

***NDIA 48th Annual Fuze Conference***  
***Guidance Integrated Fuze / Course***  
***Correcting Fuze (GIF)***  
***(CCF)***



***Chad Finch - NSWCDD***  
*(Code G34: Phone 540-653-5493  
or e-mail [cfinch@nswc.navy.mil](mailto:cfinch@nswc.navy.mil))*  
***GIF Project Manager***

***Robert Werko - ARDEC***  
*(AETC: Phone 973-724-5854  
or e-mail [rwerko@pica.army.mil](mailto:rwerko@pica.army.mil))*  
***CCF DPO***



# GIF & CCF

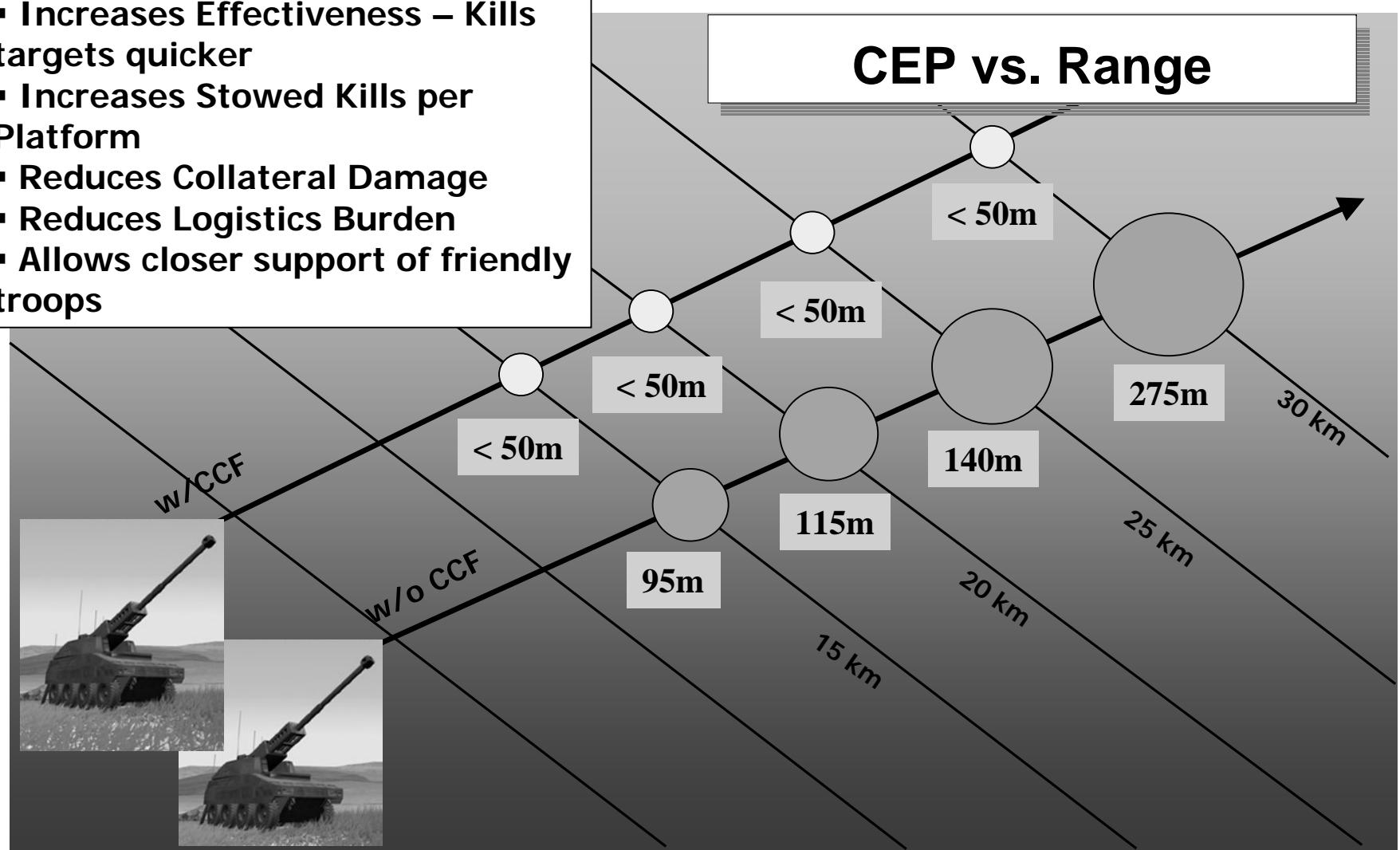


- GIF is a Technology Demonstration Program at NSWCDD Sponsored by OSD-ATL
- GIF is being co-developed by the Army & Navy as the design concept for the Army CCF Program
- US Army is developing a requirement for CCF. OPM CAS is the developer for USAFAS



# Benefits of CCF

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

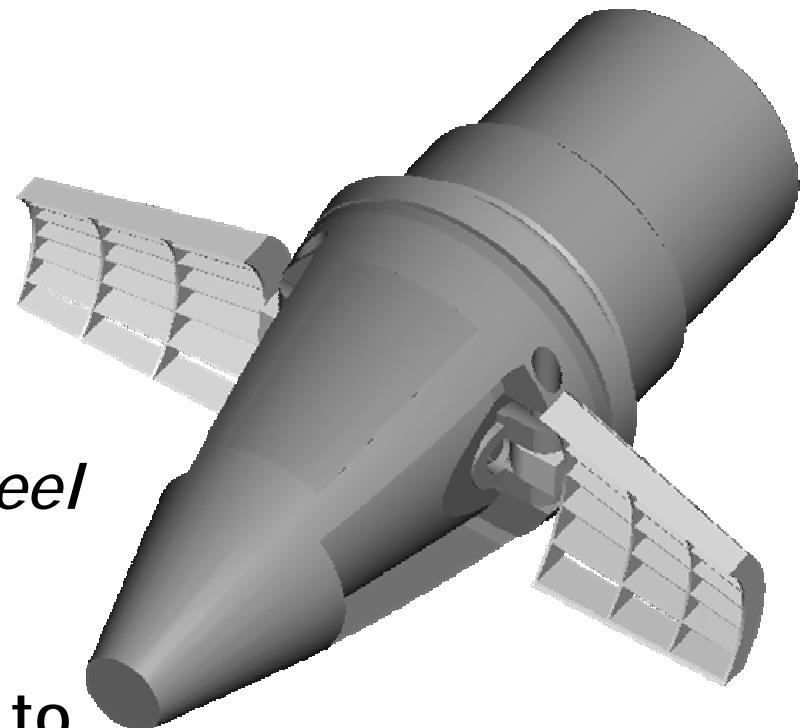


(Major Improvements to Cannon Artillery Effectiveness)



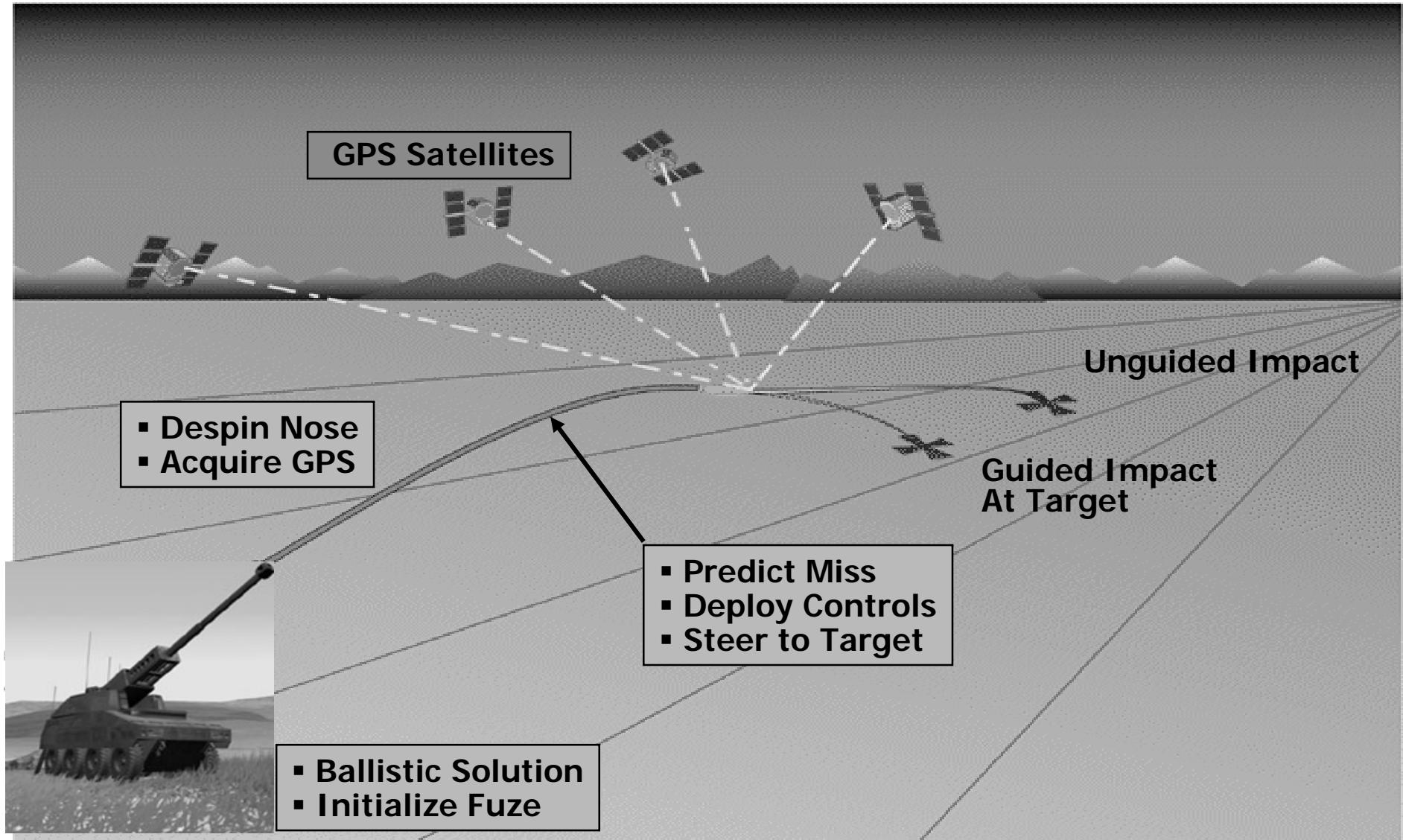
# What is GIF?

- 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.





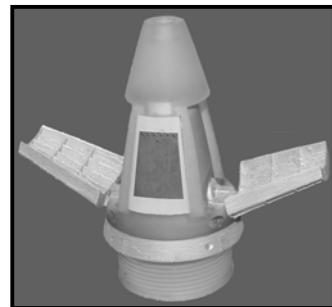
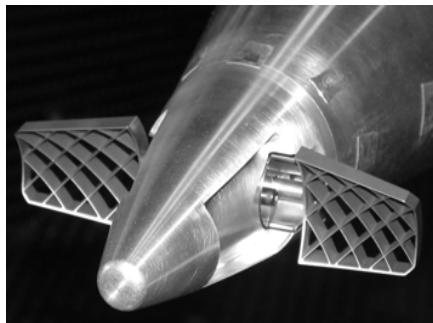
# How does GIF Work?



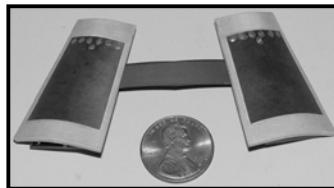


# How does GIF Work?

"Waffle" Fins Provide High Lift without Stall Required to Steer (Heavy) Army Ammo



2 GPS Antennae (Top & Bottom)



Setter Coils and Standard MOFA Radar

COTS Batteries (CR2) & Drive Motor Replace MOFA Battery



Standard Primer and S&A Untouched by GIF Mods

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

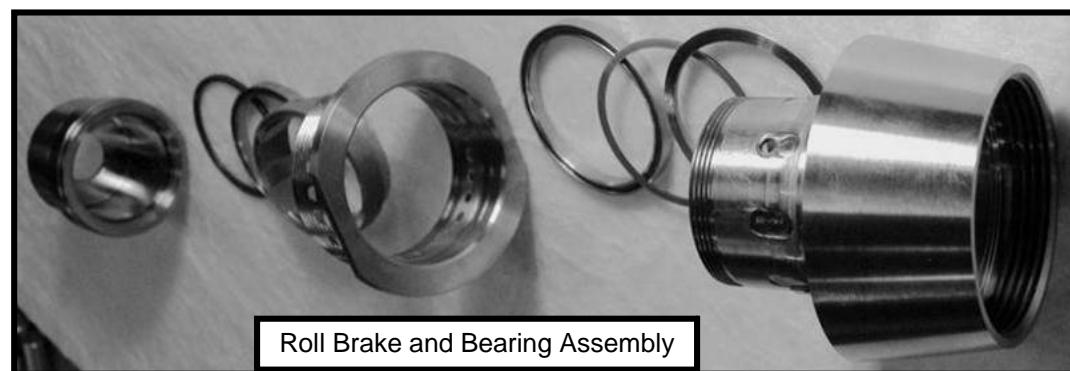
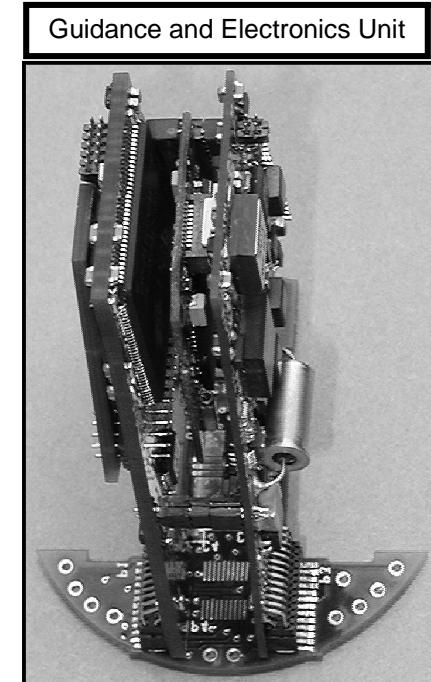
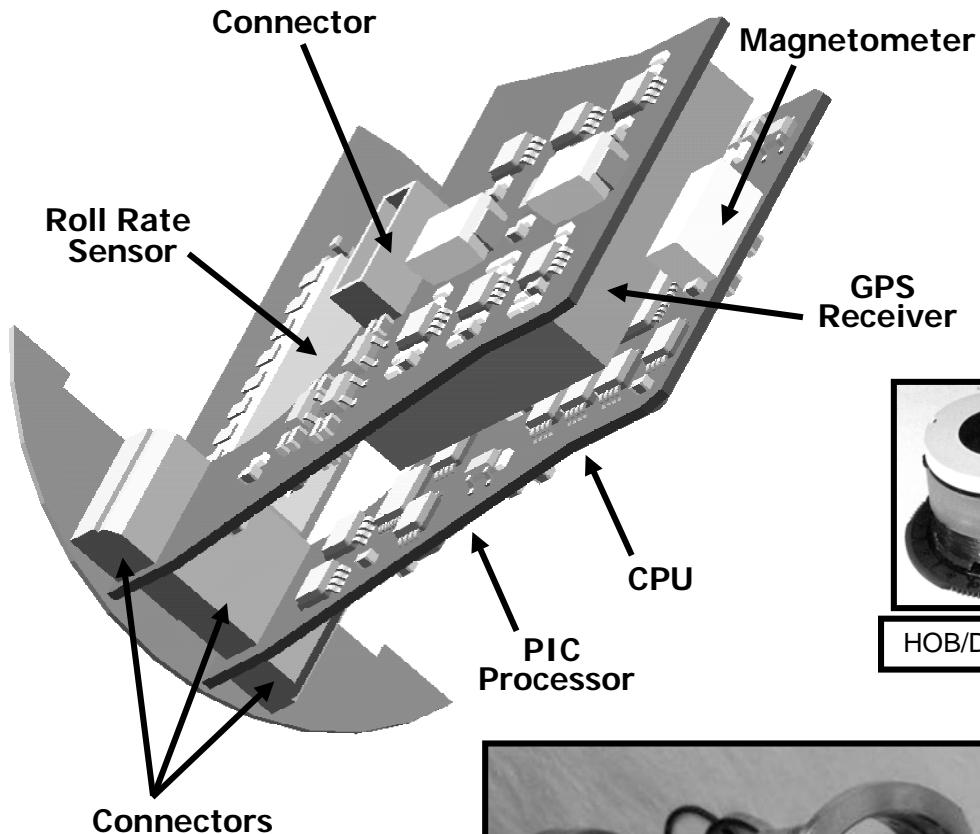
Pair of Anti-Roll Strakes (One on each Cover)



Roll Bearing Test Fuze with Tactical Strakes



# How does GIF Work?



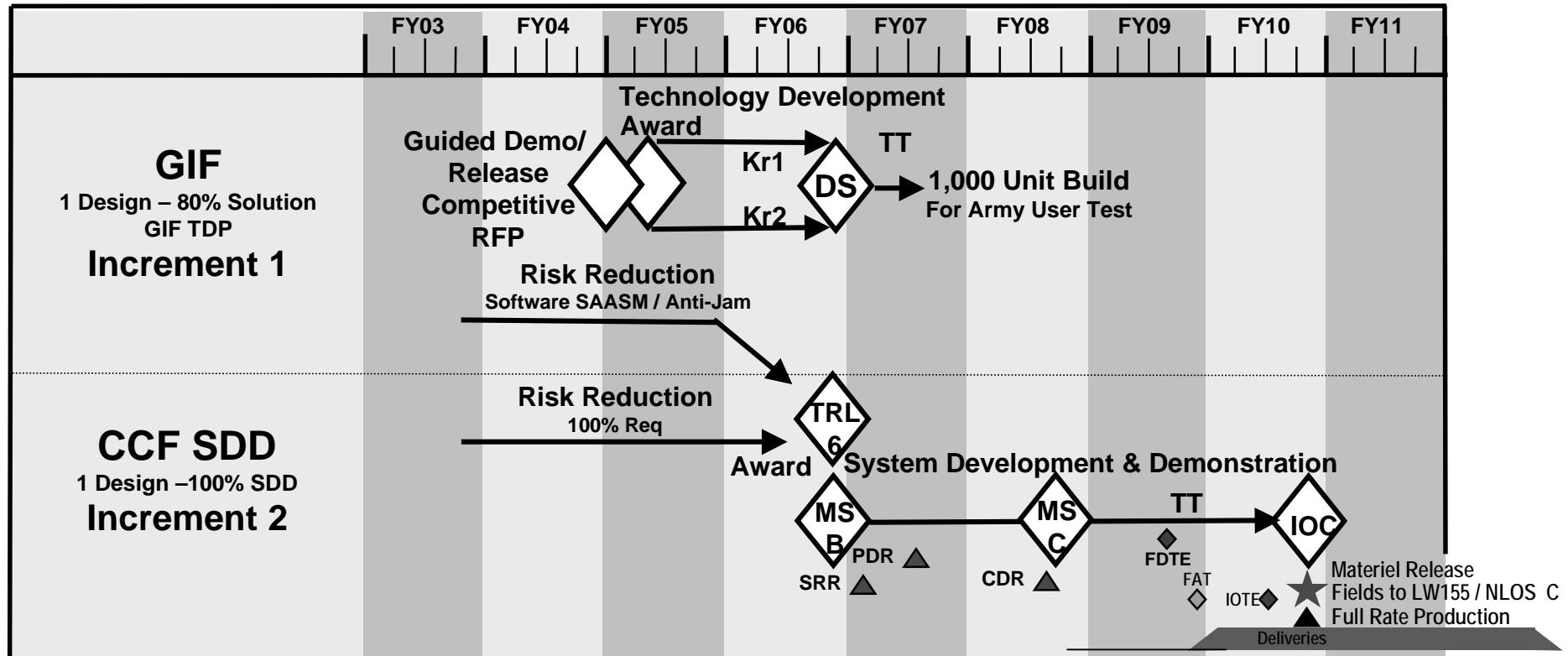


# Program Plan

- Complete Technology Demonstration Phase w/ closed loop guided gun firing
- Award up to 2 Contracts (from NSWC) 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
- 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



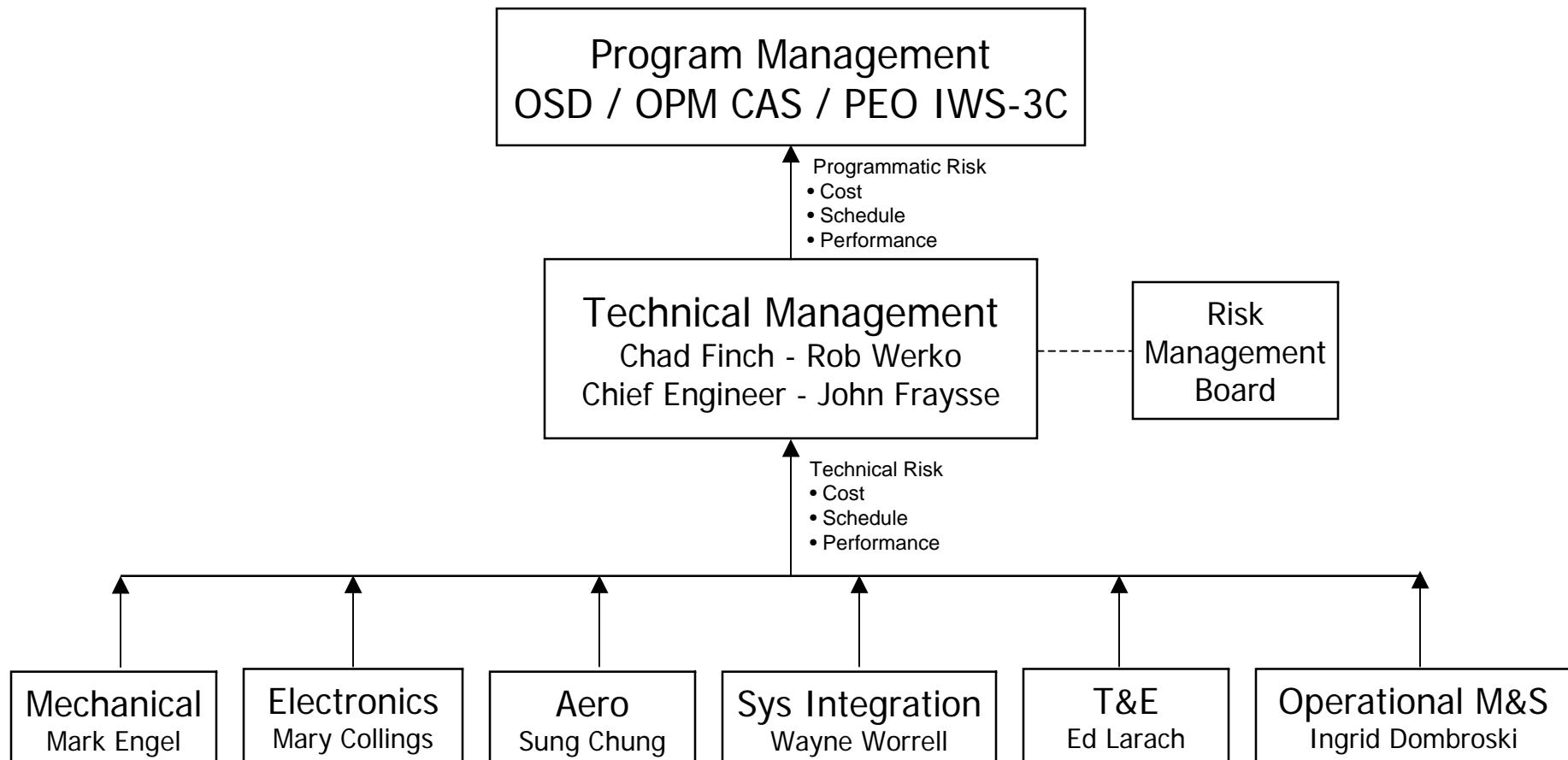


# Requirements

|                 | Demo<br>(FY04) | Increment 1<br>(FY07) | Increment 2<br>(IOC FY10) |
|-----------------|----------------|-----------------------|---------------------------|
| Accuracy        | 50m            | 50m CEP               | 50m CEP                   |
| Ammo / Zone     | M483 / 7R      | M549 / 8S             | All 155mm / 8S            |
| Munition Type   | Inert          | HE                    | HE / DPICM                |
| Fuzing Function | N/A            | Prox, PD              | 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 FedBizOpps announcement this summer/fall