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National Cyber Range

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Problems in Cyber Testing

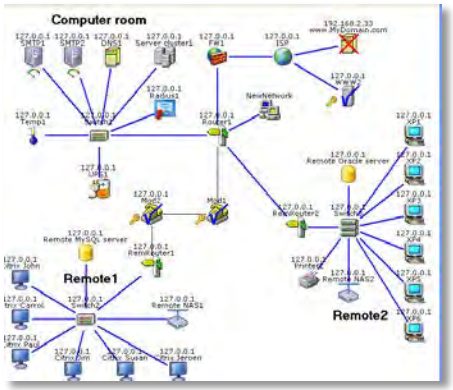
A fundamental problem faced in cyber research is that today it is too difficult to test the capabilities that we develop, in a secure and realistic environment

Existing test facilities limit our development, testing, and training timescales from matching the rapid evolution of real-world threats

Our Adversaries' Test Range

Real Networks + Real Users = Real Results

Our Existing Test Ranges



Approximated Networks + Artificial Users Behaviors = Questionable Results

The National Cyber Range

Goal

- Create a secure, self-contained facility that can rapidly emulate the complexity of defense & commercial networks, allowing for cost-effective and timely validation of cyber technologies

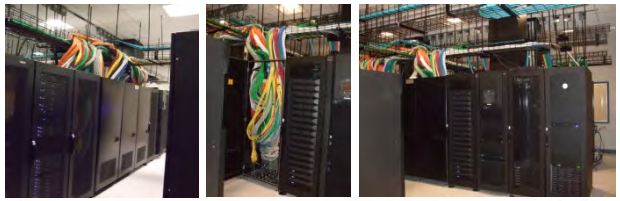
Current Status

- Completed the technical design and software tool sets for the NCR
- Demonstrated the architecture at scale on an operational prototype facility

Range Features

- Simple experiment design tools
- Automated range build-out capability
- Real-time data visualization tools
- Automated range sanitization
- Supports simultaneous testing at multiple security levels

NCR Facility



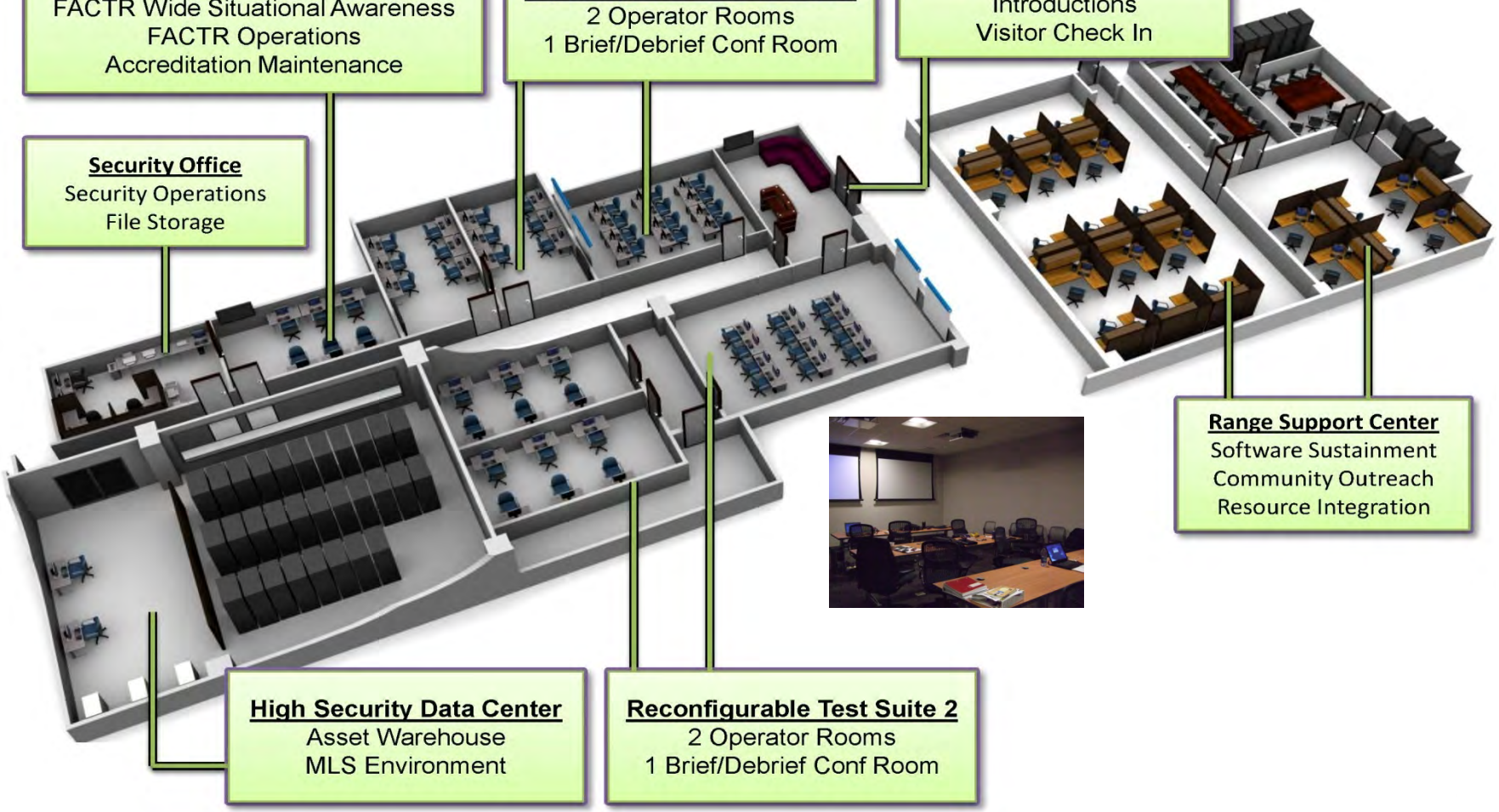
Located in Orlando, FL

Range Operations Center
FACTR Wide Situational Awareness
FACTR Operations
Accreditation Maintenance

Reconfigurable Test Suite 1
2 Operator Rooms
1 Brief/Debrief Conf Room

Welcome and Reception
Introductions
Visitor Check In

Security Office
Security Operations
File Storage



Range Support Center
Software Sustainment
Community Outreach
Resource Integration

High Security Data Center
Asset Warehouse
MLS Environment

Reconfigurable Test Suite 2
2 Operator Rooms
1 Brief/Debrief Conf Room

Moving Forward with the NCR

- What we currently are doing (October 2011 to October 2012)
  - One-year beta-operation phase of the prototype NCR
  - Just completed the first live experiment
    - Built out the range to emulate a 1100-node DoD network in 1-day
  - Range size will grow to allow for a 3000-node experiment by January
  - Transition the range and associated technologies to USCYBERCOM

- The NCR is available to agencies across the Government for use during this phase

Working with the NCR

- In-depth Government technical reviews are held quarterly
  - Limited to Government personnel and support contractors
- Next review scheduled for November 15 in Arlington, VA
- Will include a separate briefing for those interested in running experiments on the NCR
- Contact us if you are interested in attending (Jinendra.Ranka@darpa.mil)