

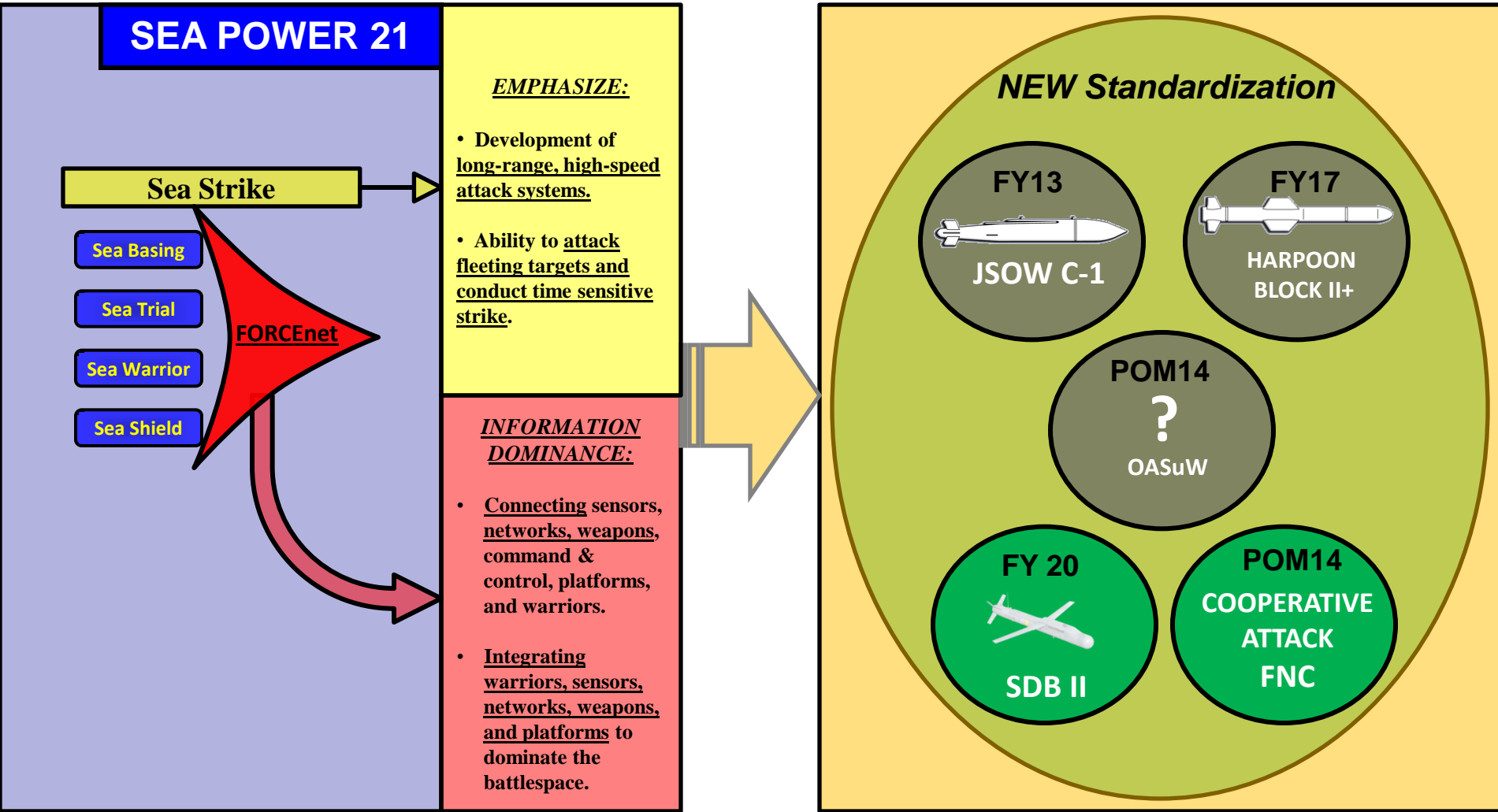


Net Enabled Weapons (NEW) Support to ASuW

Brian Kelly
Precision Strike Weapons
March 2012
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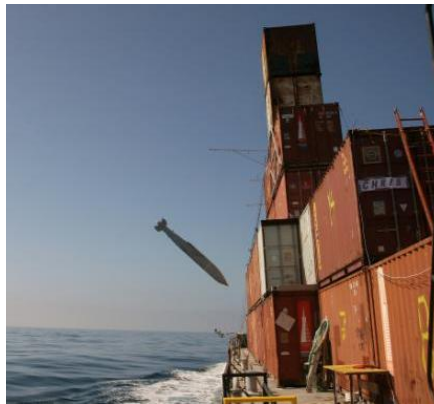
- Net Enabled Weapons are critical to supporting the ASuW mission and the Navy's strategic vision
 - Allow for the receipt of In-Flight Target Updates (IFTUs) that improve the targeting and engagement of Moving Maritime Targets
 - In-flight Retargeting/Reallocation
 - In-flight Abort
- PMA201 is taking a leading role in the ASuW mission
 - Net Enabled Weapon portfolio
 - Sensor to Weapon 3PS Targeting (S2W 3PS)
 - Weapon to Weapon Coordination (Cooperative Attack)

Supporting the Strategic Vision



Network Enabled Weapon (NEW)

Joint Standoff Weapon (JSOW) C-1

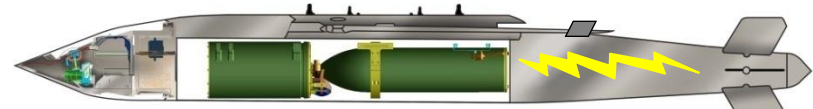


Schedule	FY06				FY07				FY08				FY09				FY10				FY11				FY12				FY13							
FY by Quarters	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV				
Milestones																													OTRR				IOC			
Development	Block II/SAASM																																			
	Block III Study				Block III/WDL (C-1)																															
Developmental Testing	DT-III B (DT-DT/OT)								DT-III C								DT-III D																			
Operational Testing									OT-III A																IT&E				OT-III B							
Production Awards / Deliveries	FRP-2				FRP-3				FRP-4				FRP-5				FRP-6				FRP-7				FRP-8				FRP-9							
	LRIP-2				FRP-1				FRP-2				FRP-3				FRP-4				FRP-5				FRP-6				FRP-7				FRP-8			

Program Description

- ACAT 1C // Navy Program
- Contractor: Raytheon Missile Systems
- Requirement: Adverse weather standoff outside point/area defenses against fixed/re-locatable stationary land targets (area, point, and hardened targets with blast/frag and penetration).
- First free flight test completed July 2011
- JSOW C-1 will be the 1st Network Enabled Weapon (NEW) deployed

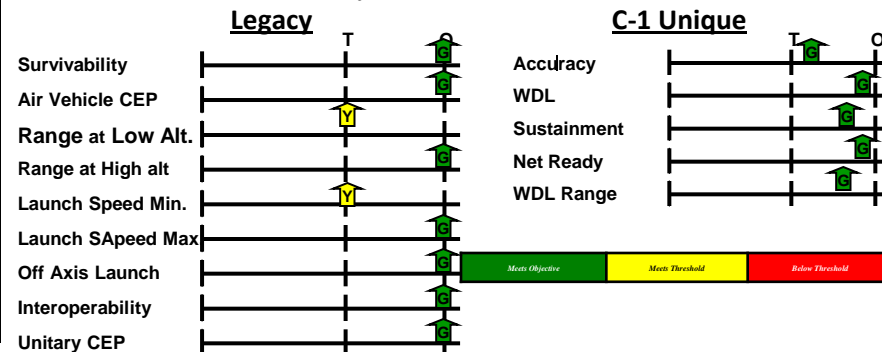
JSOW Unitary (AGM-154C-1)



- Uncooled Commercial I²R Sensor with ATA
- GPS/INS Guidance for flyout
- Terminal Seeker, Increased P_K, Precision Accuracy
- Broach Warhead, Blast / Fragmentation / Penetrator
- Link-16 Strike Common Weapon Data Link (SCWDL)
- Stationary Land & Maritime Moving Targets

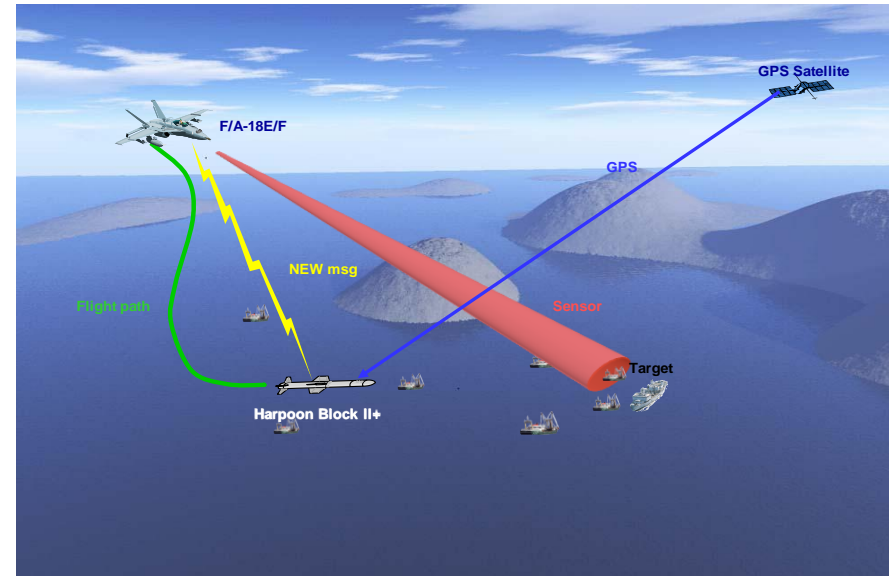
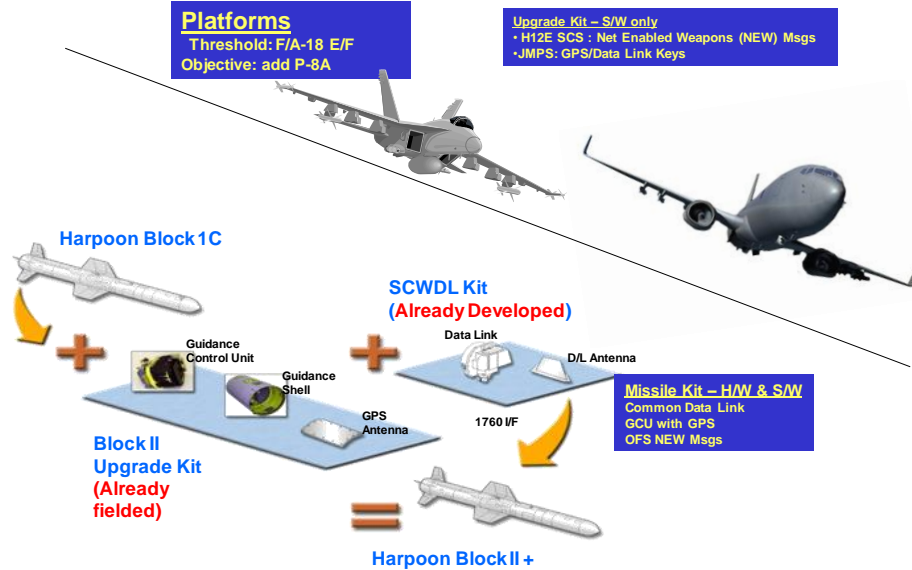
In Development - 2013 IOC

Key Performance Parameters



Network Enabled Weapon (NEW)

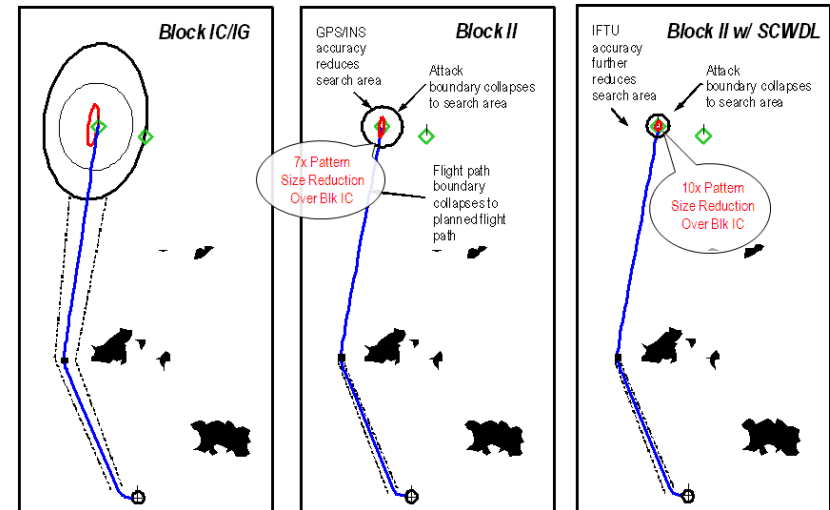
Harpoon Block II+



Air-Launch OV-1

Program Description

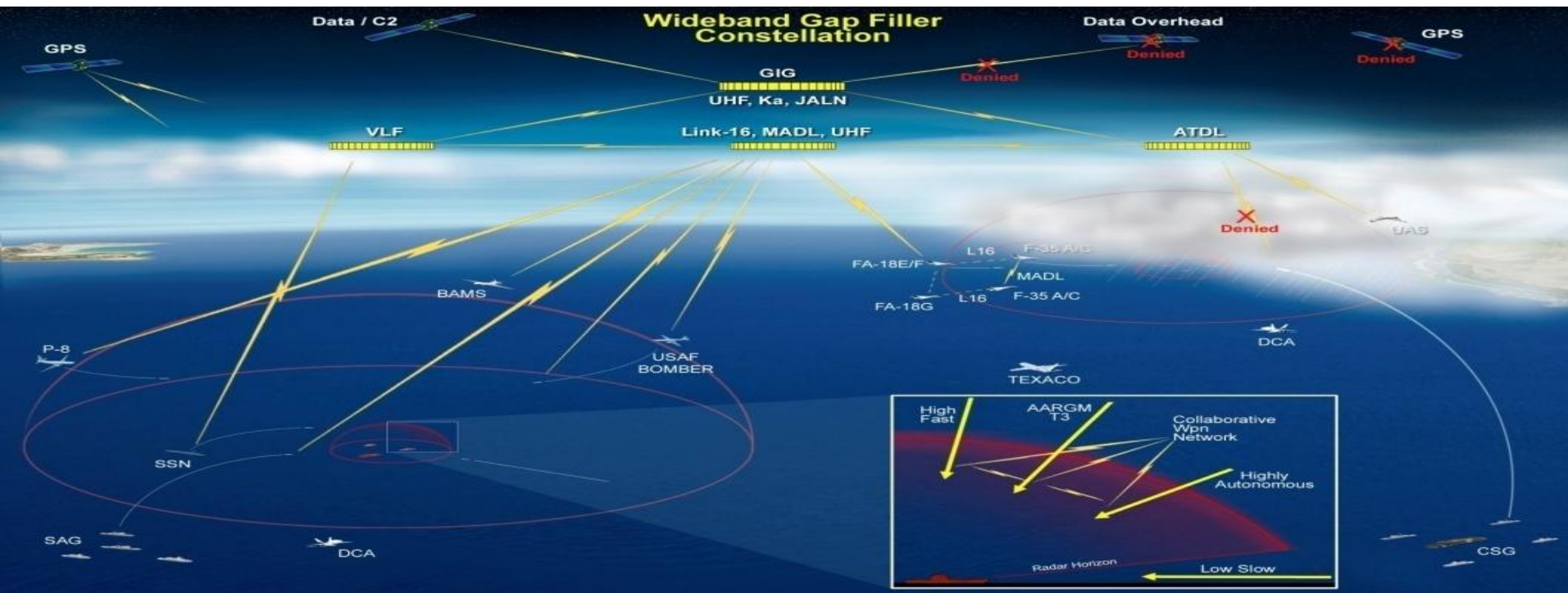
- Designated an Abbreviated Acquisition Program (AAP)
- Sales Exchange Agreement with Boeing
- Provides a Navigational Update to the Harpoon Blk 1C
 - Includes GPS/INS & SCWDL
 - Network Enabled Weapon
- IOC/Fleet Release FY17



Harpoon Block II GPS/INS & SCWDL Significantly Decreases Non-Target P_{acq}

Network Enabled Weapon (NEW)

OASUW AoA



Requirements

- Network enabled / not network dependent
- Perform at extended ranges under a wide range of targeting conditions (weather, jamming, etc.)
- Surface/Air launched
- Survivable
- Near 2018 long 2024 solution
- Near 2018 ECP to existing Program of Record
- Harpoon, SM6, Tomahawk, LRASM, JSOW, SLAM-ER

Schedule

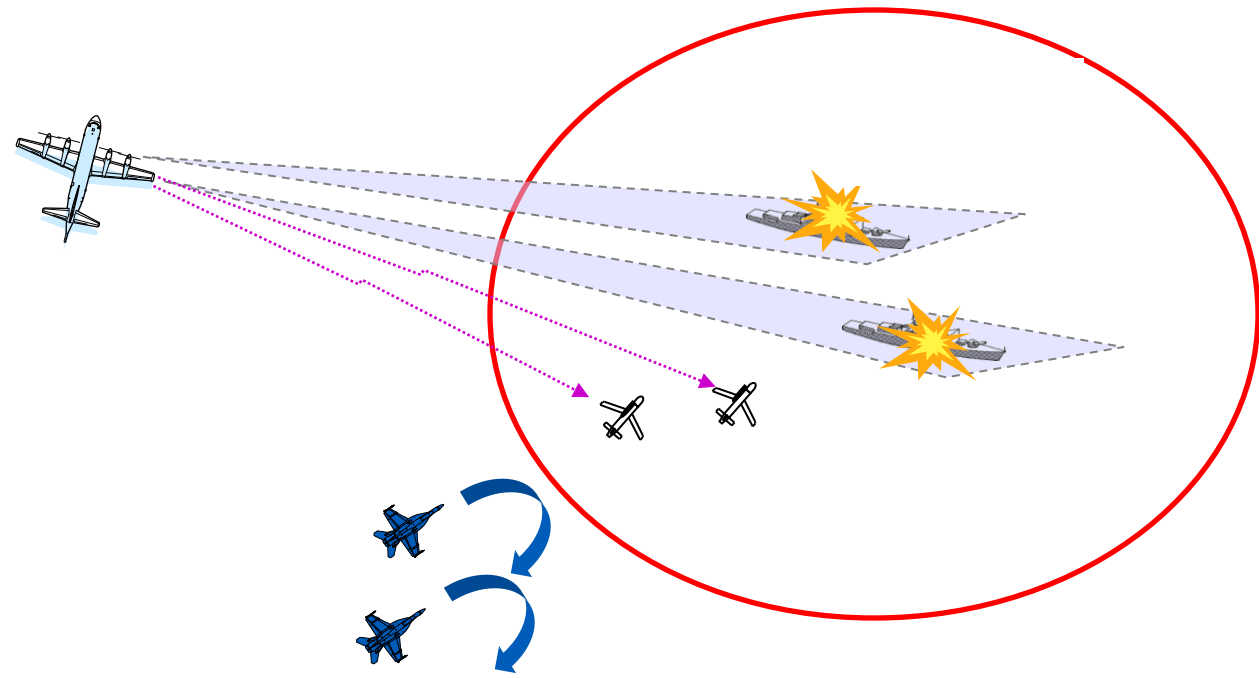
- CBA Approved May 2010
- JROC Approved ICD – Nov 2010
- MDD ADM – Jan 2011
- MPCR 0-7 Pre-Brief – 14 Mar 2011
- MPCR R3B – 16 Mar 2011
- AoA ESC/AAG out brief – 09 Mar 2011
- AoA Quick Look – Jul 2011
- *MS A – Jun 2012
- *MS B – 2017
- *MS C - 2020
- *IOC – NLT 2024
- * Dependent on results of AoA that concludes in CY11

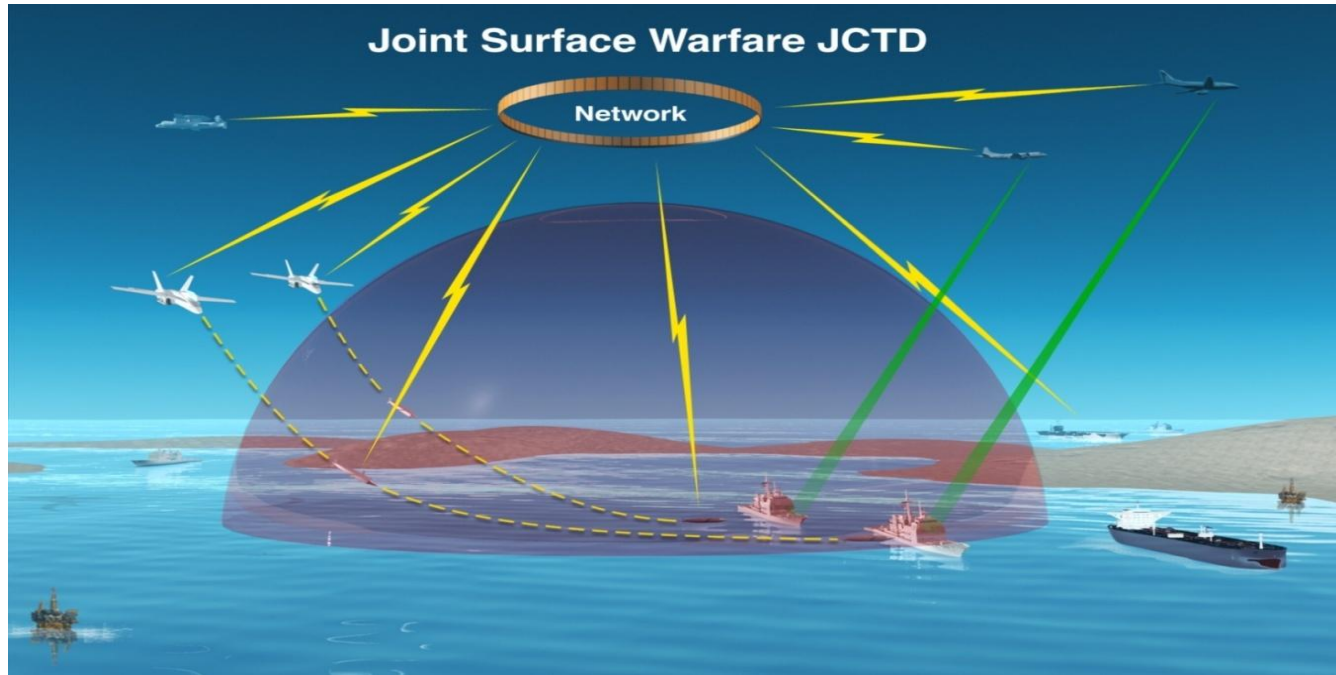
Issues

- Affordability
- Kill Chain Wholeness
- Schedule

Sensor to Weapon 3PS (S2W 3PS)

- **Enables Shooter to engage target from sanctuary**
 - Increases Shooter Survivability
 - Allows for a “launch and leave” capability
- **ISR and/or C2 platform provide IFTUs directly to weapon**
 - Improved targeting accuracy
 - Increased Pk





OBJECTIVES

- ✓ Integrate Link-16, J11 message into JSTARS and LSRS, enabling Joint ISR platforms to act as third party targeting sources (3PS) for Net Enabled Weapons (NEW)
- ✓ Ensure J11 interoperability with the JSOW-C-1, and F/A-18E/F programs of record
- ✓ Develop the associated CONOPS/TTPs
- ✓ Validate CONOPS/TTPs (SIMEX/Flight tests)

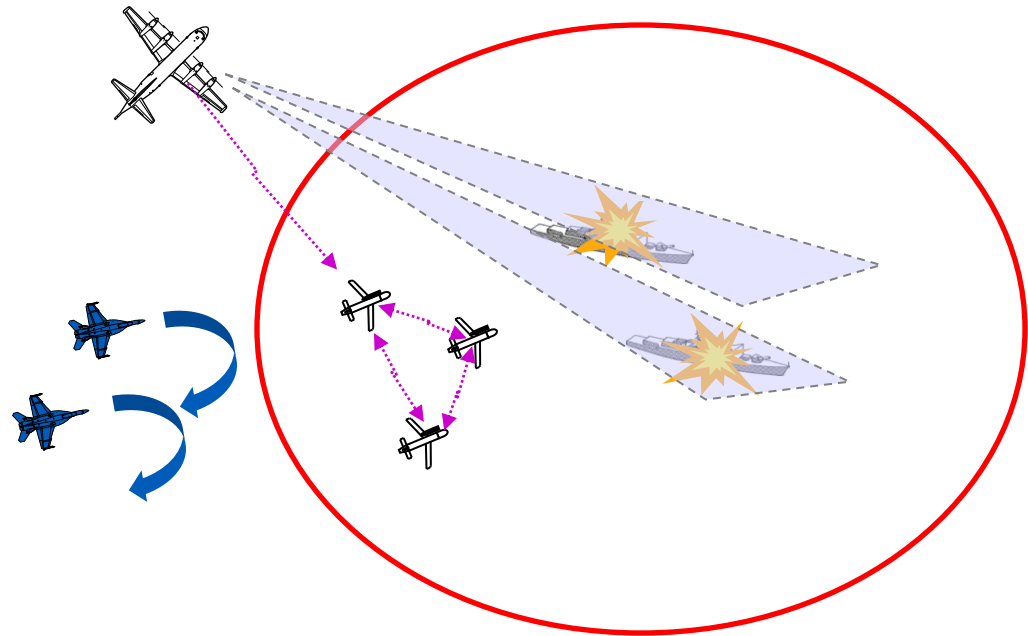
RESULTS

- Interoperability between 4 platforms achieved (LSRS, JSTARS, JSOW, F/A-18) during 33 Successful Flight Test runs
- J11 Message Set Development defined and standardized
 - Mil-STD-6016D App X updated for NATO approval
- First ever IFTU from ISR platform to a NEW in-flight
- First ever in-flight retargeting of a NEW
- CONOPS/TTPs delivered to PACFLT

"I recommend the JSuW System transition to associated PORs for further integration and follow-on testing" - RADM David A Dunaway, COTF

Weapon to Weapon (Cooperative Attack)

- **Enables Semi-autonomous communications/coordination between multiple weapons**
 - Dynamic In-flight Retargeting/Reallocation
 - Synergistic use of Sensors
 - Reduced Salvo Size
- **Currently pursued via ONR sponsored POM14 FNC**
 - Common solution, weapon agnostic
 - Targeted Demonstration in JSOW C-1, Harpoon Block II+



Near Term Challenges



- **Development of a NEW CDD/KPP that defines roles and responsibilities of platform participants (shooters, weapons, 3PS)**
 - Currently in development
- **Definition of future Network Architecture, i.e. L16, TTnT, etc.**
 - Awaiting direction from N2/N6
- **Identification of potential NEW platforms and weapons**
 - E-2D, BAMS, P-8
- **Funding for J11 message set incorporation in 3PS ISR platforms (N88/N89 seam issue)**
 - LSRS: POM 13 Issue Sheet submitted, **currently below the line**
 - \$10M in FY13, \$5M in FY14
 - JTIC certification, Chg 4 to MIL-STD-6016D ICP, Training materials, enhanced operator displays and controls
 - JSTARS

Questions?

