SMART SYSTEMS for LOGISTICS COMMAND and CONTROL
(Jun 2004)

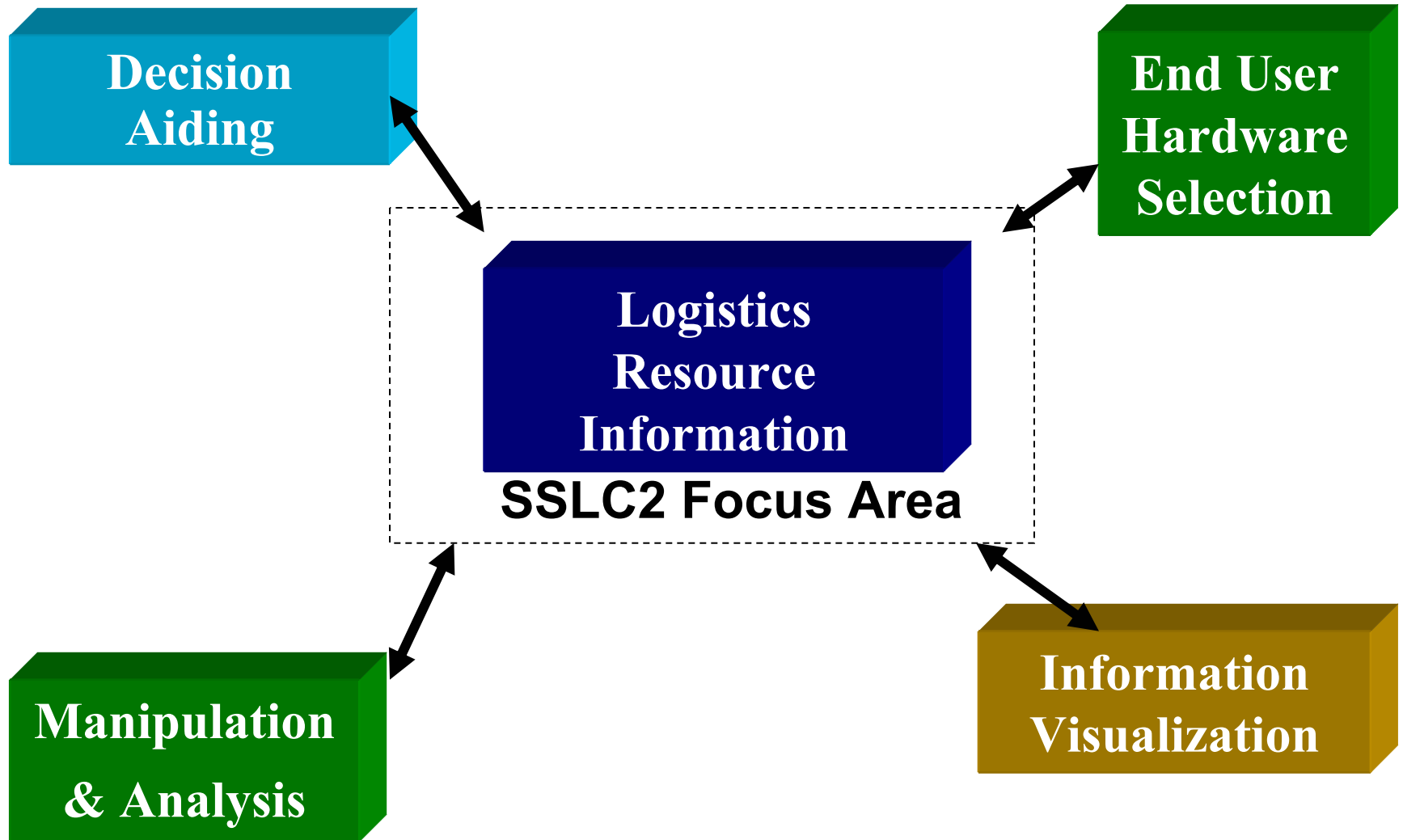**Mr. Paul Faas & Capt Justin Swartzmiller**
Logistics Readiness Branch
Warfighter Training Research Division
Human Effectiveness Directorate
Air Force Research Laboratory

Logistics C2 Research Areas

Decision Aiding

End User Hardware Selection

Logistics Resource Information

SSLC2 Focus Area

Manipulation & Analysis

Information Visualization

Problem

Current

Command Post

WG/CC

Filters   Thresholds

Telephones →
Systems →

Lt.. Colonels   Majors

← Systems
← Telephones

Filters   Thresholds

System →
Radios →

Chiefs   Seniors

← Telephones
← Systems

Filters   Thresholds

Phones →
Runners →

NCO's   Airmen

← FM Radio
← Runners

Telephones   Radios   Systems
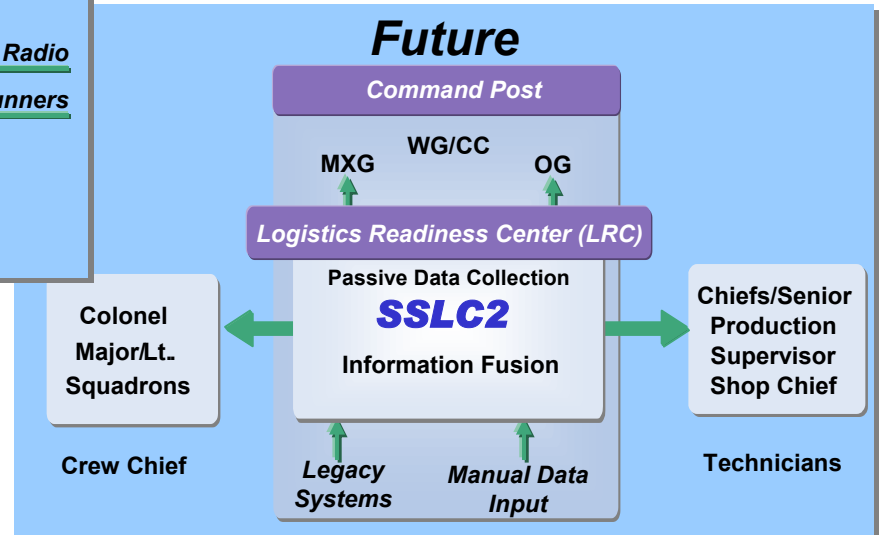
Legacy Systems   *Manual Data Input*

Warfighters need to know the state of readiness of warfighting resources beyond the state of repair of individual assets.

- **Petroleum, oil, and lubricants (POL) levels**

- **Mission Capable (MICAP) parts visibility**

- **Number of 463L pallets, nets, and devices on-hand.**

Future

Command Post

WG/CC

MXG   OG

Logistics Readiness Center (LRC)

Passive Data Collection

SSLC2

Information Fusion

Colonel Major/Lt. Squadrons

Crew Chief

Chiefs/Senior Production Supervisor Shop Chief

Technicians

Legacy Systems   *Manual Data Input*

SSLC2 benefits:

- Reduce manual data entry
- Eliminate duplication
- Increase data accuracy
- Improve timeliness of data

3

Limitations of the Current Practice Garrison Environment

- **Manual and duplicative entry into multiple databases**

  - **Current operations have limited technologies and rely on Access® and Excel® as their database tools**

- **Manual entry leads to data inaccuracies and problems with timeliness**

- **Most information contained in databases is on average eight hours old**

Limitations of Current Practice Contingency Environment

- Center designed to provide info on logistical status & operational impact to weapons systems

- Manpower intensive group

- Gets info manually through phone/fax/email

- Not typically proactive and relies on lagging indicators to display status
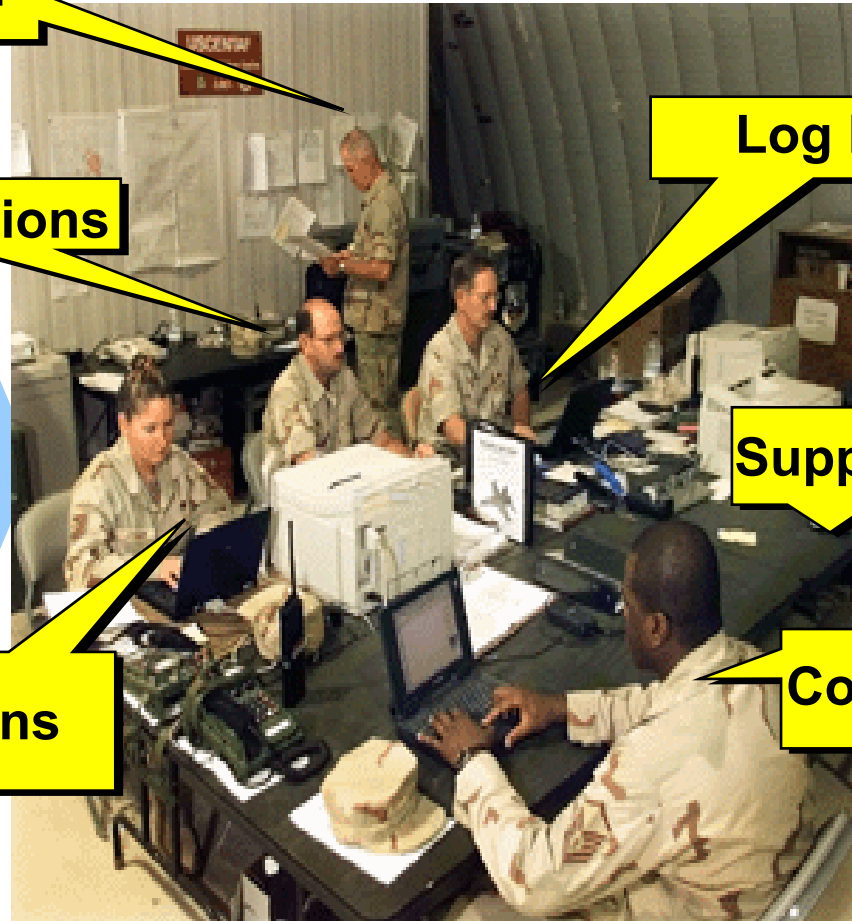

LRC Director

MX/Munitions

Log Plans

Supply/Fuels

Trans

Contracting

SSLC2 Goal

- **Improve Logistics Command and Control business decision-making**

  - **Transfer of critical information is slow, inaccurate, and requires significant time and effort to collect, organize and display**

- **How:**

  - **Develop complex computer algorithms**

  - **Create advanced decision support tools for capture of business decision-making rules**

  - **Enable passive data collection technologies**

  - **Stimulate and simulate "as-is" and "could-be" business process changes and assess those improvements**
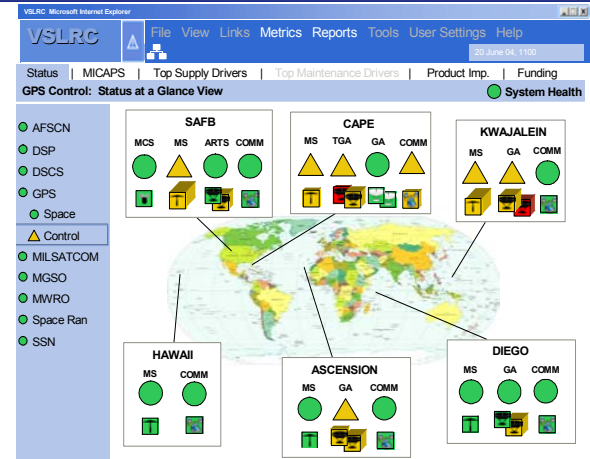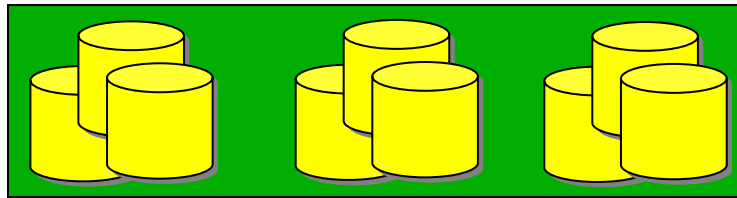
SSLC2 Technical Approach
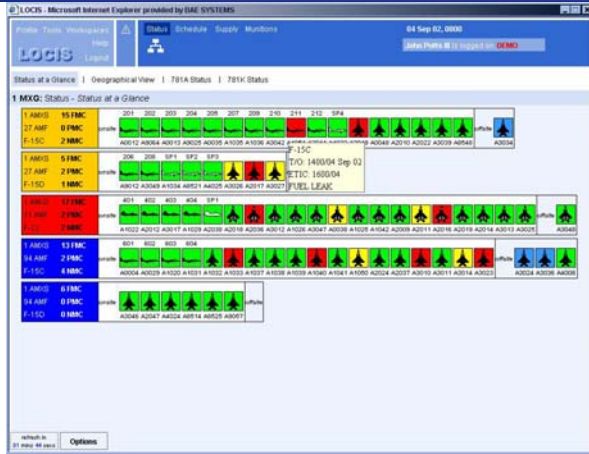
Presentation Layer

Stimulate and simulate "as-is" and "could-be" business process changes and assess those improvements

Integrating Information for Effective Presentation

Complex Computer Algorithms

Legacy Logistics Information Systems

SSLC2 Researching the Infrastructure Improvements for Timely C2 Information

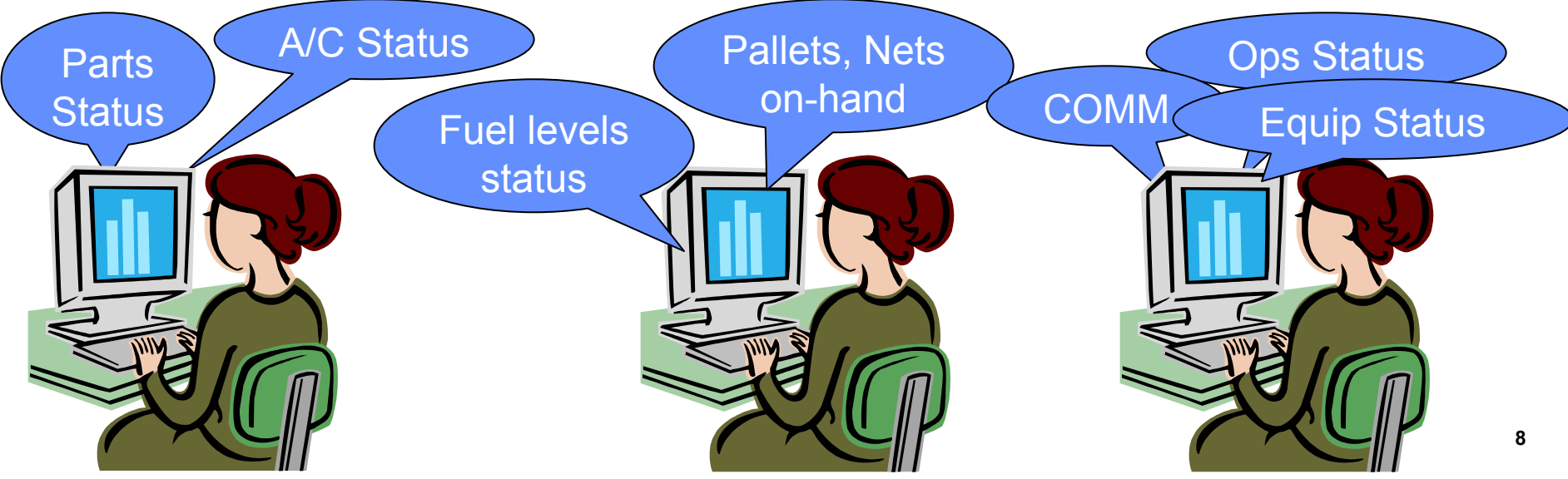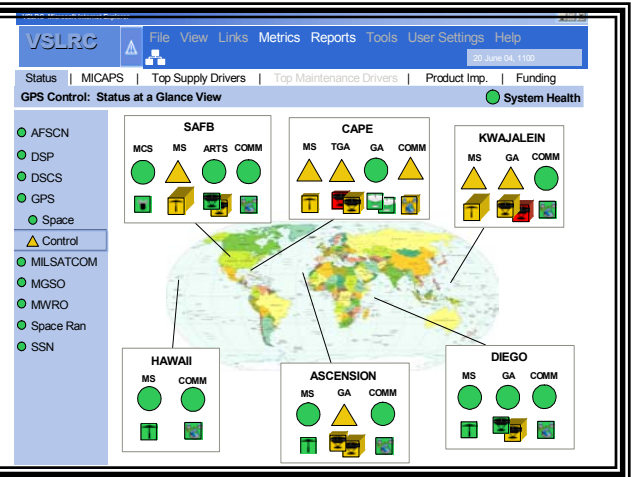**Passive Data Collection Technologies**   **Capture Business Decision-Making Rules**

SSLC2 Vision

"Timely C2 information supports better decision-making"

Potential End-Users

Base Level:

- Command Post Personnel

- Functional Supervisors

Commander Level:

- Wing Level (Squadron, Group), Battle Staff, Crisis Action Team

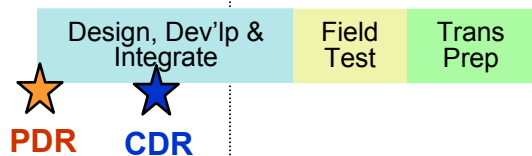- Above Wing Level – MAJCOM, HHQ, AOC, LRC, A-4, J-4

Project Schedule

Project Planning/ Rqmts Analysis
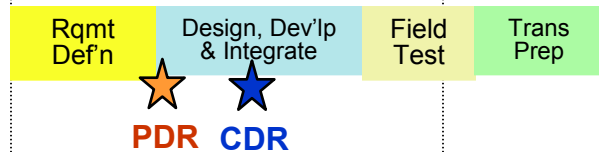
Rqmt Definition

Final Report

Spiral One

Design, Dev'lp & Integrate | Field Test | Trans Prep

PDR CDR

Spiral Two

Rqmt Def'n | Design, Dev'lp & Integrate | Field Test | Trans Prep

PDR CDR

Spiral Three

Rqmt Def'n | Design, Dev'lp & Integrate | Field Test | Trans Prep

PDR CDR

FY04 **FY05** **FY06**

AFRL Risk Abatement

- Build on key Lessons Learned from previous AFRL efforts:

  - Early & Continuous Involvement of the warfighter

  - Establishment of User Groups – realistic feedback

  - Trade Shows participation – invaluable lessons learned

- Requirements defined by users for every spiral

- Pass/fail user defined metrics

- Modular design options

AFRL Risk Abatement (continued)

- Awareness of key development projects:
  - AF Portal
  - GCSS-AF
  - TBMCS-UL
  - Enterprise Data Warehouse
  - Logistics Enterprise Architecture
  - Early identification of Transition Agents

Collaboration Partners

- AF-ILMM

- AMC/A-4

- AFC2ISRC

- AFMC LSO/LOA, AF AIT Program Manager

- AFC2 Battlelab & AFAEF Battlelab

- AFSPC
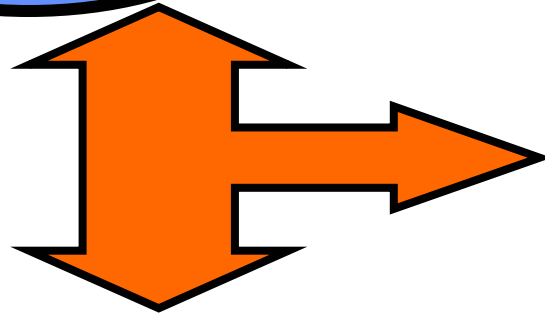
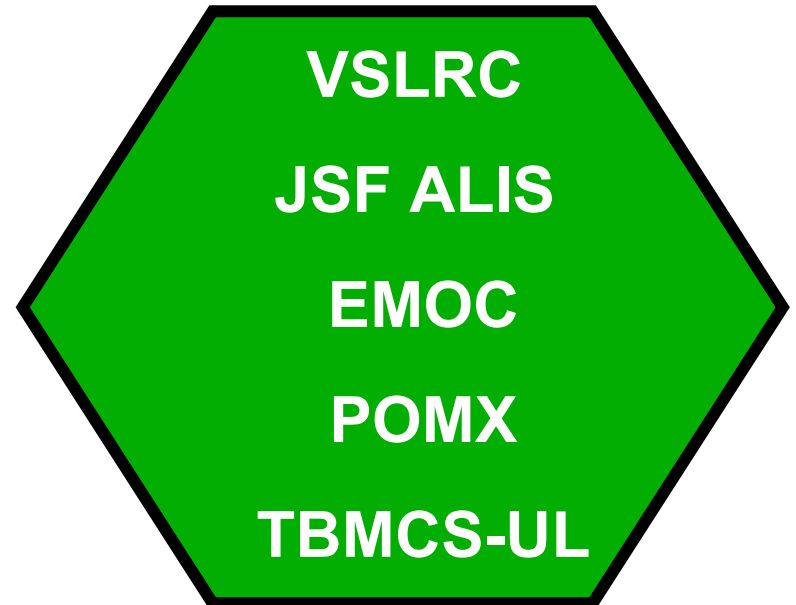- AFRL Information Directorate

- DARPA

- TBMCS-UL

Potential Transition Partners

Organizations

SMC/Det 11

AFSOC

Programs

Smart Systems

VSLRC

JSF ALIS

EMOC

POMX

TBMCS-UL

Summary

By achieving the Smart Systems goal:

> Develop and/or leverage technology to passively collect the critical information required to effectively manage logistics resources in support of combat operations.

Smart Systems will:

- Improve the currency, accuracy, and completeness of data

- Improve the effectiveness of gathering, storing, retrieving, managing, and structuring data

- Improve the value of logistics data sent to higher headquarters for use in theater-level C2

Smart Systems Points of Contact

Mr. Paul Faas

AFRL/HEAL

Program Manager

paul.faas@wpafb.af.mil

(937) 656-4390

Capt Justin Swartzmiller

AFRL/HEAL

Deputy Program Manager

justin.swartzmiller@wpafb.af.mil

(937) 656-7042

Logistics Readiness Branch

Warfighter Training Research Division

Human Effectiveness Directorate

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Wright-Patterson AFB, OH