

STELLAR TEAM

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# **MDA Science & Technology (S&T) Overview**

**To: MDA University Innovation Summit (UIS)**

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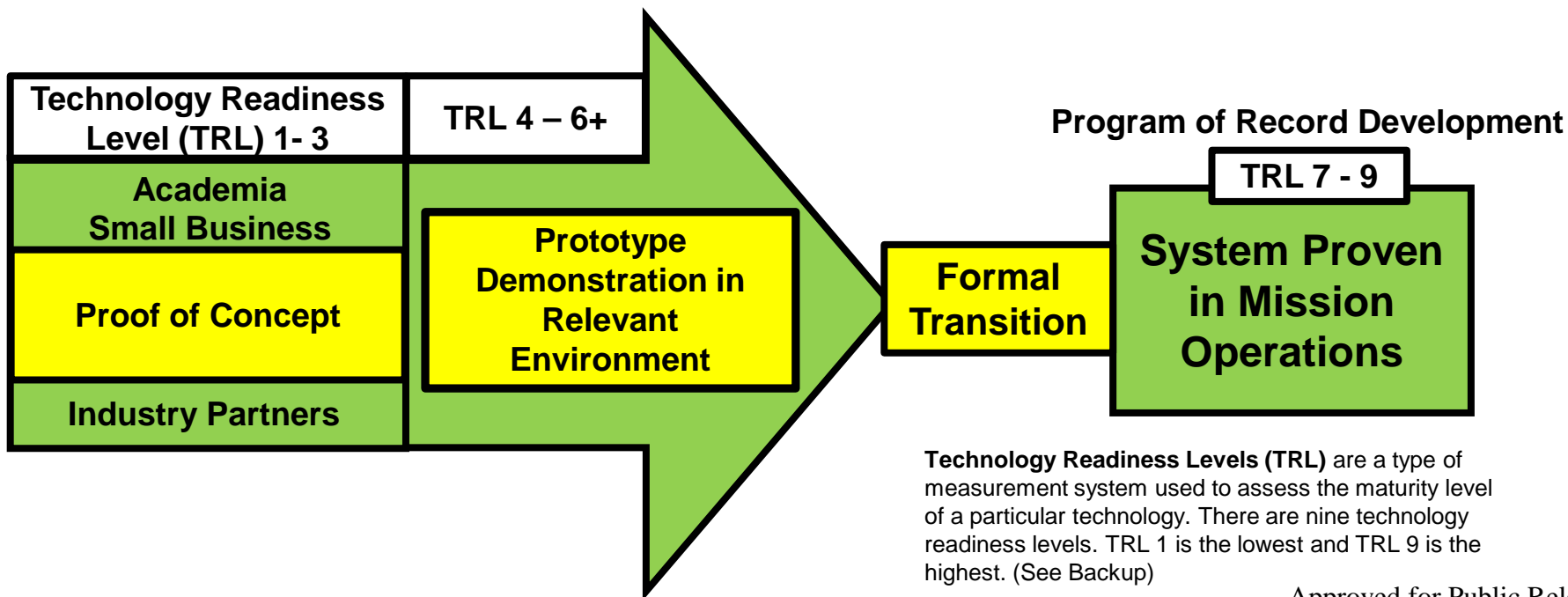
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# MDA Science & Technology (S&T) Enterprise

The MDA S&T Enterprise's vision is to **Deliver Rapid, Difference-Making Missile Defense Innovation Delivered to the Warfighter**

S&T Enterprise works across all phases of a Missile Defense Program



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# Current Missile Defense System Kill Chain

Detect

Track

Plan

Task

Engage

Assess

Ballistic & Maneuvering Threat

Hypersonic Threat

Cruise Missile Threat

Advanced Technologies are inserted into the Missile Defense System (MDS) across the Kill Chain

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# Technology Interest Areas (1 of 2)



- **Sensors**

- **Electro-Optical/ Infrared (EO/IR) and radar**
  - Track and receive modules
  - Focal Plane Arrays (FPAs)
- **Signal and data processing algorithms**
- **Radiation hardened technology**
- **Telescopes and antennas**
- **Windows and radomes**

- **Interceptor Technology**

- **Guidance, navigation, and control**
- **Batteries and power systems**
- **Advanced materials**
  - High temperature
  - Lightweight
- **Seeker technology**
- **Radiation hardened technology**
- **Deployment systems**
- **Low SWaP Inertial Measurement Units**
- **Lightweight composites**
- **Propulsion and control technologies**
  - Improved specific impulse

- **Command and Control, Battle Management and Communications (C2BMC)**

- **Advanced tracking and discrimination algorithms**
- **Command and control algorithms**
- **Low latency and secure communications**
- **Battlespace management**
- **Data fusion**
- **Warfighter training**
- **Joint track management**
- **Combat identification**
- **Network management**

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# Technology Interest Areas (2 of 2)

- **Modeling & Simulation**

- Lethality
- Battlespace environments
- Engagement
- Aerothermal environments
- Technology investment evaluation

- **MDS Testing**

- Affordable targets
- Scene generation
- Hardware-in-the-Loop (HWIL)
- Rapid analysis software toolkits
- Predictive analysis and modeling
- Range safety

- **General Areas**

- Hypersonics
- Directed Energy
- Artificial Intelligence/Machine Learning/Autonomy
- Quantum Applications
- Microelectronics
- 5G

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