

Non-Lethal Integration and Fires



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Purpose

To provide our vision for the importance of lethal and non-lethal integration and the need to develop new non-lethal indirect fires capabilities.



s, Demolitions & NL Weapons Conf



Agenda

- ✓ **Fundamentals**
- ✓ **FCS ORD Requirements**
- ✓ **Employment Concept**
- ✓ **Capabilities Focus**
- ✓ **Non-Lethal Science and Technology Objective (STO)**
- ✓ **Timeline**
- ✓ **Summary**



Fundamentals

- ✓ **Always been responsible for the staff integration of non-lethal capability**
- ✓ **Been delivering non-lethal for years**
- ✓ **Operational environment is driving us to expand roles and means**

Need evident to expand the staff responsibility through a Fires and Effects Integration Cell and develop new non-lethal capabilities



Current Force: Fires and Effects Concepts

- ✓ **Integration** of joint and multinational fires/effects
- ✓ **Fires and Effects Cells** at Division and above
- ✓ Close supporting fires/effects and counterstrike to **support tactical engagements and battles**
- ✓ **Shaping fires**/effects to destroy key enemy capabilities, isolate battlespace and deny enemy ability to reinforce or resynchronize
- ✓ Fires units with a limited array of **lethal and non-lethal munitions**.

Integration and employment of Army, Joint, and Multinational fires & effects are core competencies



Future Force: Fires and Effects Concepts

- ✓ **Routine integration** of joint and multinational fires/effects
- ✓ **Primary land integrator** of counter-precision campaign to eliminate enemy precision strike capability
- ✓ **Fires and Effects Cells** at all levels
- ✓ Deliberate integration of **lethal and non-lethal effects**
- ✓ **Close supporting fires/effects and counterstrike** to support tactical engagements and battles
- ✓ **Shaping fires/effects** to **destroy** key enemy capabilities, **isolate** battlespace and **deny** enemy ability to reinforce or resynchronize
- ✓ Fires units with a broad array of **lethal and non-lethal munitions** with ranges from line-of-sight to hundreds of kilometers

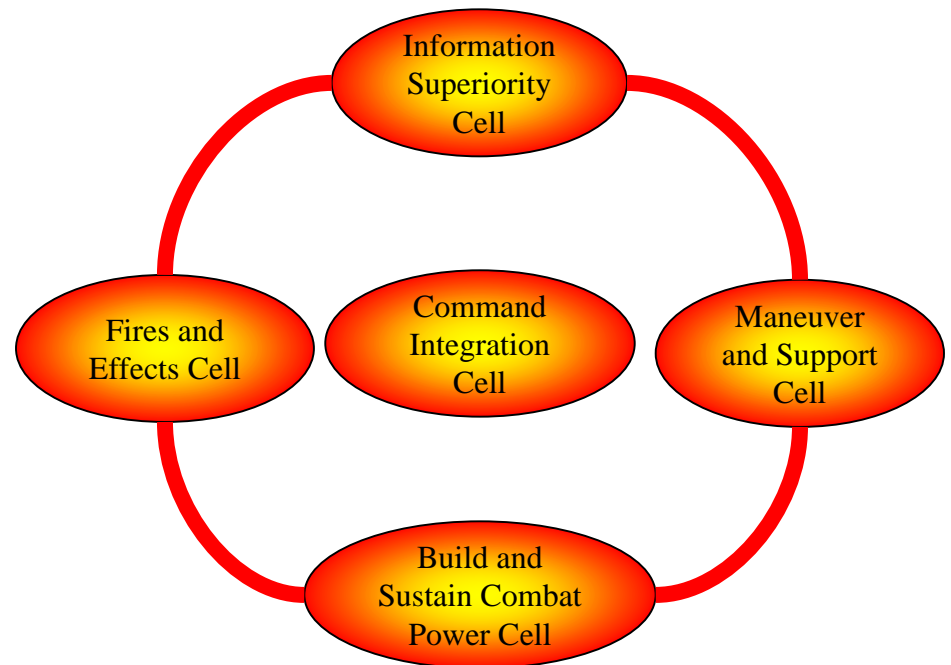
Future Force must have continuous all-weather and all-terrain fires and effects, joint and land-based, enabled by pervasive, redundant target acquisition and ISR



Future Force Staff

Multi-functional cell that coordinates and manages fires and effects for the Combined Arms Unit

- Enabled by emerging communications and automation technologies in the Network
- Reach-back to higher and joint effects
- Synchronizes organic and external support in real-time for optimized fires and effects



FECC integrates lethal and non-lethal effects processes that have been separate in many instances until now



FCS ORD NL Requirements

FCS must employ nonlethal and lethal effects to enhance combined arms effectiveness.

- ✓ Incapacitate, suppress, disperse or engage personnel, places, or things;
- ✓ Deny vehicles access to, use of, or movement through a particular area/point/facility;
- ✓ Deny personnel access to, use of, or movement through a particular area/point;
- ✓ Alter terrain/environmental conditions to favor “blue”;
- ✓ Influence actions of others; and,
- ✓ Separate combatants and non combatants.

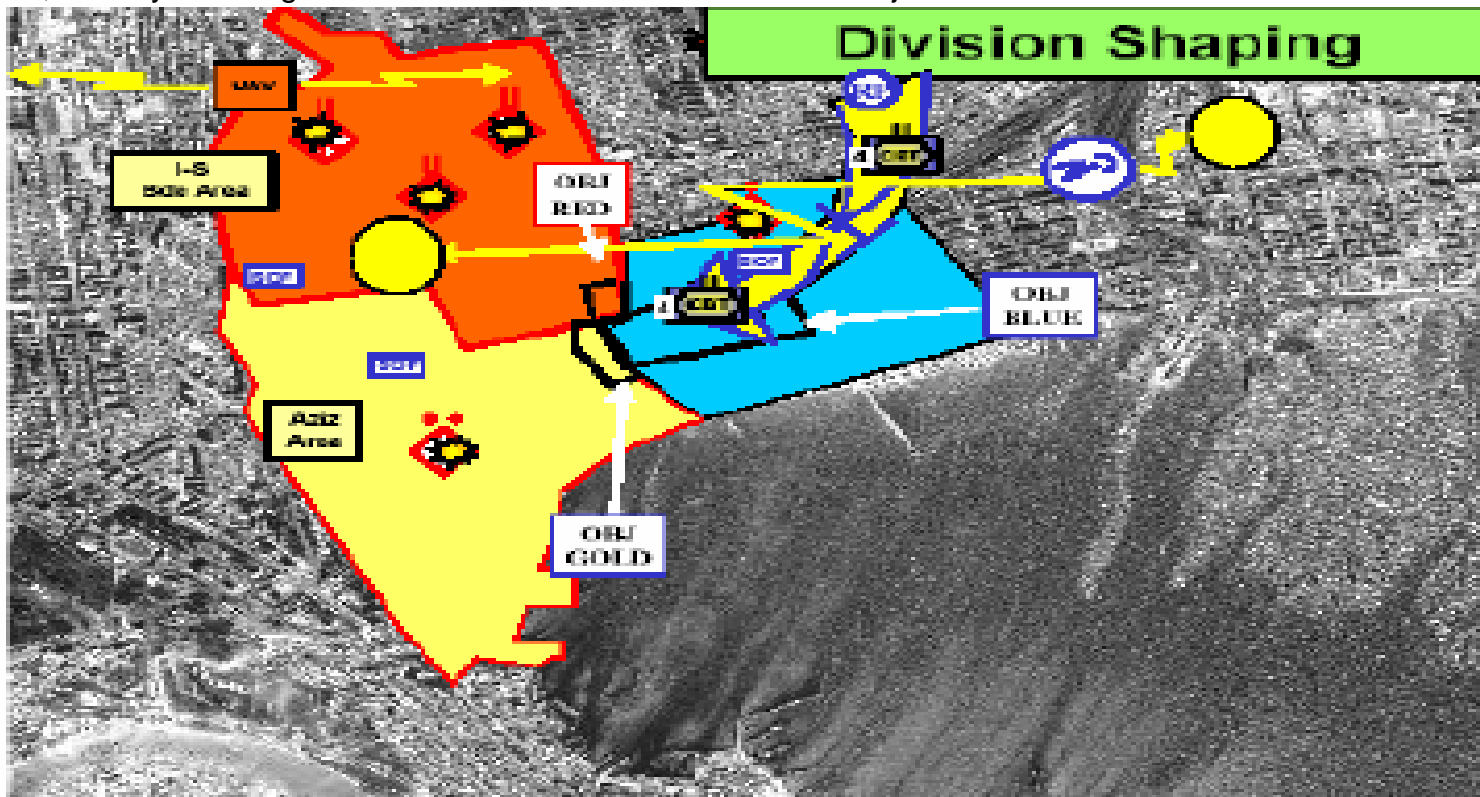
Non-lethal effects are a critical requirement for the Future Force



Operational Employment Concept

Mission: Attack to seize large urban area to neutralize/destroy OPFOR Brigade.

Fires Tasks: Prior to commencement of attack, deliver UGS and IMS with NLOS assets to support intelligence gathering and help friendly forces develop a real-time common situational understanding. Use NLOS delivered smoke and obscurants to suppress battlefield signature of friendly forces and area denial effects to enhance freedom of maneuver along the axis of advance and into the objective. As friendly forces advance, NLOS assets deliver scaleable equipment suppression effects to destroy or degrade enemy command and control assets and capabilities isolating them from supporting units and reducing his ability to defend against friendly forces. Artillery delivered malodorants will disperse crowds and separate combatants from non-combatants, thereby reducing the number of civilian casualties at the objectives.





NLOS NL Capability Areas

- ✓ **Personnel Suppression**
- ✓ **Equipment Disablement**
 - ✓ **Vehicle Mobility Disablement**
 - ✓ **Networked Detection and Sensing**
 - ✓ **Radar/Communication/Electrical Power Disablers**
- ✓ **Area Denial**

Initial developmental focus on Personnel Suppression as greatest pay-off with lowest time and technical risk



NLOS Nonlethal Candidates

(Sandia Nonlethal Artillery Payloads Study)

* Anti-Personnel

- Malodorants
- Flashbang Grenades
- Obscurants
- Irritants

* Networked Detection & Sensing

- Taggants
- Sensors (Unattended Ground Sensors)
- Sensors (Smart Dust)

* Vehicle Mobility Disablement

- Entanglement Devices
- Combustion Inhibitor
- Engine Choking
- Engine Gumming
- Metal Attack
- Thermite Attack

* Radar/Communications/Electrical Power Disablers

- Carbon Filaments
- High Power Microwaves



Science & Technology Objective

- Support of future Army operations and FCS requirements
- Tech base program established for NLOS NL Personnel Suppression munitions
- Slated to begin in November 2003
- Current program vision to support both personnel suppression and area denial



- STO Kickoff
- System Requirements – Establish Technical and Performance Requirements
- Counter Personnel Payload Analysis Selection & Component Design

- Ballistic Flight Test Demo – Component and Sub-System Tests
- Ballistic Flight Test Demo – NL Payload delivery from a 155m Projectile Cargo Round

- Full Up System Demo – Max Range Live Firing of KE Mitigated Projectile. Low Collateral Damage Design (reduced impact energy)

We expect a demonstrated capability in 18 months



Summary

- ✓ **NL applications are not new to indirect fires**
- ✓ **Future Force requires expanded NL capabilities**
- ✓ **NLOS NL capability areas have been identified**
- ✓ **Tech base effort in place to demonstrate NLOS NL Personnel Suppression in 18 months**
- ✓ **Artillery Center committed to providing advanced NL capabilities to Future Force**



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