



# LCS Mission Module Acquisition

Brief to ONR Industry Day  
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PMS 420



# Agenda



- Concept of Operations
- LCS Design Concept
- Modularity
- Mission Package Definitions
- Mission Package Spiral Baseline
- Fielding Approach
- Mission Package Integrator
- Spiral Development



**Creating Access in MIW, ASW & SUW Mission Areas**

# LCS Concept of Operations

UAV



Networked Unmanned Vehicles / Sensors / Effectors distributed in the enemy's littoral

LCS design optimized for the littoral fight

UAV



LCS

USV



USV



Anti-Access Patrol Boats

USV



RMS



LCS networked with Strike Group and surface combatant family of ships

Improving enemy anti-access defenses highlighted specific capability gaps

UUV



Mines

Diesel / Electric Submarines



Control Net:

Data Sharing:



# LCS Design Concept



Fast,  
Maneuverable,  
Shallow Draft  
Hull



Total Ship  
Computing  
Environment



Air and  
Watercraft  
Capability

C4I  
Navigation  
Self Defense  
Radar  
Vehicle Control  
Maint & Support

Core  
Systems



Core  
Crew



**SEAFRAME**

Core  
Capabilities

MOB, SOF  
ISR, MIO  
HLD, AT/FP

**LCS**

Common InterfaceControl



Mission  
Systems



Mission  
Modules



Mission  
Crew



**MISSION  
PACKAGE**

Focused  
Capabilities

MCM  
ASW  
SUW

Containerization /  
Transportation Level



Mission  
Package Level



Vehicle Level



BPAUV  
MCM



RMS  
MCM  
ASW



USV  
MCM  
ASW



VTUAV  
MCM  
ASW  
SUW

Sensor / System Level



AQS-20A  
Mine Hunting  
Mine Identification



MPCE  
Software



RTAS  
Bi-Static ASW

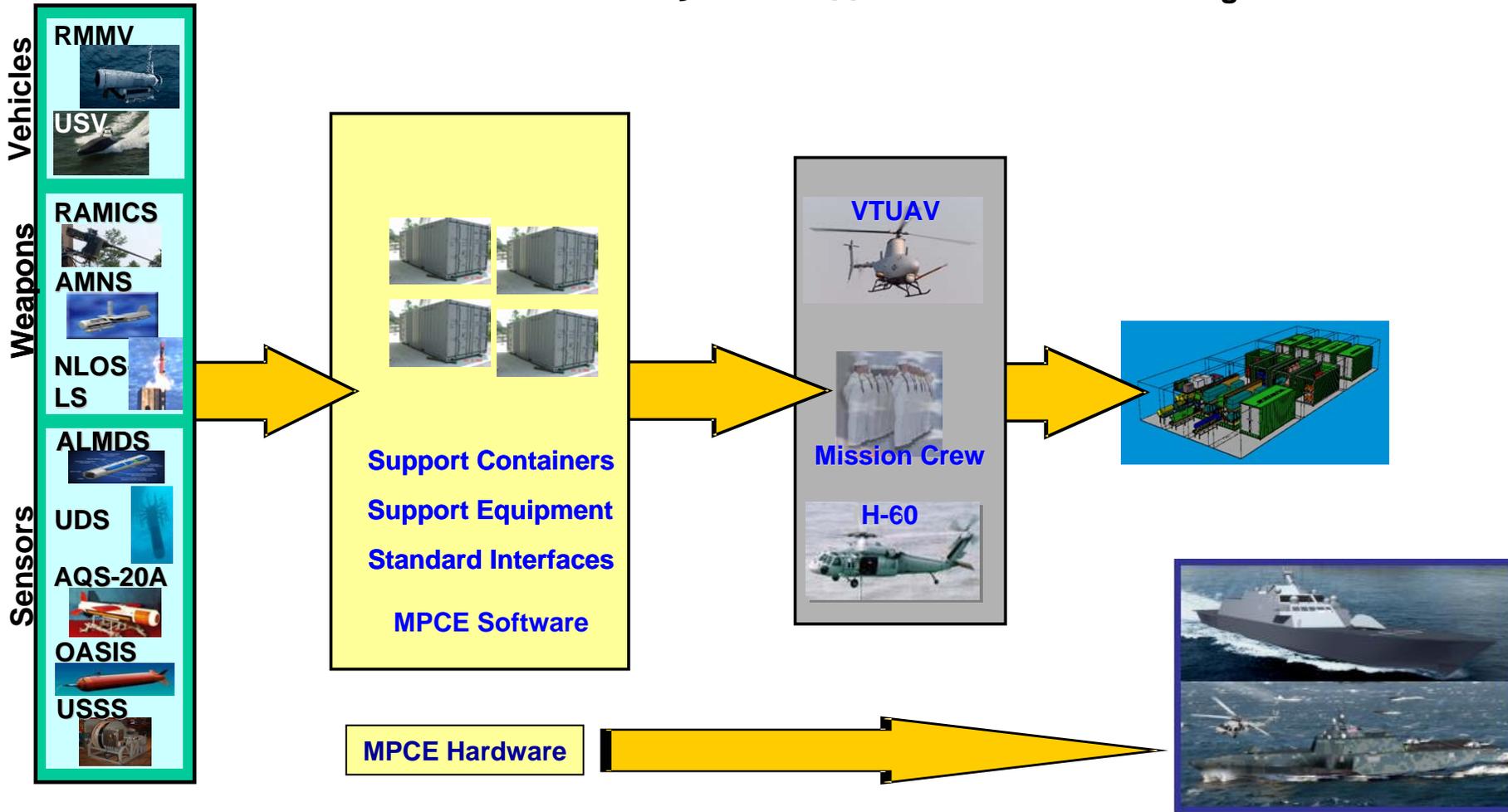
Modularity



# Mission Package Defined



$\left\{ \begin{array}{l} \text{Mission Systems} \\ \text{Support Equipment} \end{array} \right\} = \text{Mission Modules}$ 
 $+$ 
 $\left\{ \begin{array}{l} \text{Crew \& Support Aircraft} \end{array} \right\} = \text{Mission Package}$

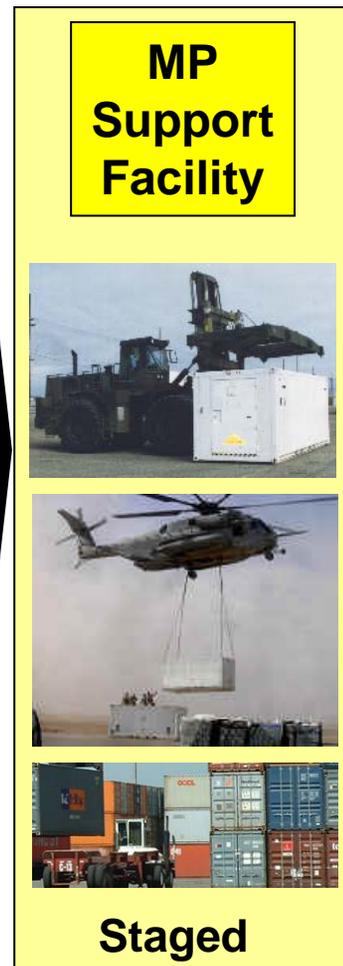
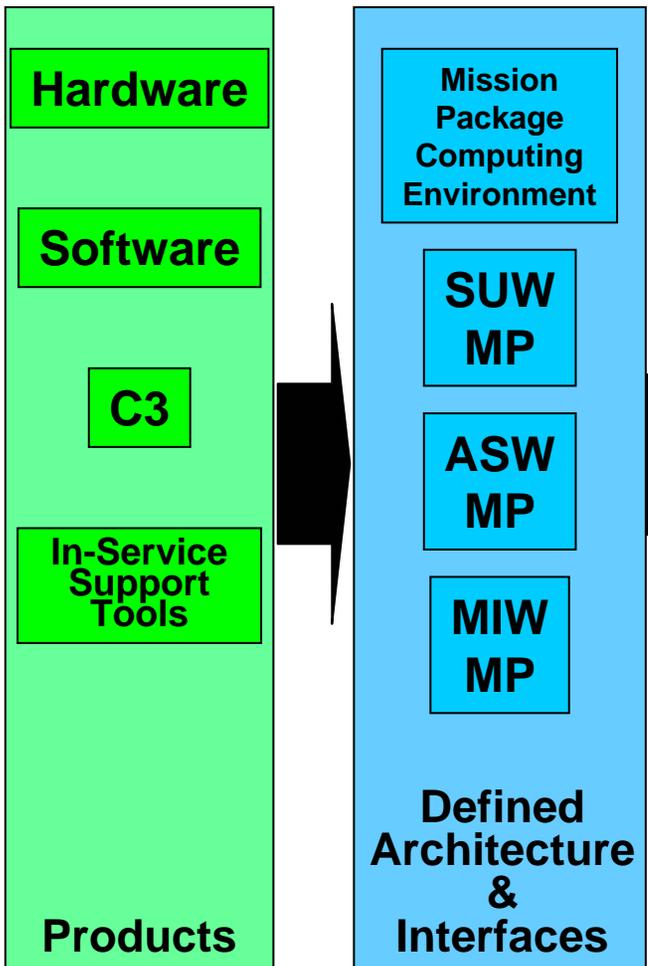




# Mission Package Fielding Approach



## Mission Package Integrator



Facilitating Spiral Development



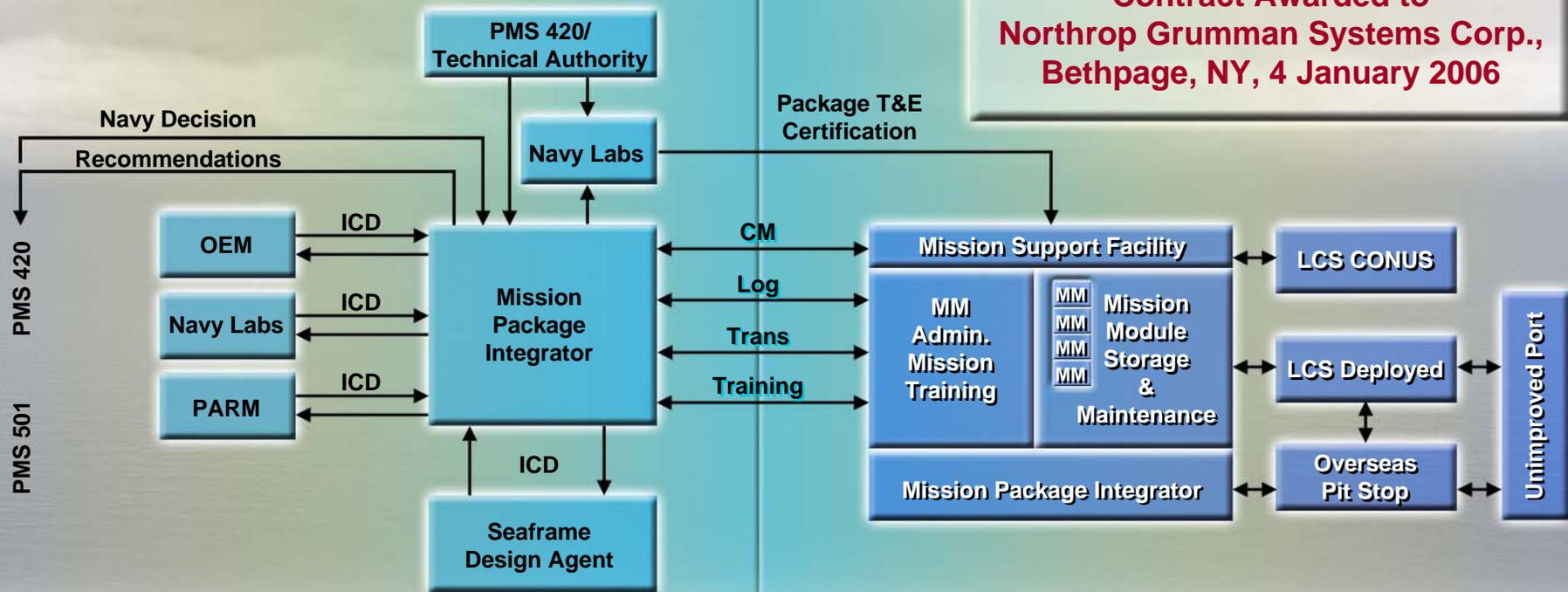
# Mission Package Integrator (MPI) Contract



1. Spiral development/new technology
2. Spiral Alpha to Beta transition
3. Test and certification

4. In-service support (e.g., training, CM, transportation, maintenance)

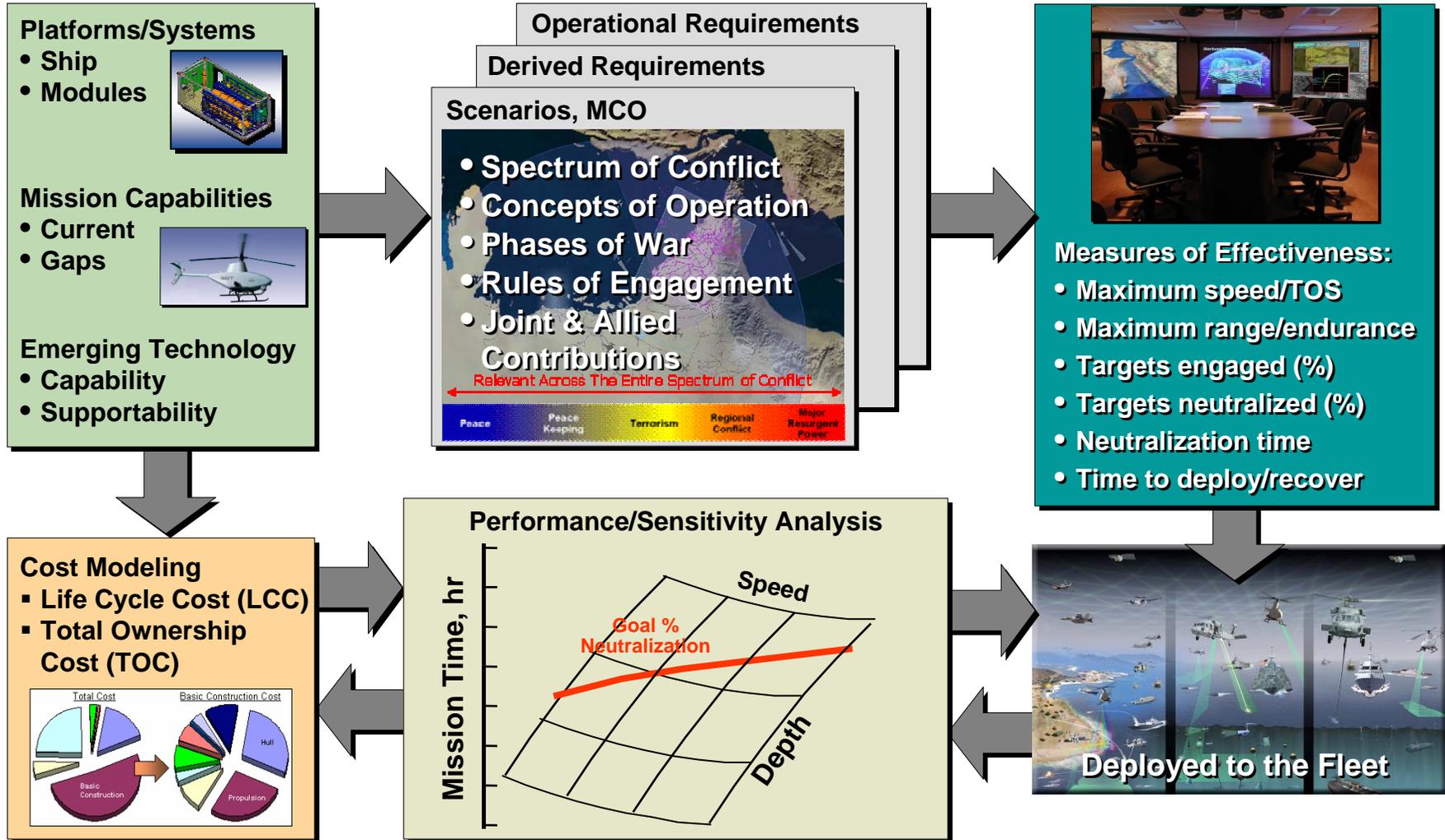
**Contract Awarded to  
Northrop Grumman Systems Corp.,  
Bethpage, NY, 4 January 2006**



***“system-engineering partner responsible for bringing the systems and technologies of the mission modules together under the integration and interface requirements”***



# A Rigorous Process for Spiral Development to Achieve Mission Wholeness





# Summary



- MP acquisition on track
- LCS is a new concept – opportunity + risk
- Spiral Development yields agility.
- MPI Key player.
- Open Architecture & Modularity are key enablers



- Questions?