



# **Prototyping: A Path to Agility, Innovation and Affordability**

**March 24, 2015**

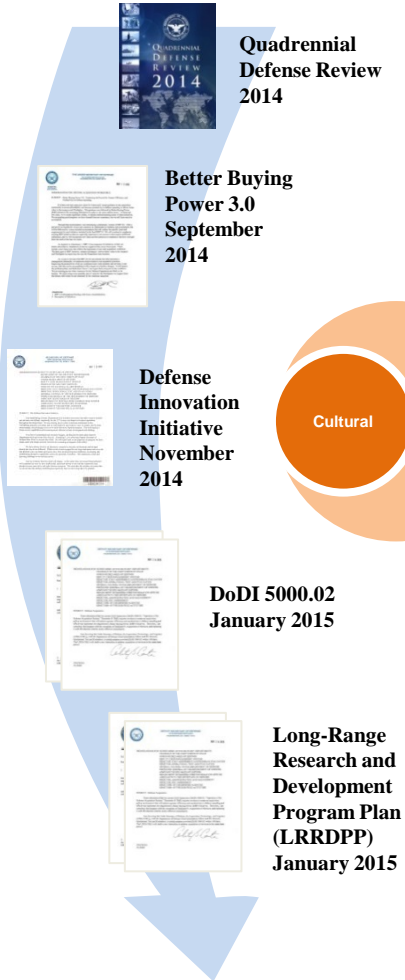
**Mr. Earl Wyatt**

**Deputy Assistant Secretary of Defense,  
Emerging Capability & Prototyping**

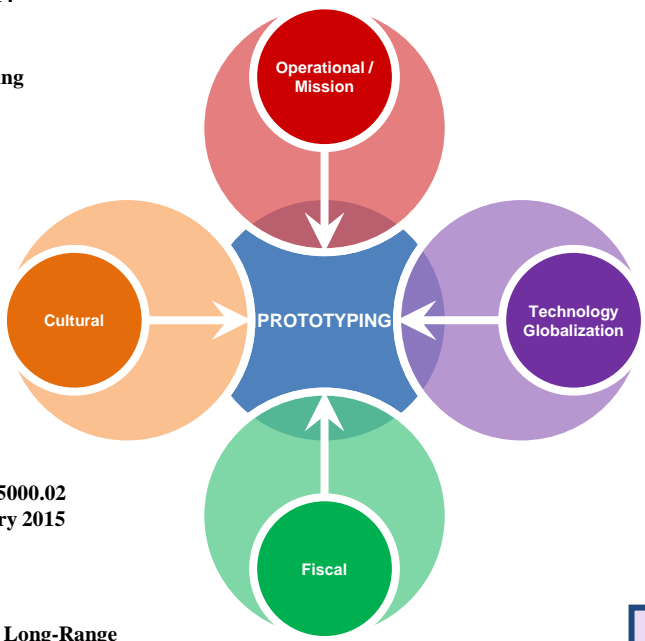


# Strategic Environment

## Strategic Guidance



## Challenges



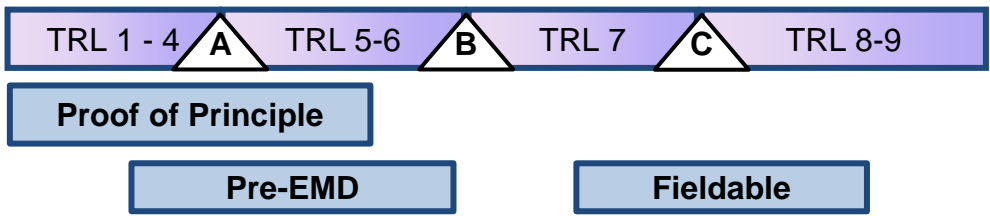
## Prototyping and Experimentation



## Methodology

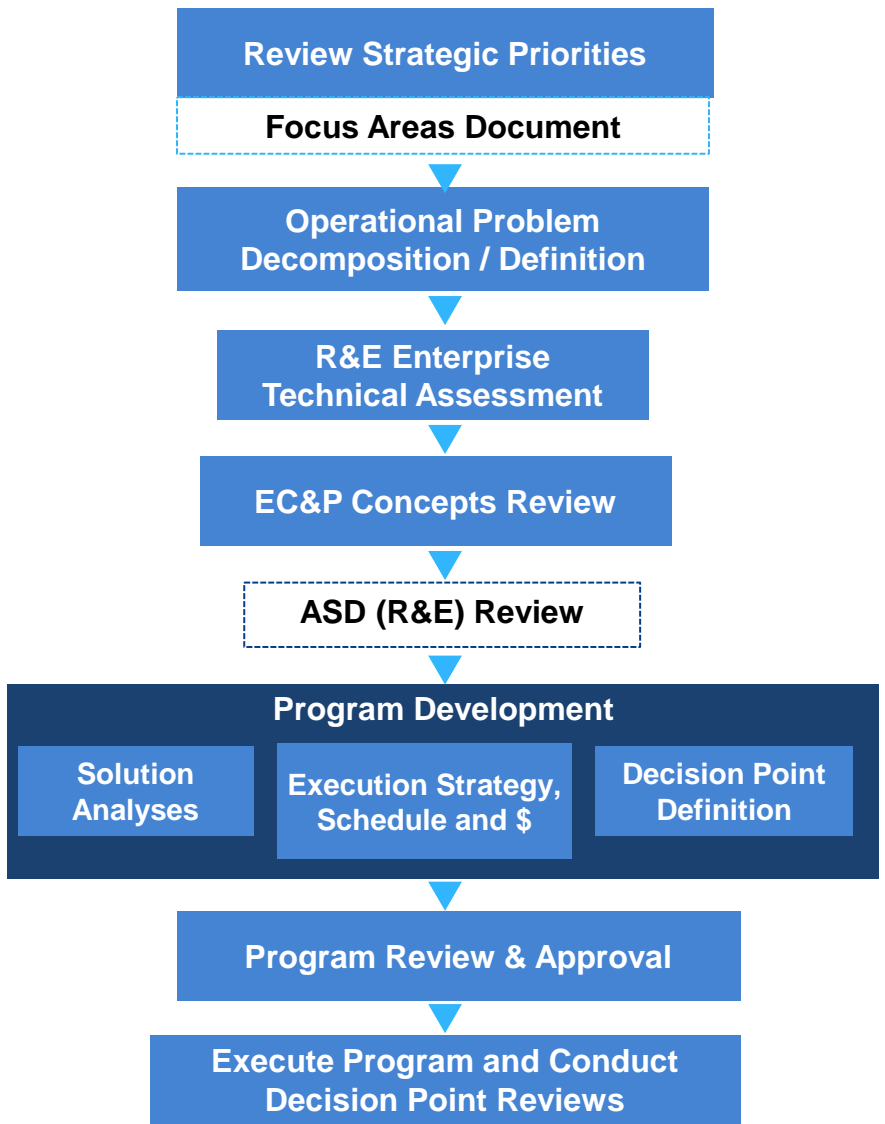


## Categories of Prototypes





# EC&P Prototyping Selection Process



***Designed to identify, develop, and demonstrate multi-domain technologies / concepts to satisfy Department / Multi-Service / COCOM highest priorities***

***Focus areas for FY 15-17***

- ***Electromagnetic spectrum agility***
- ***Autonomous systems***
- ***Space capability resilience***
- ***Asymmetric force application***



# EC&P Prototyping

## Focus Areas: FY 2015 – 2017



***Electromagnetic Spectrum Agility:*** Capabilities that allow Department of Defense (DoD) forces to operate with freedom of maneuver in the electro-magnetic spectrum (EMS). Operations include:

- Gaining and attaining access to spectrum for friendly forces, denying and/or degrading spectrum to our adversaries
- Conducting EM deception operations to degrade an adversary's understanding of our intent and capability
- Otherwise preventing the adversary from leveraging the EM domain to conduct operations in other domains (i.e., air, space, maritime, land and cyber)
- New effects in the EMS domain to include directed energy and radio frequency disruption

Focus Area Lead: Mrs. Ellen Purdy



# EC&P Prototyping

## Focus Areas: FY 2015 – 2017



### *Autonomous Systems:*

- **Capability that enables a particular action of a system to be automatic or, within programmed boundaries, or ‘self-governing’**
- **Important for mobile unmanned systems that must maneuver in an environment with little or no human assistance, or systems that aid human cognitive tasks, including:**
  - **Target recognition and systems that aid the human in the coordination of multiple sensors and multiple weapons to support the completion of blue, and the defeat of red, detect-to-engage sequences**
  - **Improving capability without increasing capacity by better coordinating and synchronizing current sensors and weapon systems, while maximizing the combat efficiency of both**
  - **Combing through large volumes of Intelligence, Surveillance and Reconnaissance (ISR) data, and notify the analyst of pattern of life anomalies or other data that meets user-specified criteria**

Focus Area Lead: Mr. Fritz Schulz



# EC&P Prototyping

## Focus Areas: FY 2015 – 2017



### *Space Capability Resilience:*

- Responds to a sophisticated adversary's attempts to deny us access to our space-based capabilities and adverse space conditions that degrade our space-based capabilities
- Resilient response includes:
  - Taking proactive and reactive defensive measures (Avoidance)
  - Designing systems with enhanced survivability features (Robustness)
  - Conducting operations to replenish lost or diminished capacity (Reconstitution)
  - Help re-establish space capability and capacity (Recovery)
  - Subsystems and activities that support any systems architecture able to achieve effects normally associated with current space systems

Focus Area Lead: Mr. Tim Boudreaux



# EC&P Prototyping

## Focus Areas: FY 2015 – 2017



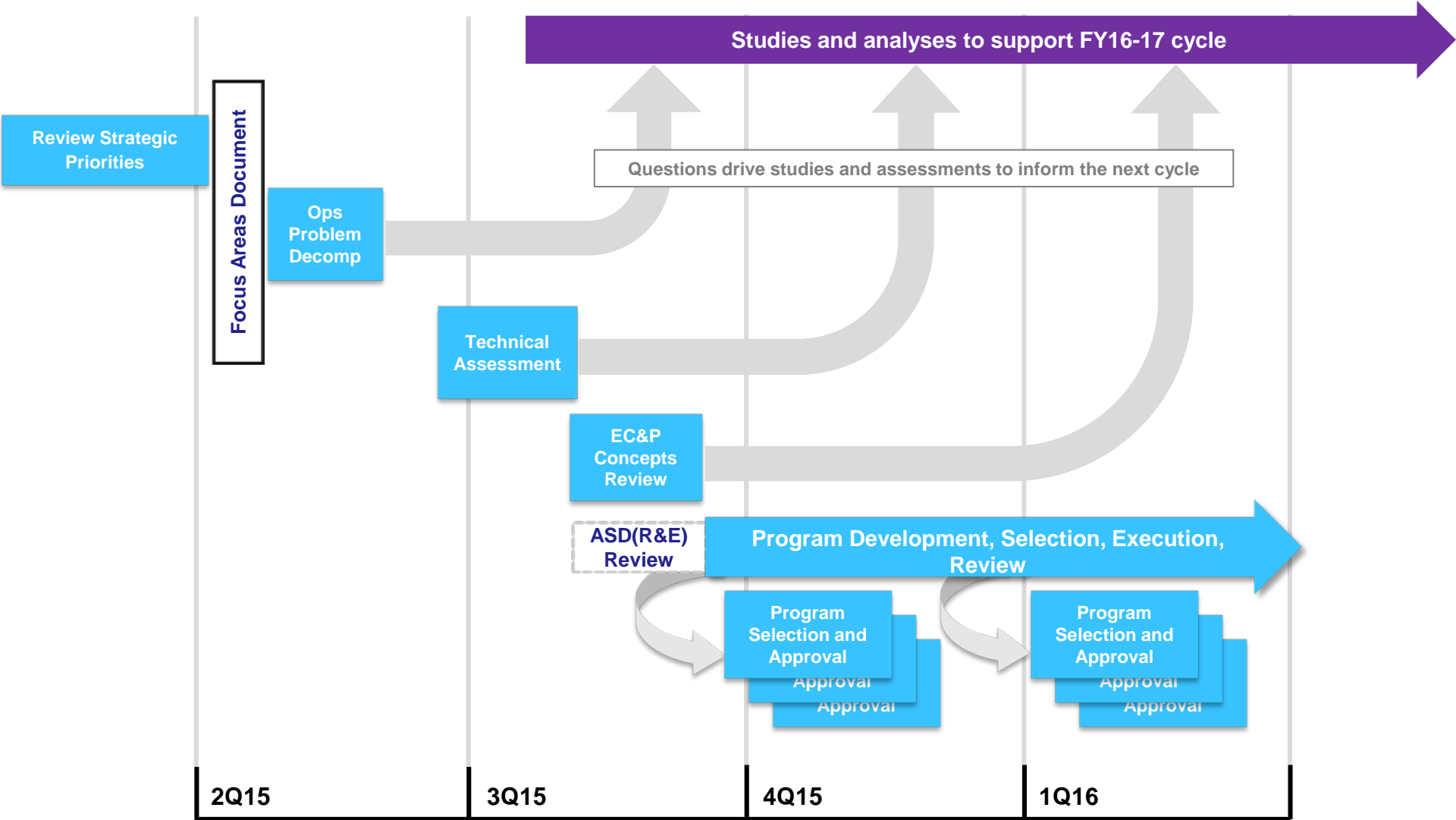
### *Asymmetric Force Application:*

- **Use of non-traditional technologies, tactics, and weapons to provide a clear military advantage to our forces during maneuver and engagement operations**
- **Solutions will reduce U.S. reliance on overleveraged blue capabilities and creatively exploit increasingly capable adversary systems while adjusting the cost curve in our favor**
- **Of particular interest are applications that provide an innovative technology offset and / or cost calculus advantage**
- **Includes technologies needed for - -**
  - **Countering threats associated with integrated air defense systems**
  - **Long range penetrating strike**
  - **Offensive and defensive air superiority operations**

Focus Area Lead: Dr. Bill Humbert



# EC&P Timeline FY15-16







# Resources for DoD R&E Enterprise Defense Innovation Marketplace



## Resources for Industry

- DoD Technology Roadmaps and Investment Strategies
  - DoD R&E Strategic Guidance documents are all posted to the Marketplace
- DoD/Service Solicitations
- Virtual Technology Interchanges & Events
- Opportunity to grow and expand DoD relationships / partnerships
- Secure Portal for IR&D Project Summaries

## Resources for DOD

- Market Research for approved DoD S&T, R&D and Acquisition professionals:
  - Secure portal with more than 15,000 IR&D Project Summaries
  - Technical Maturity and Surveillance
  - Guide DoD R&E investments
  - Potential for risk / cost reduction
- Opportunity to grow and expand new relationships and partnerships

The screenshot displays the homepage of the Defense Innovation Marketplace. At the top, it features the title "DEFENSE INNOVATION MARKETPLACE" and a row of logos for various DoD agencies including the Department of Defense, U.S. Army, U.S. Navy, U.S. Air Force, DARPA, and others. Below the logos is a navigation menu with links for HOME, RESOURCES, FAQs, NEWS & EVENTS, ABOUT, and CONTACT US. The main content area is titled "CONNECTING INDUSTRY & DoD" and includes a central text block stating: "The Defense Innovation Marketplace is a centralized resource for market research: For Industry, to learn about Department of Defense (DoD) S&T/R&D investment priorities, capability needs and technology interchanges. For Government, to access search tools to assess and then leverage industry IR&D projects for current and future programs." To the right of this text is a "Featured Item" section with a thumbnail image. Below the main text are social media links for Twitter and RSS. The "NEW IN THE MARKETPLACE" section is divided into three columns: "Strategic Documents" (listing items like "Defense Innovation Initiative \*\*NEW\*\*", "US Army S&T Campaign Plan 2015-2025", etc.), "Doing Business with DoD" (listing items like "DOD STTR 2016 \*\*NEW\*\*", "FY14 Defense Medical R&D Program Team BAA \*\*NEW\*\*", etc.), and "News & Events" (listing items like "DOD/HS/NSF Cyber Small Business Innovation Workshop \*\*NEW\*\*", "DARPA Resident Synchronized Planning and Assessment Proposers' Day", etc.). On the far right, there are several vertical buttons for "OSD INITIATIVES" (Long Range Research & Development Plan, Better Buying Power 3.0), "VIRTUAL TECHNOLOGY INTERCHANGES" (Air Force Technology Focus Areas, Aero Enterprise Technology Gaps & Apps), "INNOVATION OPPORTUNITIES" (Resources for Industry DoD Info for Business & Program Planning, Submit IR&D Data), and "RESOURCES FOR DOD" (DoD employee access of IR&D Search tool). A "FEEDBACK" section at the bottom right includes a "What did you Miss?" button. The footer contains links for Privacy & Security, Acrobat, Recovery Act, FOIA, USA.gov, Accessibility/Section 508, No Fear Act, Web Policy, and About DoD.

[www.DefenseInnovationMarketplace.mil](http://www.DefenseInnovationMarketplace.mil)