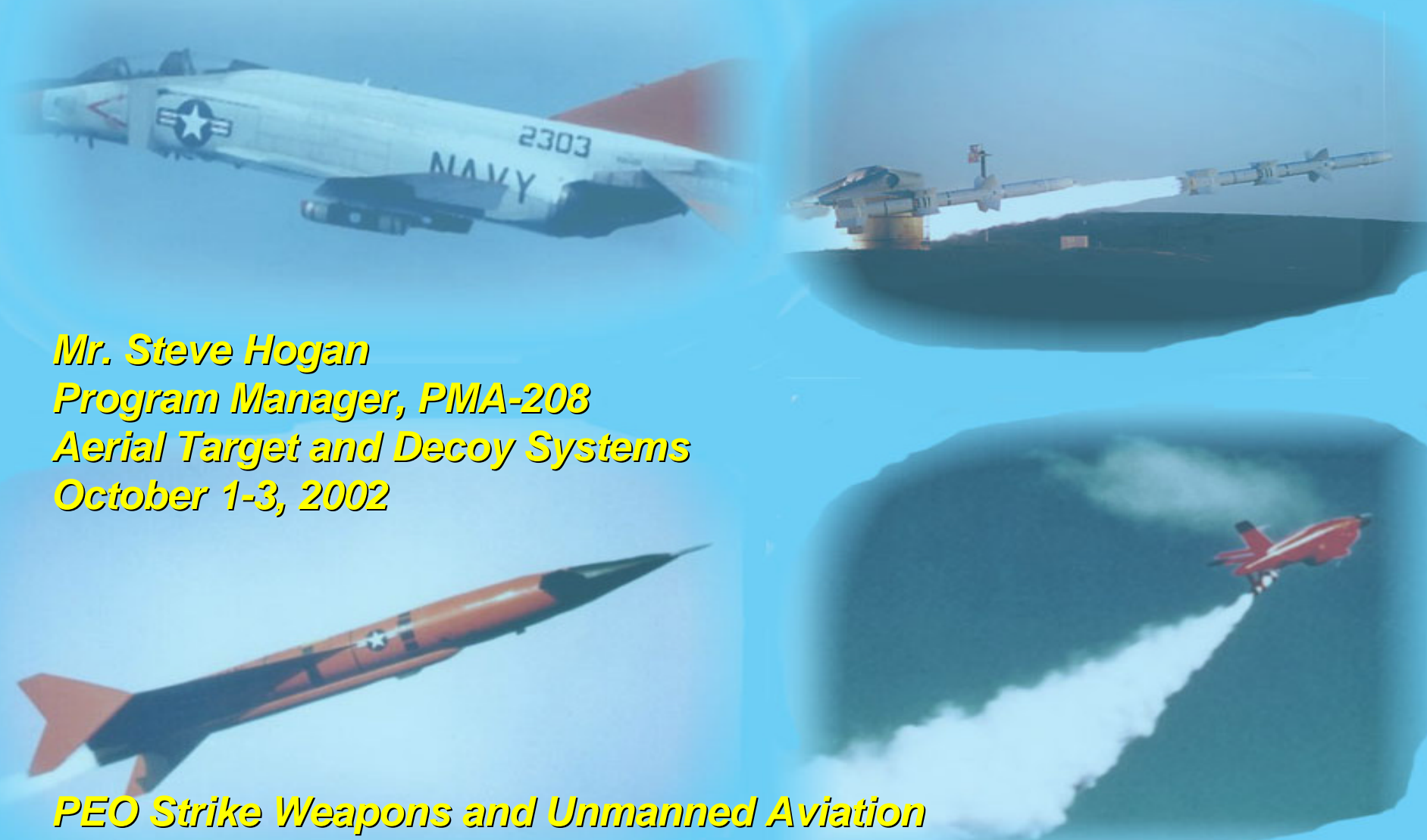




40th Annual NDIA Symposium



*Mr. Steve Hogan
Program Manager, PMA-208
Aerial Target and Decoy Systems
October 1-3, 2002*

PEO Strike Weapons and Unmanned Aviation



Outline



- **Program Mission**
- **Navy Aerial Targets Roadmap**
- **Program Funding**
- **Development Programs**
- **Target Auxiliary / Augmentation Systems (TA/AS)**
- **System For Naval Target Control (SNTC)**
- **Challenges**



US Navy Aerial Targets & Decoys



PMA-208 MISSION

**PROVIDE THREAT REPRESENTATIVE AERIAL TARGET SYSTEMS
IN SUPPORT OF WEAPON SYSTEM TEST AND FLEET TRAINING**

ITALD	TALD	QF-4	AQM-37	MQM-8G	MA-31	GQM-163A	BQM-34	BQM-74E	BQM-74F	TA/AS	SNTC
DECOYS	FULL SCALE (FSAT)	AAW	SUPERSONIC SEA SKIMMING (SSST)			SUBSONIC AERIAL TARGET (SSAT)			TARGET AUXILIARY/ AUGMENTATION SYSTEMS (TA/AS)	SYSTEM FOR NAVAL TARGET CONTROL (SNTC)	
		SUB SCALE									

- **Comprehensive threat representation**
 - Aircraft
 - Missile
- **Cost effective mix to support wide range of mission needs**
 - Training
 - Test & Evaluation

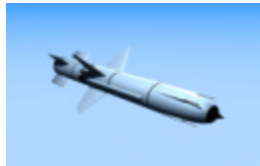


Navy Aerial Targets and Decoys

Supersonic



QF-4



MQM-8G



AQM-37C



MA-31



AST



GQM-163A

Subsonic



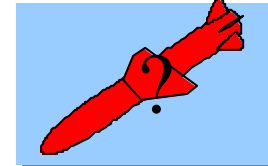
BQM-34S



BQM-74E



BQM-74F



TARGET 21

Decoys



TALD



ITALD

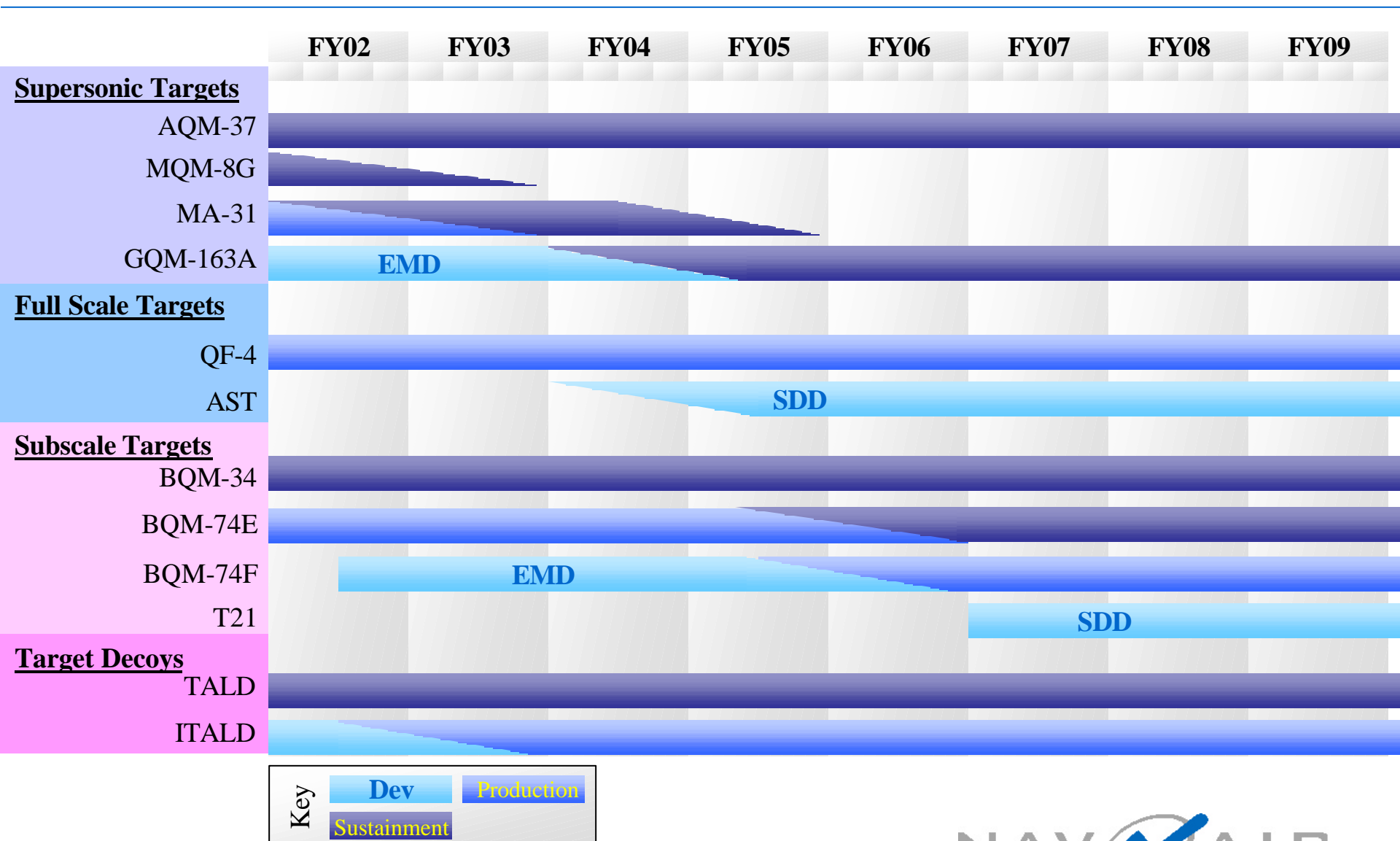
Navy Aerial Targets and Decoys Website

<https://home.navair.navy.mil/pma208/>





Navy Aerial Targets Roadmap





Aerial Targets Programs Funding

PB FY2003

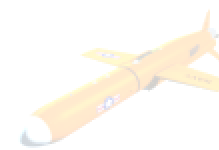


(\$ Millions)

		<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>
WP,N	Budget	70.3	71.8	78.4	152.9	90.9
RDT&E,N	Budget	41.4	36.0	39.7	44.7	46.0
O&M,N	Budget	16.8	16.8	17.2	17.6	17.9
Total Program Funding		128.5	124.6	135.3	215.2	154.8



Target Augmentation
&
Auxiliary Systems





BQM-74E



- *Subsonic Subscale Aerial Target*
- **In Production**
 - Northrop Grumman
- **Product Improvements FY02 - 05**
 - Low Altitude Control Enhancements I and II





BQM-74F

- **Near Term Performance Improvements to the BQM-74E**
- **Three Year Development Program, FY02-05**
- **Production Decision in FY05**
- **Increased Speed, Range, Endurance, Maneuverability, Payload Capacity**



- **Common Digital Architecture (CDA) Compliant**
- **Modernized Support System**
- **Prime Contractor - Northrop Grumman**



BQM-74F

Operational Enhancements



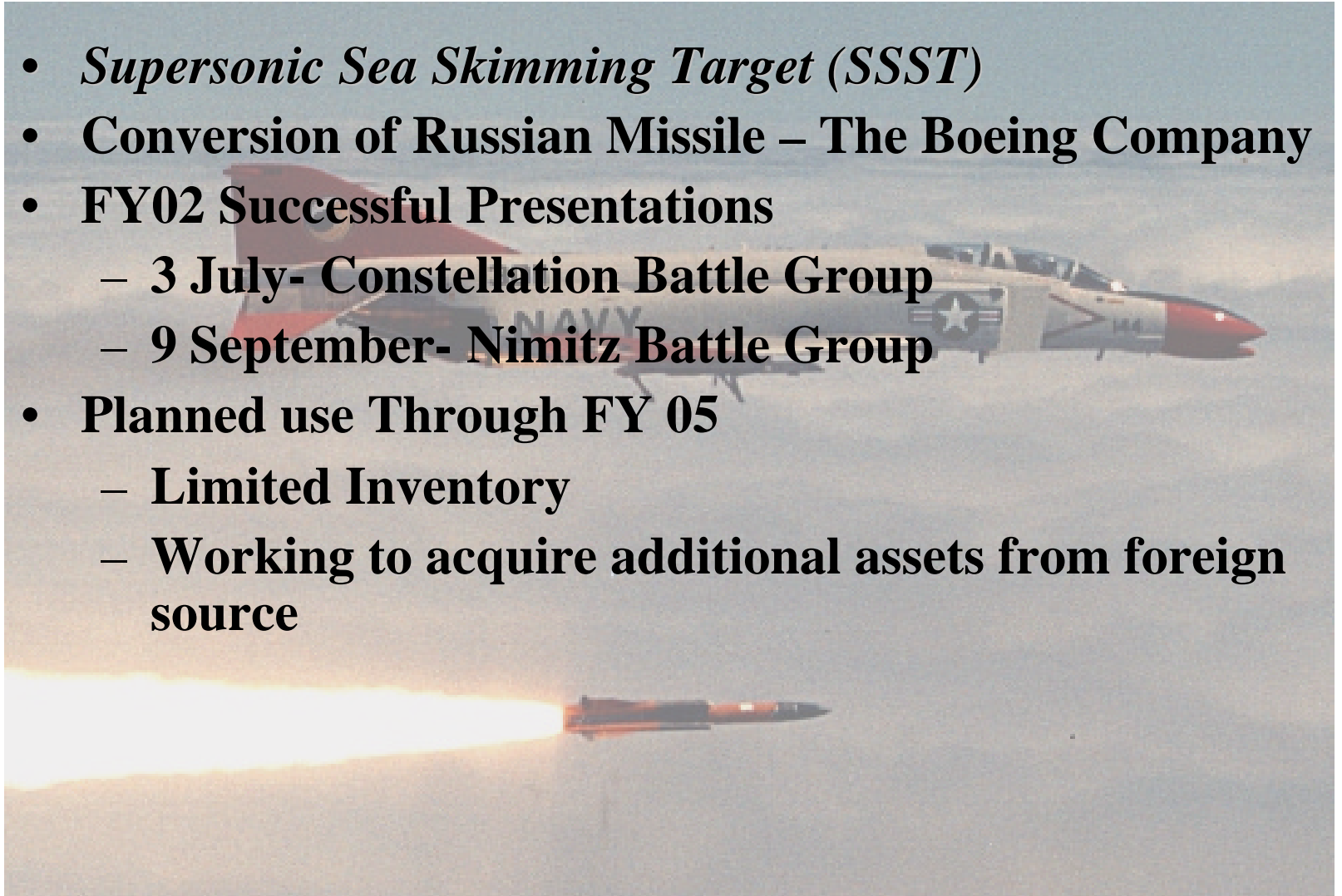
- **Way point Navigation**
 - Latitude, Longitude, Altitude and Time
 - In-Flight Mission Updates
- **Programmed Maneuvers**
 - Low Altitude Cruise
 - Fixed and Programmable Weaves
 - Airspeed Climb
 - Heading/Altitude Hold
- **End Point Homing**
- **Mission Reliability**
- **Availability**
- **Ground Launch Ready**
- **Air Launch Capable**



MA-31



- *Supersonic Sea Skimming Target (SSST)*
- **Conversion of Russian Missile – The Boeing Company**
- **FY02 Successful Presentations**
 - **3 July- Constellation Battle Group**
 - **9 September- Nimitz Battle Group**
- **Planned use Through FY 05**
 - **Limited Inventory**
 - **Working to acquire additional assets from foreign source**

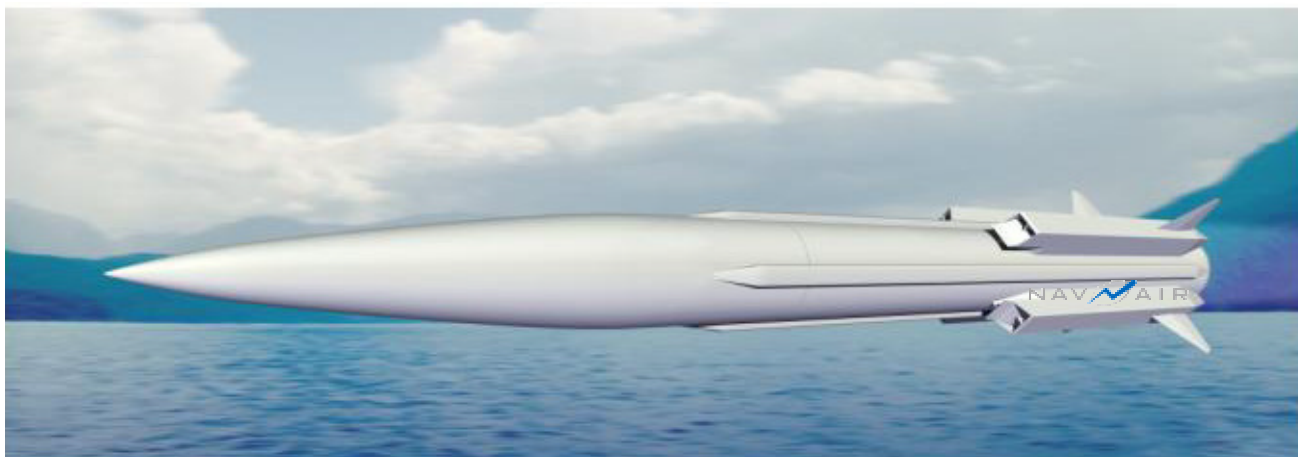




GQM-163A



- *Supersonic Sea Skimming Target*
 - Emulates Anti-Ship Cruise Missile Threat
- **EMD Contract with Orbital Sciences Corporation**
 - Raytheon Aircraft Company - Front End
 - Atlantic Research Corporation - Propulsion





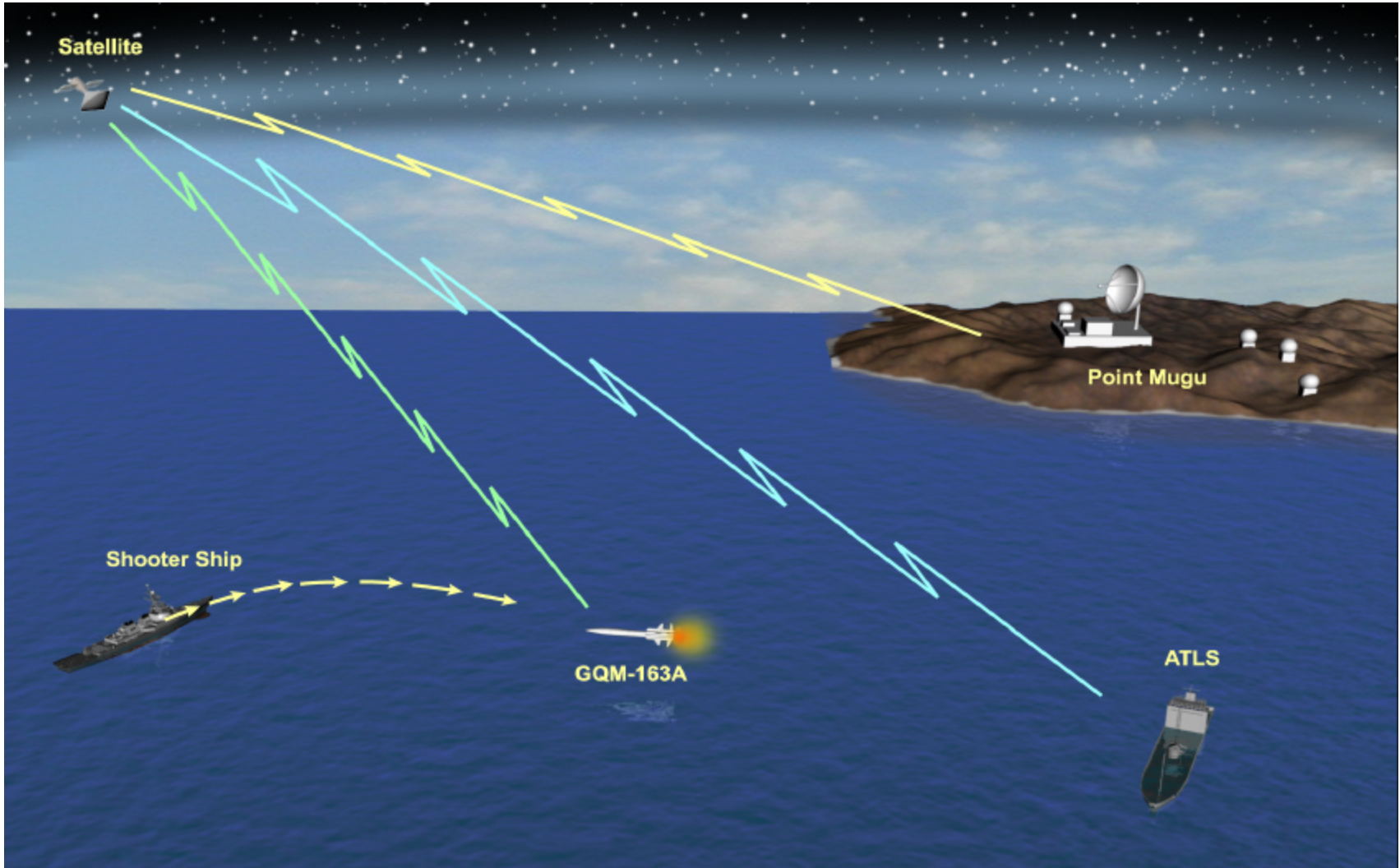
GQM-163A Program



- **GQM-163 General Performance**
 - 2.0 + Mach sea skimming capability
 - Preprogrammed autonomous flight with end game maneuvers
 - GPS based way point navigation
 - Solid Propellant Ducted Rocket Ramjet
 - Surface launch
- **Critical Design Review Conducted July 02**
- **Contractor and Government Flight Tests Scheduled for FY03**
- **First Production Planned for FY04**
 - Low Rate Initial Production in work



GQM-163A Future CONOPS





Target Augmentation & Auxiliary Systems (TA/AS)



- **Develop and Procure TA/AS in Support of Weapons System Development T&E and Fleet Training**

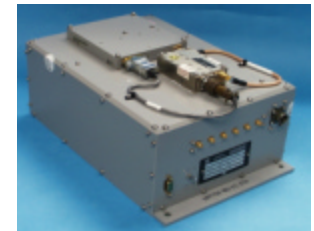
- Command and Control
- Location and Navigation
- Scoring
- Threat Simulation



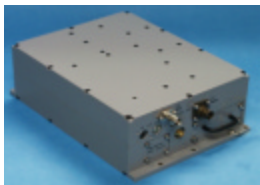
T-1438/D

- **Develop Initiatives for Upgrades to Meet Future Requirements**

- Small Baseline Vector Scoring System (SBVSS)
- Miniaturization
- EW Enhancements



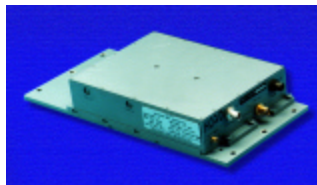
VDOPS



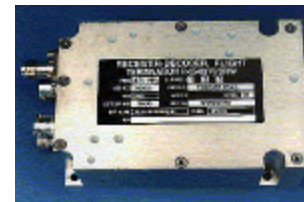
AN/DSQ-50A



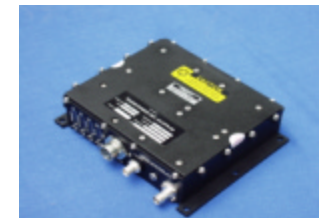
AN/DPN-90



AN/DSQ-37A



R-2540(V)DRW



AN/DPN-88



System For Naval Target Control





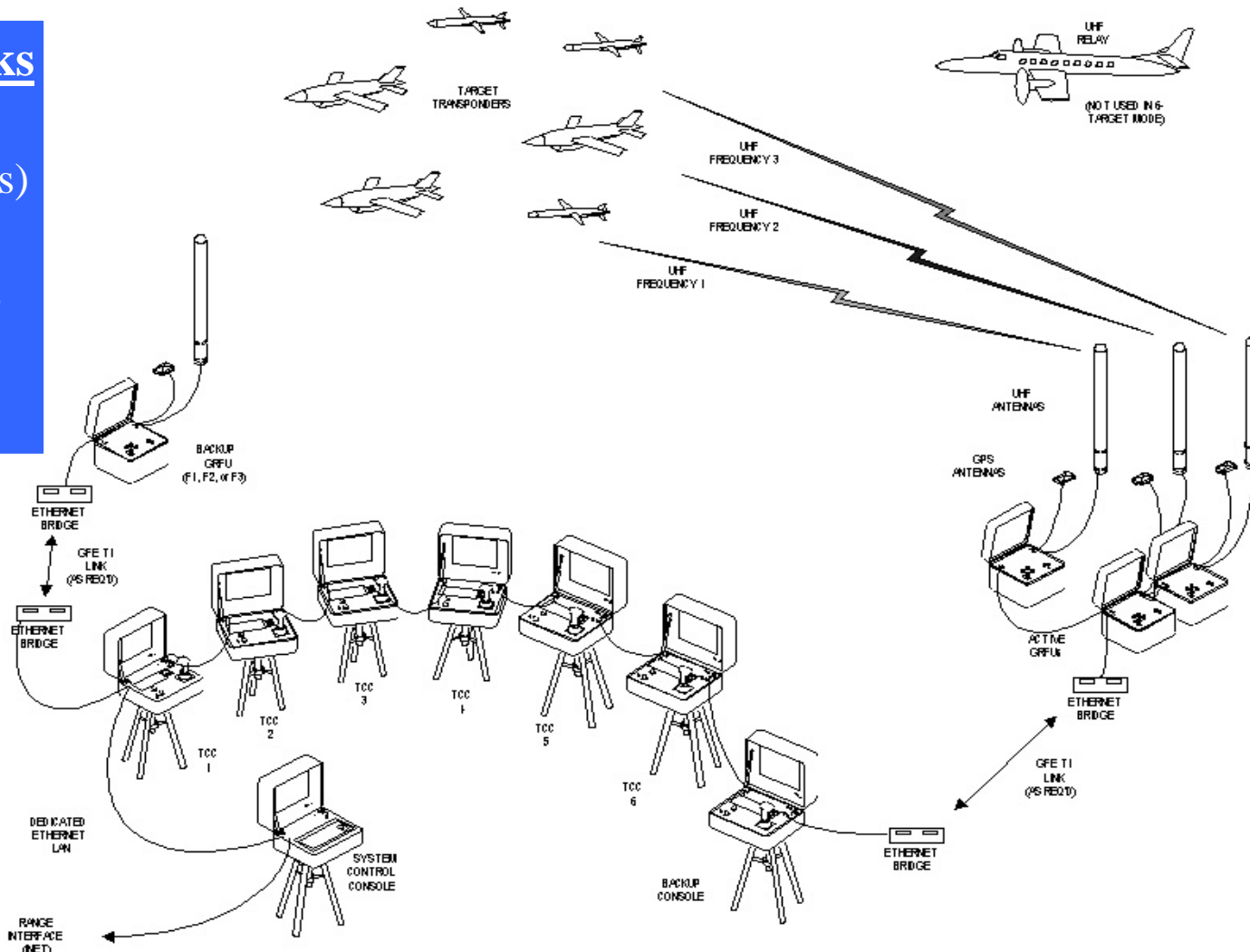
SNTC System Overview

“6 Target Control Configuration”



SNTC Building Blocks

- System Controller(s)
- Target Control Console(s)
- Ground RF Module(s)
- Airborne Transponders
- Installation Kits
- Airborne Relay





SNTC Status

Block 0:

- Provides Basic Subsonic Target Control Capability
- Flight Tested at PMRF
 - Successful BQM-34 and -74 and Dual BQM-34/-74 Flights
 - Successful Quad Target Flight (2 BQM-34, 2 BQM-74)
- Software Baseline for Block 0 & Block 1 Established

Block 1:

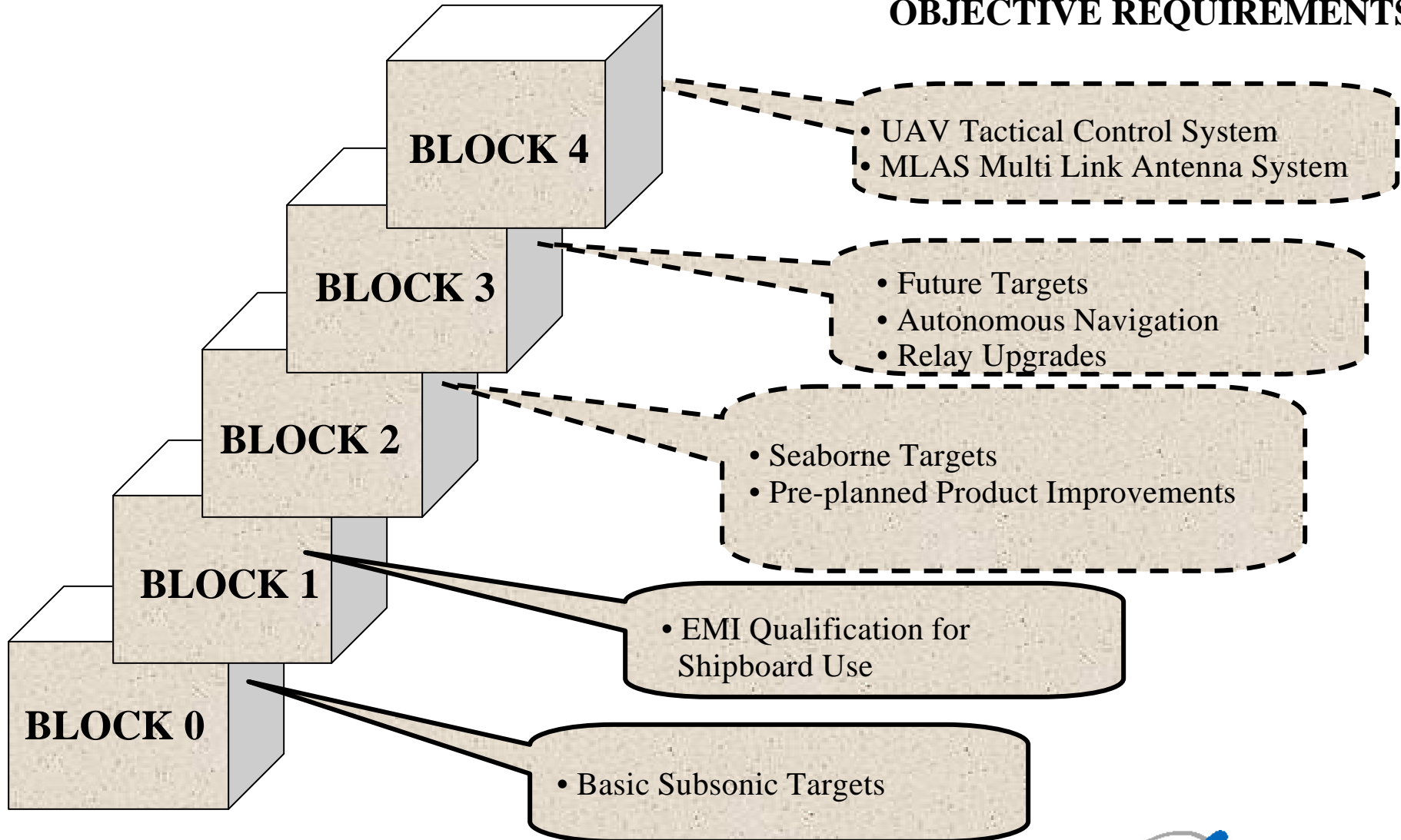
- Provides Shipboard Capable Control System
- Currently in Test and Evaluation
 - EMV Test at NSWC Dahlgren Completed

SINGLE TARGET CONFIGURATION SHOWN



SNTC Block Upgrade

OBJECTIVE REQUIREMENTS





Challenges

- **Maintain Technology Pace**

- Satellite Communications
- Data Links
- Miniaturization
- Threat Simulation

- **Control Costs**

- Procurement
- Operating

- **Reduce Cycle Time**

- Acquisition
- Development

