Comprehensive Architecture Strategy (CAS)

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

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12 July 2018

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- **AMRDEC Overview**
- **Blended Approach to Open Architecture (OA) Management**
- **Comprehensive Architecture Strategy (CAS)**
- **Enforceable, Traceable Architecture**
- **Summary**

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Deliver collaborative and innovative aviation and missile capabilities for responsive and cost-effective research, development and life cycle engineering solutions.

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U.S. ARMY RDECOM

AMRDEC

~9,211
FY17 Strength

2,945
Civilian

16
Military

6,250
Contractor

907 / 5343
SETA   Non-SETA

FY17
$2,904M

6%
Aviation S&T

7%
Missile S&T

63%
Army

24%
Other

Colorado Springs, CO

Joint Base
Langley - Eustis, VA

NASA Ames -
Moffett Field, CA

Corpus Christi, TX

AMRDEC HQ
Redstone Arsenal, AL

Core Competencies

- Life Cycle Engineering
- Research, Technology Development and Demonstration
- Design and Modification
- Software Engineering
- Systems Integration
- Test and Evaluation
- Qualification
- Aerodynamics/ Aeromechanics
- Structures
- Propulsion
- Guidance/Navigation
- Autonomy and Teaming
- Radio Frequency (RF) Technology
- Fire Control Radar Technology
- Image Processing
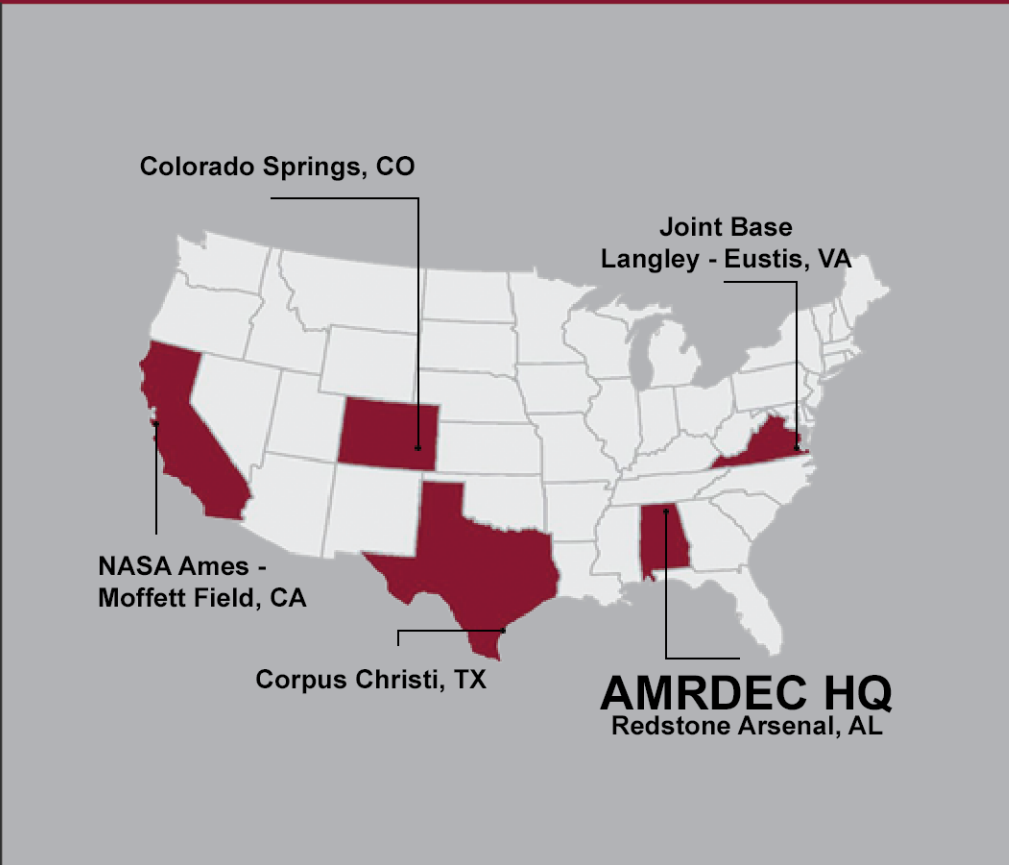- Models and Simulation
- Cyber Security

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#1: Readiness

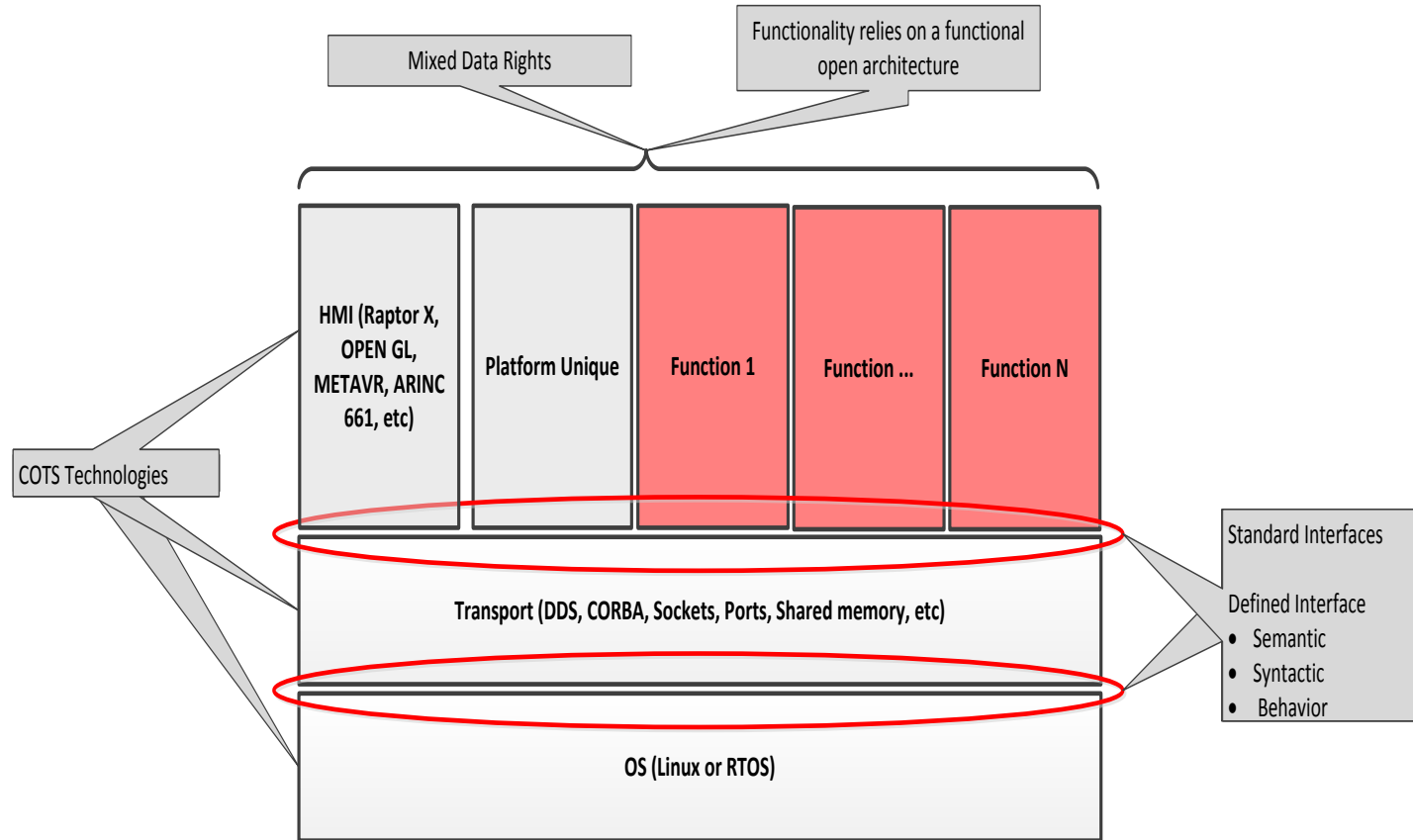Provide aviation and missile systems solutions to ensure victory on the battlefield today.

#2: Future Force

Develop and mature Science and Technology to provide technical capability to our Army's (and nation's) aviation and missile systems.

#3: Soldiers and People

Develop the engineering talent to support both Science and Technology and the aviation and missile materiel enterprise

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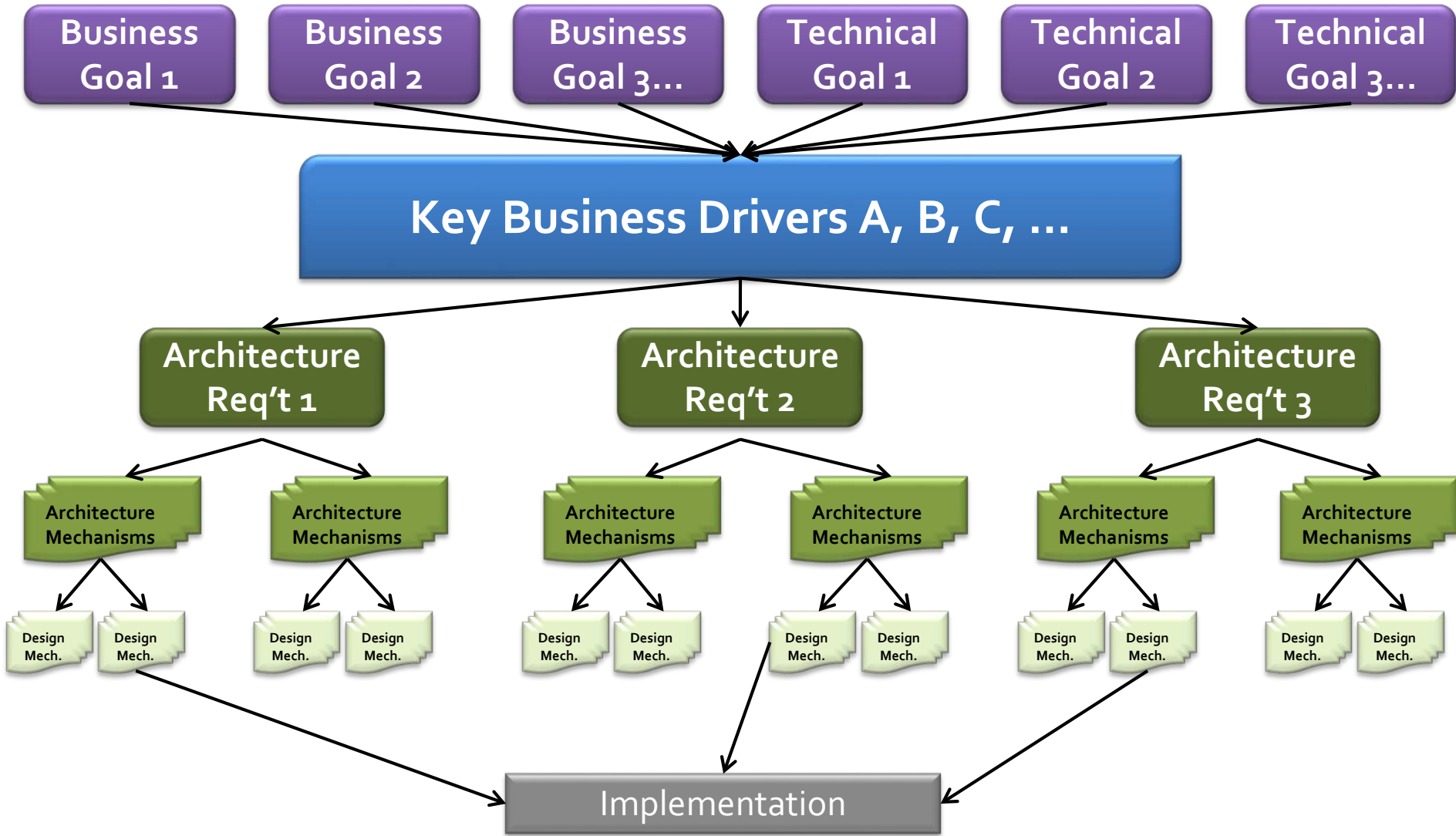
- Previous standardization efforts typically focused on only one aspects of an architecture management approach
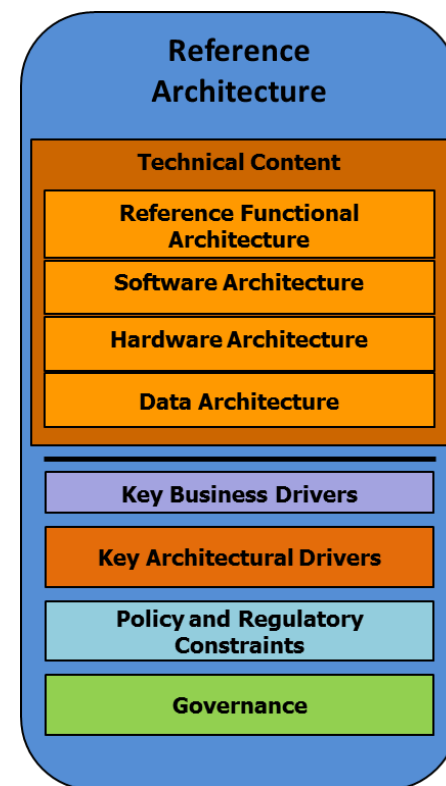- Blended approach must be used to enforce the openness of an architecture

Establishes Architecture requirements based on key business drivers, stakeholder concerns, policy and regulatory constraints

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┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
│ Business │ │ Business │ │ Business │ │Technical │ │Technical │ │Technical │
│  Goal 1  │ │  Goal 2  │ │ Goal 3...│ │  Goal 1  │ │  Goal 2  │ │ Goal 3...│
└──────────┘ └──────────┘ └──────────┘ └──────────┘ └──────────┘ └──────────┘
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Key Business Drivers A, B, C, ...

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┌──────────────┐   ┌──────────────┐   ┌──────────────┐
│ Architecture │   │ Architecture │   │ Architecture │
│   Req't 1    │   │   Req't 2    │   │   Req't 3    │
└──────────────┘   └──────────────┘   └──────────────┘
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Architecture Mechanisms — Architecture Mechanisms — Architecture Mechanisms — Architecture Mechanisms — Architecture Mechanisms — Architecture Mechanisms

Design Mech. — Design Mech. — Design Mech. — Design Mech. — Design Mech. — Design Mech. — Design Mech. — Design Mech. — Design Mech. — Design Mech. — Design Mech. — Design Mech.

Implementation

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- **Architecture Definition**
  - **A deliberate management and documentation of the hardware, software, functional and data architectures open interface standards, and behavioral definitions required to meet an organization's Key Business Drivers**

- **CAS business aspects**
  - **Key Business Drivers**
  - **Key Architectural Drivers**
  - **Regulatory and Policy Constraints**
  - **Governance Considerations**

- **CAS technical aspects**
  - **Data Architecture**
  - **Functional Architecture**
  - **Software Architecture**
  - **Hardware Architecture**

Reference Architecture

Technical Content

Reference Functional Architecture

Software Architecture

Hardware Architecture

Data Architecture

Key Business Drivers

Key Architectural Drivers

Policy and Regulatory Constraints

Governance

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- **Singularly focused solutions do not provide full benefits of OA**

- **CAS provides a mechanism to implement existing standardization efforts in the areas they are most effective**

- **Leveraging the benefits of CAS will enable rapid capability deployment, increased lethality and life cycle cost reduction**

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