Outline

• Future Combat Systems Program

• Architecture & Systems

• Acquisition Plan
CSA Statement of the Problem

“We must provide early entry forces that can operate jointly, without access to fixed forward bases, but we still need the power to slug it out and win decisively. Today, our heavy forces are too heavy and our light forces lack staying power. We will address those mismatches.”

-- GEN Shinseki, CSA, 23 June 1999

...Responsive, Deployable, Agile, Versatile, Lethal, Survivable, Sustainable.
## FCS IOC by the End of the Decade

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<td>Concept And Technology Demos</td>
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The Lead Systems Integrator

- **LSI**
  - Is not a type of contract
  - Is a style of operation

- **Conventional Prime**
  - Develops/builds what it can
  - Subcontracts what it can’t

- **LSI**
  - Focuses on system engineering, system integration, system planning and control
  - Gets best of industry to work the hardware
FCS LSI Organization

Future Combat Systems
Program Manager
Jerry McElwee

Deputy Program Manager
Rick Baily

Deputy Program Manager
John Gully

Executive Program Director
Frank De Mattia

Chief Scientist
Edward Brady

Chief Program Engineer
Richard Collins

Strategic Development
Bob Mitchell

SDD
ACE

Supplier Management & Procurement
Business Management

SSEI
Force Requirements

IS&T
Supportability

Combat Systems
Unmanned Platforms

C4ISR
Lethality

Training Systems
Increment II

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FCS Environment

- Significant Government Investment
- Impacts Every Unit and Soldier in the Army
- Shapes Government / Commercial Industrial and Sustainment Base
- Schedule Constrained and Technology Driven

Requires Innovation and Leadership

First True System-of-Systems Development, Production and Fielding
ORD Definition of FCS
The LSI’s Concept of Operations

Field FCS-Equipped Units of Action With Threshold Objective Force Capability by the End of the Decade.

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Robust Capability Within 8.5 hrs of Wheels Down

Platforms Deployed

Radial Range (km)

Total vehicles

100 km zone established and maintained

Time (hours)

Shooter vehicle (total)

ARV
Mortar
BLOS
NLOS-LS
UAV Carrier
Avenger
NLOS

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A System of Systems Architecture is Transformational

Integrated Warfighting
- Train
- Sustain
- Fight
- Deploy and Maneuver

System of Systems Warfighting

+ Integrated Materiel and Infrastructure
- Acquisition and Support Domains
- Expendables
- Major Subsystems
- Weapons and Ammunition
- Platforms
- Soldier Systems
  - Commonality
  - Modularity
  - CAIV
  - Multimission Capability
  - Multiservice/Multirole
  - International Sourcing
  - Acquisition Streamlining
  - ...

System of Systems Materiel

Legacy Forces
- COTS/GOTS
- National S&T
- Army S&T
- DARPA S&T

Strategic Goal: Plan and produce an evolving force with Increment upgrades that implements transformational capabilities by deliberate design and the insertion of advanced and visionary technologies.
Unit of Action: C4ISR Architecture

Joint Common Database

Common Operating Picture

Interoperable export

Information Layer “UA Infosphere”

Logical Database

CROP

RT Synchronization

EPLRS SINCgars Link 4A Link 11 VHF Link 16

Interoperability Domain

WIN-T UE/HQ ESO

JTRS

Computing and Networking

Information Domain

Battle Management
Planning & Intel.
Situation Understanding
Sustainment

Warfighter Interface

Distributed Information Management

Standards-Based Open Software Architecture

Common Vehicle Subsystems

Platform Systems Domain

Network-Centric Warfighting Domain

O&O V1.0

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Persistent ISR

Sensors

- Individual soldier system
- Vehicle mobility/weapon sight
  - LWIR FLIR, EO
- Vehicle warning and defensive aids
  - MWS, EO, glint, laser RF, laser warning
- 5m RSTA mast for R&S
  - LWIR/MWIR FLIR, EO, laser RF, laser warning, Ka band radar
- 2m RSTA mast for ARV
  - LWIR FLIR, EO
- Modular payloads for UAVs
  - MWIR, IICCD, LRF, gated SWIR
    - SIGINT
    - SAR/MTI radar
    - NBC, hyperspectral
Combat Systems

Manned Systems
- ICV
- Mounted Combat System
- NLOS Cannon
- NLOS mortar
- C2V
- Reconnaissance and Surveillance

Unmanned Air Vehicles (UAV)
- Class I & II
- Class III
- Class IV

Unmanned Ground Vehicles
- Armed Robotic Vehicle
- Small Manpackable UGV
- Mule
- NLOS LS System
- Unmanned Payloads
- Unattended Ground Sensors
- Intelligent Munitions System

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Unmanned Systems

Unmanned Air Vehicles (UAV)

- Class I & II
- Class III
- Class IV

- Unmanned Payloads
- Unattended Ground Sensors
- Intelligent Munitions System
- NLOS LS System

Unmanned Ground Vehicles

- Armed Robotic Vehicle
- Small Manpackable UGV
- Mule

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Acquisition Challenges

• Program With Three Independent Variables
  ▪ Schedule
  ▪ Technology Maturity
  ▪ Available Funding

• New Environment for Army Acquisition
  ▪ LSI
  ▪ Politics
  ▪ System of Systems
  ▪ Historical Advocacies

• Commonality

Schedule Remains the Primary Concern
Key Tenets of FCS Development and Procurement

- Create opportunities for Best of Industry
- Retain competition throughout acquisition
- Maintain and shape industrial base for the future
- Achieve substantial commonality at subsystem level
- Facilitate technology insertion
- Leverage on-going government technology base
- Maintain/shape government acquisition community
- Minimize impact to current/projected warfighting capability
- Keep an eye on total program affordability, balancing performance and sustainment requirements
Way Ahead to Procurement Products
Industry Competition Schedule

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<th>FY02</th>
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<td>June</td>
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- **Go-No-Go Decision**
- **MS B Decision**
- **Best of Industry Trades & Demos**
- **Demo BIA’s Extended**
- **Integrator Design BIA’s**
- **Spec Coord**
- **Draft Spec’s**
- **Draft RFP’s**
- **Proposals**
- **Evaluation/ Negotiation**
- **Source Selection**
- **SDD**
S&T for FCS

• The FCS LSI Program is an SDD procurement program, not an S&T program
  ▪ The LSI S&T IPT evaluates and assesses technologies for incorporation into FCS Increments
  ▪ S&T funding will come from the services and DARPA, not the LSI
  ▪ CTD for Increment II will begin shortly after Increment I MS B
  ▪ DARPA and the Army will begin focusing S&T funding for Increment II

• Candidate technologies that are consistent with the O&O and the ORD should seek to become a part of the FCS Increment II SDD

• The current ORD describes the objective capabilities and is the best source of information for future requirements