

# *NDIA 48th Annual Fuze Conference*

## *Guidance Integrated Fuze / Course Correcting Fuze*

*(GIF)*

*(CCF)*



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***CCF DPO***



# GIF & CCF



- GIF is a Technology Demonstration Program at NSWCDD Sponsored by OSD-ATL
- GIF is being co-developed by the Army & Navy as the design concept for the Army CCF Program
- US Army is developing a requirement for CCF. OPM CAS is the developer for USAFAS



# GIF & CCF



- GIF is a low-cost, fuze-sized module that is intended to replace a “NATO standard” fuze
- GIF corrects the ballistic trajectory in 2D, resulting in a small terminal miss distance
- GIF provides *“First Round - Steel on Target”*
- GIF technology can be applied to *literally millions of existing* 155mm, 105mm, 5”, 76mm projectiles, and 120mm and 81mm mortars.

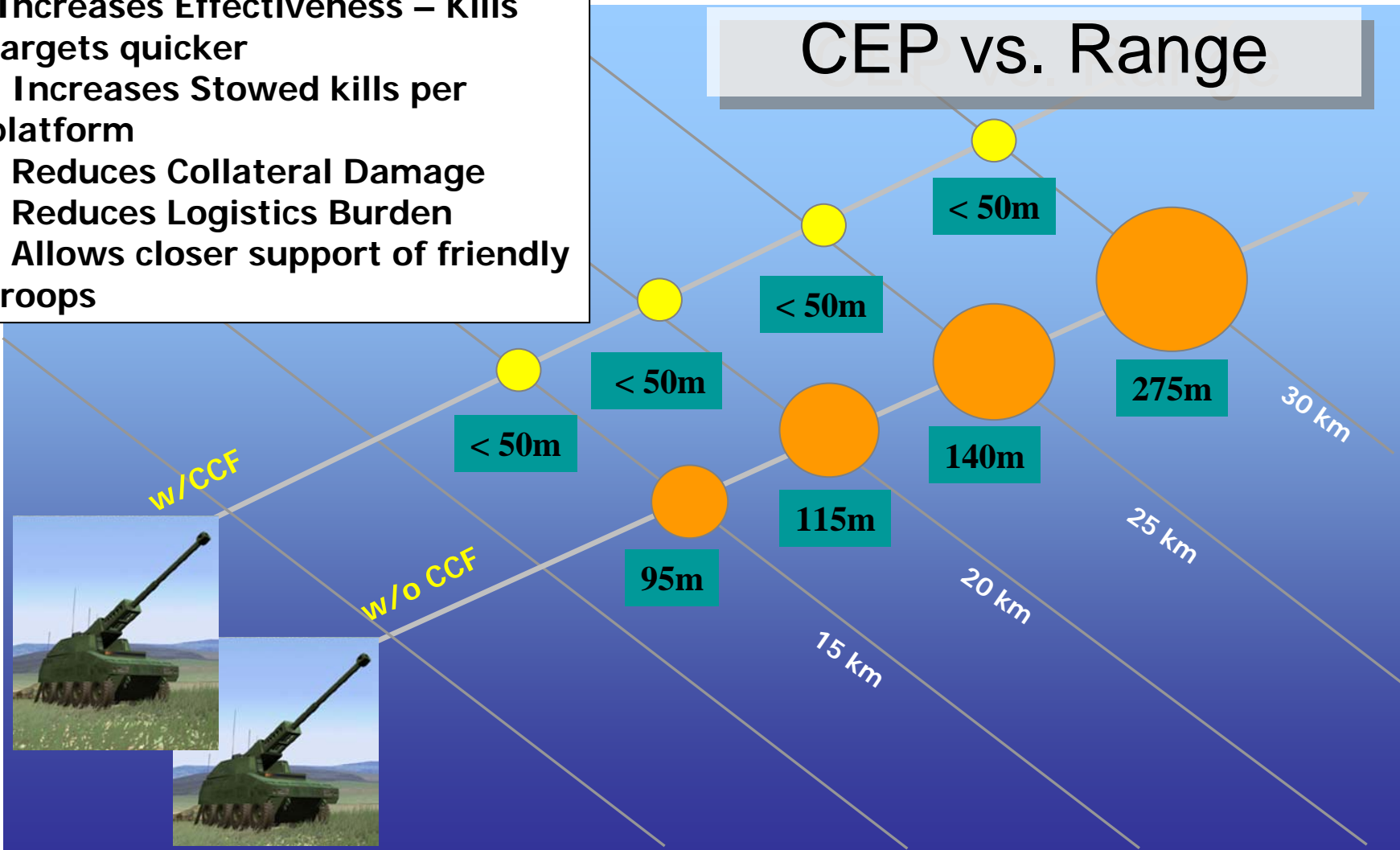


# CCF Benefits



- Increases Effectiveness – Kills targets quicker**
- Increases Stowed kills per platform
  - Reduces Collateral Damage
  - Reduces Logistics Burden
  - Allows closer support of friendly troops

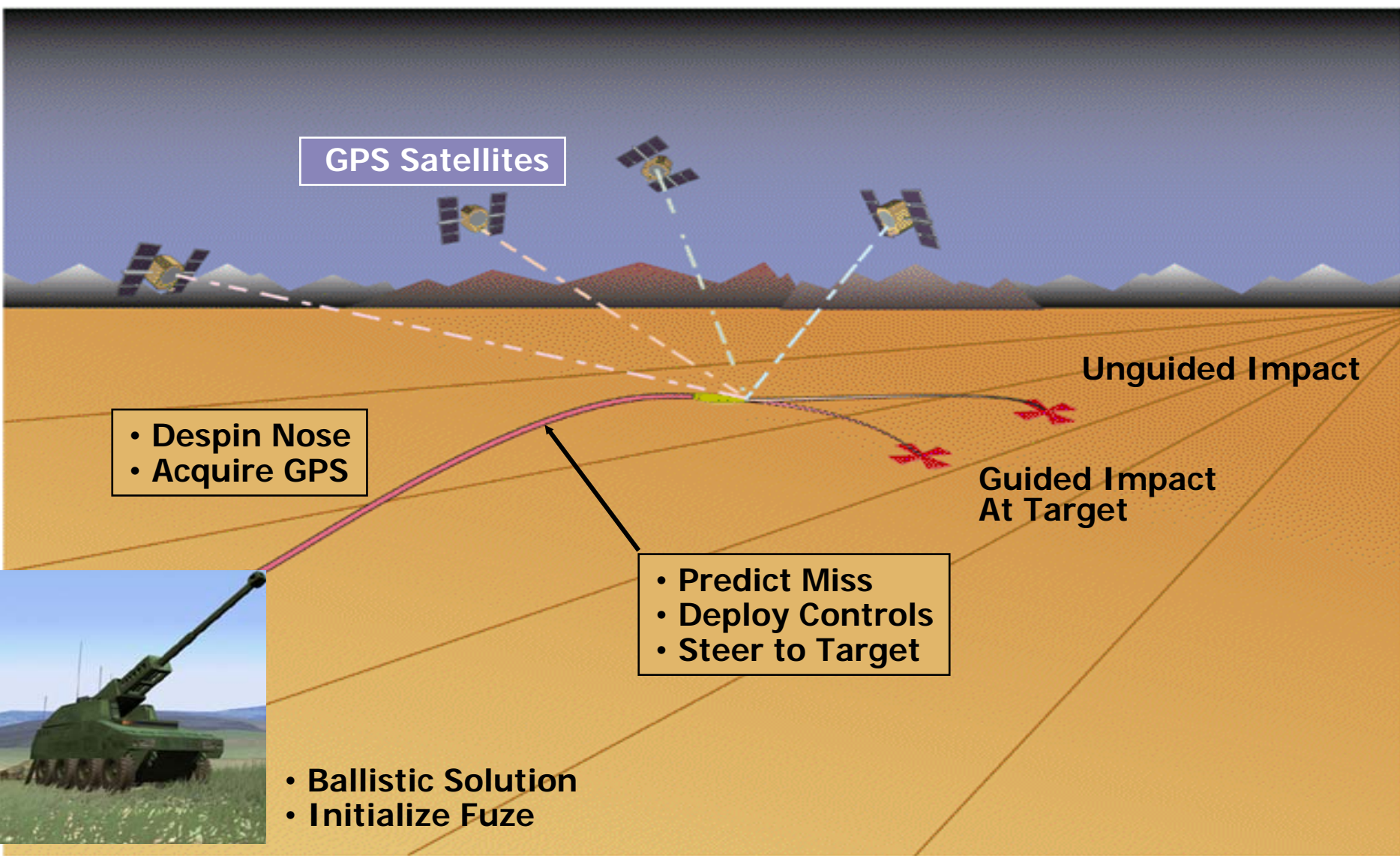
## CEP vs. Range



(Major Improvements to Cannon Artillery Effectiveness)



# How does GIF Work?







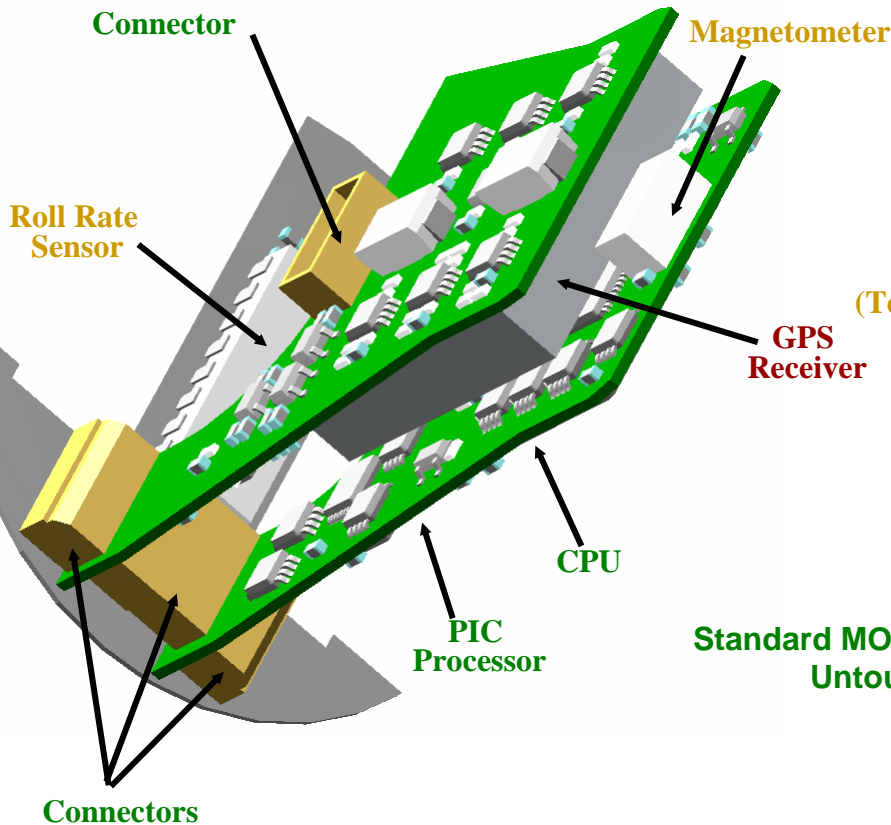
# Technical Status



**“Waffle” Fins Provide High Lift without Stall  
Required to Steer (Heavy) Army Ammo**

**COTS Batteries  
(CR2) & Drive Motor  
Replace  
MOFA Battery**

**Standard Primer  
and S&A  
Untouched  
by GIF Mods**



**2 GPS  
Antennae  
(Top & Bottom)**

**Roll Brake  
System**

**Differential Cant  
Between the Waffles  
Provides Anti-Roll  
Torque After the  
Covers are Discarded.**

**Covers Protect Waffle Canards  
Prior  
to the Initiation of Guidance**

**Standard MOFA Radar and Setter Coils  
Untouched by GIF Mods**

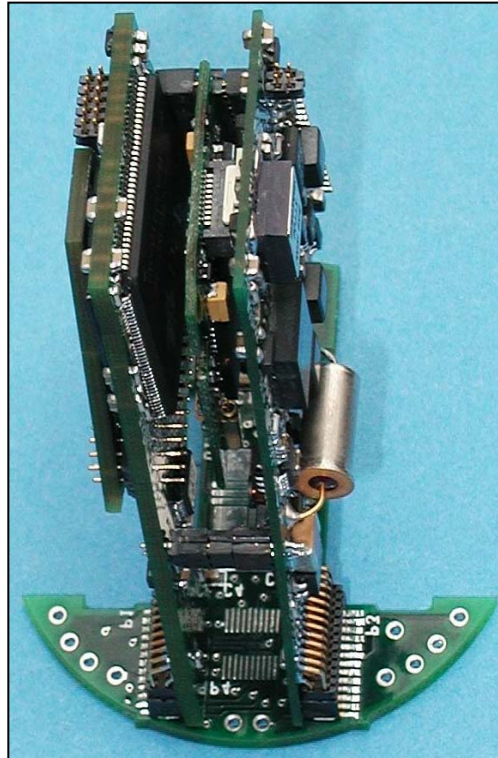
**2 Anti-Roll Strakes  
(One on each Cover)**



# Technical Status



**Roll Bearing Test Fuze with Tactical Strakes**



**Guidance and Electronics Unit**



**GPS Antennae System**



**HOB/DCI Module**



**Roll Brake and Bearing Assembly**



# Program Plan



- Complete Technology Demonstration Phase w/ closed loop guided gun firing
- Award up to 2 Contracts (from NSWEC) for development of GIF based on Gov't TDP
  - 100 Fuzes for qualification testing
  - Proposals may deviate from GIF baseline TDP to improve performance, reduce cost or schedule





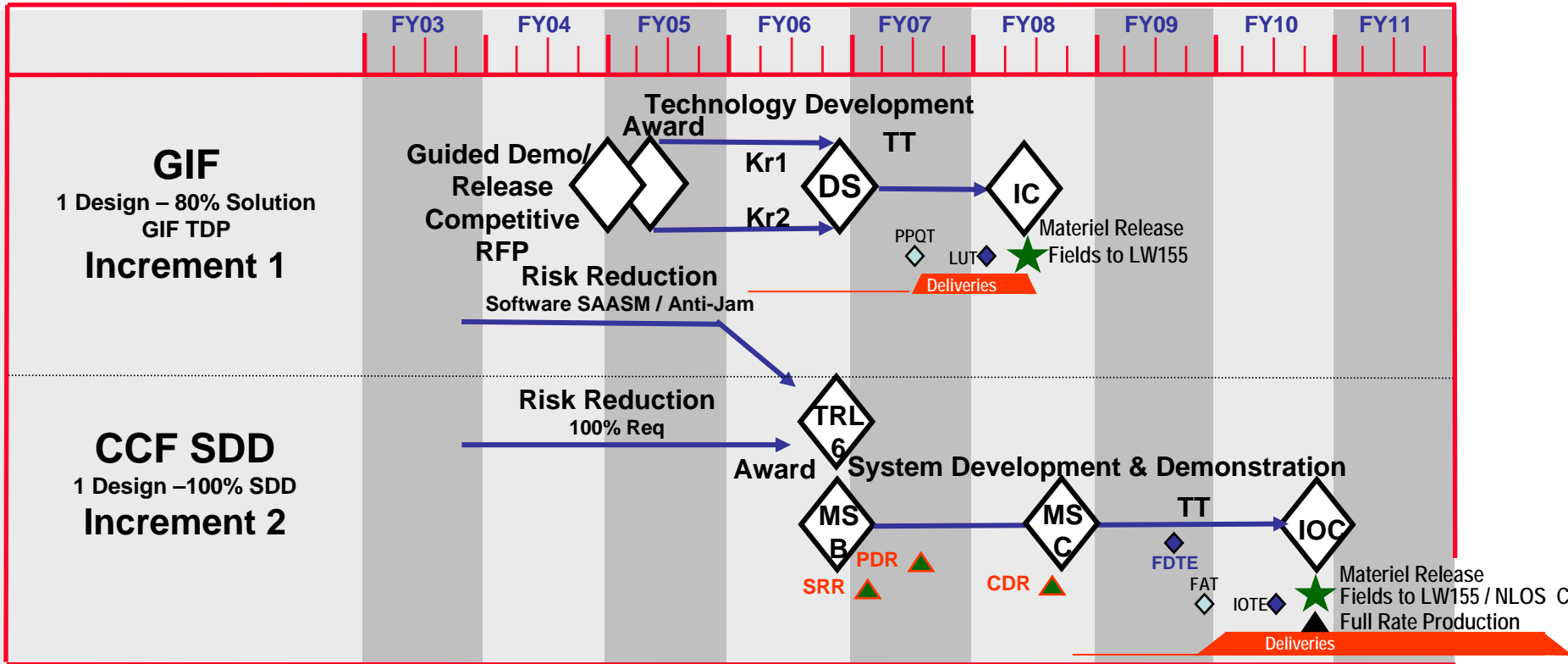
# Program Plan



- Down select for following options
  - Build 1000 GIFs for Army user test
  - Course Correcting Fuze development (SDD)
- Army to take GIF design into CCF SDD program in FY06
- CCF Initial Operational Capability in FY10



# Program Plan





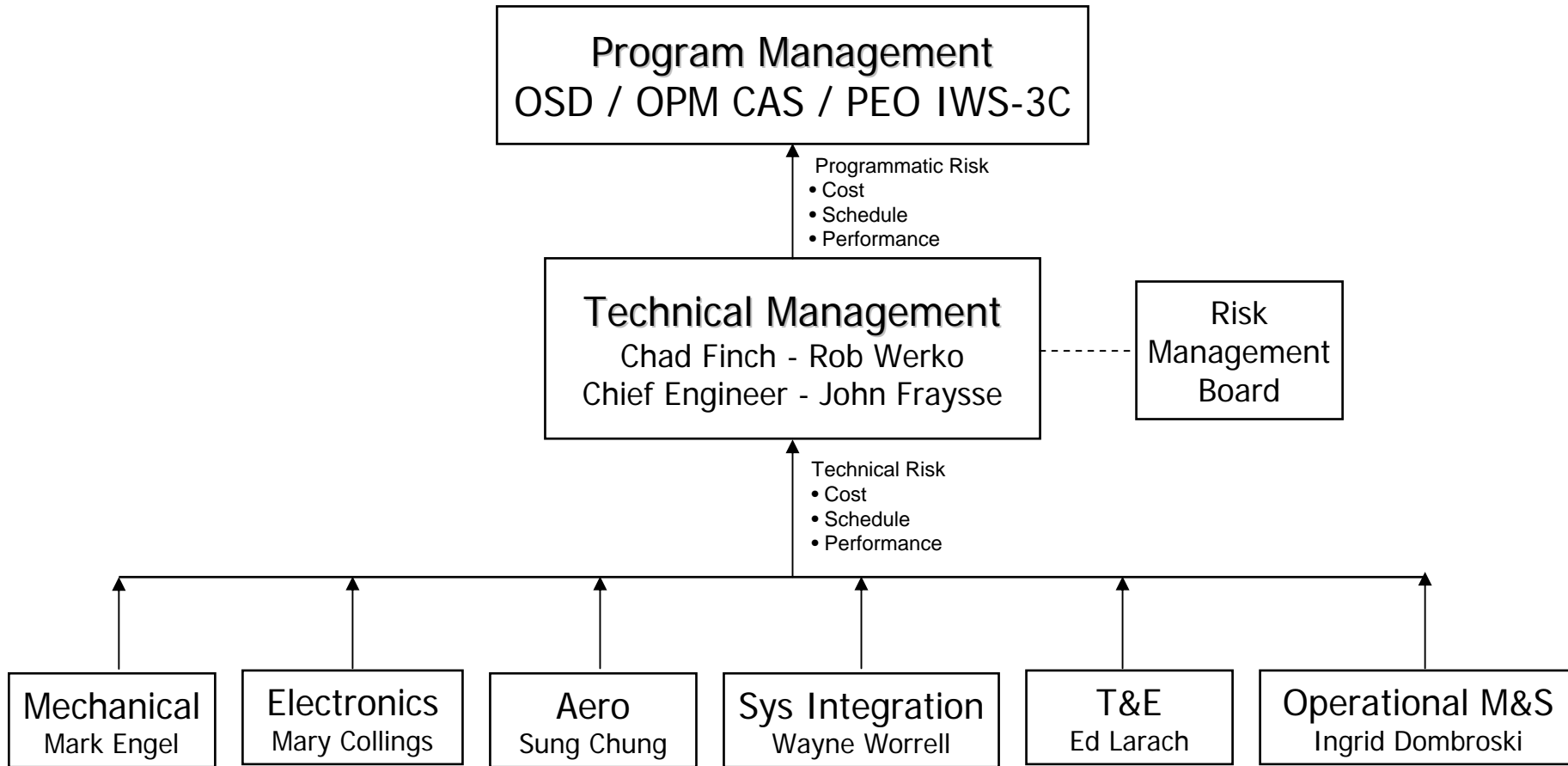
# Requirements



	TD (FY04)	Increment 1 (IC FY07)	Increment 2 (IOC FY10)
Accuracy	50m	50m CEP	50m CEP
Ammo / Zone	M483 / 7R	M795? / 8S	All 155mm / 8S
Munition Type	Inert	HE	HE / DPICM
Fuzing Function	N/A	Prox, PD, ET	Prox, PD, ET, Delay
Setter	Bench	EPIAFS	EPIAFS
GPS	C/A	C/A	P(Y) SAASM
Temperature	Ambient	0 to +120°F	-45 to +145°F
Shelf Life	N/A	7 Years	20 Years



# GIF / CCF Team







# Conclusion



- Closed loop guided demo shot currently scheduled for October of this year
- Gov't plans to hold pre-solicitation conference prior to RFP release
  - Review baseline design and SOW
  - Look for a FEDBUZOPPS announcement this summer