



Navy/MAGTF-Ship Integration Center

*Optimizing MAGTF
Employment aboard
L-Class ships*



Holistic, Enterprise Approach to Alternatives in:

- ◆ *Ship design*
- ◆ *MAGTF equipment fielding*
- ◆ *Methods of MAGTF employment from ships*



NAVAL SURFACE WARFARE CENTER PANAMA CITY DIVISION

Science, Technology, Analysis, & Simulation Department
Naval Surface Warfare Center Panama City Division





N/MSIC Integrated Solutions

Optimizing MAGTF Employment aboard L-Class ships



N/MSIC: N/MSIC is a collaborative, long-term venture ...between the Navy and the Marine Corps... that combines Sophisticated, Dynamic Modeling and Simulation (M&S) Systems with Cross-Functional, Integrated Task Forces (ITF).

Purpose: Through a **Holistic and Disciplined Approach to MAGTF-Ship Integration**, form a Common Picture for all DoN Expeditionary Warfare “Decision Support System” Stakeholders – (PPBE, Acquisition, Requirements).

- N/MSIC is designed to optimize MAGTF employment aboard L-Class ships by informing decision makers on ship design, MAGTF equipment fielding alternatives, and alternative methods of MAGTF employment from ships.

Method: This **Holistic and Disciplined Approach to MAGTF-Ship Integration** will be developed in a Phased Approach, ensuring all Stakeholders are represented and consulted early and often.

I. Form N/MSIC

- ✓ Establish Construct (Co-Chaired by Blue-Green, Executive Steering Committee)
- ✓ Establish Integration Task Forces (ITF)
- ✓ Establish Integrated Modeling System (VV&A Process, Inter-Connected Models)

II. Integrate DoN Expeditionary Warfare DSS Stakeholders

- ✓ Link ITF Schedule & Model Priorities to MAGTF-Equipment and Ship Design Milestones
- ✓ Establish N/MSIC Charter/Execution MOA's

III. Develop Sustainment Plan for N/MSIC



End State: An Established MAGTF-Ship Integration Center

- Decision Makers provided timely & relevant solutions that optimize MAGTF employment aboard L-Class ships;
 - ✓ Stakeholders fully represented through the ITF process
 - ✓ Verified, Validated, Accredited Modeling and Simulation System
 - ✓ Responsive N/MSIC construct that aligns priorities and efforts to Key Milestones

Need for MAGTF-Ship Integration Model

**...Complex Systems, Sophisticated Processes,
Multiple Configurations, Changing Footprint, Life Cycle Costs**

The operation of MAGTF Equipment on L-Class platforms, with their significantly increased capabilities and size are fundamentally changing Expeditionary MAGTF-ship Operations

- **Program Costs Demand “The Right Design...before steel is cut.”**
 - **Change:** Assembly, Delivery, Staging & Launch/Recovery of Complex Munitions
 - **Change:** Size, Wt, Classification, Interoperability, and Support Equipment Requirements of Embarked Equipment
 - **Change:** Expanded Applications of MAGTF equipment (COE changes for Phases 0-5)
- **Needed: Holistic, Reliable, Predictive tool built on proven technology**
 - Allows what-if games with Complex, Multi-Functional Configurations, Processes, Manpower, Schedules, etc.
 - Enables Cross-Functional Assessment of Multiple Equipment Transition Strategies
 - Enables Comms “Early & Often” @ every level, across all Elements of DSS
 - Enables earlier operational testing, reduces test cost
 - Enables Cross-Class Considerations (Commonality, Interoperability, Capability, Fwd/Back Fit Options)
- **Supports SECNAVINST5000.2E, 1 Sep 11: DoN Implementation and Operation of DAS and JCIDS**
 - 6.1.8 Shipboard Systems Integration:...ensure integration of **All Embarked Systems and Subsystems** (including aviation systems) in a manner that ensures established performance and support requirements are satisfied

**Early assessment of Operational Impact
of changes in Design, Equipment Configuration, or Operation**

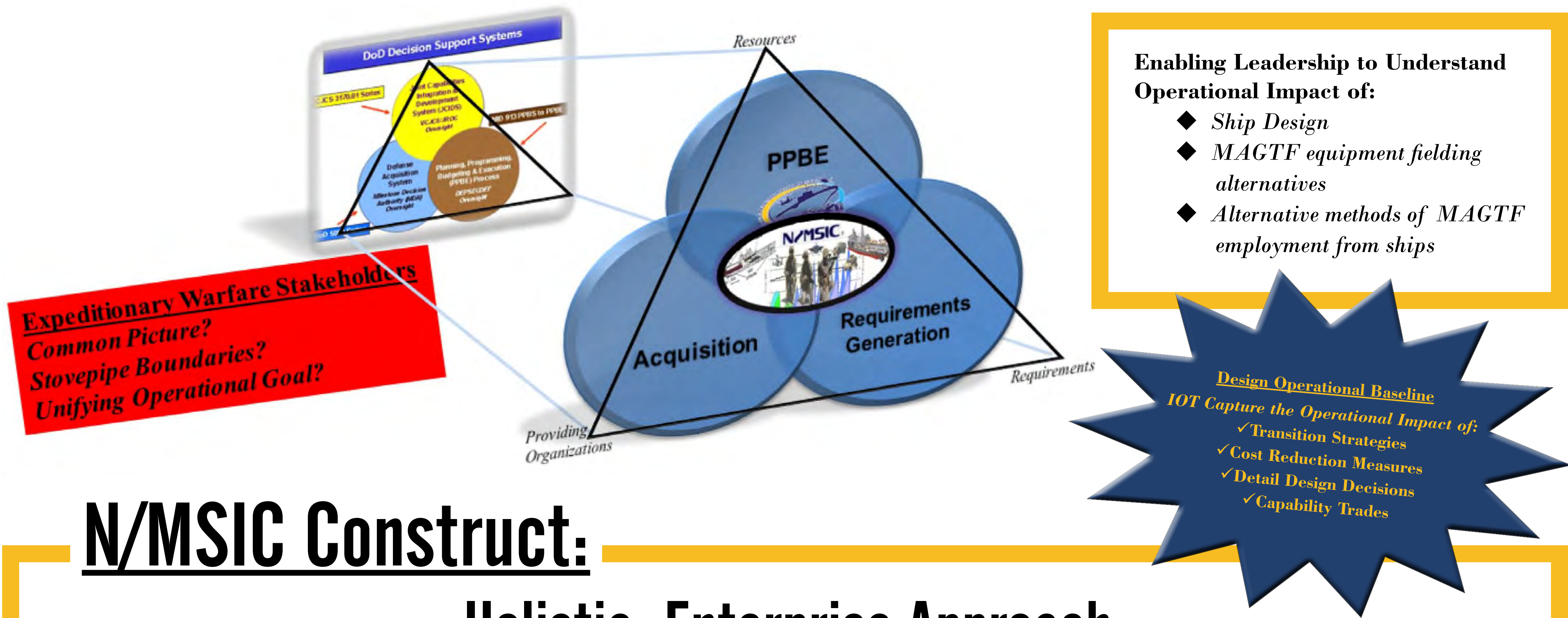


Wholeness Integration, requires Holistic, Enterprise Approach



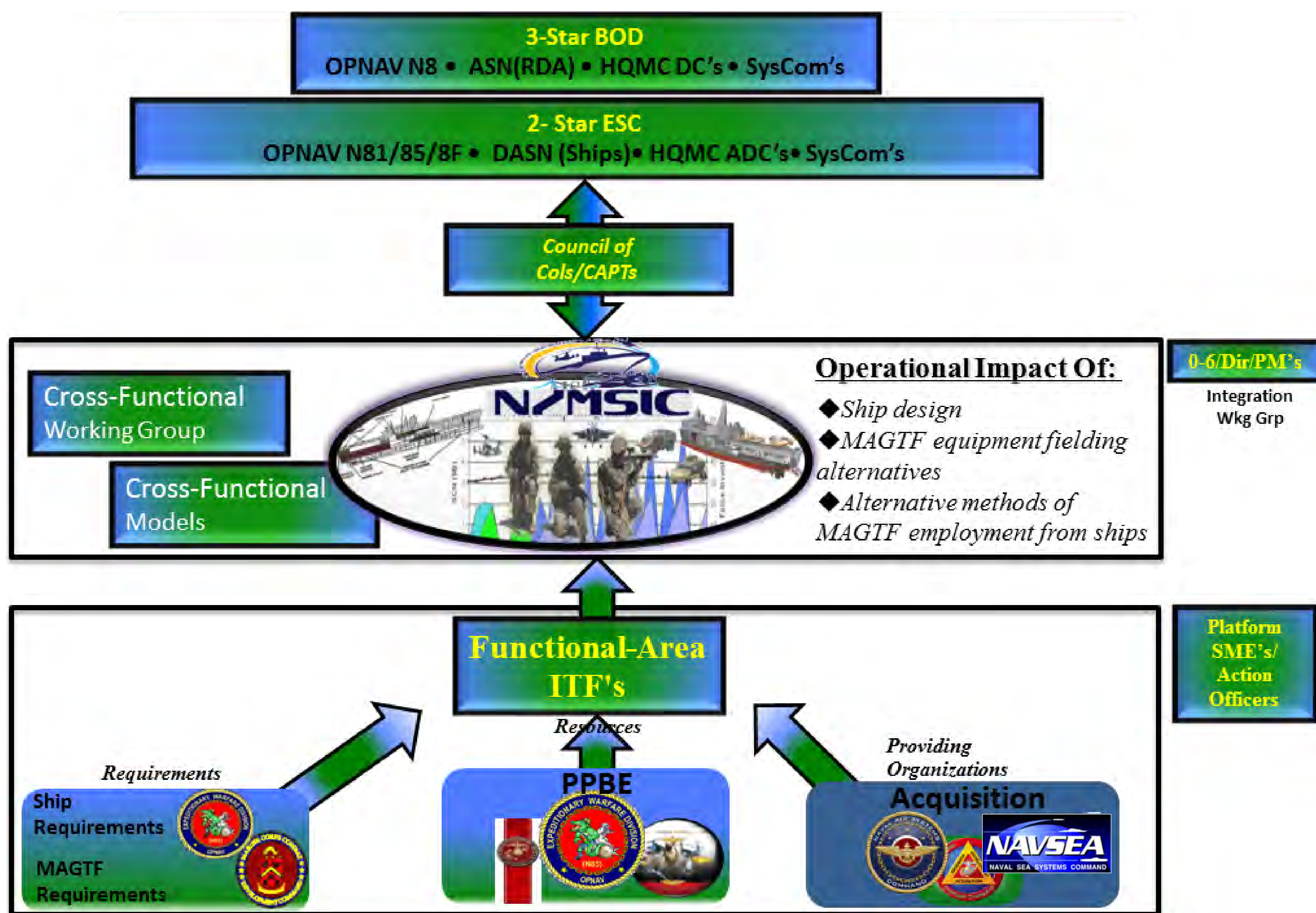
Common Picture to Integrate the DOD Decision Support System Elements

(Defense Acquisition Guidebook 18 Mar 2011)



N/MUSIC Construct:

Holistic, Enterprise Approach



NAVSEA/PEO Ships Role

Provides:

- **Real-time Design Updates**
 - Validation Design Updates
 - CAD Drawings
 - Performance Specification Updates
 - DRAFT Copies
 - SME Access
- **T&E Planning Updates**
 - Physical Testing
 - M&S-Based Assessment
 - OPEVAL Plans
 - Accommodations for data collection, experimental design
- **M&S Accreditation participation**
 - SME Validation
 - Accrediting authorities, as required

Receives:

- **Performance-to-Cost Linkages**
 - Analytic connection between cost delta's and operational performance
- **Derived Requirements Insight**
 - Timely Clarification
 - Design Impacts
 - CONOPS/COE Impacts
- **OPEVAL Preparation**
 - Likely outcomes
 - Equipment Requirements
 - Risk Reduction

Reduced Total Ownership Cost

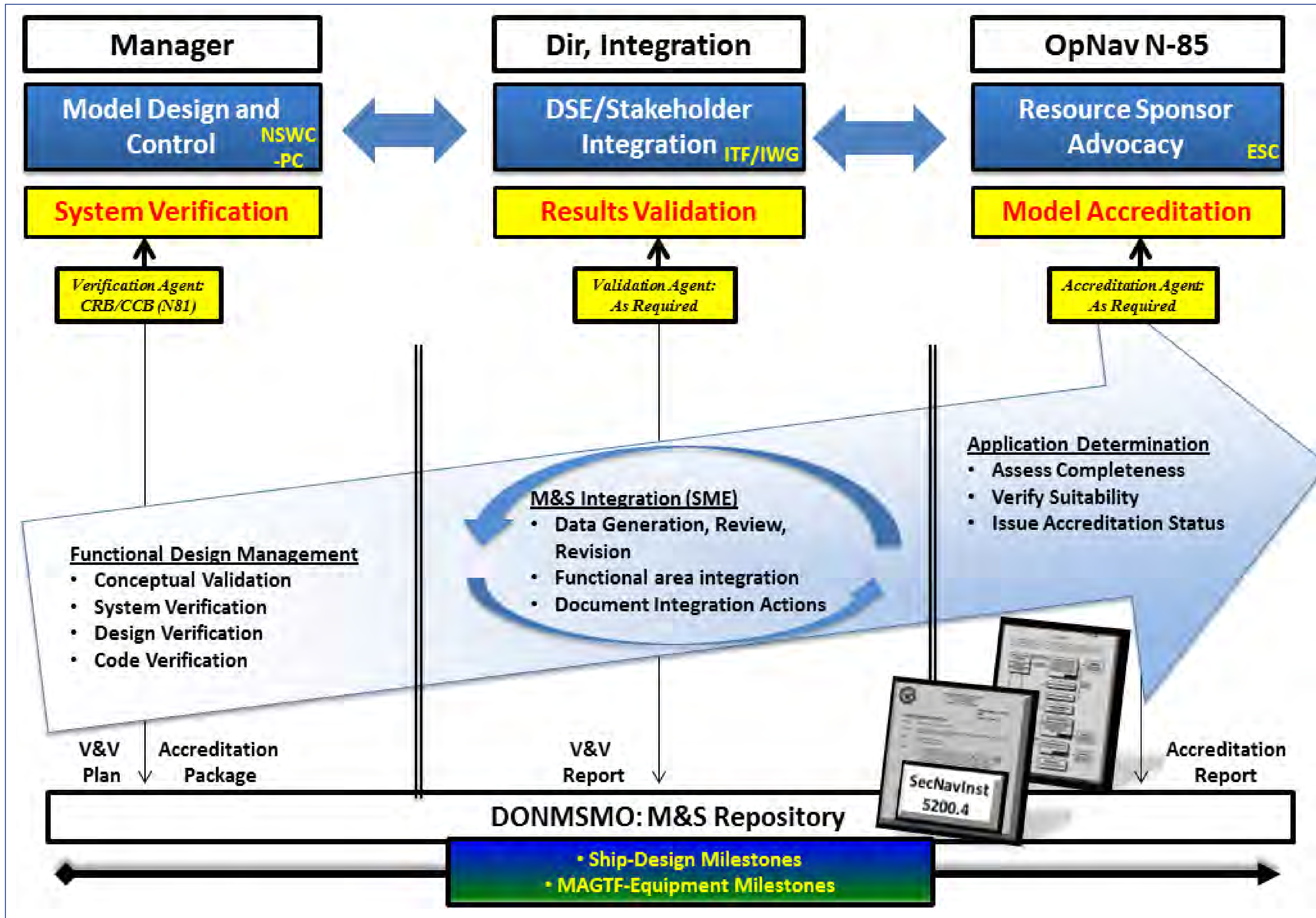
- **Trade Study Impacts**
 - Impact to KPPs, MOEs, etc.
- **Visibility**
 - Design Drivers
 - CONOPS/COE Decisions
 - Operational Needs
- **Traceability**
 - Well-documented and analyzed basis for design changes

Reduced Total Ownership Cost

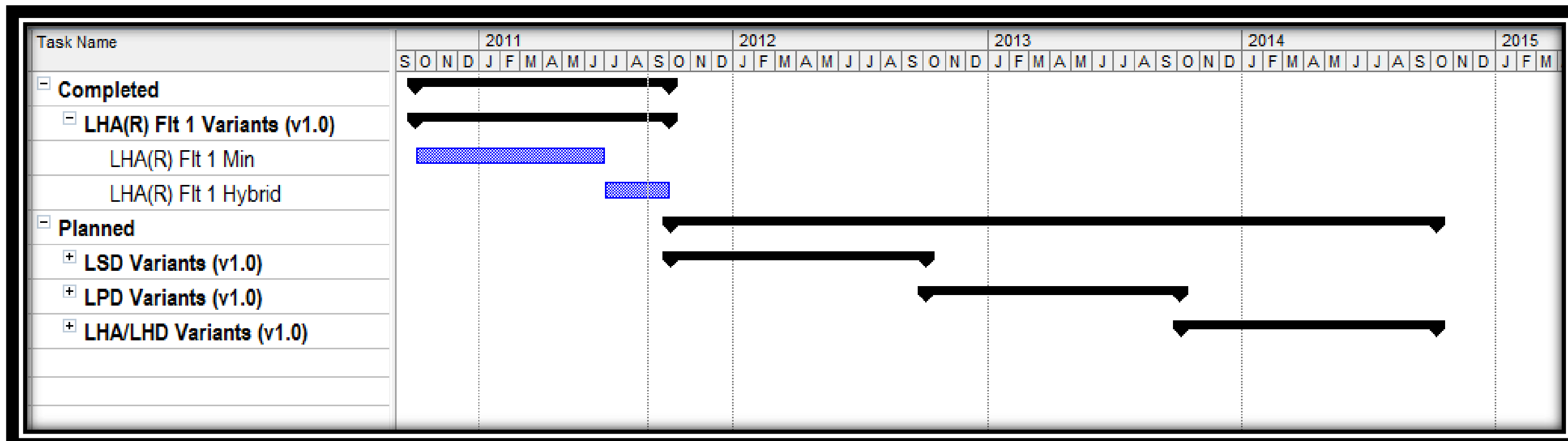




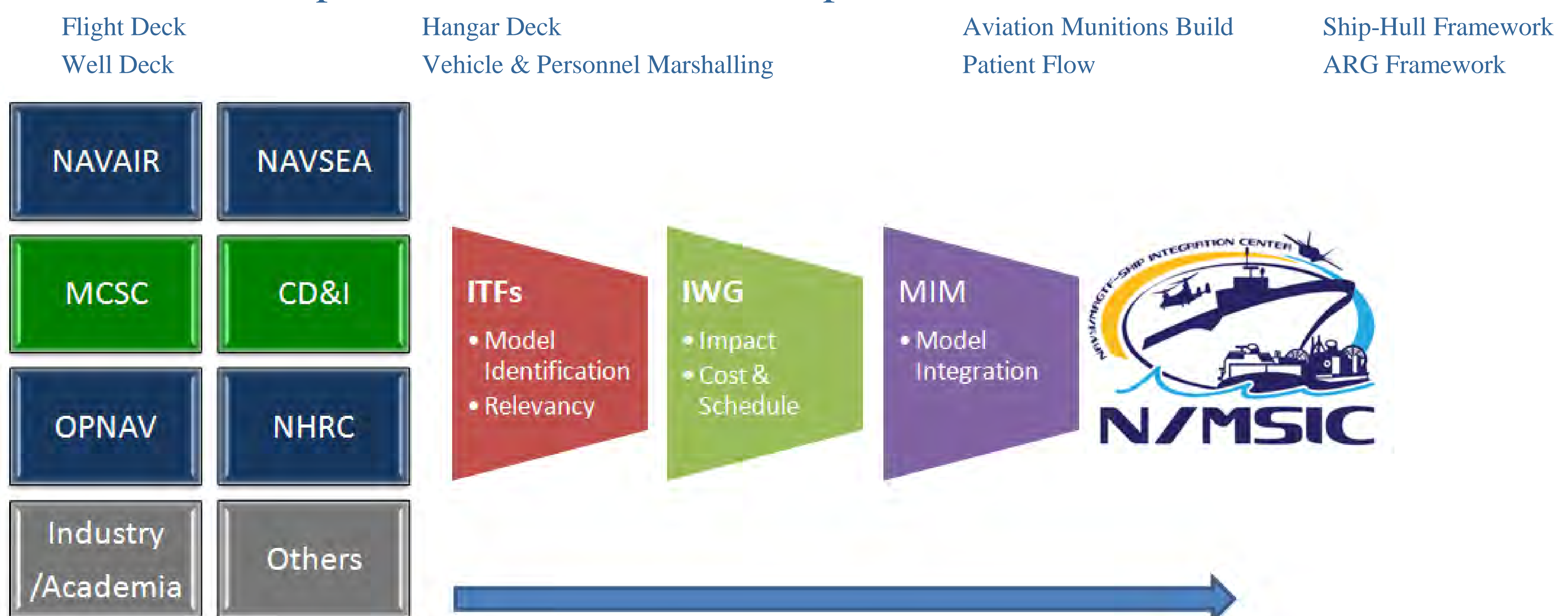
N/MSIC – Modeling & Simulation Management



Development, Interfaces with Existing Models & Expertise:



8 Independent Modules across Ship Classes





N/MSIC – Leverages ASIC Success



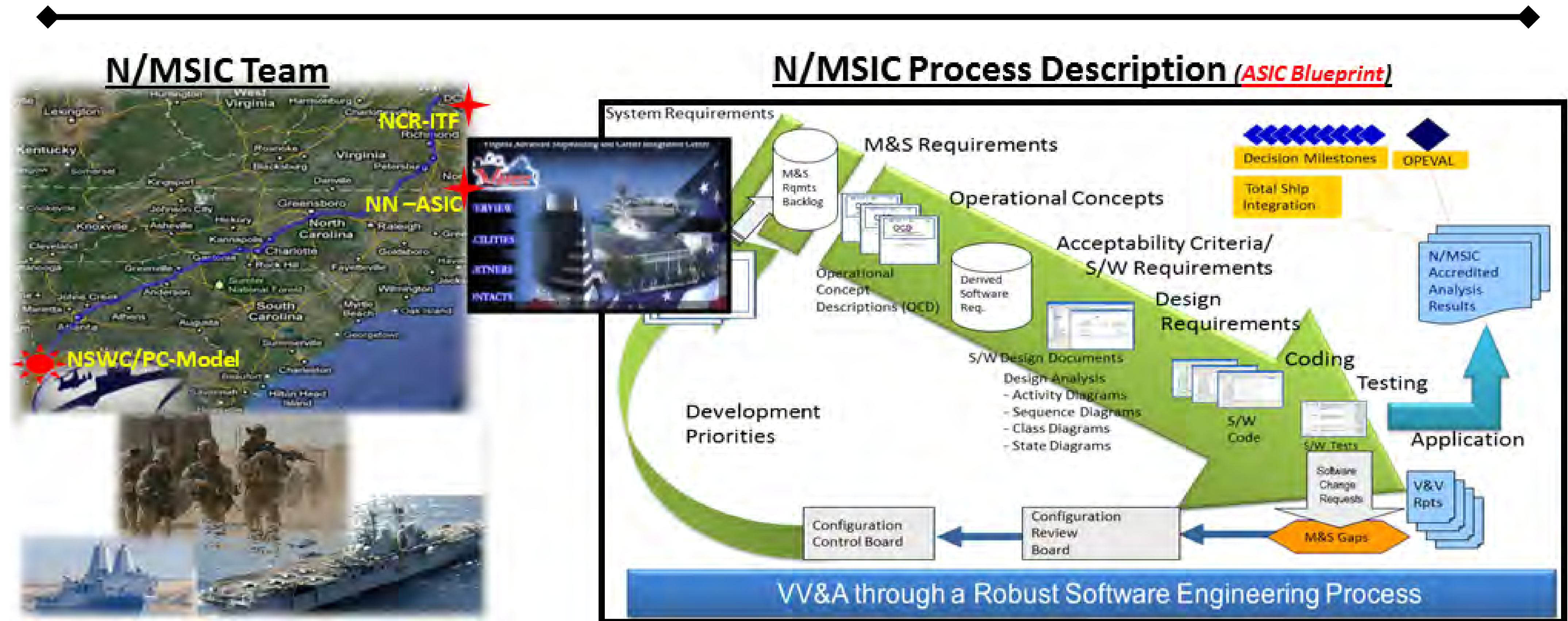
N/MSIC Model Development

- **SME:** *ASIC SME Support*
 - ✓ *Charter Design; Process Capture*
- **Model:** *ASIC Engineering Support*
 - ✓ *VV&A Counsel; External-Model Integration*

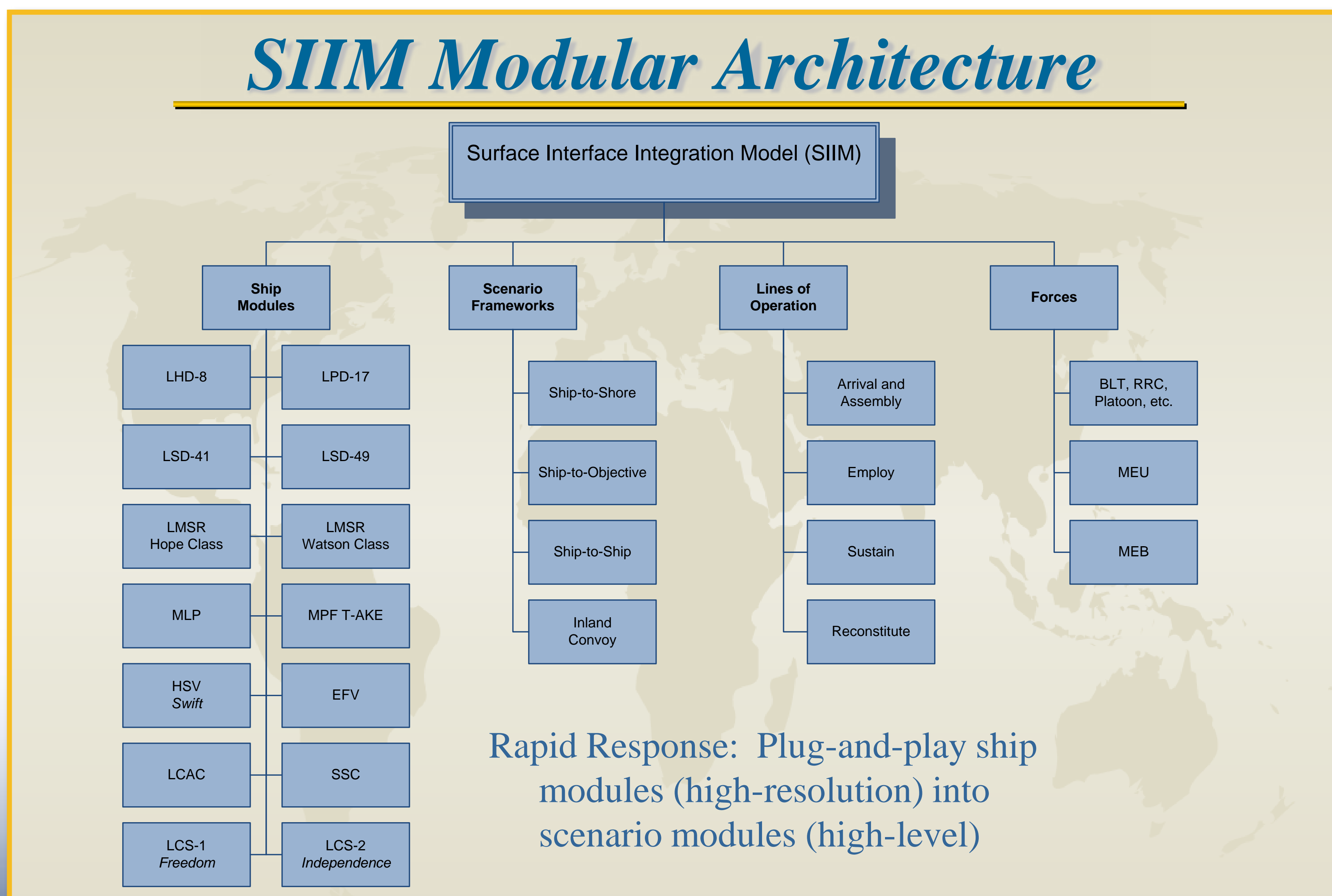
CVN-78 ASIC ROI:

- ✓ Weapons Elevator Study
- ✓ AESS Locations
- ✓ Aircraft Elevator Reduction

~ \$100M Savings
~ Sustained SGR

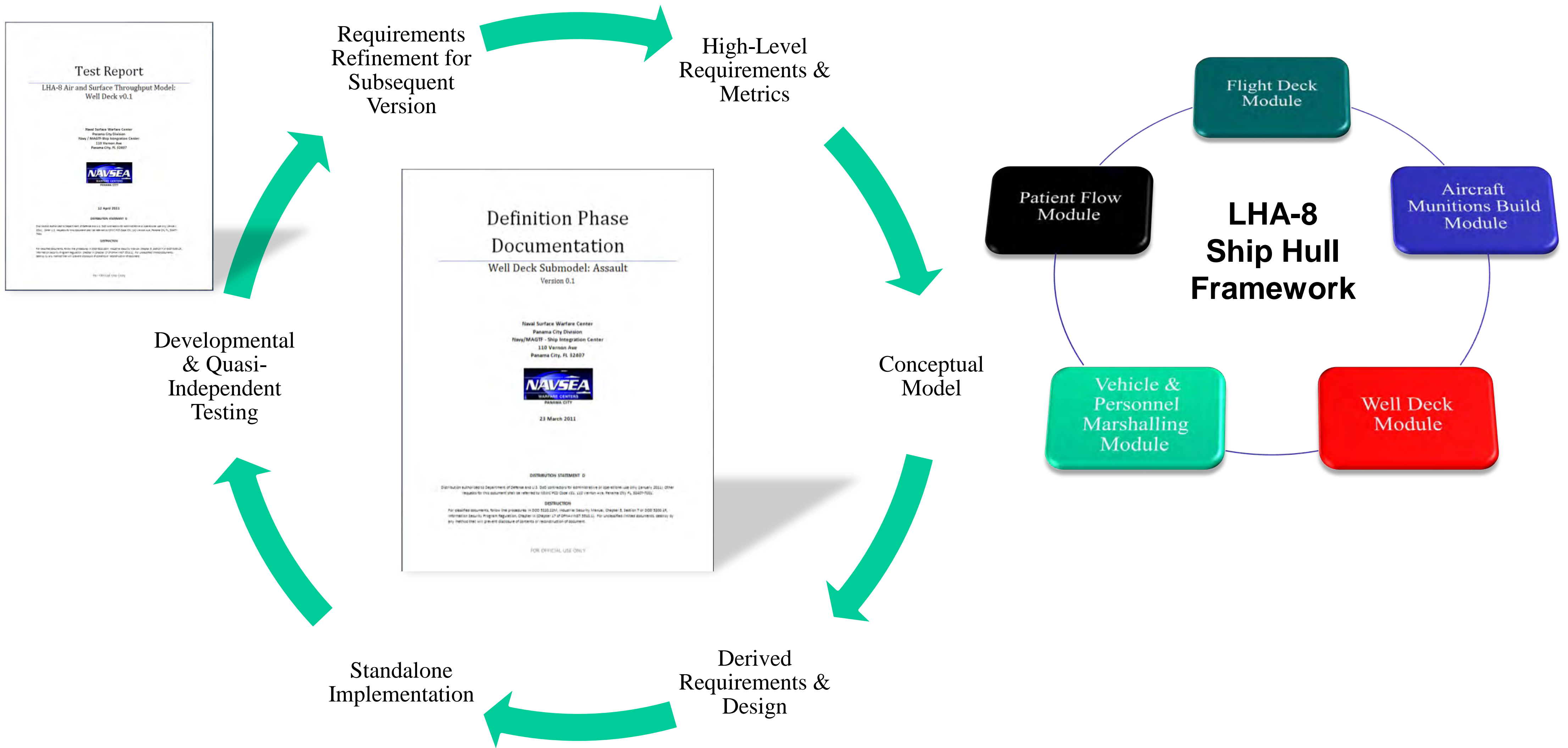


Leverages NSWG PCD Surface Interface Integration Model (SIIM):





Submodel Verification



Submodel Merge Process:

