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Customer Success Is Our Mission

Vision for Space Exploration

Concept Exploration and Requirements

CER Contract Kick-off Meeting

13 September 2004

Overview Presentation by:

Raytheon Corporation

Raytheon Team Enterprise

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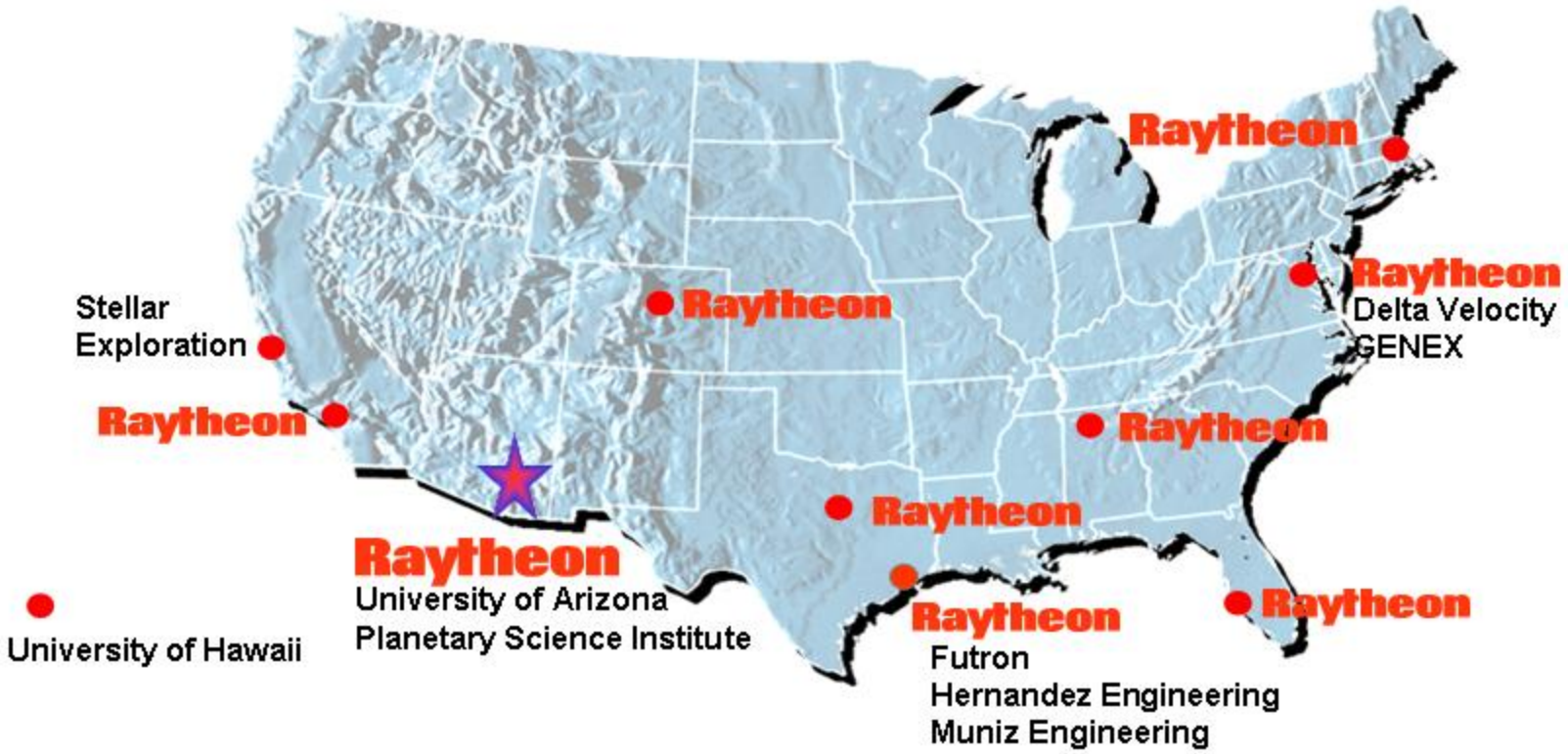

World Class Engineering and Integration Expertise

Space Exploration – Historical View

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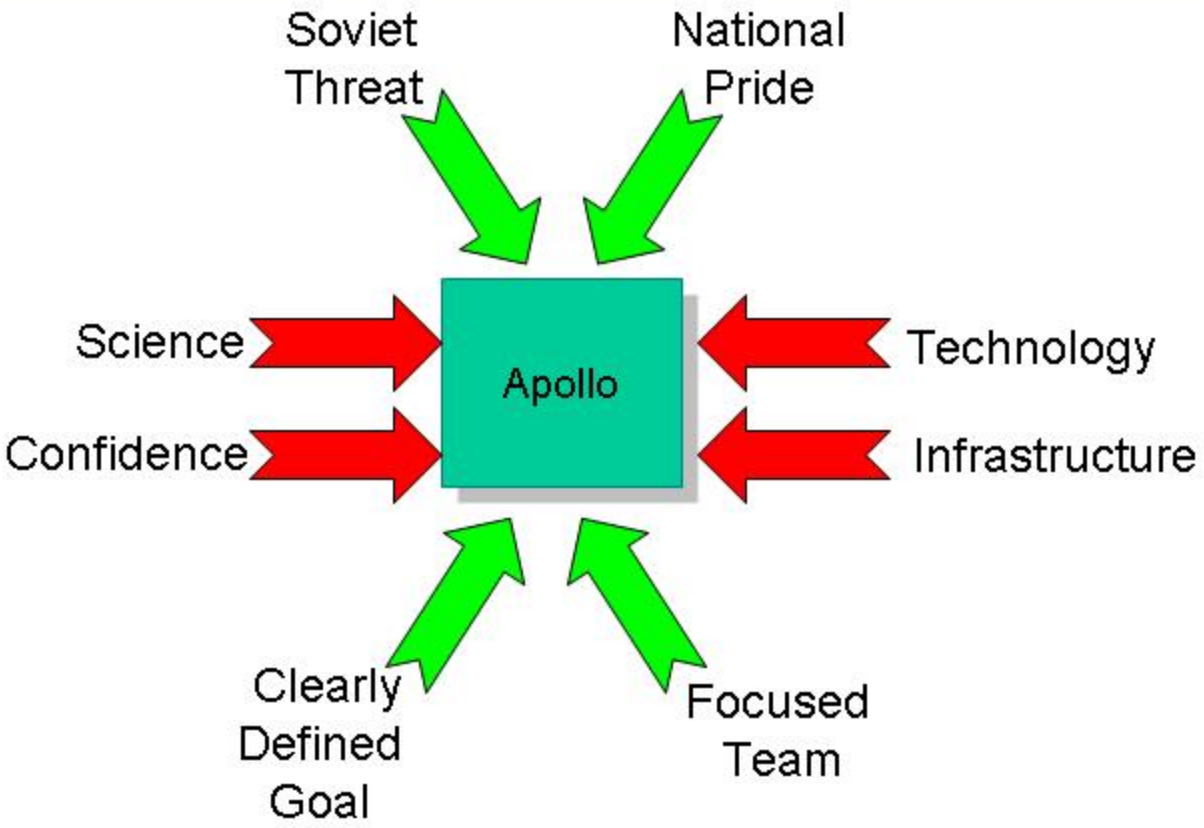

Von Braun/ Colliers	L-5 Society / O'Neill	Next Logical Step	National Commission On Space	Space Exploration Initiative

New Opportunity!

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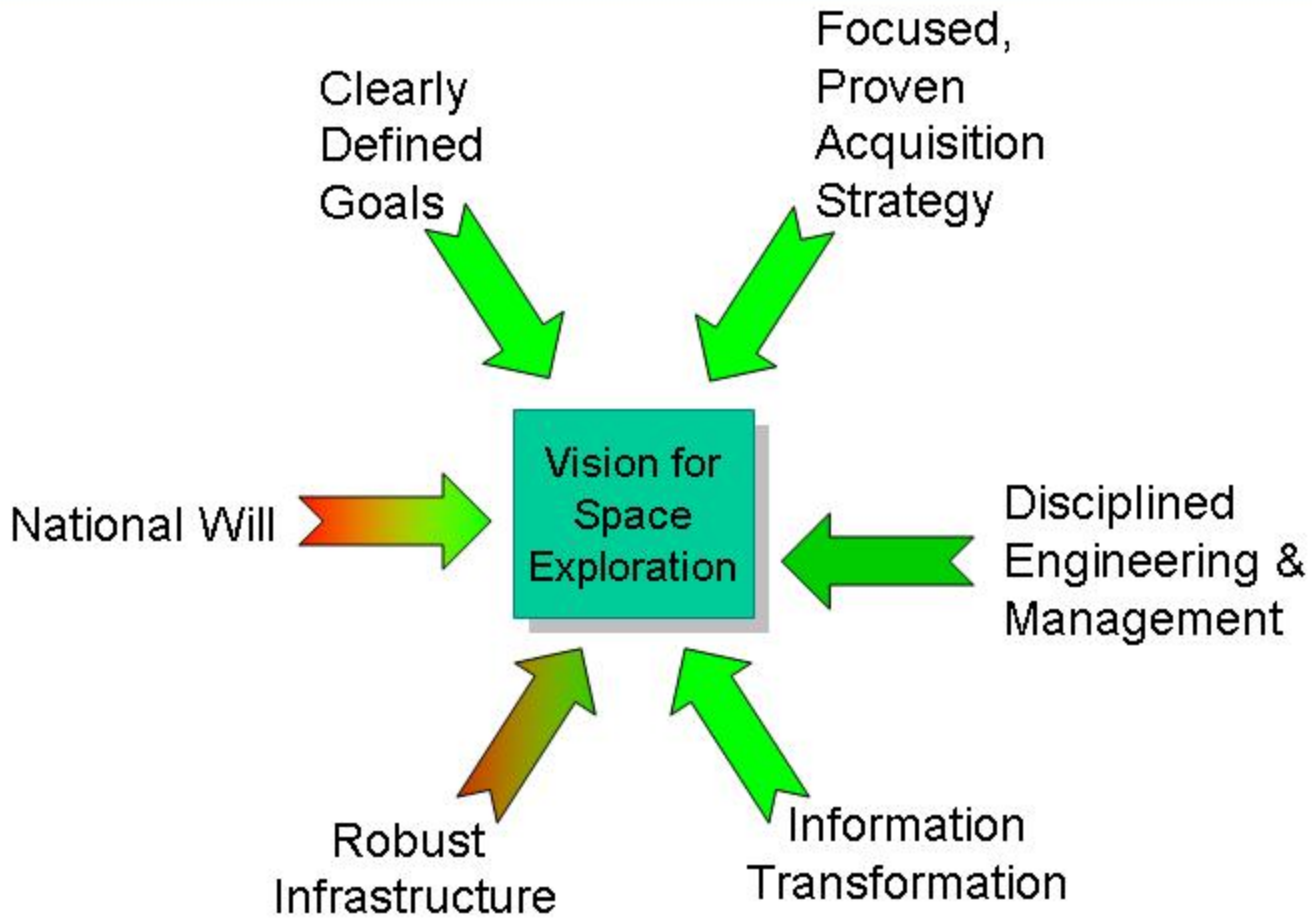

40 years of Architecture Studies

Vision ➡ Objectives ➡ Strategy

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Vision

Advance U.S Scientific, Security, and Economic Interests through a Robust Space Exploration Program

Objectives

Safe

Sustainable

Affordable

Extend Human Presence

Enable Innovation

International and Commercial Participation

Strategy

Results Driven

Open Systems Culture

Collaborative Environment

Disciplined Simulation Based Acquisition

Network Centric Operations

Architecture Approach

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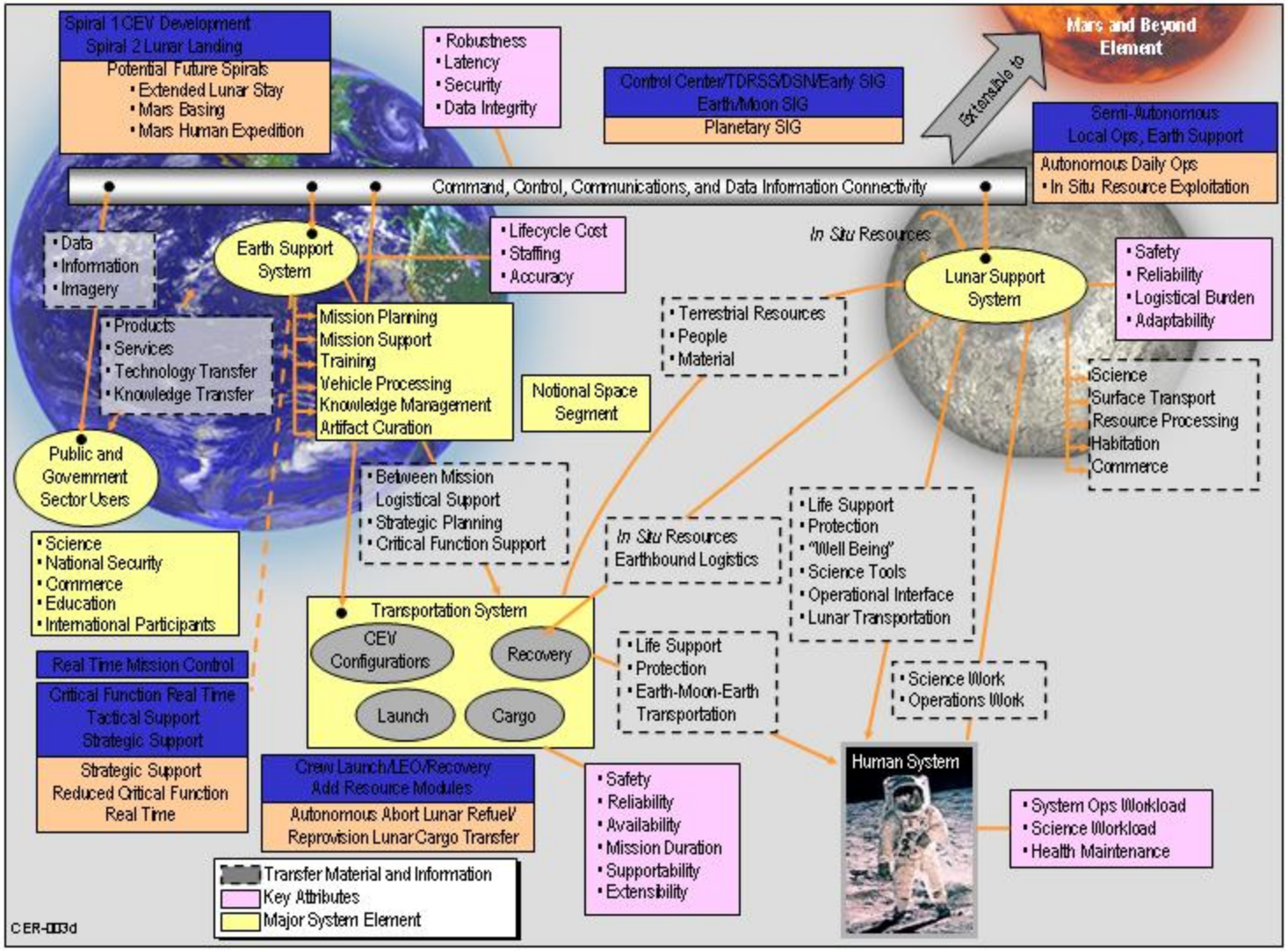

CEV Requirements derived from Overall Architecture

Architecture Attributes

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Operations Centric

- Focus on outcomes
- CEV is a vital element, but not the centerpiece of the enterprise
- Lifecycle cost / performance key parameters
- Leverage emerging operations concepts to minimize standing support
- Maximize knowledge transfer and availability
- Open information systems
- Modular, open spacecraft systems

Open Enterprise

- Enable participation by commercial, and international partners
- Interagency leverage

Information System Concept

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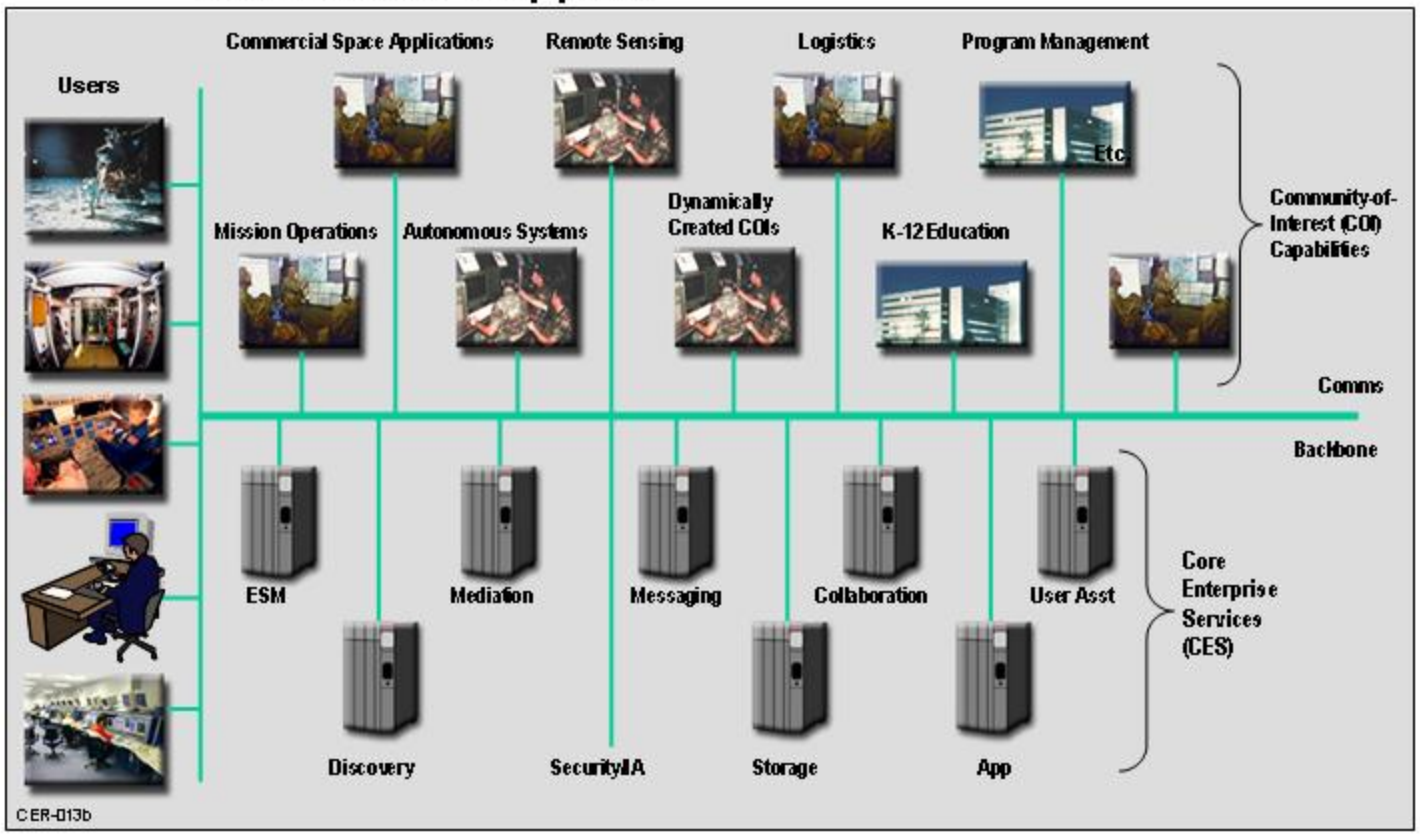
Knowledge Management Based

- Enables "Power to the Edge" Operations
- Enables opening the enterprise
  - **Outreach**
  - **Distributed Support**



Commonality and Extensibility

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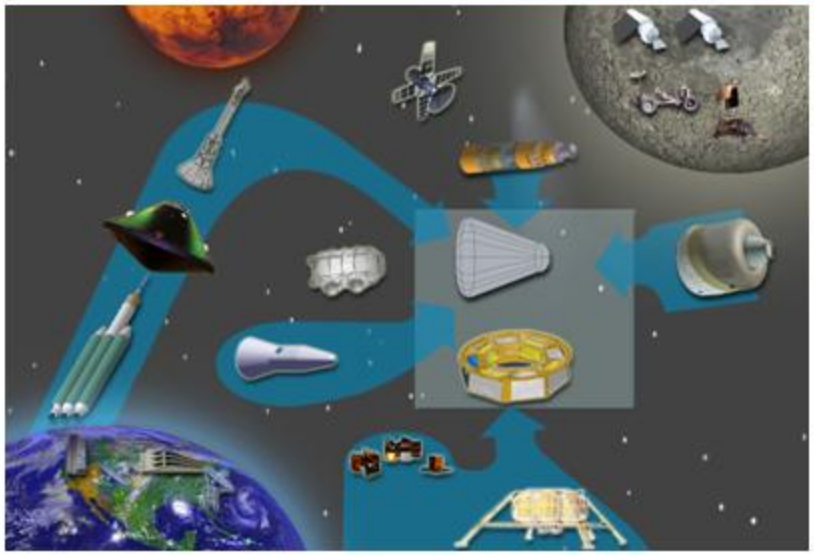

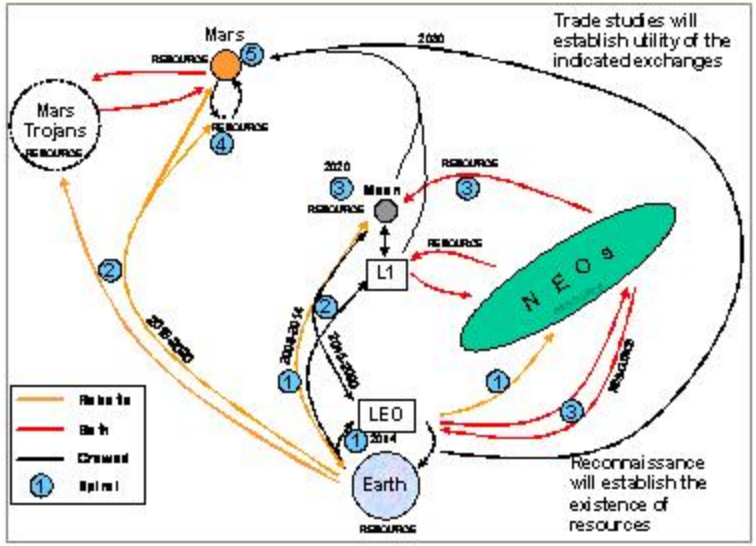

Modular spacecraft and robotics design

- Mission flexibility as the spirals unfold
- Technology insertion
- Enabler for wide participation in program
- Leverage between crewed and robotic spacecraft

NASA, DoD and Commercial Elements

- Software standards
- Autonomous operations technology
- Communications technology standards

Formal Architecture Approach

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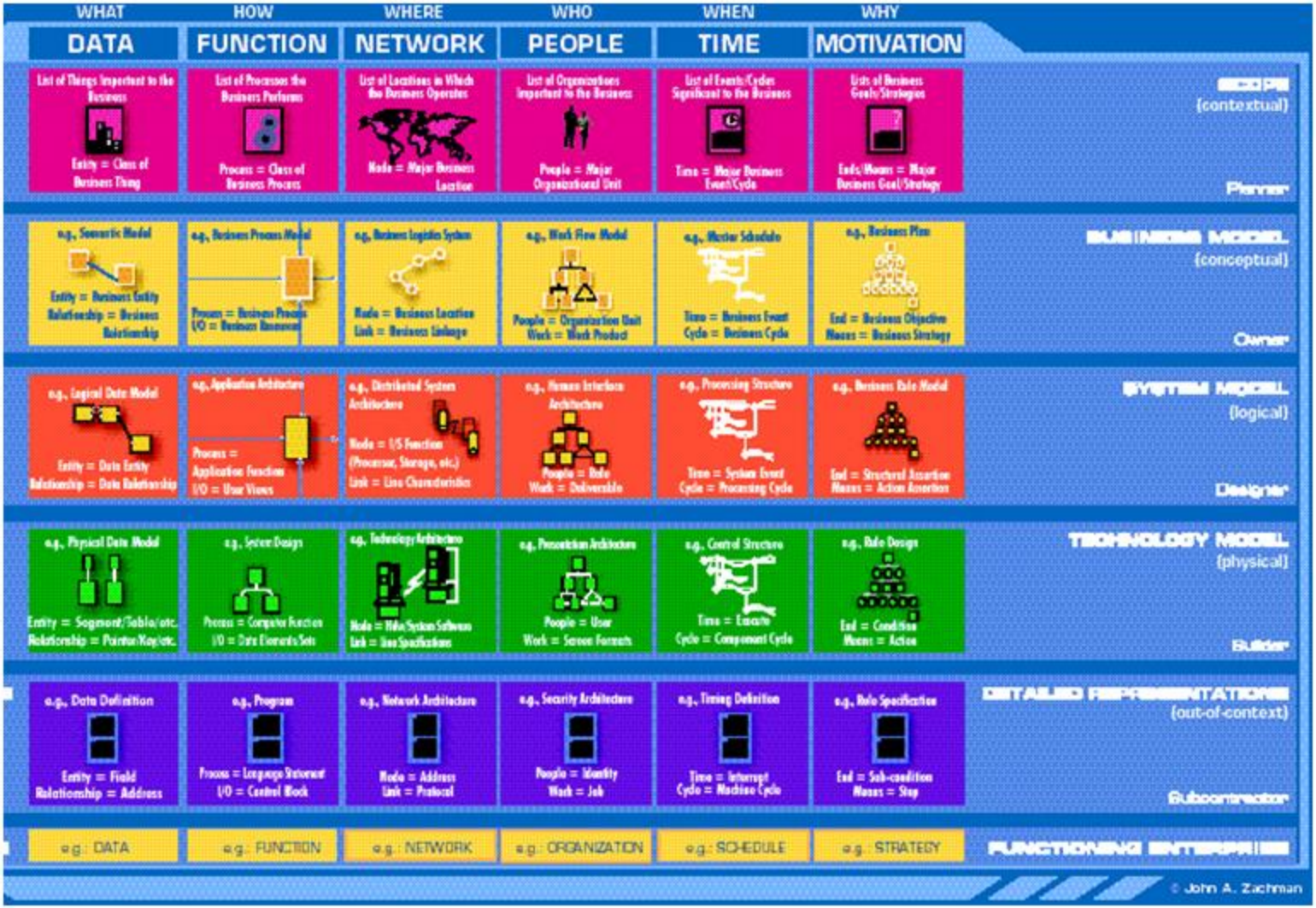

Summary

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Formal Architectural Framework Process:

- ✓ Enables Requirements Flow down to CEV and Launch System
- ✓ Facilitates evaluation of innovative technologies
- ✓ Frames the dialog for international and commercial participation
- ✓ Allows orderly maturation of exploration enterprise

This Process underpins disciplined communication and collaboration

Full Partnership Enables Sustainable Exploration