Program Executive Office
Strike Weapons And Unmanned Aviation

ONR Naval-Industry
R&D Partnership Conference

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Strike Weapons and Unmanned Aviation
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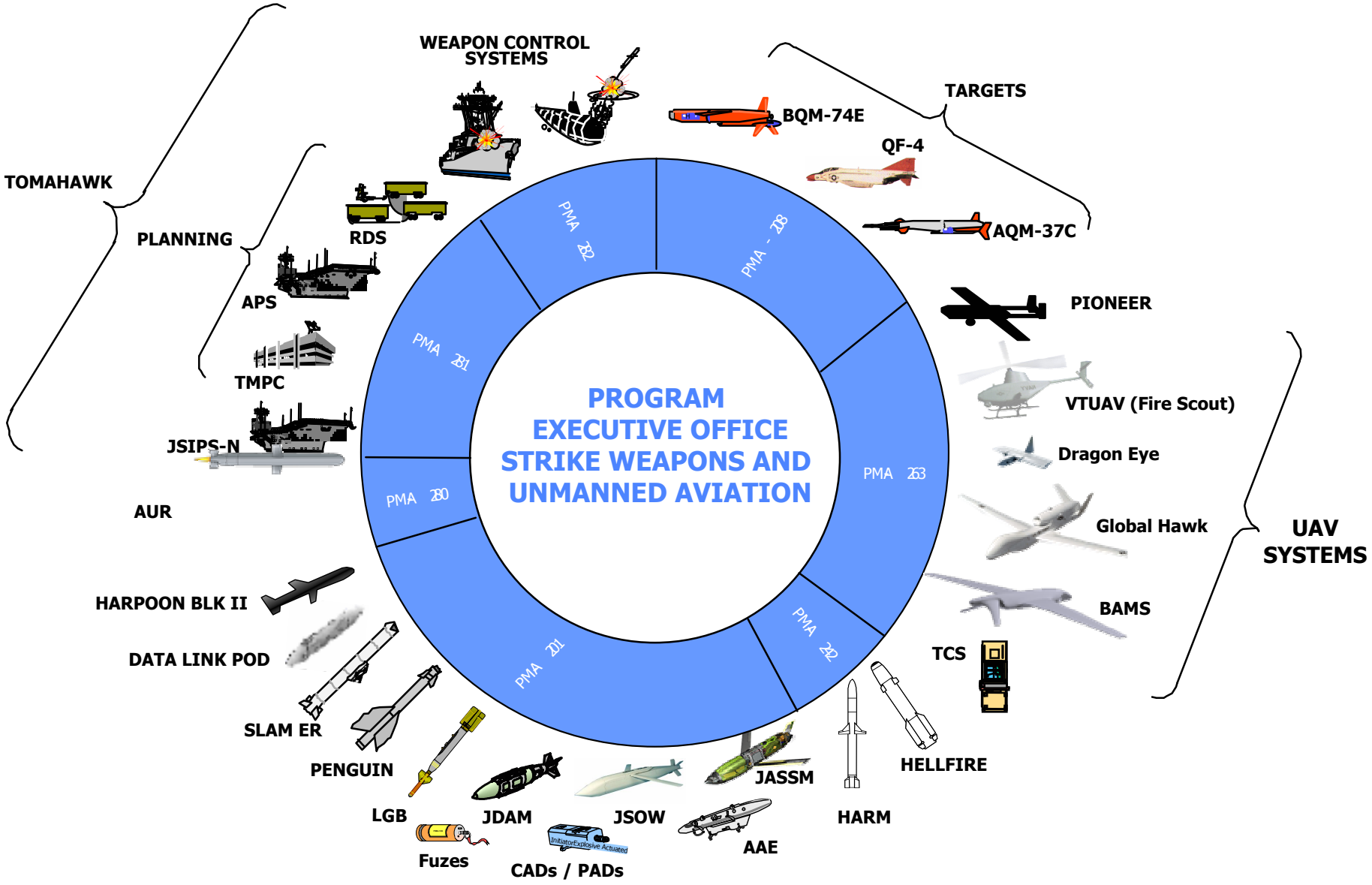
NAVAIR

Program Executive Office Strike Weapons and Unmanned Aviation



System Description

Missile Comparison

Tomahawk Block III

- Post Production Phase
- Length 20.3 Ft
- Diameter 21 in.
- Weight 3,500 lbs (Missile/Rocket Motor)
- Parts Count ~ 2477
- Range ~ 900 Nmi.
- Speed High-subsonic
- Payload
  (Conventional) WDU-36B ~ 1000lb. Explosive Wt.
  (Submunitions) BLU-97B (166 munitions)
- 8-Yr Recertification Cycle
- AUR Mission Reliability 83%

Tomahawk Block IV

- Production Phase
- Length 20.3 Ft
- Diameter 21 in.
- Weight 3,330 lbs (Missile/Rocket Motor)
- Parts Count ~ 655
- Range ~ 900 Nmi.
- Speed High-subsonic
- Payload
  (Conventional) WDU-36B ~ 1000lb. Explosive Wt.
- 15-Yr Recertification Cycle, 15-Yr Warranty
- AUR Mission Reliability 88%

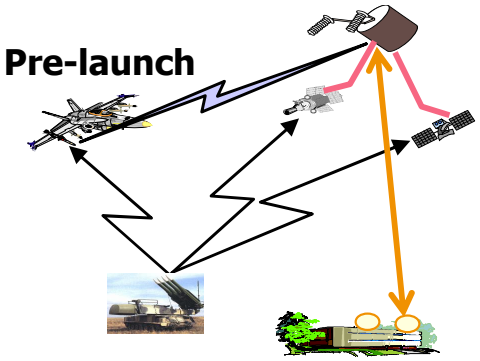
* Includes obsolescence/earliest deliveries

AARGM

AGM-88E AARGM

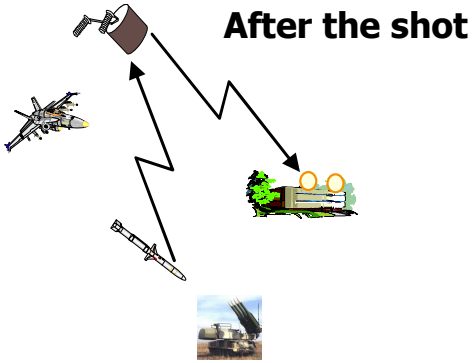
- Counter Shutdown
  - Active MMW guidance
- Expanded Threat Coverage
  - Enhanced ARH receiver
- Netted Targeting
  - Real-time Intel feed via TDDS prior to launch
  - Weapon Impact Assessment (WIA) transmitted prior to detonation
- Geospecificity
  - GPS/Point-to-Point Weapon
  - Impact Avoidance Zones/Missile Impact Zones

Rapid Response Real-time Intel Feed



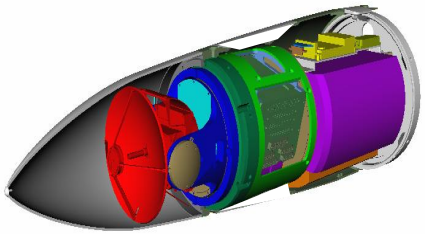
Offboard Feed (NRT, Targeting Quality)

BDA Cueing



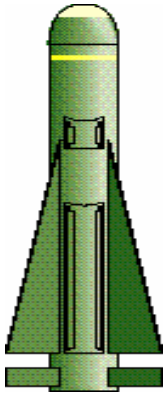
Cued BDA (Weapon Impact Assessment)

Counter Shutdown Increased P_k



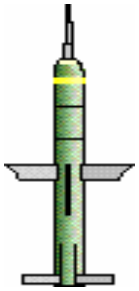
JCM Program Overview

- Replacement for Maverick, Hellfire and TOW
  - Inventories Aging
  - Single Mode Seekers
  - Logistic footprint W/Multi-Missile Inventory
- ARMY Lead Program
- Neckdown to Joint Common Missile
  - Per N78 strike weapons roadmap
- Total Ownership Cost Reduction
- Platforms: AH-1Z, F/A-18 E/F, MH-60 R/S

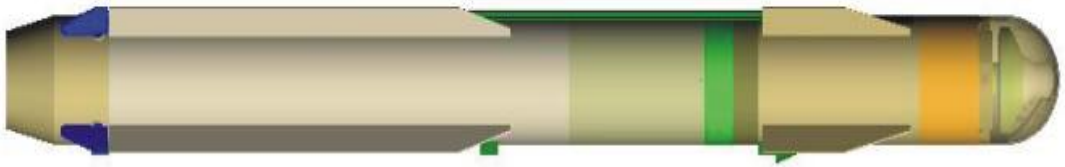


MAVERICK
LASER / IR

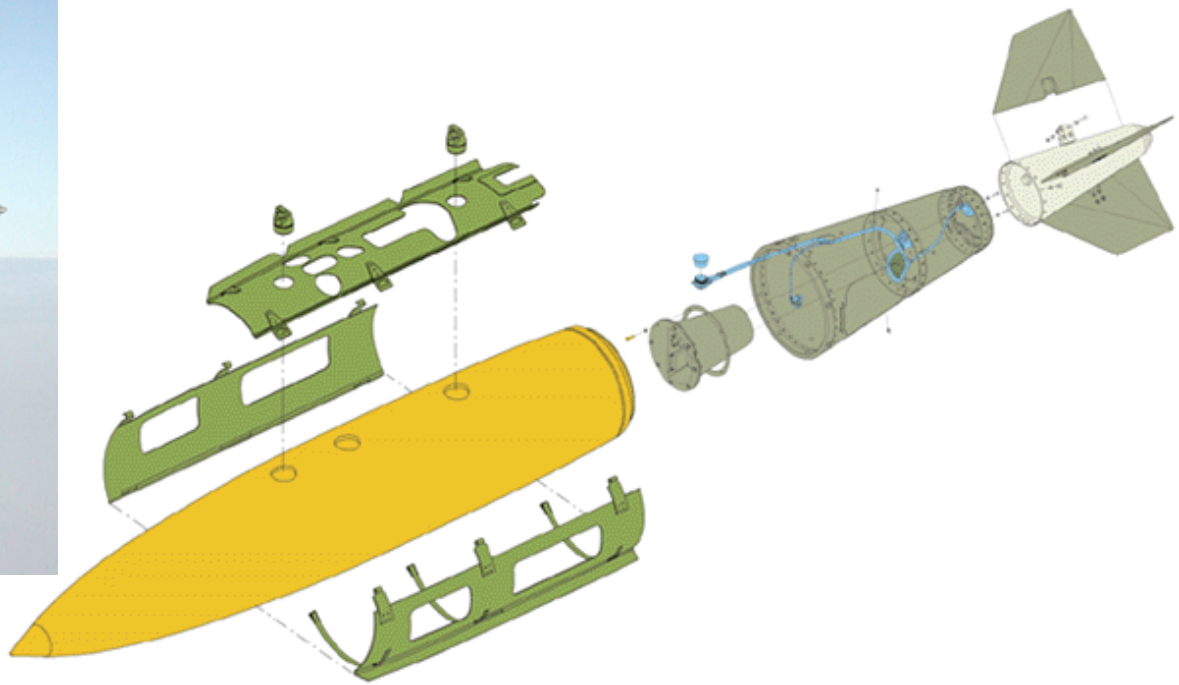
HELLFIRE
HELLFIRE II



TOW
TOW 2A
(AIR)



Joint Direct Attack Munitions (JDAM)



- Guidance kit for MK-82/BLU-111, MK-83/BLU-110, MK-84/BLU-117 and BLU-109 Warheads
- GPS-Aided Inertial guidance provides affordable accurate (5m CEP) guidance
- Provides adverse weather kill capability versus fixed and relocatable targets

Joint Standoff Weapons (JSOW)

Mission	Close air support, interdiction, amphibious strike and anti-surface warfare
Variants	AGM-154A (Dispenser weapon, area attack) AGM-154B (Dispenser weapon, anti-armor) AGM-154C (Unitary, point target)
Service	Navy and Air Force
Guidance method	JSOW airframe- GPS/INS AGM-154B- BLU-108 submunitions--two color infrared sensors AGM-154C- GPS/INS with a terminal IR seeker (ATA)
Range	12 nm Low altitude launch 40 nm + High altitude launch

Fire Scout

Operational Characteristics

Max. Speed	125 kts
Max. Altitude	20,000 ft
Radius	110 nm
Endurance	6+ hrs
Fuel Type	Heavy Fuel
Takeoff Means	Hover
Landing Means	Hover
Engine	420 shp

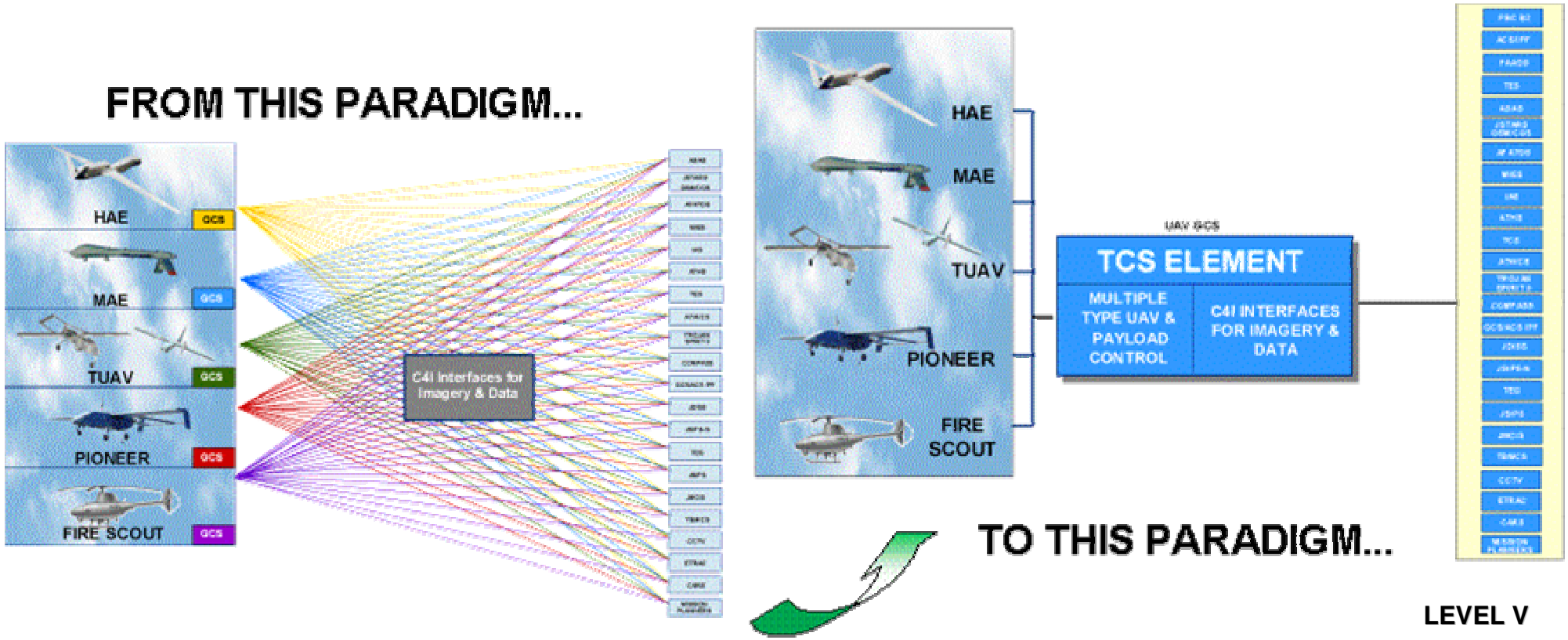
Physical Characteristics

Rotor Disk Area	594.5 ft sq
Length	275 in
Height	113 in
Horizontal Tail Area	3.1 ft sq
Vertical Tail Area	4.7 ft sq
Anti-Torque Disk Area	14.2 ft sq
Empty Weight	1457 lbs
Max. Take-off Weight	2550 lbs
Payload Capacity	200 lbs
Mission Fuel Load	793 lbs
Fuel Capacity	130.5 gallons

Payloads

EO/IR and Laser Designator

Tactical Control System (TCS) Vision



TCS levels of control:

LEVEL I
- Indirect Product

LEVEL II
- Direct Data Receipt

LEVEL III
- Payload Control
- Direct Data Receipt

LEVEL IV
- Flight Control
- Payload Control
- Direct Data Receipt

LEVEL V
- Launch & Recovery
- Flight Control
- Payload Control
- Direct Data Receipt

Broad Area Maritime Surveillance

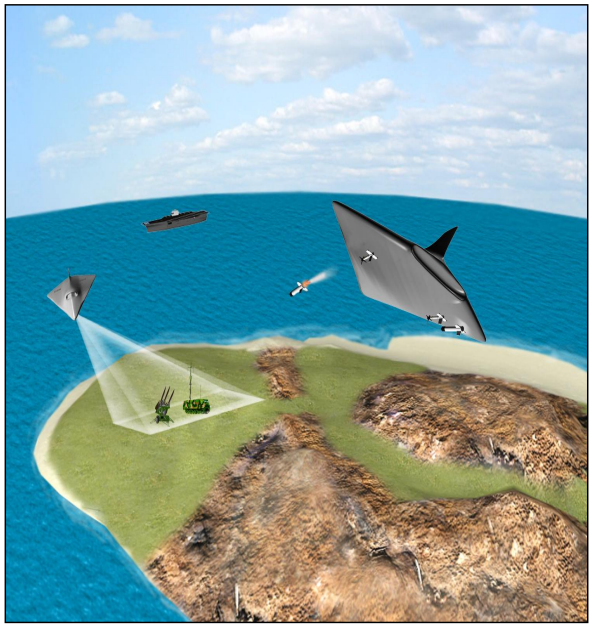
- Persistent maritime/land ISR capability
  - 36 hour flight profile
  - Reduced AOR footprint
- Global coverage
- Stand off multiple sensors
- CONOPS:
  - Wide Area Surveillance of maritime & land targets
  - Strike support (stand off)
  - ELINT / Limited COMINT
  - Comm relay

The Global Hawk Maritime Demonstration (GHMD) –
Provide Global Hawk sensors with maritime modes (delivery FY 05) to be utilized for experimentation, CONOPS, and TTP development

Broad Area Maritime Surveillance (BAMS) UAV Program –
Develop maritime capable UAV systems for operational deployment (projected IOC FY09)

JUCAS
Penetrating Surveillance

- Builds on DARPA/ONR S&T Demonstrations
- CV based
- Multi-mission with ISR initial focus (IOC~2015)
- Highly autonomous Command and Control/Sensors
- Survivable in high threat S-A environment
- CONOPS:
  - Surveillance & Reconnaissance
  - Strike support (close in)
  - Tactical Reconnaissance
  - Tactical ELINT / Comm relay
  - Suppression of Enemy Air Defense (SEAD) and Strike capability (IOC~2020)
- Potential Joint Program standup in FY04



Global Hawk Maritime Demonstration System

Physical Characteristics

Wing span:	116.2 ft
Length:	44.4 ft
Height:	15.2 ft
Gross T/O wt:	25,600 lbs
Payload wt:	2,000 lbs
Fuel Capacity	2,160 gallons

Payloads

Operational Characteristics

True Airspeed:	345 kts
Altitude:	65,000 ft
Range:	12,500 nmi
Endurance:	35 hrs
Endurance @ 1200 nm:	24 hrs
Fuel Type	Heavy Fuel