T&E of Emerging Technology
Government and Industry

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Version #1
Current Testing
...But What About This?

How Do We Test This? What Does Right Look Like?
Drivers - The Threat Environment

FASTER

SURVIVABLE

ADAPTABLE

AFFORDABLE
Today’s Environment
Requirements, Acquisition, T&E and Cyber Challenges

INCREASING COMPLEXITY

• Emerging technologies
• Systems-of-systems
• Highly dependent on IT & software
• Cybersecure & interoperable
• Delivered quicker
• Delivered in Increments
• How to test?
How should the “spectrum” of autonomy be defined?
- Cognitive vs adaptive

How do we test systems that learn?
- What is industry doing that USAF could leverage?
- Effects based testing or process as well?
- Are they learning the right lessons?
- Are they learning them quickly enough to be effective?
Current Test Challenge
Cyber

- Evolving and rapidly growing need
- Approaches are time consuming and have a high manpower demand
- Where can automated tools be leveraged for cyber testing?
- What techniques are used in industry?
- What are meaningful measures to communicate cyber vulnerability and survivability?
Future Test Challenge
Directed Energy

- Current tests are primarily set up for technology development vs operational employment

- What changes are needed in test approach and infrastructure to do an operational assessment to include suitability?

- What does right look like? How are requirements defined?
Other Technologies

- Electronic Warfare
  - Threat Representation
  - Range Limitations

- Hypersonics
  - Test Infrastructure
    - Test Fleet Challenge
  - Range Challenges
Government & Industry Partnering

- Early Involvement of Test/Ops Community
  - Education two way street
    - Know the technology / Know the CONOPS
  - Early design of test strategy
- Leverage existing industry tool sets
  - Modeling and simulation collaboration
  - Automated test tools
- Continuum of testing – Contractor DT, DT, OT
- Marketing ↔ Requirements ↔ Testing
Relevance

Protect the Homeland

Build Security Globally

Project Power and Win Decisively
“It’s Just a Sensor”…

Need to understand technology and what it means
The Need for Testing

DEMO ≠ FIELDABLE SYSTEM

Advance the technology

DOTmLPF-P