

***Littoral Combat Ship (LCS)
Briefing
to
UK-US Defense Industry Seminar***

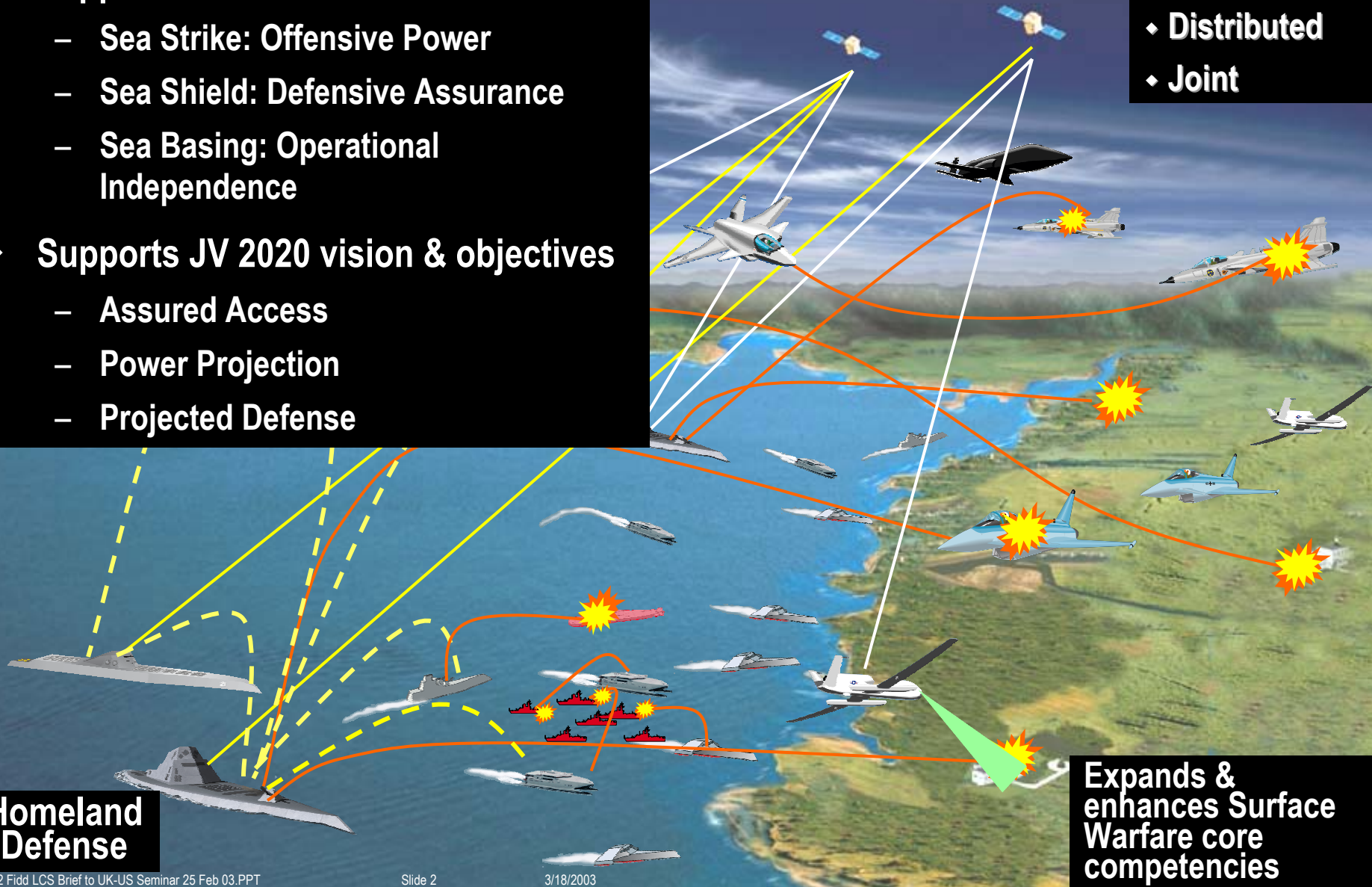
25 February 2003

Tysons Corner, Virginia

U.S. Navy Surface Combatants

- ◆ Supports Sea Power 21
 - Sea Strike: Offensive Power
 - Sea Shield: Defensive Assurance
 - Sea Basing: Operational Independence
- ◆ Supports JV 2020 vision & objectives
 - Assured Access
 - Power Projection
 - Projected Defense

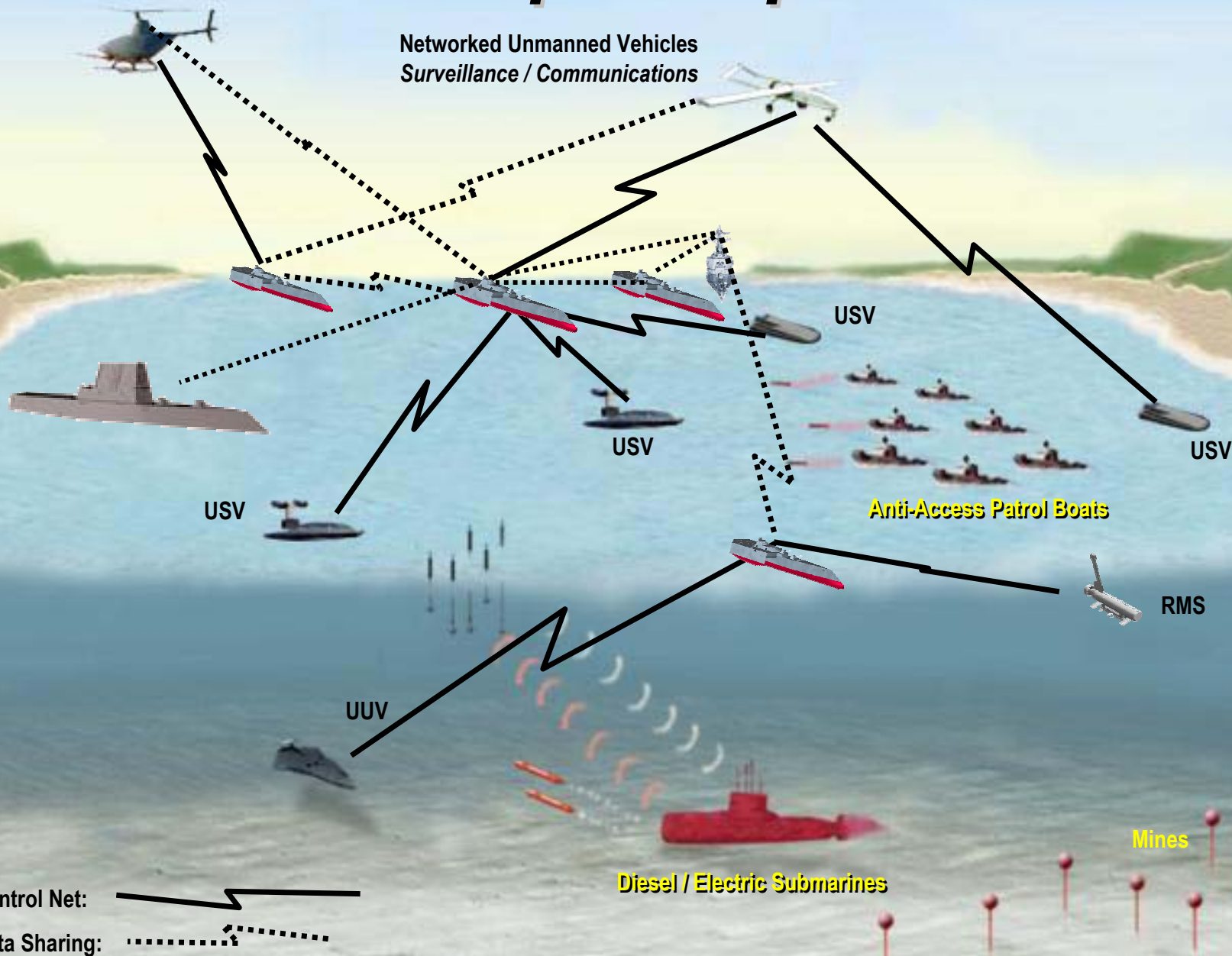
- ◆ Netted
- ◆ Distributed
- ◆ Joint



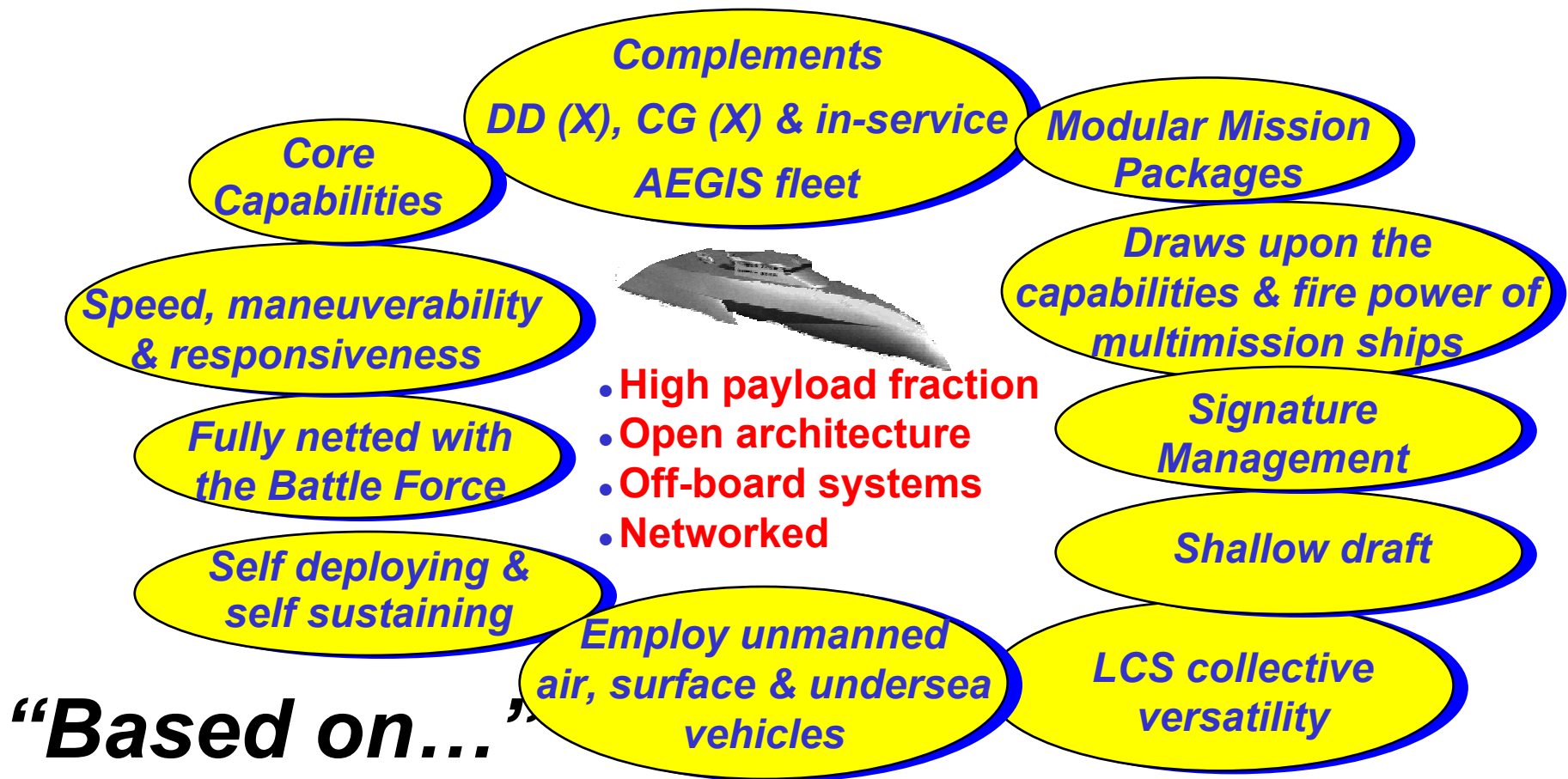
**Homeland
Defense**

**Expands &
enhances Surface
Warfare core
competencies**

LCS Concept of Operations



LCS Attributes



Experimentation at
Sea.
(HSV, SKJOLD,
VISBY, TRITON)

Results of Global
War Gaming, &
FBES

Fleet Input &
Responses

Focused LCS
Workshops

Studies & Analysis

Modular Mission Capabilities

Mine Counter Measure Package

- ♦ Provide organic punch through capability
- ♦ Search, map, avoid with limited neutralization
- ♦ Support remote & autonomous UVs and operate helos
- ♦ Massed LCS Division = Dedicated MCM capability

Small Boat Prosecution Package

- ♦ “Need to engage from close aboard to Over-The-Horizon”
- ♦ Stabilized gun and missile system
- ♦ Integrated with EO / IR system
- ♦ Include non-lethal capabilities
- ♦ Helos & off-board systems

Littoral ASW Package

- ♦ Integrated with multiple off-board sensor systems
- ♦ Automatic on-board processing
- ♦ Helicopter(s)
- ♦ Permits dedicated LCS ASW division

Inherent Missions

- ♦ SOF
- ♦ Maneuver, logistics, replenishment
- ♦ NEO
- ♦ MIO
- ♦ Medical ...

Missions made possible by the removal of focused mission modules

PD-IRD Specific Characteristics

Characteristics	Threshold	Objective
Hull		
Draft @ FLD (ft)	20	10
Service Life (yrs)	20	30
Mission Package Payload ¹ (mt)	180 (105 Mission Package / 75 Mission Package Fuel)	210 (130 Mission Package / 80 Mission Package Fuel)
Propulsion & Engineering		
Sprint Speed @ FLD (kts) in SS3	40	50
Range @ Sprint Speed ² (nm)	1000	1500
Range @ Economical Speed w/ Payload (nm)	3500 @ >18	4300 @ 20
Aviation Support		
Embark and Hangar	(1) MH-60 R/S and VTUAVs	(1) MH-60 R/S and VTUAVs
Flight Deck	Operate, fuel, reconfigure and support MH-60 R/S and UAVs / VTUAVs	Operate, fuel, reconfigure and support MH-60 R/S and UAVs / VTUAVs
Launch and Recover Aircraft (Best Heading)	SS4	SS5
Water Craft Support		
Boat Type	11m RHIB	40ft High Speed Craft
Launch and Recover (Best Heading)	SS3 in 45 min	SS4 in 15 min
Logistics		
Provisions (days)	14	21
UNREP	CONREP, VERTREP and RAS	CONREP, VERTREP and RAS
Core Crew Size	50	15
Crew Accommodations	75	75
Mission Reconfiguration (days)	4	1

Note 1. Mission Package Payload = all non-core systems, vehicles, helicopters, ordnance and associated personnel, equipment and containers and fuels to perform a single mission

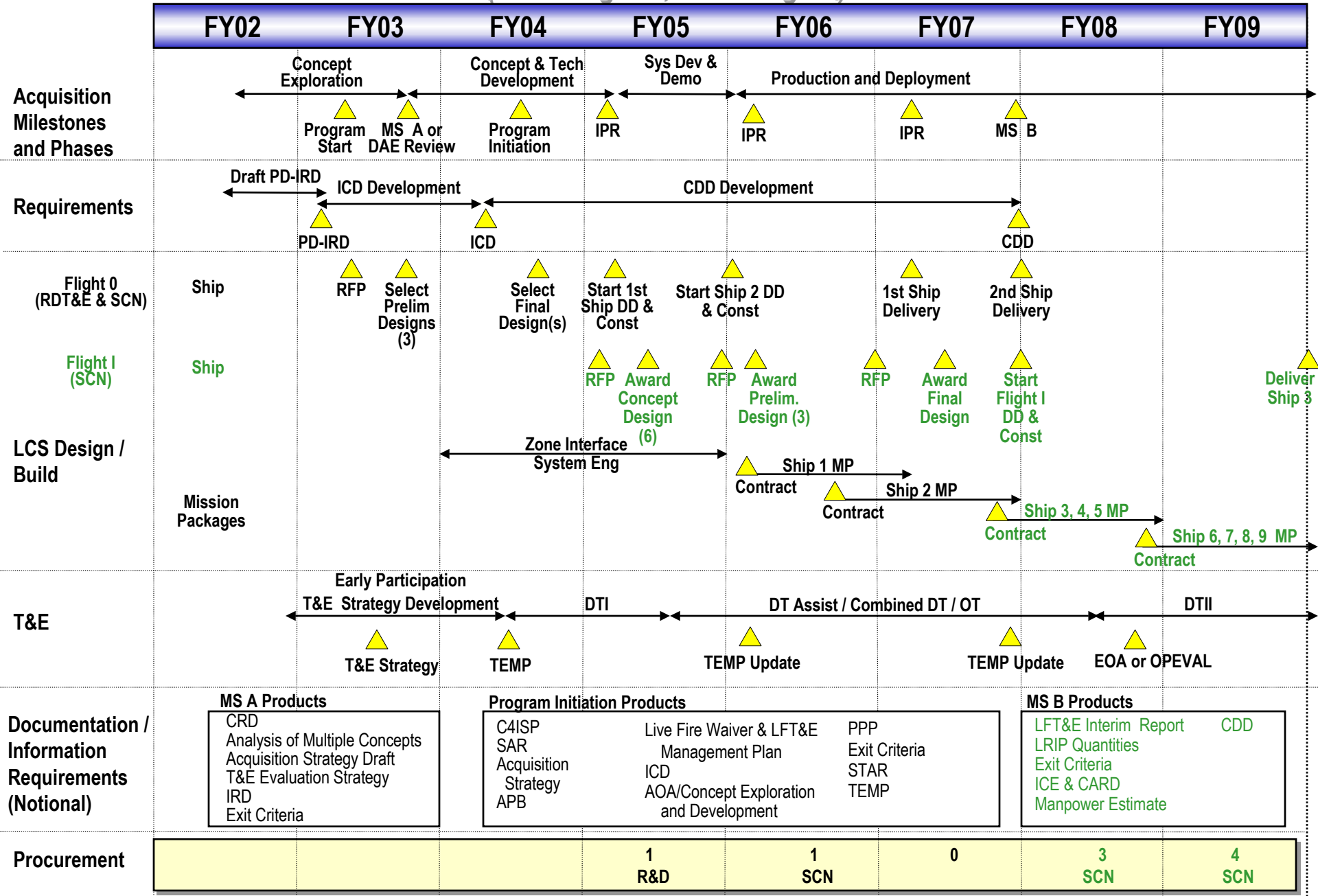
2. Includes payload, where payload = heaviest possible mission package and core mission systems, but excludes ship's fuel

Affordability

- ◆ **Critical parameter for the LCS**
- ◆ **Smaller and less expensive**
- ◆ **Mission flexibility through the use of modular mission packages**
- ◆ **Allow the LCS to be procured in numbers required in the Global CONOPS**
- ◆ **Optimal mission manning**
- ◆ **Reduced life cycle costs**

LCS Integrated Schedule

(FY05 Flight 0, FY08 Flight I)



Program Status

- ☑ 23 Feb 02 ASN(RDA) directed establishment of LCS Program**
- ☑ 08 Jul 02 N76 letter provided interim direction to PEO(S) on top level objectives for exploratory studies for Family of Ships concept**
- ☑ 14 Aug 02 RFP released for Ship Concept Studies**
- ☑ 17 Sep 02 Establishment of LCS Program Office (under PEO(S))**
- ☑ 08 Nov 02 Contract award for Family of Ships Concept Studies (focused-mission high-speed ship)**
- ☑ 15 Nov 02 Congressional New Start approval for Littoral Combat Ship Program (\$30M Congressional Plus-up)**
- ➔ Feb 03 Planned solicitation for LCS Flight 0 preliminary designs**

Near-Term Schedule

<input checked="" type="checkbox"/> ASN decision meeting	07 Feb 03
<input checked="" type="checkbox"/> Issue Synopsis	10 Feb 03
<input checked="" type="checkbox"/> Acquisition plan (approved by PEO)	13 Feb 03
<input checked="" type="checkbox"/> Draft RFP to Industry	14 Feb 03
<input checked="" type="checkbox"/> Industry Day	20 Feb 03
◆ Issue formal solicitation	28 Feb 03
◆ Receipt of proposals	14 Apr 03
◆ Proposal evaluation	Apr – Jul 03
◆ Contract(s) Award	Jul / Aug 03

RFP Structure – Preliminary Design

Section - Title

◆ Part I – The Schedule

- ✓ A – Solicitation / contract form
- ✓ B – Supplies or services and prices / costs
- C – Description / specifications / statement of work
- ✓ D – Packaging and marking
- ✓ E – Inspection and acceptance
- ✓ F – Deliveries or performance
- ✓ G – Contract administration data
- ✓ H – Special contract requirements

◆ Part II – Contract Clauses

- ✓ I – Contract clauses

Section - Title

◆ Part III – List of Documents, Exhibits, and Other Attachments

- J – List of attachments

◆ Part IV – Representations and Instructions

- ✓ K – Representations, certifications, and other statements of Offerors or respondents
- L – Instructions, conditions, and notices to Offerors or respondents
- M – Evaluation factors for award

Tasking

- ◆ **Perform Phase I of LCS Flight 0 (Preliminary Design)**
 - Meet operational needs and requirements established in Preliminary Design Interim Requirements Document (PD-IRD)
- ◆ **Participate in four meetings**
 - Initial kick-off Government site
 - Two In-Process Reviews (IPRs) Industry site
 - Preliminary Design Review (PDR) Industry site
- ◆ **Submit proposal for Phase II (Final System Design and Detail Design and Construction)**

Period of performance	7 months
Contracts	Up to 3
Funding	Up to \$10M each
Contract: Firm Fixed Price	

RFP Structure

Statement of Work Overview-Preliminary Design

Littoral Combat Ship (LCS) Preliminary Design (7 months)

- ◆ Program planning, scheduling, resourcing, contracting, and monitoring to complete the LCS Preliminary Design
- ◆ System engineering (including carpet plots)
- ◆ CAIV
- ◆ Specified Performance Document and Performance Spec
- ◆ Mission modularity and tech insertion and refresh
- ◆ Ship Integrated Information System
- ◆ Human system engineering, manning analysis
- ◆ LCES planning (including PBL considerations)
- ◆ Risk Management Plan
- ◆ Certification and qualification processes
- ◆ Integrated Data Environment
- ◆ Design Reviews (four meetings)
 - Initial Kick-off
 - In-Process Review #1 at approximately 60 DAC
 - In-Process Review #2 at approximately 120 DAC
 - Preliminary Design Review (PDR) at approximately 180 DAC

Section C
CLINs 0001, 0002
(data), 0003
(special studies)

RFP Structure

Statement of Work Overview – Follow on Options for Final Design & Construction

Completion of LCS Final design (7 months) (Option)

- ◆ Completion of design (using performance spec as starting point)
- ◆ Deliver technical specification to support procurement decisions at conclusion of CDR
- ◆ Describe all systems, features, standards, components by which LCS will be detail designed
- ◆ Design Reviews (Two Critical Design Reviews)
 - Initial Critical Design Review (ICDR)
 - Final Critical Design Review (FCDR)

Non Recurring Engineering, Detail Design, Construction, and Production of LCS Flight 0 (Option)

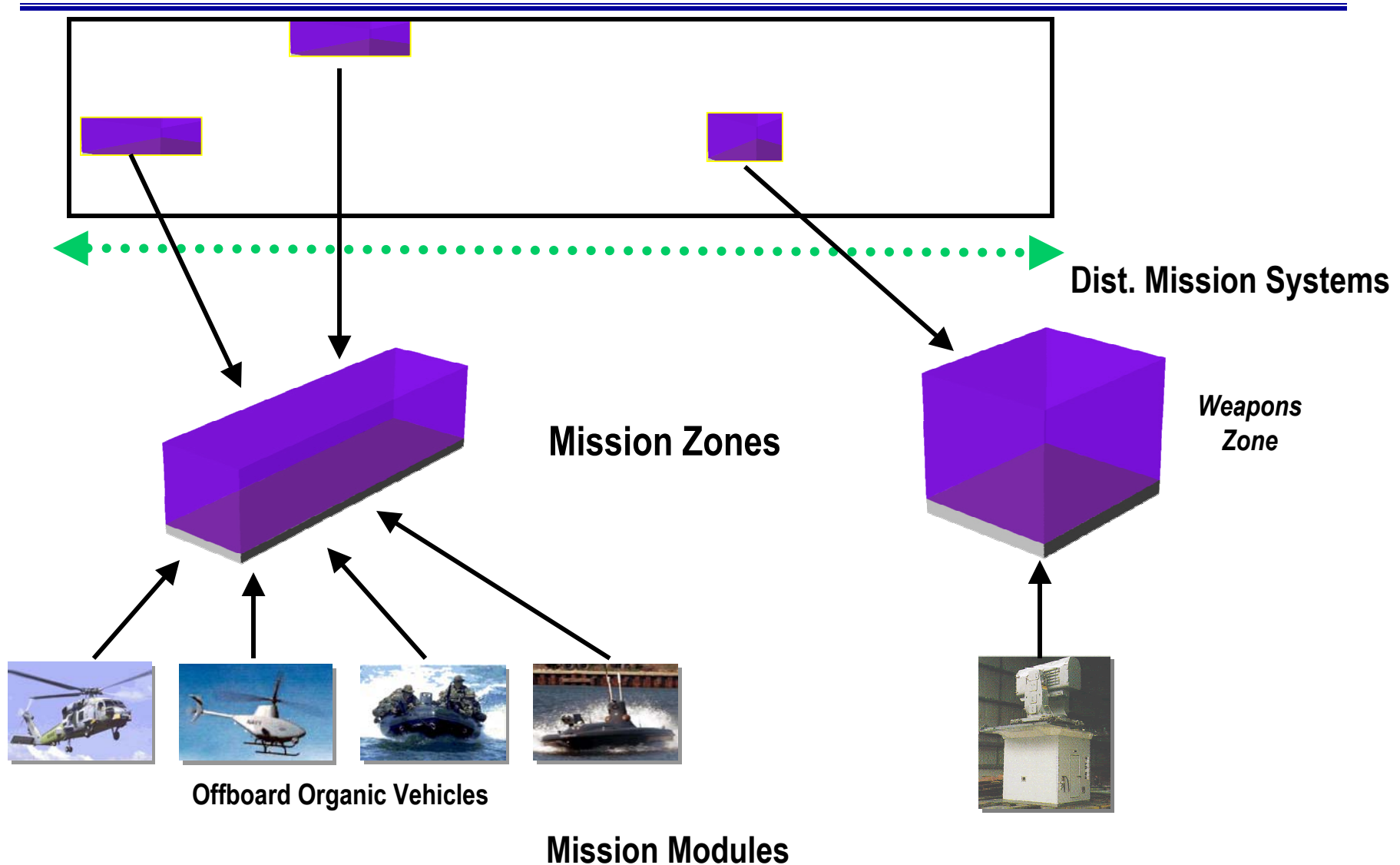
- ◆ Non-recurring engineering, detail design, start-up manufacturing required to support ship construction, system integration, and ship and mission system equipment production
- ◆ Trials
- ◆ Operational Test and Evaluation
- ◆ Design Reviews
 - Initial Design Review is Spec review four (4) weeks after option exercise. Following Design Reviews at eight (8) weeks intervals
 - Ship Production Planning Conferences (SPPCs)
 - Performance Readiness Review (PRR) – at least thirty days prior to the start of construction

OPTION ITEMS

SUPPLIES / SERVICES

0004	Final System Design (See Notes F and G)
0005	Data for 0004
0006	Special Studies for 0004
0007	Detail Design & Construction for LCS 1 (See Notes F and G)
0008	Detail Design & Construction of LCS 2 (See Notes F and G)
0009	Construction of LCS 2 (See Notes F and G)
0010	Data for 0007, 0008, 0009
0011	Special Studies for 0007, 0008, 0009
0012	LCE&S
0013	PIO

Mission Systems Development



RFP Structure

Section J Attachments – Preliminary Design

- ◆ Attachment J-1: Financial Accounting Data Sheet (to be provided at award)
- ◆ Attachment J-2: Security Requirements, DD-254
- ◆ Attachment J-3: Data Requirements
- ◆ Attachment J-4: Preliminary Design – Interim Requirements Document (PD-IRD)
- ◆ Attachment J-5: Mission System Architecture (MSA) Requirements
- ◆ Attachment J-6: Preliminary Design Review (PDR) Requirements
- ◆ Attachment J-7: Performance Specification Template
- ◆ Attachment J-8: CONOPS
- ◆ Attachment J-9: Option Items
- ◆ Attachment J-10: Navy Open Architecture Programs Criteria (Consists of three separate documents)
- ◆ Attachment J-11: Performance Based Logistics Guidance
- ◆ Attachment J-12: “Carpet Plot” Performance Grid Template
- ◆ Attachment J-13: Government Furnished Information (GFI)

Mid-Term Schedule

Post Preliminary Design Award

- ◆ **Preliminary Design** **17 Jul 03 – 11 Feb 04**
- ◆ **1st update / contract modification
for option items** **03 Nov 03**
- ◆ **Final update / contract modification
for option items** **01 Jan 04**
- ◆ **Industry submit proposals for
next phase** **30 Jan 04**
- ◆ **Downselect to one or two for
final design** **28 May 04**
- ◆ **Exercise 1st construction option** **18 Jan 05**
- ◆ **Exercise 2nd construction option** **31 Dec 05**

Potential International Cooperative Opportunities

- ◆ **Industry to Industry Teaming on U.S. LCS Design and Construction**
- ◆ **Industry to Industry Teaming on mission module Design and Construction**
 - Surf zone mine threat modules
 - Anti diesel submarine threats modules
 - Anti small fast surface craft modules
- ◆ **Industry to Industry Teaming / data exchange on**
 - Hull forms
 - Composites
 - Propulsors
 - Signature management
 - Human Systems Integration
 - Remote sensors
 - Other technologies

Potential International Cooperative Opportunities (cont)

- ◆ **Vehicles For Communication**
 - Direct Industry dialog
 - Web page establishment for initial dialog, introductions
 - ★ WWW.LCSSHIP.COM
 - Navy Electronic Commerce On-line(NECO) – LCS Solicitation Information
 - ★ WWW.NECO.NAVY.MIL

Summary

- ◆ **U.S. Navy is committed to a littoral combatant to address asymmetric threats in the littorals**
- ◆ **LCS Program provides a vehicle for collaborative international teaming in a variety of ways**
- ◆ **Littoral combatant expertise is extensive in several Navies**
 - **The U.S. Navy and U.S. Industry would like to learn from that experience base**