



5th Annual Update...

Jim Rosbe

SOAR TECHNOLOGY, INC.

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Soar Tech

Began operations January 1998 as spin-off from University of Michigan and DARPA STOW project

STAFF:

- 25 employees
- 1/3 PhDs, 1/3 MS, 1/3 BS
 - Computer Science
 - Mathematics
 - Engineering Management

OFFICES:

- Ann Arbor & Orlando, FL
- Satellites: Bethesda MD and Waterville ME

KEY TECHNOLOGIES

- Artificial intelligence
- Cognitive science
- Modeling & simulation
- HCI & human error modeling
- Software engineering

Objective

To produce practical results that benefit our customers and the world by the application of **advanced artificial intelligence**, grounded in the **scientific principles of human-system interaction**, and implemented through **expert software engineering**.

SPONSORING ORGANIZATIONS

Air Force Research Laboratory Human Effectiveness Directorate (AFRL/HEA)

Army Research Institute (ARI)

Defense Advanced Projects Research Agency (DARPA)

Naval Air Warfare Center Training Systems Division (NAWCTSD)

Office of Naval Research (ONR)

Joint Forces Command (JFCOM)

USAF ASC/YW Training Systems Product Group

USAF XOC

Naval Warfare Development Center (NWDC)

Modeling and Simulation Information Analysis Center (MSIAC)

Advanced Research & Development Activity (ARDA)

Defense Modeling and Simulation Organization (DMSO)

Institute for Defense Analysis (IDA)

AFRL Rome Labs

Army Aviation Applied Technology Directorate

Tank Automotive Command (TACOM)

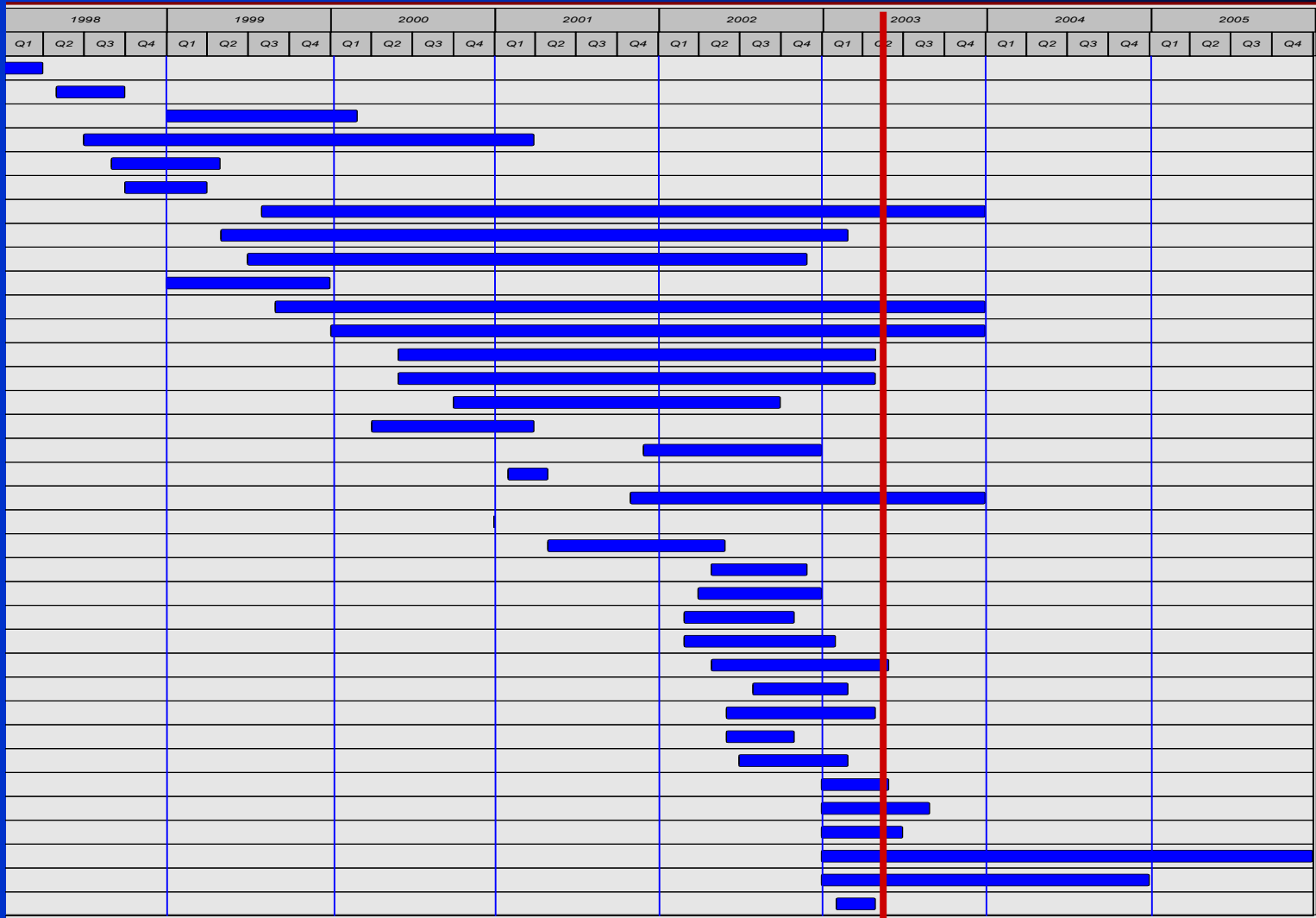
COMMERCIAL & RESEARCH PARTNERS

BMH Associates • Lockheed Martin • Veridian • L-3 Communications • Virtual Technology Corp.

General Dynamics Robotics Systems • EBS • Raytheon • IITRI • Altarum • University of Michigan • USC/ISI

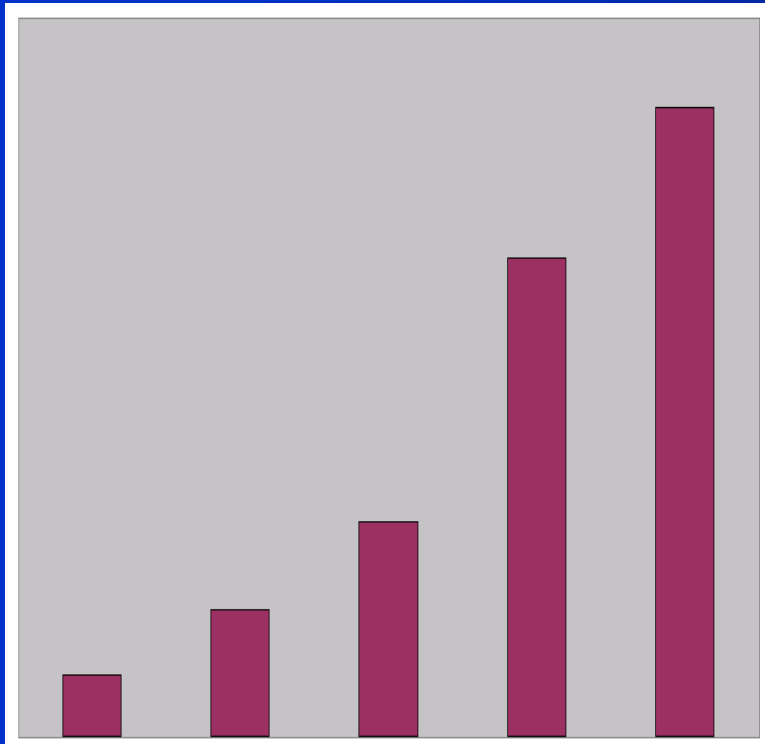
Intelligent Reasoning Systems • George Mason U • Pennsylvania State University • Alion Science & Technology

Contracts 1998-2005

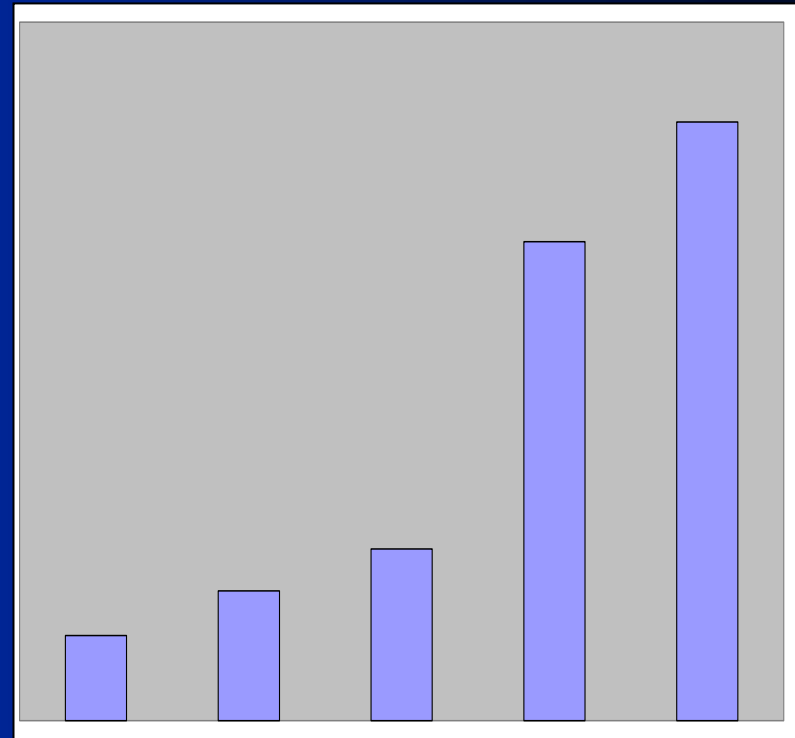


May 2003

1998-2002

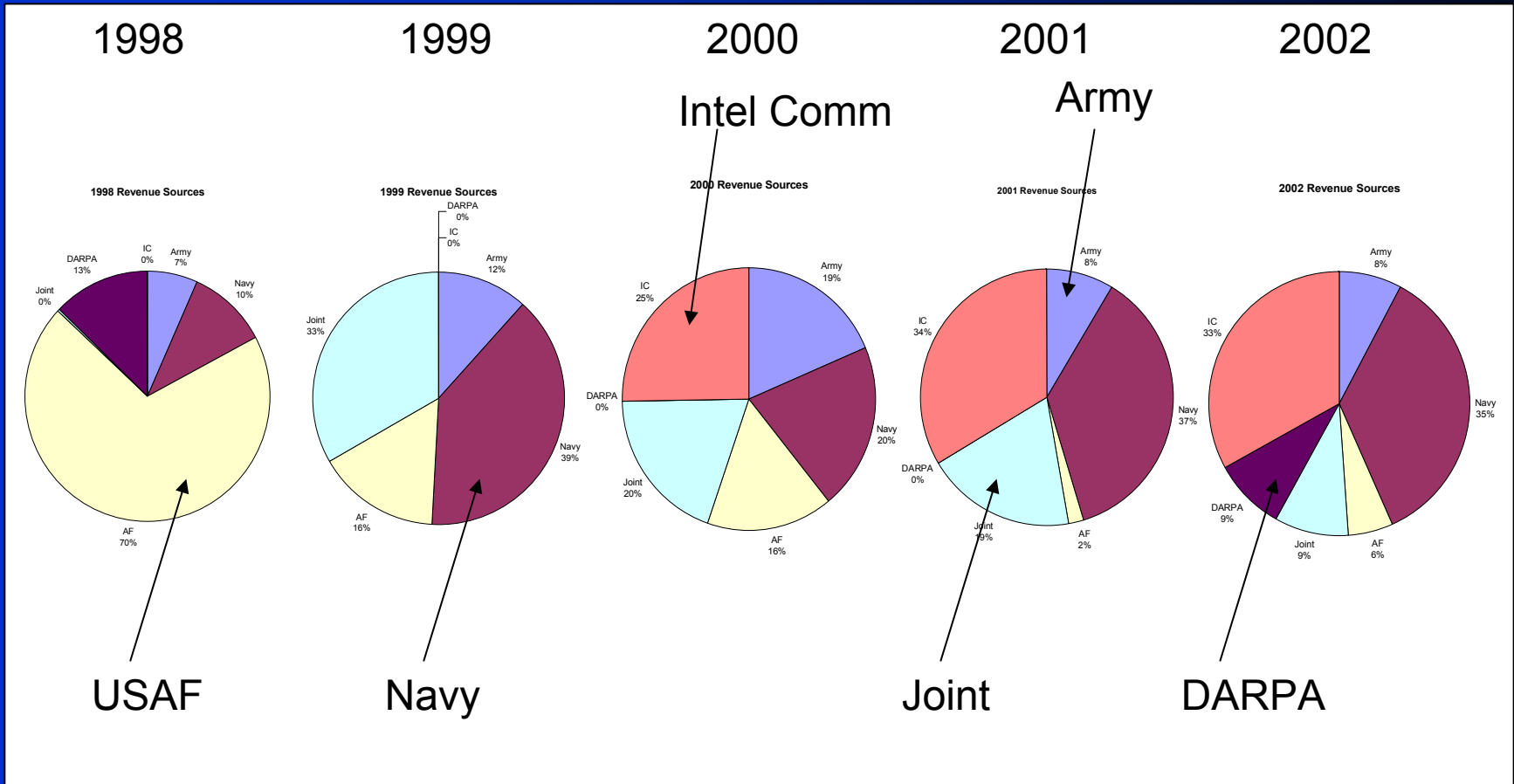


Revenue

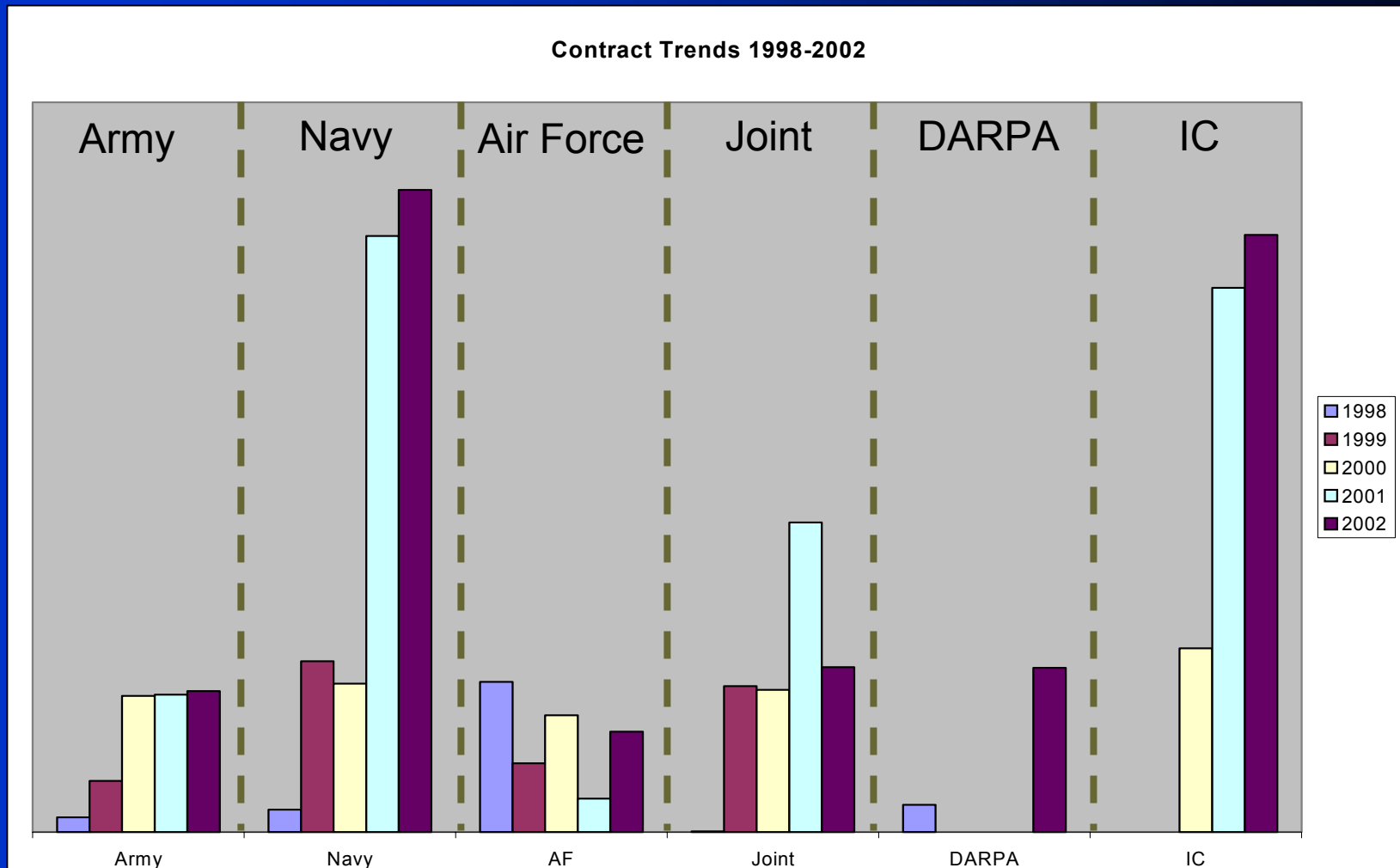


Staffing

Contract Trends



Contract Trends



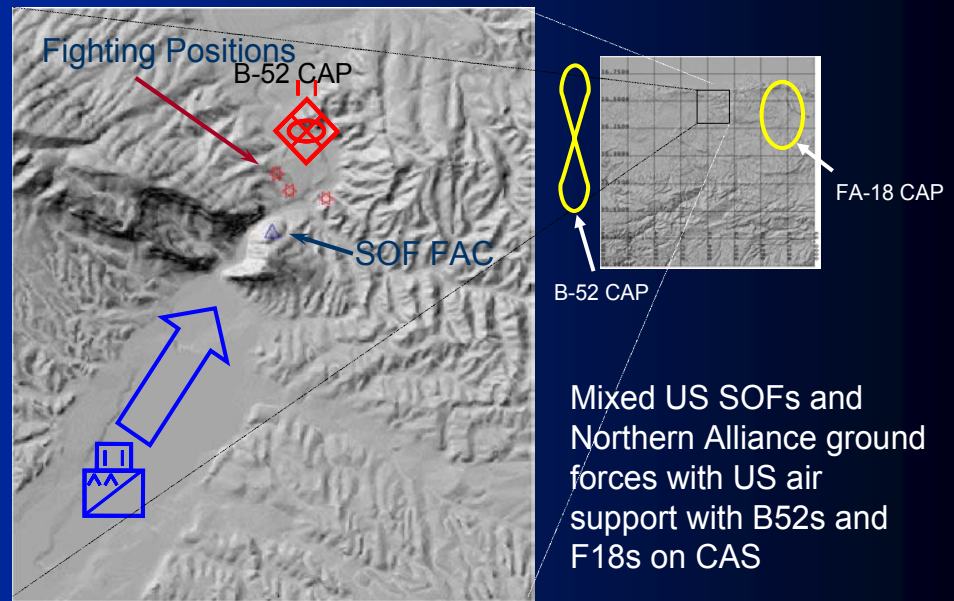
Continuity, plus...

- Continued M&S research, development, support

Plus

- New customers
- New domains
- New challenges
- More definition

M & S for "What If" Simulations



Mixed US SOFs and Northern Alliance ground forces with US air support with B52s and F18s on CAS

Our main directions

Agent-based...

1. Modeling and simulation

2. Command and control

- Interface agents
- Visualization
- Usability

3. Embedded intelligence in robotics

4. Intelligence analysis tools

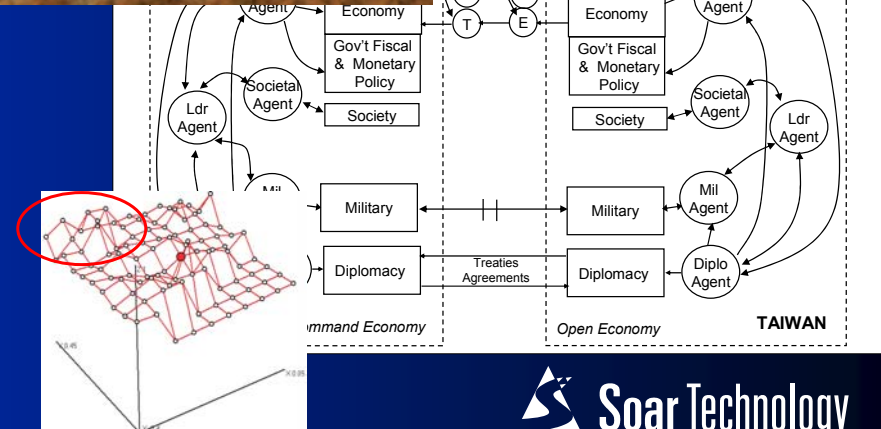
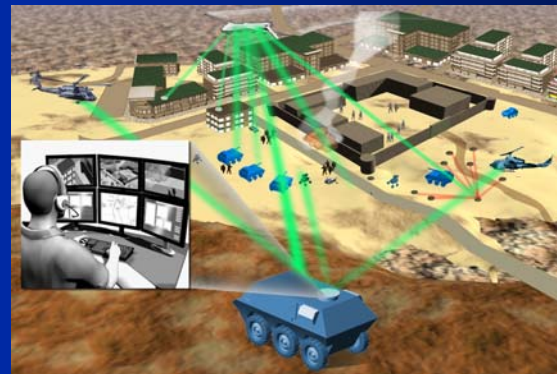
....Rapid agent development for cognitive systems

New starts since Soar 22

- ARI: CIANC3 Phase II – Intelligent interface agents for command & control
- AFRL Rome: SBIR Phase I -Augmented Warrior Readiness – adaptable information visualization to reduce complexity & support command and control
- ONR: VISTA – visualization/explanation toolkit for agents
- NASA: SBIR Phase I - EGGLEAN – Error-tolerant modeling and analysis tool
- AMCOM: SBIR Phase I - Automated RWA wingman
- DARPA: NATIVE – Cognitive architecture R&D
- ONR: STTR Phase I – Speech interface research for agents
- DARPA: Enduring Freedom Reconstruction – recreation of Mazar-e-Sharif
- GDRS/TACOM: CTA Robotics – M&S of robotic scout vehicles
- Veridian/DARPA: UrbanSUNSET – modeling of MOUT
- DARPA: SBIR Phase I Playbook and Whiteboard for Rapid User Programming of Autonomous Vehicle
- DMSO: High-level symbolic representation language

...evidence of demand

- FCS & UVs generally
- Command & control
- Intelligence community



Since last year, new staff:

Ann Arbor:

Brian Cook

Laura Hamel

Interns 2003:

Devvan Stokes

Zahar Prasov

Plus demographic explosion



SoarTech interaction with the Soar Community...and others

- *VISTA & SoarDocs available to Soar researchers*
- *R&D collaborations*
 - *U Michigan*
 - *Penn State U*
 - *George Mason U*
 - *GDRS & TACOM*
 - *Veridian*
 - *Micro Analysis & Design*
 - *Altarum*
- *Growing number of consultants*
- *Recruiting new staff*
- *Internships & coops*
- *Licenses with U Michigan/USC*
- *Sponsorships*



Harrison High School
Robohawks

Mining Report

Nuggets

- Increasing, large opportunities ahead
- Broader recognition
- Funded to do more, in more directions...deeper, longer thinking

Coal

- Short-term uncertainty
- Waiting for coherence
- No commercial applications yet