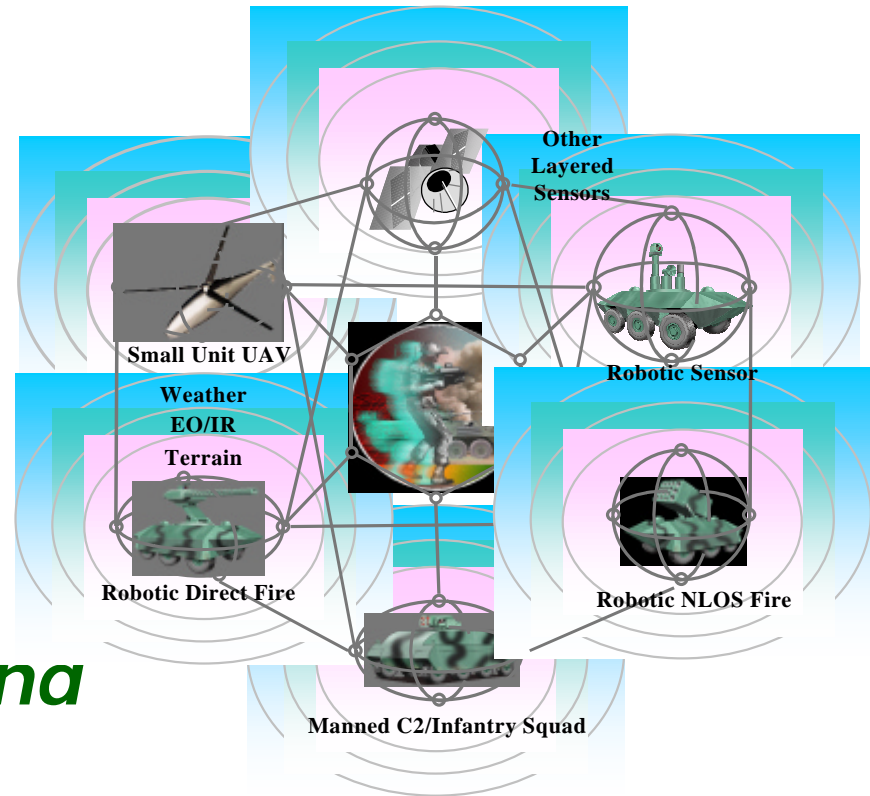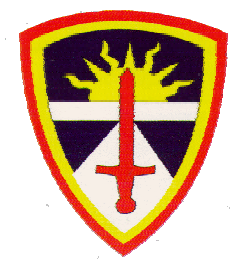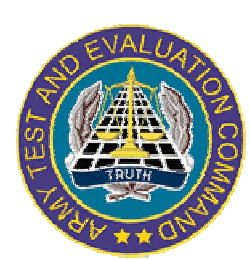# *The Army T&E Perspective*

Presented by
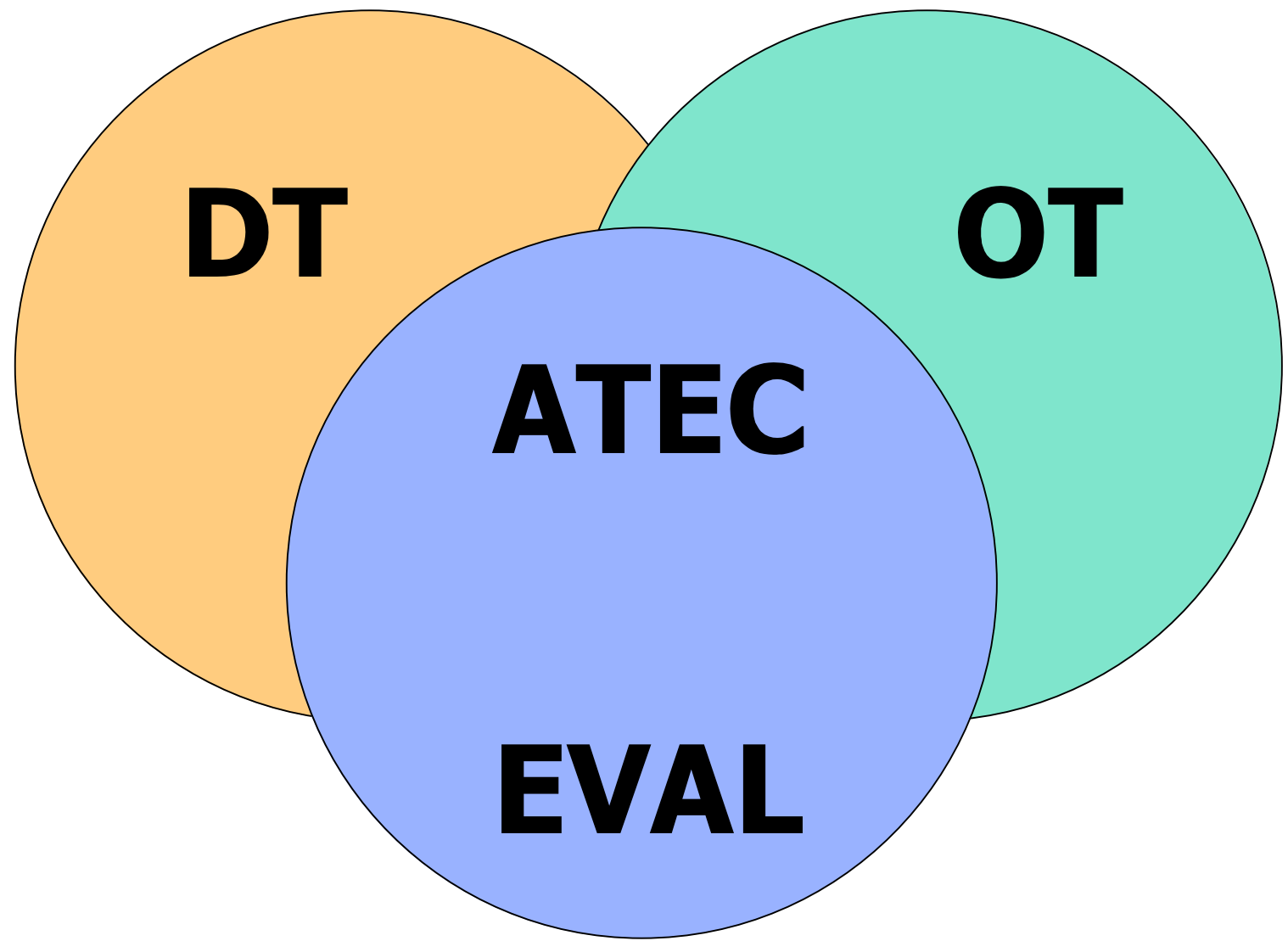
MG Robert Armbruster, USA

Commander,

US Army Test and Evaluation Command

Other Layered Sensors

Small Unit UAV

Robotic Sensor

Weather
EO/IR
Terrain

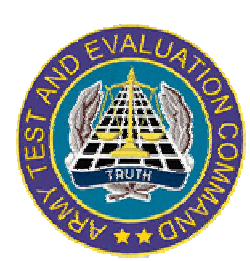Robotic Direct Fire

Robotic NLOS Fire

Manned C2/Infantry Squad

Our Army . . .Our Soldiers . . .Our Equipment

# *Integrated T&E Structure*

DT

OT

ATEC

EVAL

# *The Old Way*
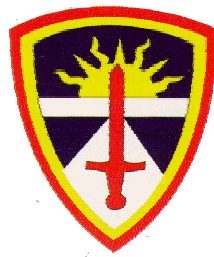
- Sequential Development, Production, P3I
- Platform-centric
  - --ORD   --S/W
  - --Centralized PM   --Instrumentation
  - --T&E   --System Evals
  - --Platform Prime Contractor
- Limited Interfaces
- Survivability Measured by Armor
- Evaluations Using Platform
  - --Effectiveness--Suitability--Survivability
- Unique Range Linkages
- Unique School/User Linkages
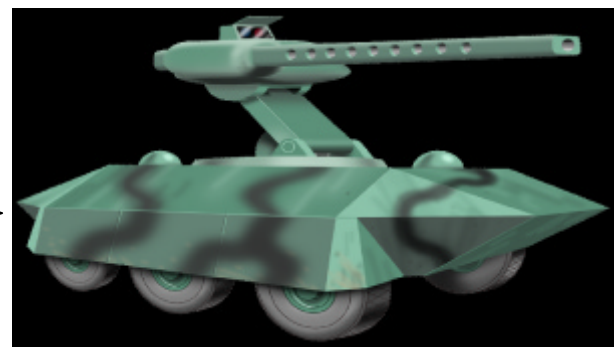- Limited M&S and C3 S/W with Executions
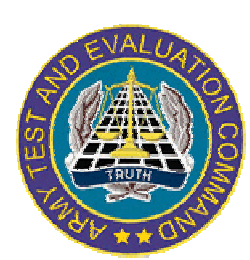
The Current Way
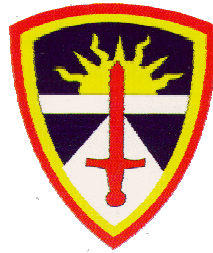
- Concurrent Development, Production, P3I
- Family of Systems (FoS)-Centric
  - --Common ORD Requirements
  - --Common Applique S/W
  - --FoS PM
  - --Common Instrumentation
  - --T&E Based Upon Commonality
  - --FoS Platform Evals
  - --FoS Contractor with Extensive Subs
- Limited Interfaces
- Survivability Measured by Armor
- Evaluations Using FoS and Platform
  - --Effectiveness--Suitability--Survivability
- Multiple Range Linkages
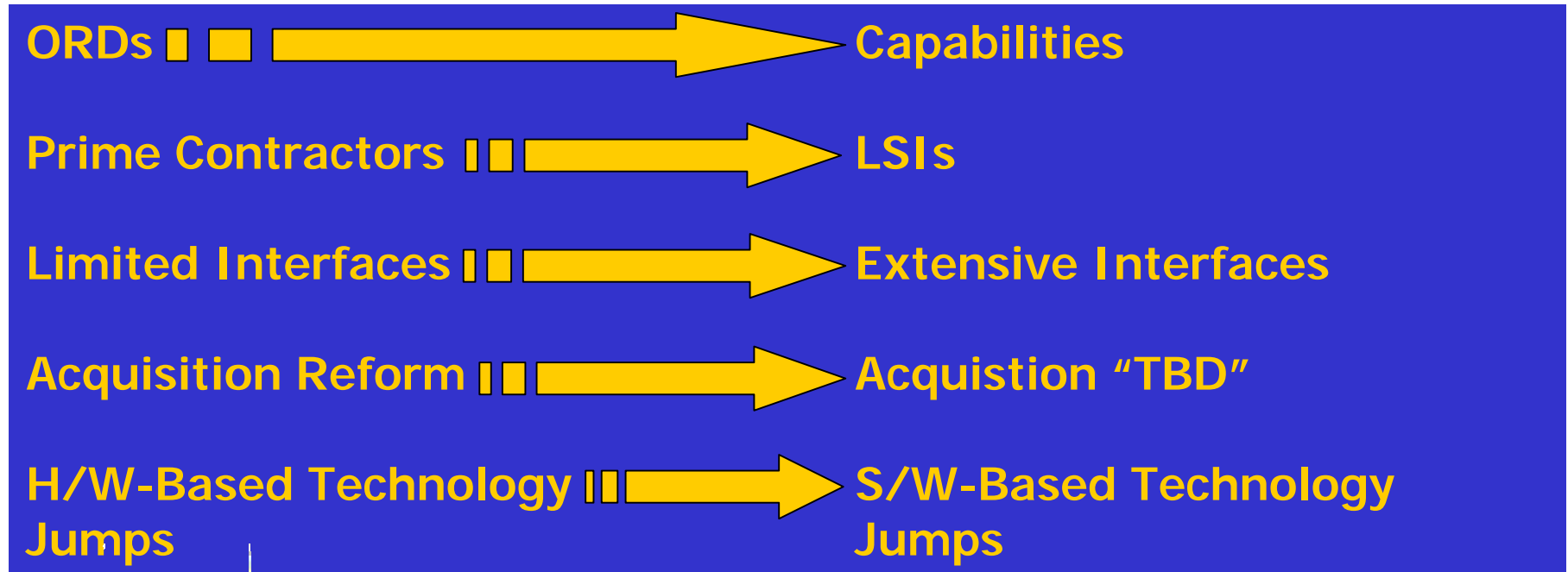- Multiple School/User Linkages
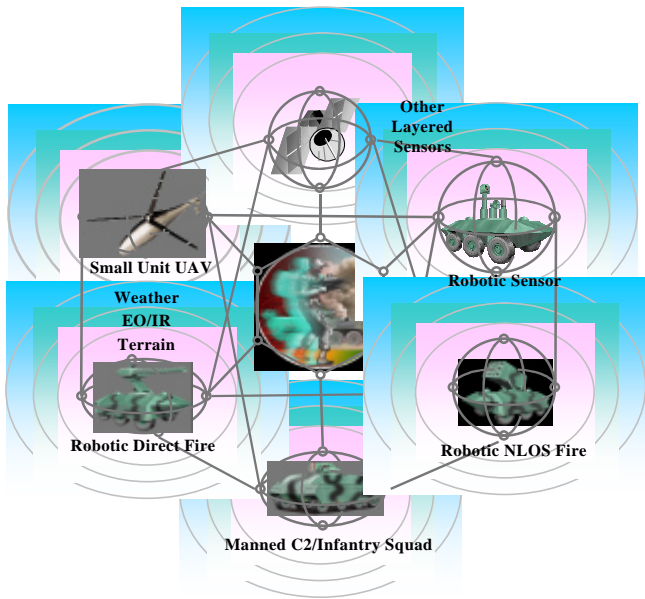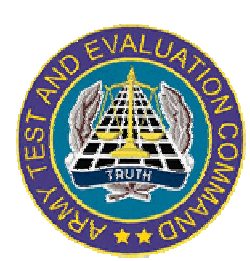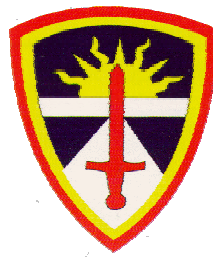- Limited M&S and C3 S/W

What is Changing

ORDs ➤ Capabilities

Prime Contractors ➤ LSIs

Limited Interfaces ➤ Extensive Interfaces

Acquisition Reform ➤ Acquistion "TBD"

H/W-Based Technology Jumps ➤ S/W-Based Technology Jumps
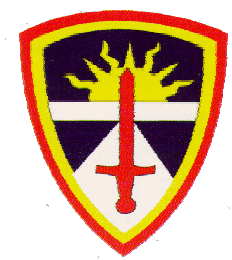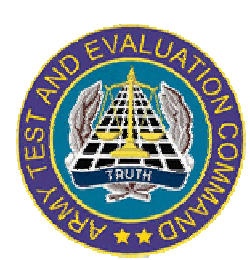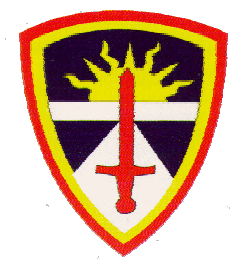
The New Way

- Network and SoS-Centric
  --Capabilities   --Executive
                                                     Networked S/W
  --Decentralized PM   --Embedded
                                                     Instrumentation
  --T&E New Approaches   --Platform SoS
                                                     and Evals
  --LSI
- Extensive Interfaces
- Survivability Measured by New Approaches
- Evaluations Using SoS Platform and Degraded
        States Methodologies
  --Effectiveness--Suitability--Survivability
- Multiple Virtual and Real Range Linkages
- Multiple School/User Linkages
- Maximum M&S, SILS and C3 S/W

Other Layered Sensors

Small Unit UAV

Robotic Sensor

Weather EO/IR Terrain

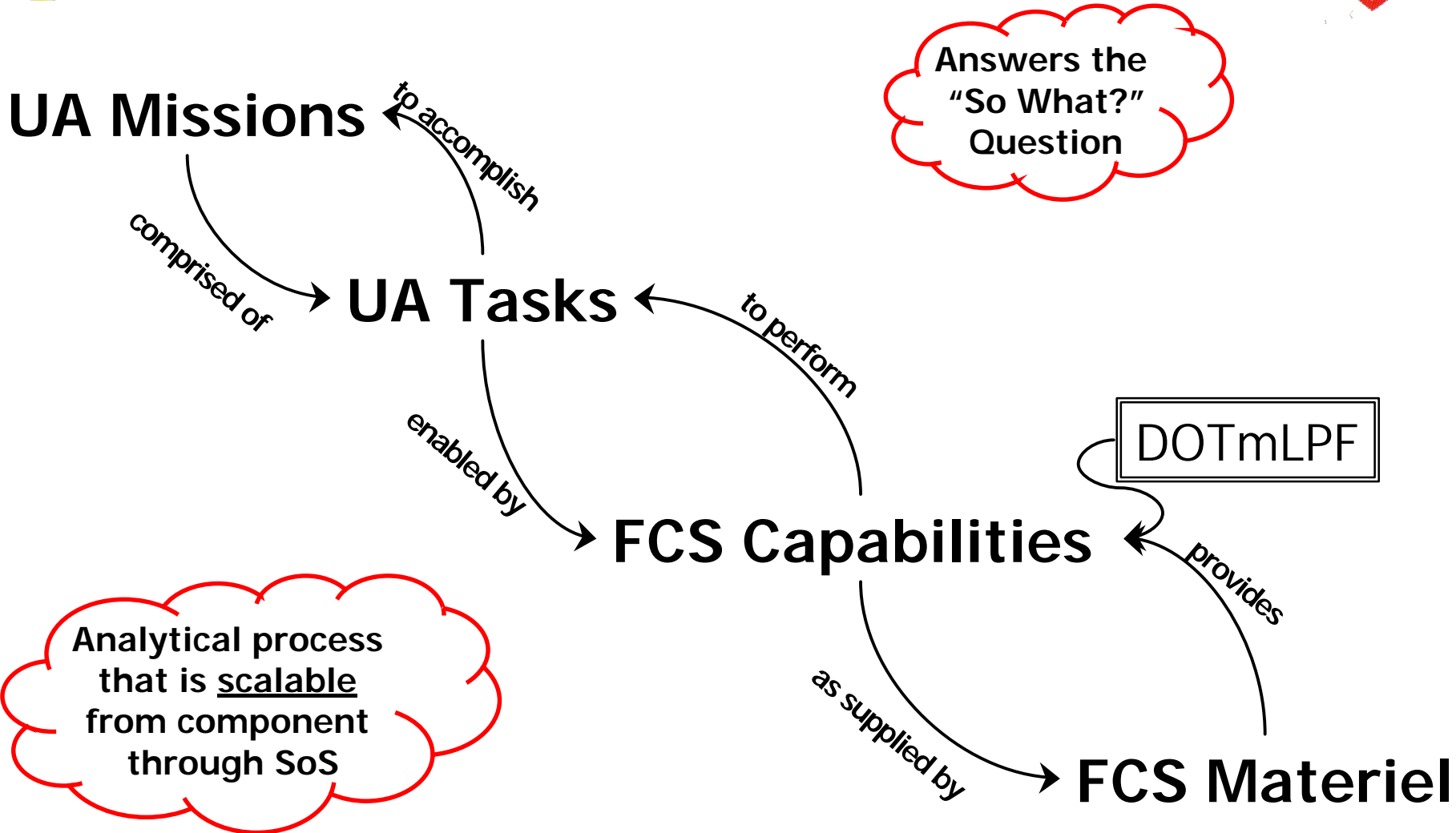Robotic Direct Fire

Robotic NLOS Fire

Manned C2/Infantry Squad

New T&E Approaches
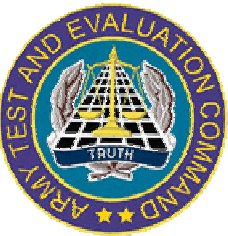
- **Up-Front Involvement with LSI/PM prior to the RFP**
  --Eval Logic--Schedules--Data Requirements--Methodology

- **Simulation OTs** ———————————→ **Live OTs**

- **Extensive SoS SILS**

- **Virtual Ranges and C3 Drivers**

- **Software Blocking**

- **Committed Unit**

- **Integrated Survivability**
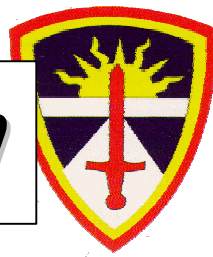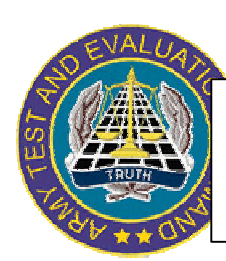
Capabilities-Based Evaluation

UA Missions

to accomplish
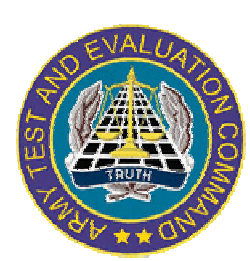
comprised of

UA Tasks

to perform

Answers the "So What?" Question

enabled by

FCS Capabilities

DOTmLPF

provides

Analytical process that is <u>scalable</u> from component through SoS

as supplied by

FCS Materiel

Integrated Survivability

Detection Avoidance

Stay Out of Detection Range

Kill Enemy Prior to Detection

Avoid Detection

Avoid Acquisition

Avoid Being Hit

Avoid Penetration

Mobility

Lethality

C4ISR

Hit Avoidance

Live Fire

Avoid Kill

We Are Making Progress

THE NEXT STEP IS FCS

ARMY TEST AND EVALUATION COMMAND