Future Force Warrior
Advanced Technology Demonstration Update

NDIA International Infantry &
Joint Services Small Arms Systems
Annual Symposium

John H. Edwards
FFW Technical Program Office @ ARDEC

Phone: (973) 724-3794
E-Mail: jedwards@pica.army.mil

The Future Force Warrior (FFW) ATD

- Integration program structured to leverage cutting edge technologies
  - Currently in S&T phase
- System of Systems concept maximizing effectiveness of small combat unit (SCU) operations
- Interoperable with Future Combat System
- Early design phase for LW III/ Ground Soldier System

FFW ATD End State

- End State 1: Integrate and demonstrate technologies, system of systems concepts, and development of war fighting concepts that provide a substantial increase in combat effectiveness for a Small Combat Unit operating in the Future Force UoA for transition to the Spiral 2 GSS SDD program. Verify increased effectiveness via analysis and demonstration.
- End State 2: Identify and support the transition of mature technologies for insertion into Spiral 1 GSS SDD (LW) and other PEO programs prior to the ATD completion.
- End State 3: Define the baseline objective GSS architecture, contrast it to mounted/air soldier requirements, identify any gaps, evaluate the modifications required to fill the gaps, provide hooks in the design where appropriate, fill those gaps that have minimal impact on FFW execution, and document the recommended plan forward for the SaaS.

Ground Soldier Spiral Strategy

FCS Spirals FY06 FY08 FY10 FY12 FY14

GSS FY05 FY06 FY08 FY10 FY12 FY14

- - Current Force - - | - - Future Force - -

Dismounted Battle Command System (DBCS)	Land Warrior	Ground Soldier System (-)	Ground Soldier System (T)	Ground Soldier System (O)
Commanders Digital Assistant (CDA)				
Spiral #0	**Spiral #1**	**Spiral #2**	**Spiral #3**	**Spiral #4**
• Commanders Digital Assistant • MicroLight Enhanced Position Location System	• Stryker Integration • Tactical Internet Connectivity • Vehicle-based Battery Recharging • UoA Experimental Force	• Soldier Architecture • Increase Mission Effectiveness • Decreased Weight • Future Combat System Compatibility	• Soldier Architecture • Increase Mission Effectiveness • Decreased Weight • Future Combat System Compatibility	• Integrated w/Platforms • 50# Fighting Load
	Technology Insertion and Complementary Systems	Technology Insertion and Complementary Systems	Technology Insertion and Complementary Systems	Technology Insertion and Complementary Systems

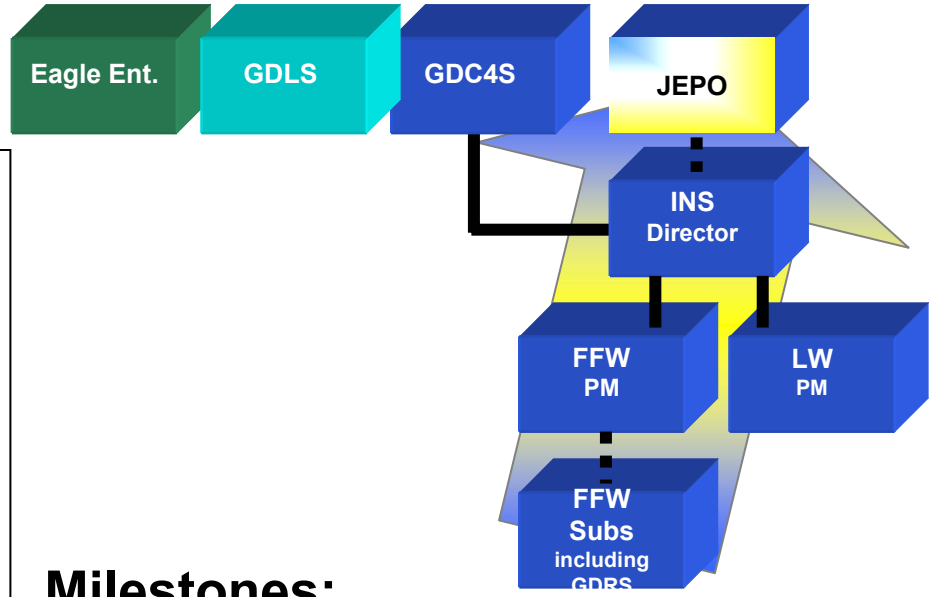
Science & Technology Future Force Warrior

Acquisition Program Metrics

Evolutionary Acquisition Approach with Revolutionary Technology

Land Warrior & Future Force Warrior Consolidation

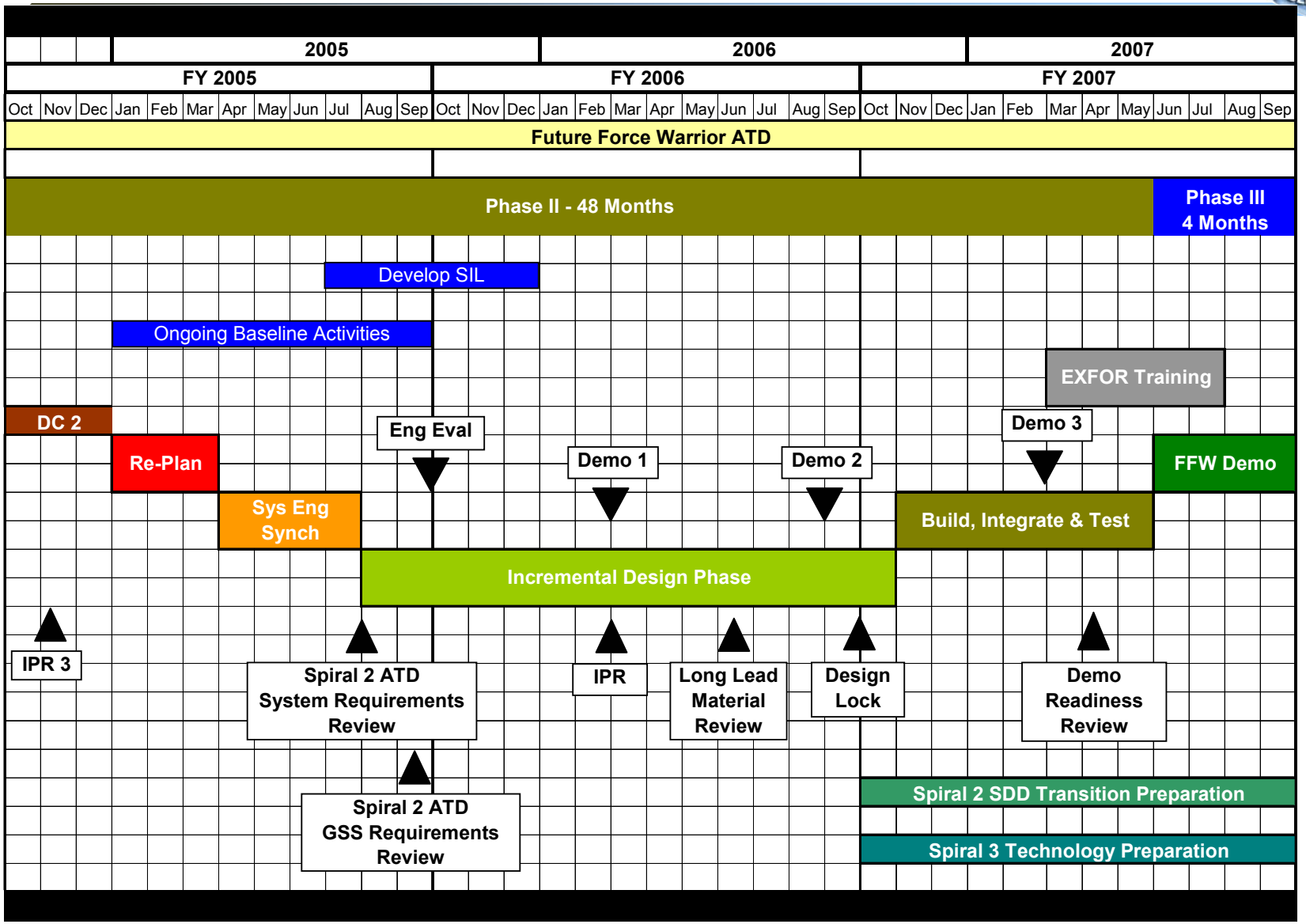
- LW and FFW are now being integrated using the Spiral roadmap to Ground Soldier, with FCS and JTRS CI5 insertions
- Meets the Congressional language for merging programs
- LTI function being moved to GDC4S to facilitate focused spiral implementation
- Cost savings being achieved through re-use, consolidated architectures, and technology insertion prioritization



Milestones:

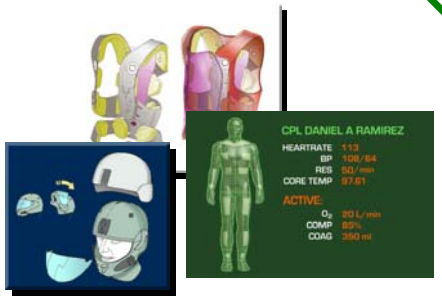
- **Jan 05: Changes in organization, contract structure & technology announced**
- Report to Congress on LW/FFW consolidation submitted 2 Feb 05
- **Mid-Feb 05: Rebaseline Plan developed and approved**
- **31 Mar 05: New program rebaseline defined and implementation started**

FFW Top Level Schedule



Future Force Warrior Capabilities

Integrated Combat Ensemble & Helmet



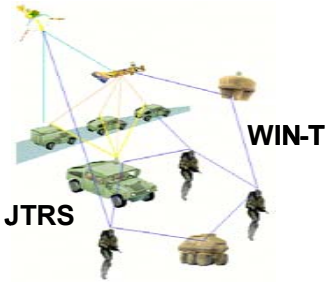
Training and Leader Development

Soldier robotics and Interface with FCS robotic platforms

Lightweight Hybrid Power System

Netted Fires

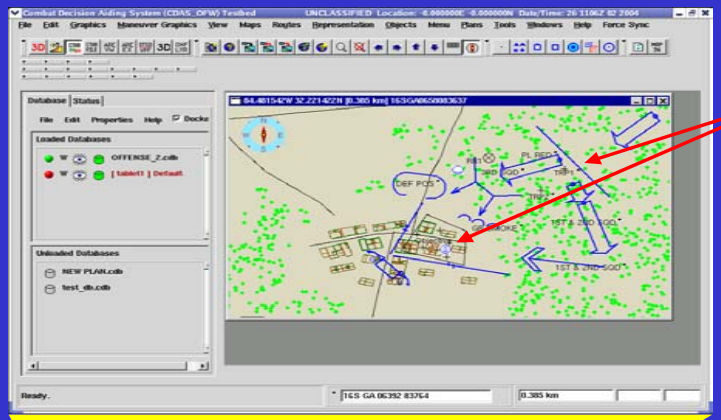
Netted Comms/SA



Demonstrate *REVOLUTIONARY* Soldier and Small Teams capability through integrated system of systems approach

FFW Netted Fires Experiments

- Soldiers used FFW CDAS 25%-30% of the time.
- FFW CDAS performed call for fire 5 times faster then, comparative voice. (both from Paladin)
- Soldier comfortable calling fire with FFW CDAS
- FFW CDAS improved Lethality, Distribution and Management of squad fires, reachback and survivability. (FCS NLOS/PAM/LAM).



Preplanned Targets

Plt Ldr/Sqd Ldr PDA

FFW Soldier CDAS HMD (CDAS Combat View)

Plan developed by Plt Ldr and shared down to Sqd Ldrs, then to all soldiers.

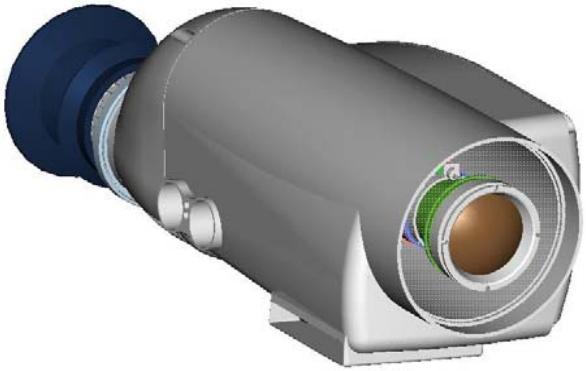
FFW Lethality

- Projected 2007 ATD Product
  - Distributed Capabilities
    - Weapon sensors distributed according to requirements/capabilities of each duty position in the small combat unit
  - Increased Lethality
    - Weapon sensors provide data that enables cooperative engagement, networked effects, and updates to the UDOP.
    - DRS fire control will provide long range geo-location capability
    - Current TM/TAs with Lightweight Machine Gun & Ammunition program and the Fused Multi-spectral Weapon Sight
  - Cooperative engagement
    - Modified XM104 will enable cooperative engagement in the small combat unit
  - Reduced weight
    - Integrated sensors will reduce weight, power consumption, and space claims on the weapon

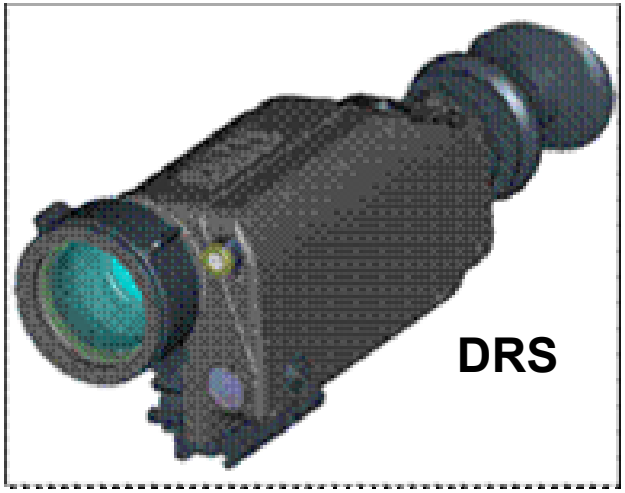
FFW Weapon Sensors

- Activities
  - Assess/integrate lethality requirements within Integrated Combat Ensemble.
  - Modified XM104 fire control systems provided by PM Individual Weapons/L3 Brashear team. Integrate systems into FFW architecture.
  - DRS fire control development through mature componentry for extended range capabilities
  - Fused Multispectral Weapon Sight – FMWS leverage from Center for Night Vision Electronic Sensors Directorate/Northrop Grumman team

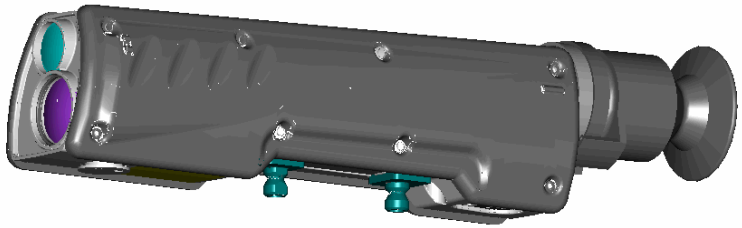
  Lightweight Small Arms Technologies



FMWS

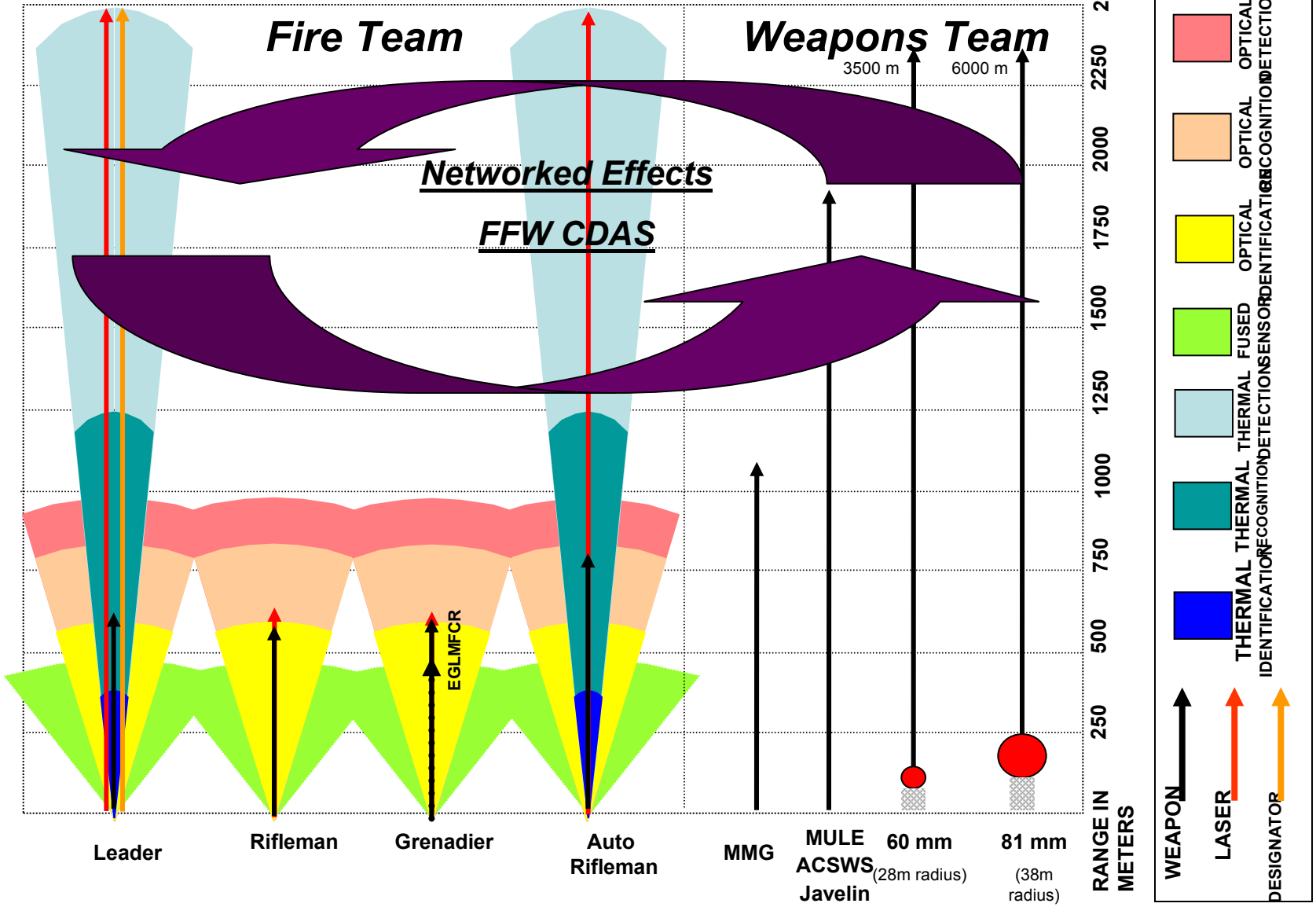


DRS



FFW XM104 Enhanced

Small Combat Unit Lethality Effective Area of Coverage



Summary

FFW helps transform *OPERATIONAL EFFECTIVENESS* by holistically improving the lethality, survivability, mobility, situational awareness and sustainability of the *Soldier* and small combat unit at a system level within the *Future Force*

FFW ATD

Questions