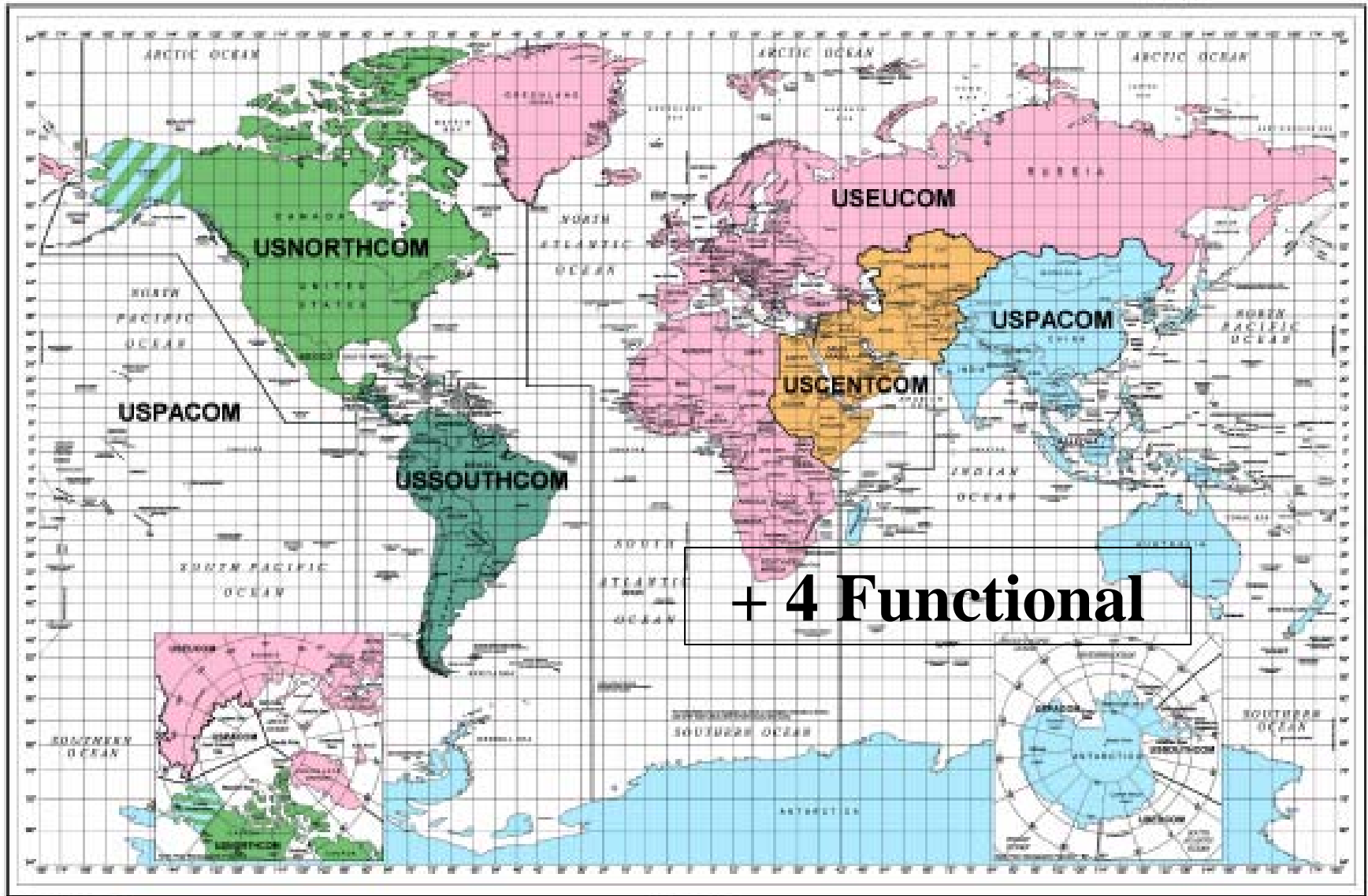# *US Joint Forces Command*

Presentation to NSF - DDDAS 2006 Workshop

19 Jan 2006

Dick Ross
Experimentation Directorate
Russ Richards
Office of Research & Technology Application
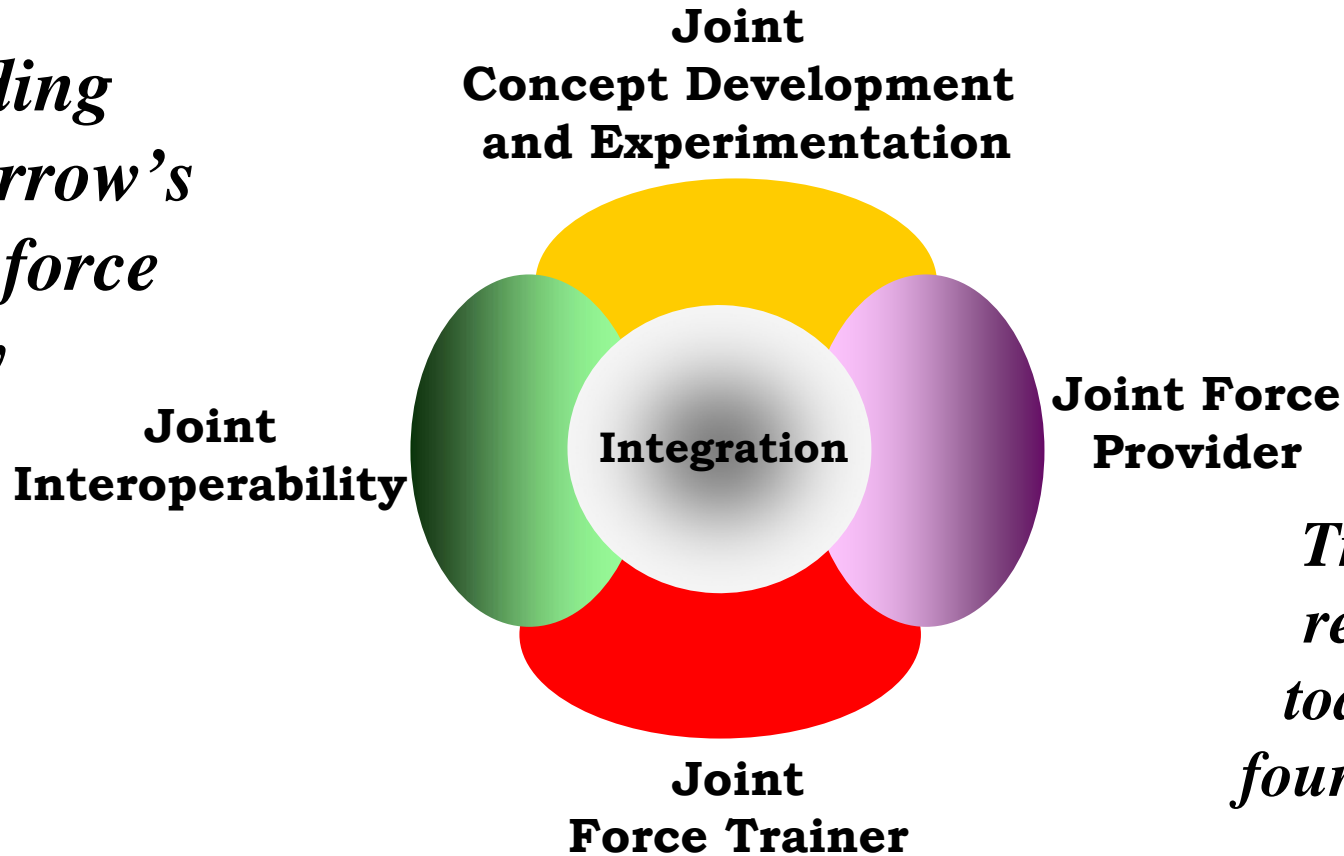*U.S. Joint Forces Command*

Combatant Commands (c. UCP-2004)

World map showing combatant command areas of responsibility: USNORTHCOM, USPACOM, USSOUTHCOM, USEUCOM, USCENTCOM, USPACOM

+ 4 Functional

JFCOM's Transformation Engines

Building tomorrow's joint force today

Joint Concept Development and Experimentation

Joint Interoperability

Integration

Joint Force Provider
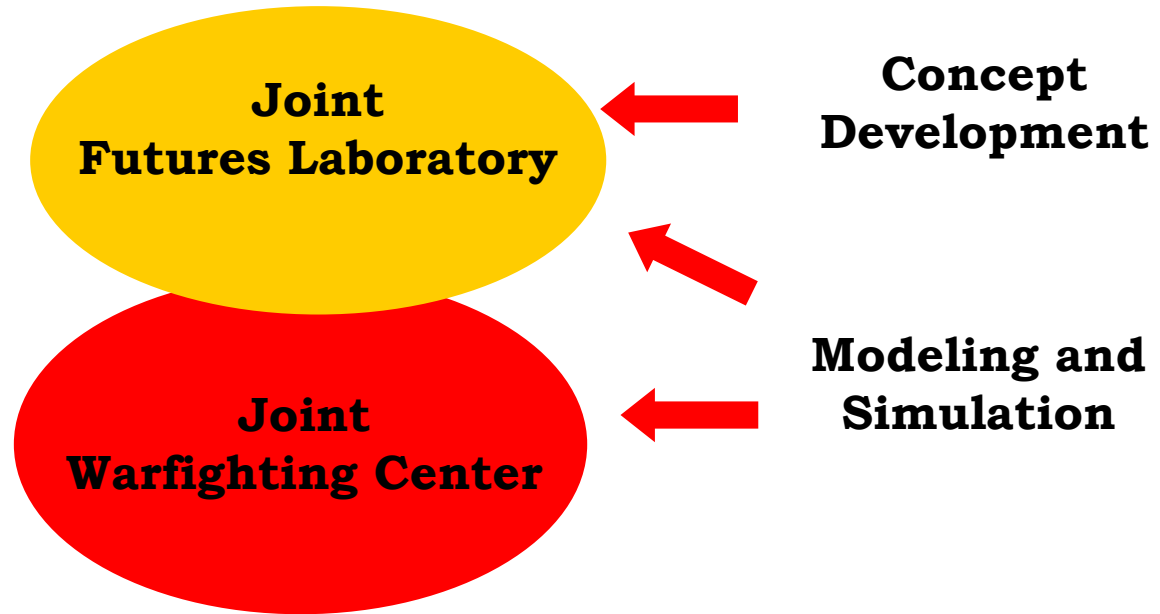
Joint Force Trainer

Trained and ready forces today are the foundation for tomorrow

Our clients are **<u>TOMORROW's</u>** joint warriors!

JFCOM Future Development Centers

Developing tomorrow's joint force

Joint Futures Laboratory ← **Concept Development**

Joint Warfighting Center ← **Modeling and Simulation**

NSF Partnering Interests

Many of the DDDAS funded projects have application to JFCOM M&S and Concept Development efforts:

1) Interested in the longer term projects – multi-year

2) Projects with strong potential to produce products we can use to enhance our M&S tools

3) Likely to invest contract support to transition enhancements that have clear application to infrastructure, decision aid or other national security applications – the SEAS effort is a good example

NSF Partnering Models

Two broad models for collaborative partnering with JFCOM in research areas of mutual interest:

• Providing access to PIs of real world data, code, and testing facilities for DDDAS research applications

> Such as:
>> Command & Control
>> M&S models
>> G-2 (process), JWARS (constructive), JSAF (HITL)
>> Networks – posted data
>> Model expertise

• Supporting industrial collaborations - potential is there for subcontracting funds to PIs that support specific development efforts

Example: Building on DDDAS efforts

History of using distributed "synthetic" Human in the Loop M&S. The Command started developing complex experiments using DARPA STO M&S project, evolved into Joint Semi Automated Forces (JSAF).

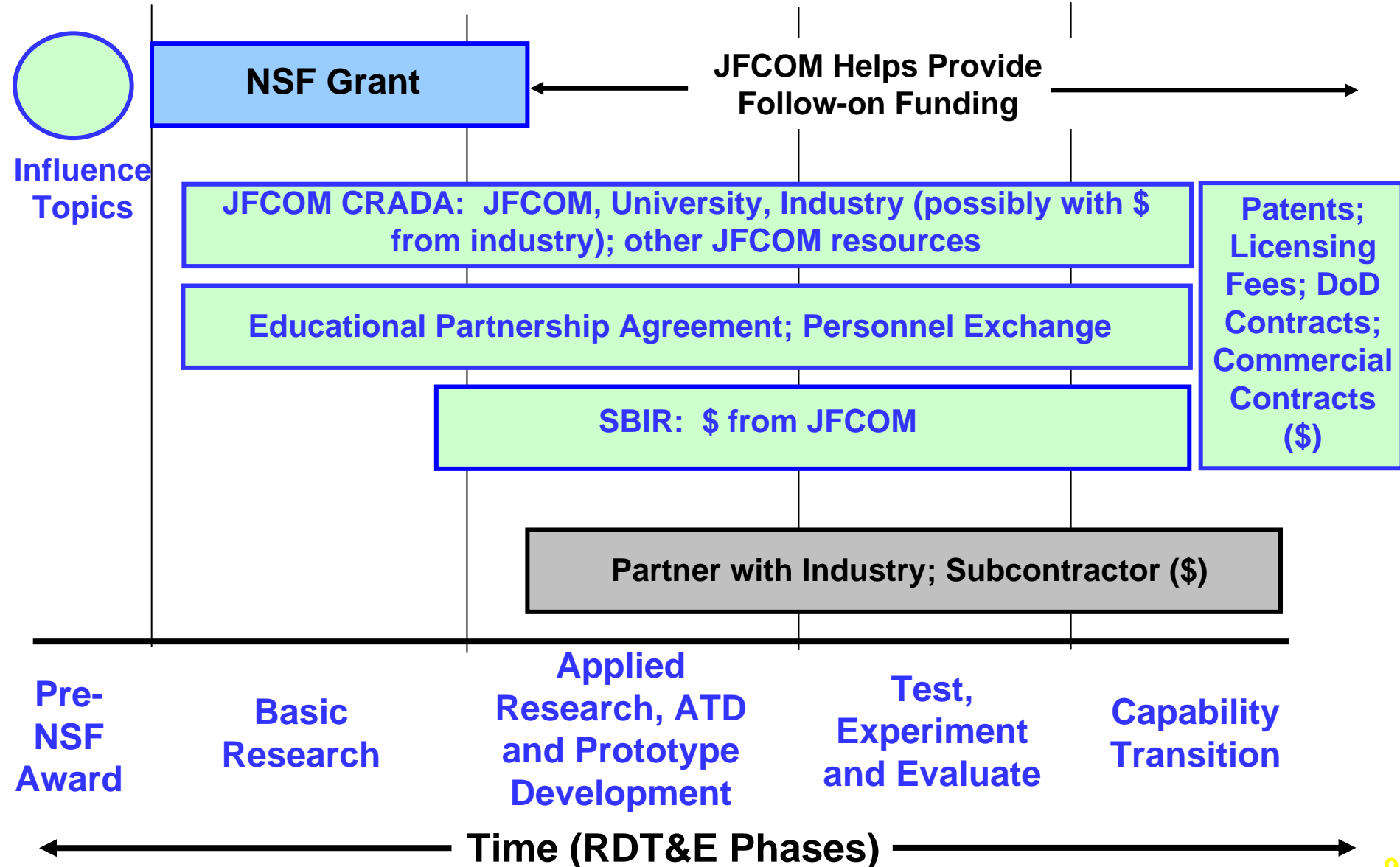|	
1999	JFCOM - fist major experiment with JSAF - JEXP 9901
2000	NSF funds initial efforts for Synthetic Environment for Analysis and Simulation (SEAS) – Purdue
2001-2003	NSF supports SEAS as part of evolving DDDAS Effort
2002-2003	JFCOM Follow-on Urban Future experiment – lacked social modeling
2004	Working with Purdue commercial spinoff group SIMULEX - SEAS prototype demonstrated in JFCOM experiment
2004-2005	SEAS social modeling further integrated into JFCOM efforts

Ongoing efforts include:
- Continuing evolution of Social Modeling Simulation as part of Joint Experimentation Federation
- Dynamic Link to "Holistic Mil Planning"–Operational Net Assessment (ONA)
- Informing other DoD simulations
- Faster than Real Time and Real Time
- Super-computer capable

U N C L A S S I F I E D

Technology Transfer at JFCOM

- **New technology transfer authorities granted to JFCOM in March 2005**

- **Give JFCOM more flexibility in working with industry and universities; new mechanisms**

- **Office of Research and Technology Applications**

- **Cooperative Research and Development Agreements (CRADA); Educational Partnership Agreements; Personnel Exchanges; Small Business Innovation Research (SBIR)**

- **CRADA: JFCOM can provide all types of resources except $ (personnel, equipment, facilities, networks, databases, scenarios, M&S tools, evaluations, experiments)**

Engaging with NSF Researchers

Influence Topics

NSF Grant

JFCOM Helps Provide Follow-on Funding

JFCOM CRADA: JFCOM, University, Industry (possibly with $ from industry); other JFCOM resources

Educational Partnership Agreement; Personnel Exchange

SBIR: $ from JFCOM

Patents; Licensing Fees; DoD Contracts; Commercial Contracts ($)

Partner with Industry; Subcontractor ($)

Pre-NSF Award

Basic Research

Applied Research, ATD and Prototype Development

Test, Experiment and Evaluate

Capability Transition

Time (RDT&E Phases)

Questions