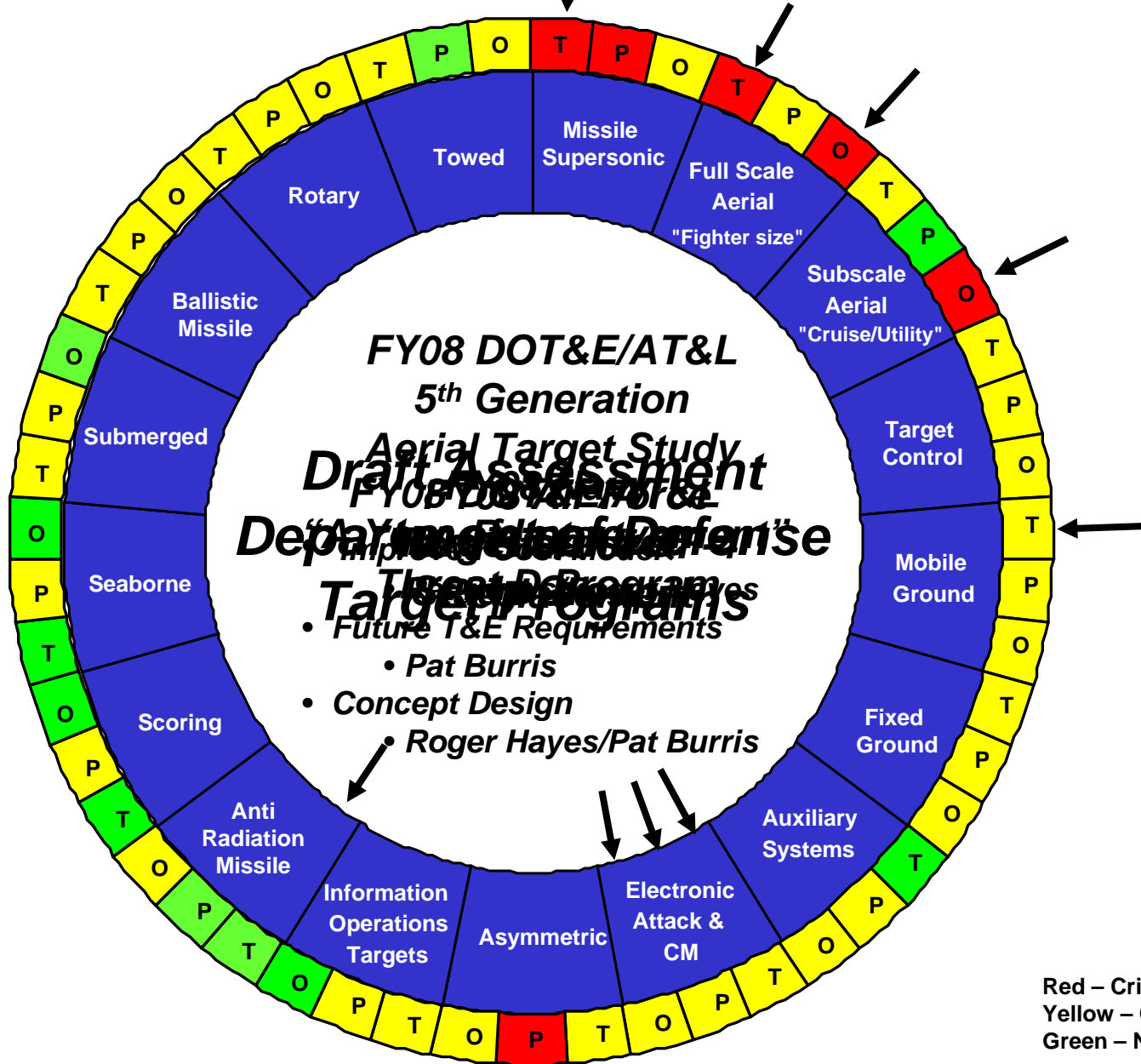


# *DOT&E's Targets Overview*



*Dennis Mischel*  
*(Josh Messner)*  
DOT&E - Targets

# Target Program Status



T - Threat Realism  
P - Procurement  
O - Other

Red - Critical Issue  
Yellow - Concern  
Green - No Significant Issue



# Target Management Initiatives

## *FY08 TMI Projects*

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- DOT&E Directed
  - 5<sup>th</sup> Generation Full Scale Aerial Target
  - Target Control Study
- Service Executed
  - Navy
    - SLACE
    - CPAM
  - Air Force
    - ACM Target
  - Other On-Going Efforts
    - Realistic Low Cost Target
    - Navy Subscale Flight Demonstration
    - Common Interface Demonstration
    - Multi-spectral Mobile Ground Target System

***Less projects but with more OSD focus***



# Summary

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- Significant progress within targets in FY07
  - Start of Threat D program
  - Start of QF-16 program
- TMI Program
  - Study department-wide issues
    - 5<sup>th</sup> Generation Target
    - Target Control
  - Addressing Service issues
    - Torpedo targets
    - Mobile ground targets
    - Advanced Cruise Missile (ACM) – TARGET?





# Background



## Fighter Aircraft from Around the World - 2007



Characteristic	MiG-19	MiG-21	MiG-23	F-15	J-8	F-16	Mirage 2K	MiG-31	F-117	Su-27	MiG-29	JH-7	JAS-39	Rafale	F/A-18E	EF-2000	J-10	Su-34	FC-1	MiG MFI	S-37	F-22	F-35	XXJ
Length, ft	41.0	51.7	56.8	63.8	70.2	49.3	48.1	74.4	69.8	72.0	57.0	68.9	46.3	50.1	60.1	52.3	50.9	76.4	49.1	65.6	74.2	62.1	50.5	N/A
Wing Span, ft	30.2	23.4	25.5	42.8	30.7	31.0	29.9	44.2	43.3	48.3	37.3	42.0	27.6	35.4	44.7	35.9	31.8	45.9	31.0	49.2	54.8	44.5	35.0	N/A
Wing Area, ft <sup>2</sup>	270.0	247.5	367.7	608.0	454.0	300.0	441.0	663.0	780.0	667.0	409.0	563.0	275.0	492.0	500.0	538.0	419.8	667.4	262.7	N/A	602.0	840.0	459.6	N/A
Aspect Ratio	3.4	2.2	1.77	3.0	2.1	3.2	2.0	2.9	2.4	3.5	3.4	3.1	2.8	2.5	4.0	2.4	2.4	3.2	3.7	N/A	5.0	2.4	2.7	N/A
Empty Weight, lbs	11,983.0	11,800.0	21,153.0	28,600.0	22,864.0	18,600.0	16,535.0	48,104.0	29,500.0	36,100.0	24,250.0	35,057.0	12,346.0	19,974.0	29,574.0	21,500.0	18,260.0	46,930.0	14,134.0	N/A	N/A	31,670.0	26,000.0	N/A
Combat Weight, lbs	14,663.0	19,200.0	28,668.9	44,500.0	28,995.1	24,601.0	22,240.9	71,329.9	37,328.8	45,296.4	31,941.0	44,359.0	17,266.0	27,112.9	39,194.0	28,887.7	26,022.0	62,000.0	N/A	N/A	N/A	45,000.0	35,000.0	N/A
Wing loading, lbs/ft <sup>2</sup>	54.3	77.8	78.0	62.1	63.9	62.0	50.4	107.6	47.9	67.9	78.1	78.6	62.8	55.1	78.4	53.7	62.0	92.9	N/A	N/A	N/A	53.6	76.2	N/A
Number of Engines	2	1	1	2	2	1	1	2	2	2	2	2	1	2	2	2	1	2	1	2	2	2	1	N/A
Mil Thrust, lbs (S/L)	N/A	N/A	18,850.0	29,180.0	21,194.0	17,800.0	14,400.0	41,888.0	21,200.0	N/A	24,250.0	24,500.0	12,141.0	22,486.0	28,000.0	27,000.0	17,857.0	N/A	N/A	N/A	N/A	56,000.0	28,000.0	N/A
AB Thrust, lbs (S/L)	14,356.0	15,700.0	28,700.0	47,540.0	30,864.0	29,100.0	21,400.0	77,160.0	21,200.0	55,200.0	38,800.0	41,030.0	18,105.0	33,666.0	44,000.0	40,500.0	27,557.0	65,120.0	18,277.0	78,040.0	78,040.0	70,000.0	43,000.0	N/A
Thrust/Weight Ratio	0.96	0.82	1.00	1.26	1.06	1.18	0.96	1.08	0.57	1.22	1.21	0.92	1.05	1.24	1.12	1.40	1.06	1.05	N/A	N/A	N/A	1.56	1.23	N/A
Max Speed, Mach	1.37	2.00	2.35	2.50	2.20	2+	2.20	2.63	0.92	2.35	2.30	1.70	1.80	1.8+	1.8+	2+	2.20	1.80	1.80	2.35	1.60	2.42	>1.8	N/A
Service Ceiling, kft	57.4	62.3	N/A	65.0	59.1	50.0	59.1	67.6	69.0	60.7	55.8	51.2	50.0	55.0	50.0	60.0	65.6	65.0	50.0	N/A	59.1	65.0	N/A	N/A



# DoD's Fighter Size Target Program

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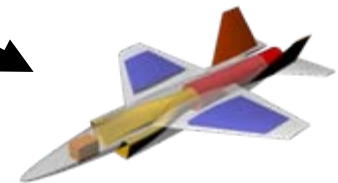
Current



2015 - 2020



2018 and Beyond





# 5<sup>th</sup> Generation Full Scale Aerial Target Study

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## PDM II

- Directed Study of required 5<sup>th</sup> Generation Requirements
  - Stealth
  - Maneuverability
  - Speed
  - Payloads

***Report stated an additional study was needed***



## DOT&E/AT&L Study

- Future test requirements
- Commercial cost models
- Affordable prototype?

***Report due in March to potentially effect POM***

## Involvement

- Air Force (AFA, AFRL, ACC, AAC)
- Navy (NAVAIR)
- Cost Team (Air Force and IDA)
- Industry (Cirrus, Swift, Eclipse, Adam)





# Target Control Study



## Defense Science Board Report

“The Task Force can envision the gradual introduction of common control elements into each range to provide an increasing degree of interoperability, test flexibility, and lower operational costs.”

***Prior common control systems have failed***



## Navy Lead DoD Study

LEW Warfare Memo

- Identify joint common elements
- Open Architecture
- Open Source Software
- Protocols and Standards

***Feasibility report due in March***

## Involvement

- Air Force, Navy and Army
- OSD (TRMC, DT, DDRE)



# Target Management Initiative New Start Project



## SUBMARINE LAUNCHED COUNTERMEASURE EMULATOR (SLACE) DESIGN STUDY

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### Project Description:

- Identify SLACE requirements, design approaches and options, and submarine launch certification requirements
- Develop SLACE performance specifications
- Conduct feasibility, cost, and design tradeoff analyses
- Recommend an optimum SLACE design approach
- Execute a preliminary system level SLACE design
- Deliver preliminary system level design package



### Project Requirement:

SLACE vehicles are required to support FY10 OPTEVFOR operational test of CBASS torpedo and ARCI sensor systems in the presence of mobile countermeasures

Other Sources of Funding: None

Proposal Endorsement:

OPTEVFOR will endorse proposal

Project Director:

Clarence Ching / NUWC Div Keyport / Comm: (360) 396-1099 / Email: [clarence.ching@navy.mil](mailto:clarence.ching@navy.mil) / Navy



# Target Management Initiative

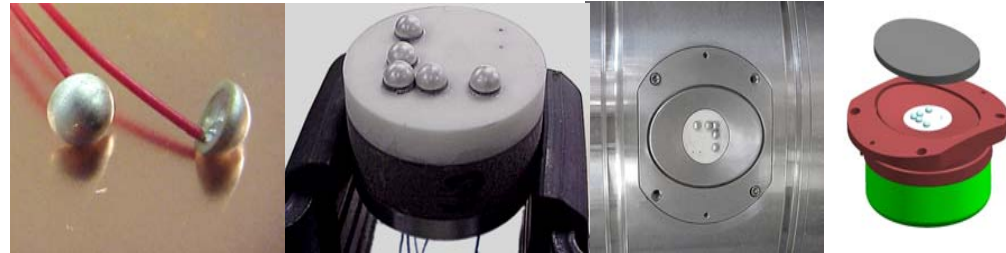
## New Start Project



### CPA PASSIVE MEASUREMENT (CPAM) MINI-ARRAY

#### Project Description:

- Identify Closest Point of Approach (CPA) passive measurement requirements
- Develop CPAM mini-array performance specifications
- Conduct feasibility, cost, and design tradeoff analyses
- Identify most likely CPAM mini-array design approach(es)
- Design, fabricate, assemble mini-array candidate(s)
- Bench test/In-water test mini-array candidate performance
- Identify suitable mini-array candidate(s) that meet CPAM performance specs



#### Other Sources of Funding:

PMS 415 - \$150K  
 ONR - \$150K  
 Total - \$300K

#### Project Requirement:

FY11 Containerized Countermeasure Anti-Torpedo passive attack development spiral mandates Torpedo Proximity Scoring System (TPSS) passive CPA measurement upgrade

#### Proposal Endorsement:

PMS 415 and ONR endorse proposal

Project Director:

Clarence Ching / NUWC Div Keyport / Comm: (360) 396-1099 / Email: clarence.ching@navy.mil / Navy



# Multi-spectral Mobile Ground Target System (MMGTS)

## System Description and Capabilities Summary



**For more information, contact:**

**Mr. Joshua Messner**

**DOT&E Target Resources**

**[Joshua.messner@osd.mil](mailto:Joshua.messner@osd.mil)**

**Phone: (703) 681 - 5502**



# Target Management Initiative

## New Start Project ?



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### *New Mission for Advanced Cruise Missile Drone Feasibility Study*

## Project Description

- Feasibility Study to determine if Advanced Cruise Missiles may be retrofitted to become air drone to meet future target requirement





# Defense Science Board

2005 Report on Aerial Targets

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## Recommendations on Full-Scale Targets

1. **Immediately develop a drone replacement for the QF-4 using an existing aircraft platform. Seek to eliminate requirements for man-rating. (U.S. Air Force)**

*The Task Force views this as a straightforward process that will fill our mid-term needs. The Task Force sees little need for lengthy investigations, so no gap in our mid-term capability should occur.*

2. **Immediately begin a concept demonstration of a new, unmanned, full-scale drone that can capture important features of advanced fighter-size aircraft. (U.S. Air Force)**

*A modest investment here will serve to sort out the possible approaches and put us on a path to produce the next-generation full-scale drone to deal with testing against advanced aircraft.*