



# **RAPID FIELDING**

## **A Path for Emerging Concept and Capability Prototyping**

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# Strategic Guidance

## Quest for agility, innovation, and affordability

*“As we end today’s wars and reshape our Armed Forces, we will ensure that our military is agile, flexible, and ready for the full range of contingencies.”*

*“This country is at a strategic turning point after a decade of war and, therefore, we are shaping a Joint Force for the future that will be smaller and leaner, but will be **agile, flexible, ready, and technologically advanced.**”*

– Sustaining US Global Leadership: Priorities for the 21<sup>st</sup> Century Defense

“We are continuing our efforts in the following seven areas to achieve greater efficiency and productivity in defense spending:

1. Achieve affordable programs;
2. Control costs throughout the product lifecycle;
3. Incentivize productivity and innovation in industry and Government;
4. Eliminate unproductive processes and bureaucracy;
5. Promote effective competition;
6. Improve tradecraft in acquisition of services; and
7. Improve the professionalism of the total acquisition workforce.”

– Better Buying Power 2.0

*“The goal of Reliance 21 is to ensure that the DoD S&T community **provides solutions and advice** to the Department’s senior-level decision makers, warfighters, Congress, and other stakeholders **in the most effective and efficient manner possible.** This is achieved through an ecosystem and infrastructure that enables **information sharing, alignment of effort, coordination of priorities, and support for scientists and engineers across the Department.**”*

– Reliance 21, January 2014

*“When there is a **strong threat-based or operationally driven need to field a capability solution in the shortest time**, MDAs are authorized to **implement streamlined procedures** designed to accelerate acquisition system responsiveness. Statutory requirements will be complied with, unless waived in accordance with relevant provisions.”*

– Interim DoDI 5000.02, November 26, 2013

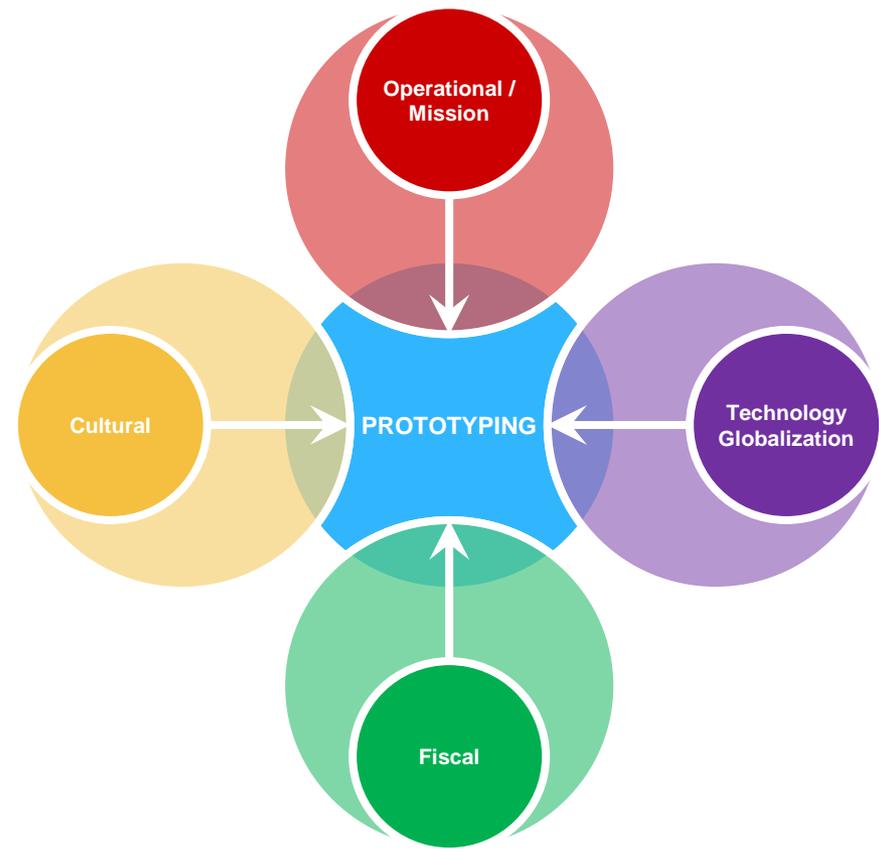
*“Staying ahead of security challenges requires that we **continue to innovate, not only in the technologies we develop**, but in the way the U.S. forces operate. Innovation – within the Department and working with other U.S. departments and agencies and with international partners – will be center stage as we adapt to meet future challenges.”*

– Quadrennial Defense Review 2014



# Challenges

- **Spectrum of operational needs**
  - 18th Century Piracy — 21st Century Cyber
- **Prioritization of mission areas**
- **Exploring potential military use of non-military technology**
- **Constrained fiscal environment**
- **Cultural changes**
  - Nature of warfighting
  - Industry mind-set





# Prototyping as a Path to Agility, Innovation, and Affordability



## AGILITY

Paul MacCready wins the Kremer prize in 1977 for human powered flight by designing an aircraft that can quickly be reconfigured, saving time during the prototyping process.



## INNOVATION

Declining budgets following WWI coincided with the rise of air power.  
HMS Hermes is the first official aircraft carrier.



## AFFORDABILITY

In 1947, Chuck Yeager breaks the sound barrier in the Bell X-1 prototype – the start of big budget prototyping efforts.

## A proven tool for:

- Technical risk reduction
- Demonstrating feasibility
- Measuring operational value
- Advancing technical skill sets
- Advancing the state of practice in unique disciplines

## Enable DoD to affordably:

- Explore the realm of the possible without commitment to follow-on procurement
- Cost-effectively enhance interoperability and reduce lifecycle costs
- Devise / demonstrate a hedge against technical uncertainty or unanticipated threat



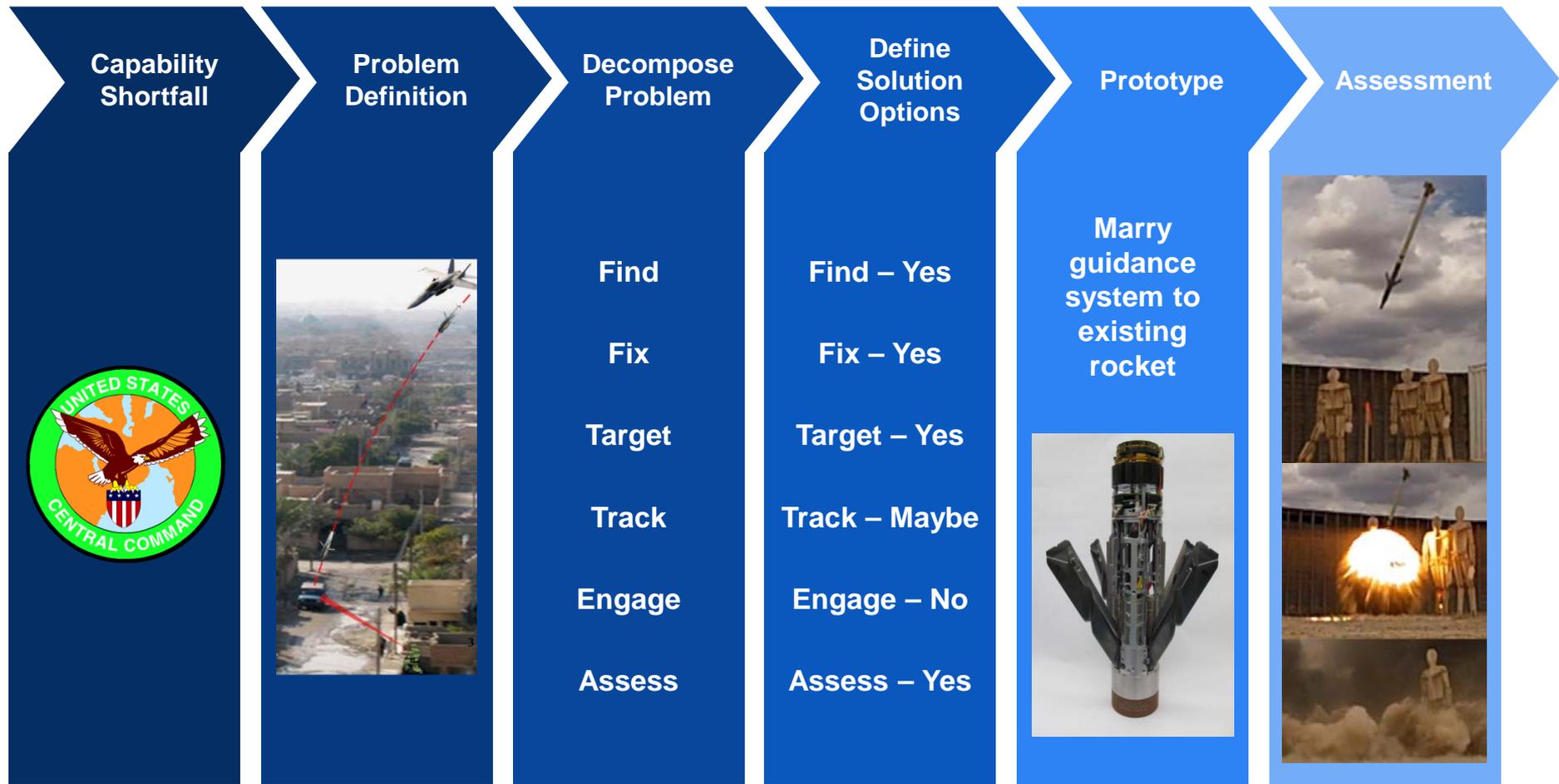
# Why DASD Rapid Fielding?



- **Mission: Identify, develop and demonstrate multi-domain technologies and concepts to satisfy DoD, Multi-Service and COCOM priorities**
- **Leverage well-developed skill sets**
  - Demonstrated ability to deliver both operationally field-able and less technically mature developmental prototypes
- **Leverage networks within the Global R&E Enterprise**
  - Fully exercise the R&E Enterprise (Gov't labs and integration facilities, depots, academia, etc.), as well as traditional and non-traditional providers
  - Utilize best practices to satisfy joint and cross-cutting needs



# Methodology





# FY14-15 Themes Under Consideration



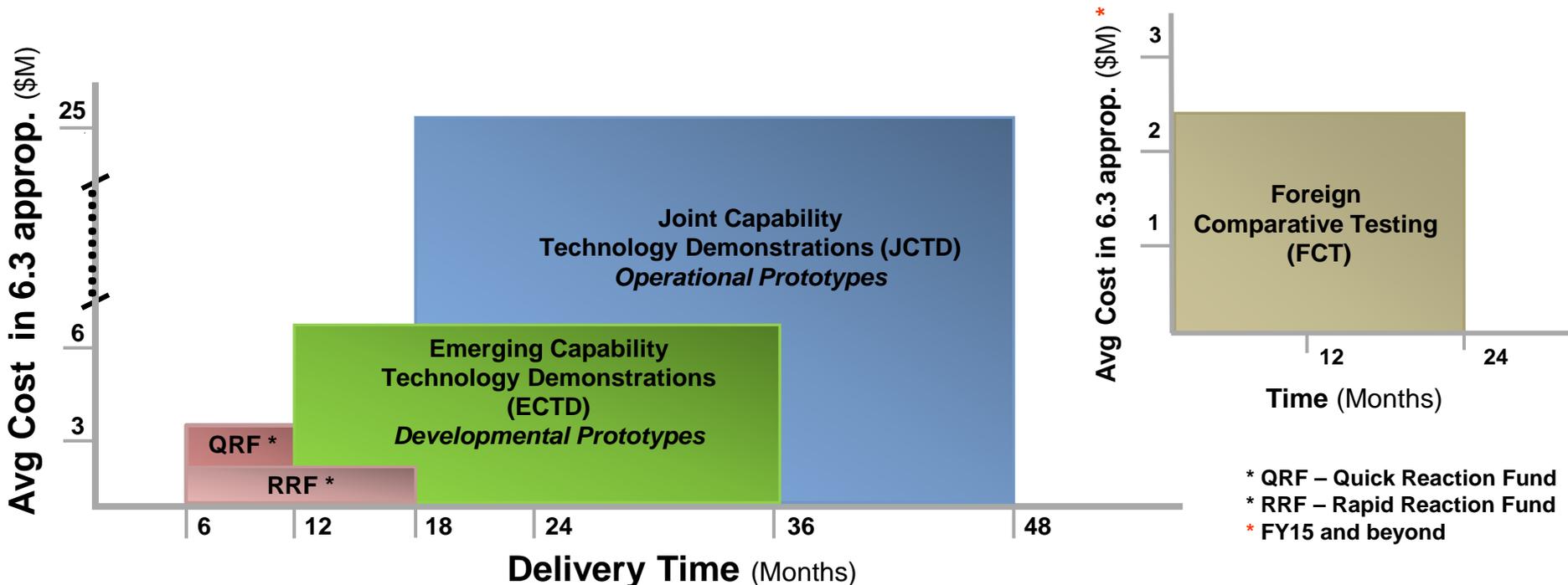
- **Space capability resilience**
- **Autonomous systems**
- **Electromagnetic spectrum agility**
- **Countering weapons of mass destruction**
- **Novel counters for force applications**



# RF Program Elements & Parameters



## Project Parameters – Avg Cost & Time



**Foreign Comparative Testing (FCT)**

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Col Hans Miller  
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**Joint Capability Technology Demos (JCTD)**

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**Emerging Capabilities Technology Demonstrations (ECTD)**

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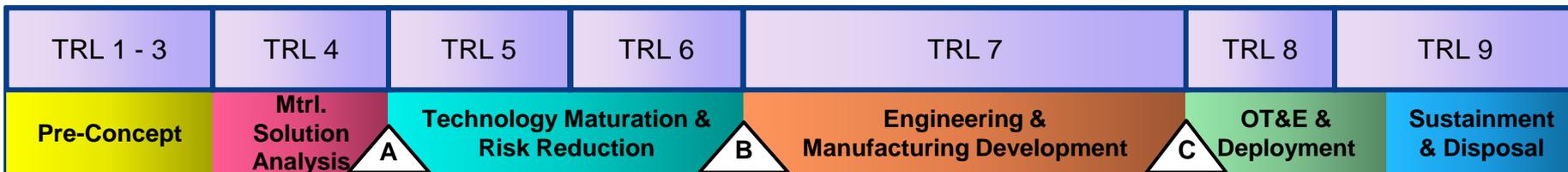
**Quick Reaction Special Projects (QRSP)**

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# Instruments



## Developmental Prototypes

- Demonstrate feasibility of an integrated capability
- Provide evidence of overcoming specific technical risk barriers
- Develop sufficiently detailed cost data to enable cost-capability trades

## Operational Prototypes

- Demonstrate military utility of integrated capability solutions
- Demonstrate robust fabrication processes
- Demonstrate performance in specific operational environments
- Define form, fit, function and “ilities”
- Enable business case analyses



# Agility, Innovation & Affordability

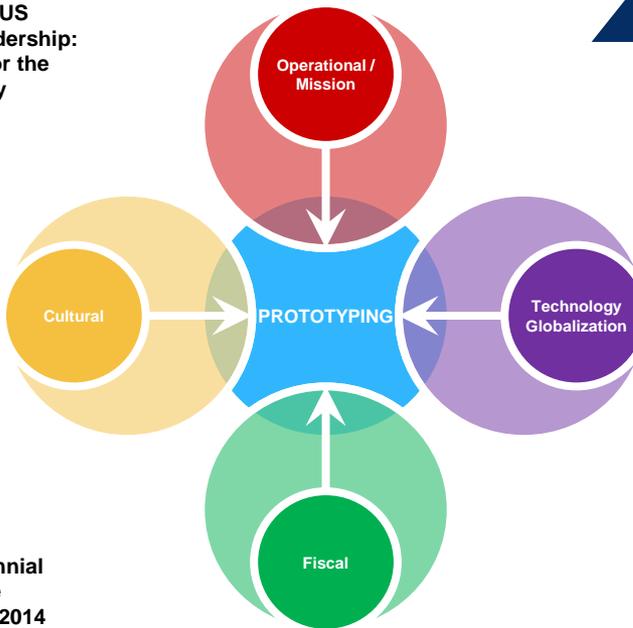


~ Summary ~

## Strategic Guidance

- Sustaining US Global Leadership: Priorities for the 21<sup>st</sup> Century Defense
- Better Buying Power 2.0
- Interim DoDI 5000.02, November 26, 2013
- Reliance 21, January 2014
- Quadrennial Defense Review 2014

## Challenges



## Methodology



## Instruments

Developmental Prototypes	Operational Prototypes
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*“Opportunities multiply as they are seized.”*

Sun Tsu, The Art of War