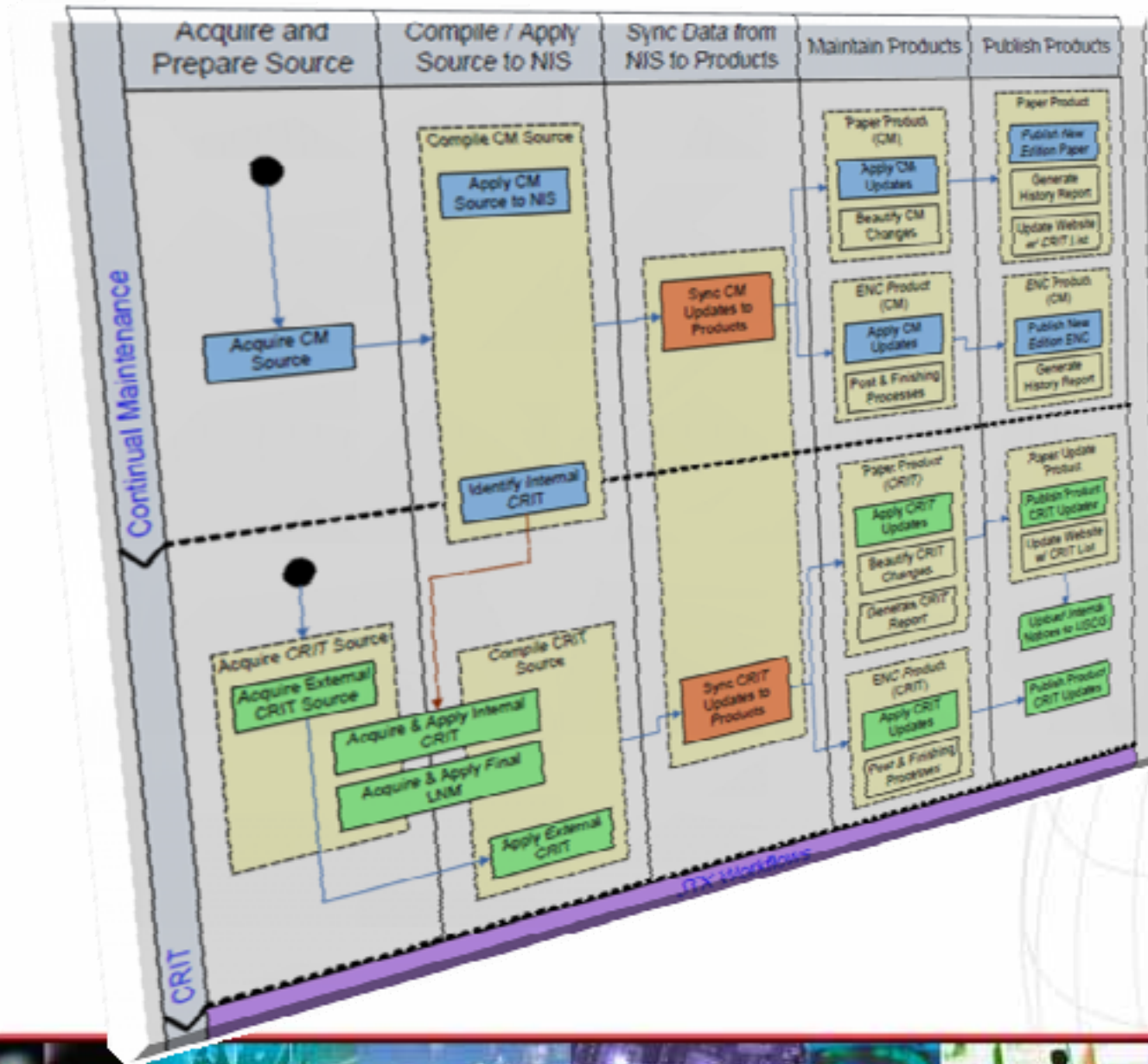
System
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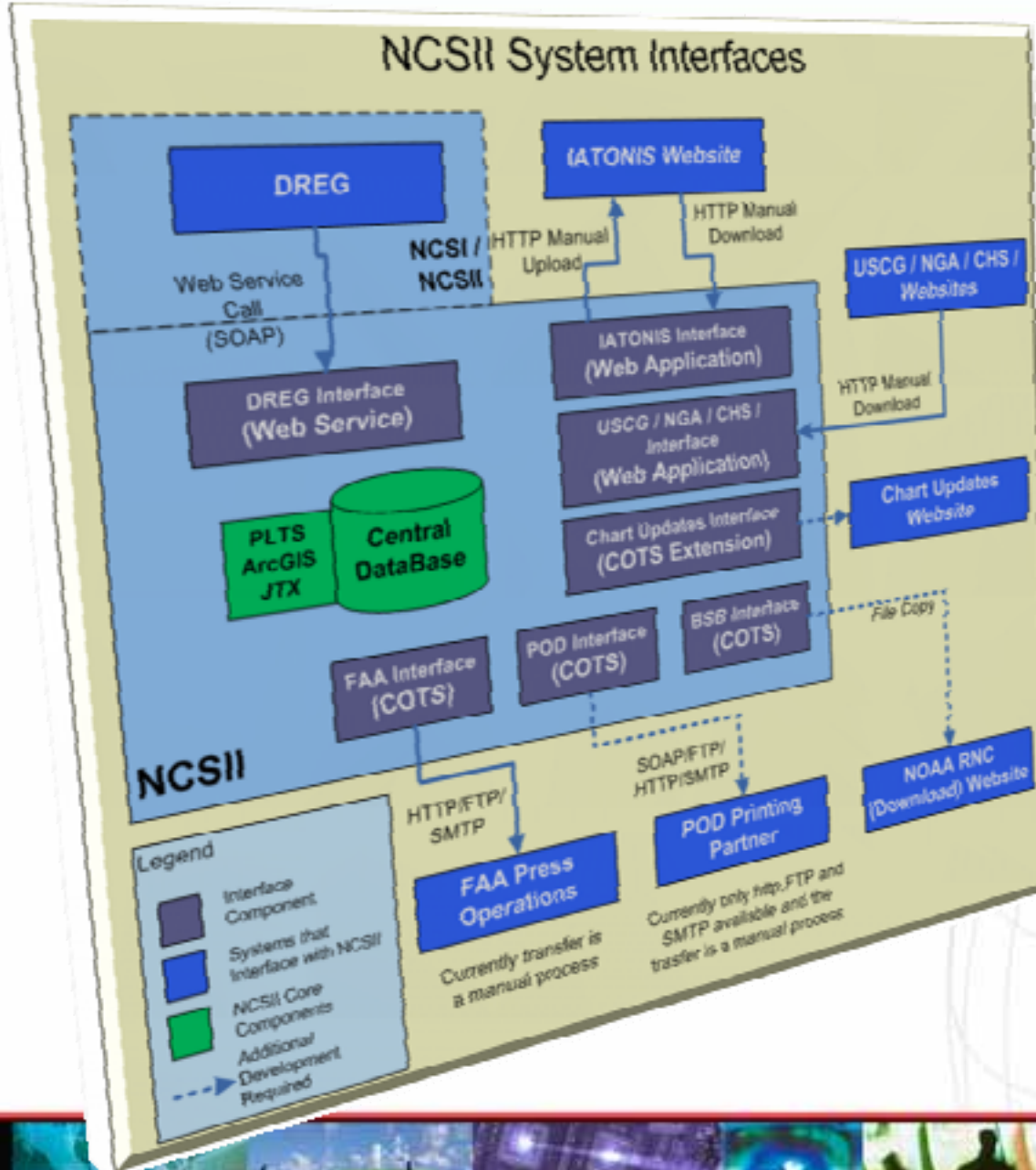
System Integration

Workflows and Interfaces



System Integration

Workflows and Interfaces



Nautical Solution Integration

System Integration

- Unit and Integration Test
 - Discrete Requirement Tests
 - Functional, Interface, Operational, Quality, Performance
 - End to End Scenario Tests
 - Workflows, Interfaces and Custom Development
- Configuration Management
 - Configuration Identification
 - Change Control (Internal/ External Changes)
- Release Management
 - Multiple Environments
 - Parallel Testing Activities



Challenge Resolution

- Translate Business Needs (As-Is) into Requirements (To-Be)
- Fine-tune Alignment between Technology, Business Needs and Schedule
- Evolve COTS to Integration Readiness
- Facilitate Project Impasse Resolution
- Fill the Gaps while Maintaining the Benefit of the COTS Investment



- System Accepted
- Transition in Progress
 - Training
 - Data Preparation/ Migration
 - Standard Operating Procedure Development
 - Intense User Production-Like Dry Run Testing
 - Integration (and COTS) Re-Factoring
- Limited Production Planned for 2010
- Full Scale Production Planned for 2011 and Beyond
 - Projected 5 years to transition entire Chart Suite



Questions ?

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