



**Army Space and Missile Defense Command**

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# **STK USER CONFERENCE JUNE 2004**

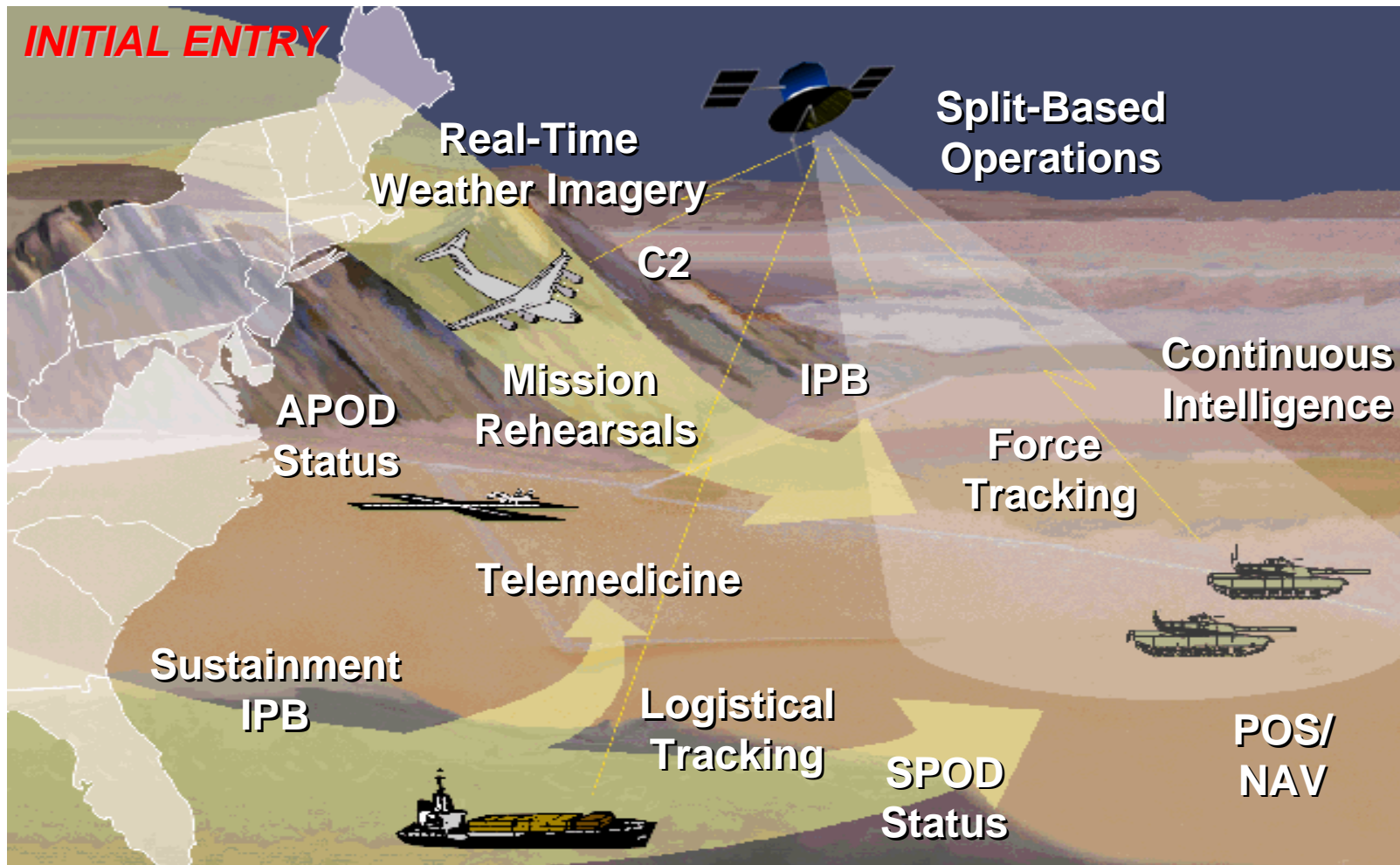
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*"Secure the High Ground"*

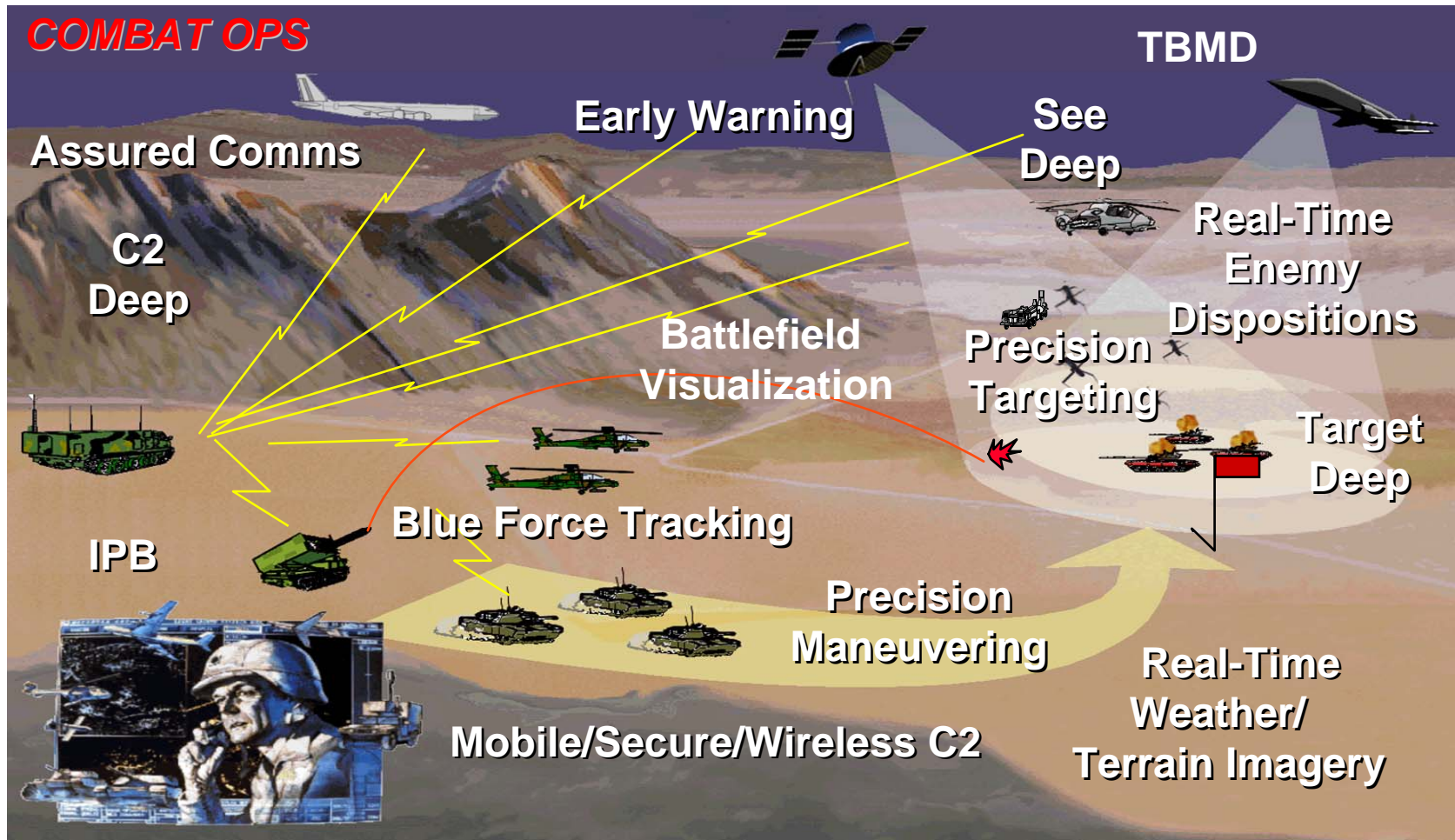


# THE ARMY IS DEPENDENT ON SPACE





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## BATTLE LAB MISSION

### **MISSION**

Deliver Space and Missile Defense innovations to the warfighter through Advanced Concepts & Technology insertion, prototyping, experimentation, modeling and simulation, and operational analyses.

### **VISION**

The Provider of Choice for Space and Missile Defense future capabilities.

### **FOCUS**

Space and Missile Defense capabilities seamlessly integrated into warfighter operations.



## EXPERIMENTS DIVISION

- Plan, prepare, conduct, and analyze space technology experiments and demonstrations.
- Program and execute ASED P.
- Provide DTLOMS support, equipment experimentation, and modernization to ARSST/Space Forces.
- Expedite delivery of space-based products to the joint warfighter.
- Provide rapid prototyping of space-based technologies during crises and contingency operations.
- Support SMDC and Battle Lab GBMD efforts.



## SSE BACKGROUND

- Strike Force development in 1999.
- AUSA OCT 99.
- Interim SOOQC, summer 2000.
- 1<sup>st</sup> generation used in JCF-AWE 00 (first time at Division level).
- Full Development began in fall 2000.
- Testing begins with commercial company in fall 2000 (SATURN).
- MAR - APR 2001, IDIV O&O written, basis for SSET requirements.
- SOS ID'd as baseline tool for SSE, development begins in fall 2001 on SSET (requirements derived from IDIV O&O).
- Millennium Challenge 02, 82d ABN DIV Cdr wants SSET for current ops, supports space for division ops.
- Operational use in OEF and OIF.



# SPACE SUPPORT ELEMENT (SSE)



HMMWV w/Shelter



Space Comms

Space Tools





# SPACE OPERATIONS SYSTEM (SOS)

- V1 - BattleScape, WOTS, BRITE, TRS, SBMCS, SMAT, OMEGA etc.
- V2 - STK, PDSM, ELT3500, Falconview, SBMCS, SMAT, etc.
- Refinement continues for Space analysis then visualization tool.
- Future - STK v 6 (includes data feed integration w/AWarE).
- ENTR provides direct “space” feed to STK.

- TDDS
- TADIXS-B
- TIBS

ENTR = • PCI bus



AWarE

JRE

Link-16/TADILJ

TDDS

TIBS



# SPACE COMMUNICATIONS



## Space Technology Utility Research Network (**SATURN**)

- IPSAT
- Ku Band
- 256kb -1MB Uplink/up to 9MB downlink
- 1.2m - 2.4m Dish Antenna
- Secure broadband
- Redundant communications
- Pending DoD approval for Secure Network
- Fly-away system





# SPACE OPERATIONS OFFICER (FA40)

## The Vision

A core of Space Operations officers in tactical, operational, and strategic leadership and staff positions, providing operational and technical space expertise to enable Army and Joint Warfighters to achieve Information Dominance. FA 40 officers provide commanders a specialized capability for planning, developing, training, and integrating space capabilities to support military operations in the 21st Century.

COMMUNICATIONS  
COMMAND & CONTROL

POSITION  
NAVIGATION

JOINT SPACE  
ACTIVITIES

TOOLS  
ANALYSIS



WTEM  
SATELLITES

INFORMATION  
OPS

TBMD/GBMD

SATELLITE-BASED  
INTEL COLLECTION  
&  
SURVEILLANCE OPS

Space Operations Officers will use their expertise to focus the benefits of space-based capabilities on the right warfighter--at the right time.



## SMDC OPERATIONS CENTER

- Center for Army Strategic Command (ARSTRAT) Operations.
- ASCC to USSTRATCOM.
- Reach-Back vs local capability.
- Technology show-piece (if it works and is value-added).
- Organic space analysis capability - view missions (DCG, CG etc.)



# STK COMPARISON

## Major Decision and Comparison Factors

- METL Support - how many METL tasks does STK support?
- Cost - cost effective for value added?
- Capability - What does it bring to the *tactical* fight?
- Development - how receptive is the contractor to development? What's in current pipeline?
- Data Feeds - does it receive 'bucket load' of space/tactical/theater feeds?
- Propagator - does STK use other propagator besides own?
- Certification for Use - potential issues?



## COMPARISON

- Current SOS uses BA BattleScape - limited future support, not CJMTK compliant.
  - Test baseline - ARSST METL (22), scenarios designed (<, >, = SOS capabilities).
  - Two SOS - one w/current configuration, one with STK added.
  - Standard data set - NGA maps, DTED, CIB, imported to both computers.
  - Near real time image geo-rectified and imported by both SOS computers.
  - Lat/Long data for selected ground locations used as sites or turn-points on both SOS's.
  - SCN and current two line ELSET provided.
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- STK accomplished ~ 76% of identified tasks.
- AWarE and STK in conjunction to work additional seven tasks.
- Based on enhancements in v 5 and identified development (current & future) for v 6 (plus ease of use) decision to use STK - was approved for use in SOS/SSET (*acceptable risk*).



# TRAINING

- Developing training course.
- Type - use current contractor (as applicable), use custom, overview for FA40 course, refresher.
- User - FA40, ARSST as identified, SMDC-OC as identified, ARSTRAT staff.
- Version - how much training for w/ v 4, 5, 6?
- Location - Colorado Springs & Global.
- Ease of Use - not easy, how much GUI customization alleviates long-term training?



## STK USE

### Constraints

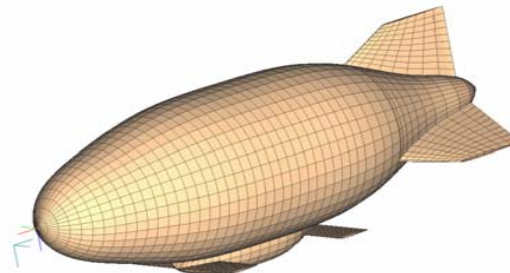
- Environment
- Classification
- Data accessibility
- Accreditation

### Use

- JPOW VIII
- 193d, 3ID, 101st ABN DIV, 10th Mountain DIV etc. (fielding plan)
- RS05 - FOCTOC

### Future

- HAA
- JBFSA
- Other





## SUMMARY

- Demand for space services and products is increasing.
- Army Unit of Action/Employment will use space capability.
- Space force enhancement at all levels including tactical.
- Utilize best mix of hardware and software.
- Be responsive to warfighter.
- Work in Joint arena - requirements w/USAF, Navy, USMC.
- STK is next generation tool, today.