

# Integrating Unmanned Aircraft into the National Airspace System

## An Application of Value-Focused Thinking and Enterprise Architecting



Platform Access

Any Military Airfield

Installation Specifi

By Platform

Focus of Thesis

Cost

**Form** 

Concept

Predator at Grand Forks AFB

"As-Is" Analysis

### **Objective**

-Create a viable AF/FAA airspace integration enterprise

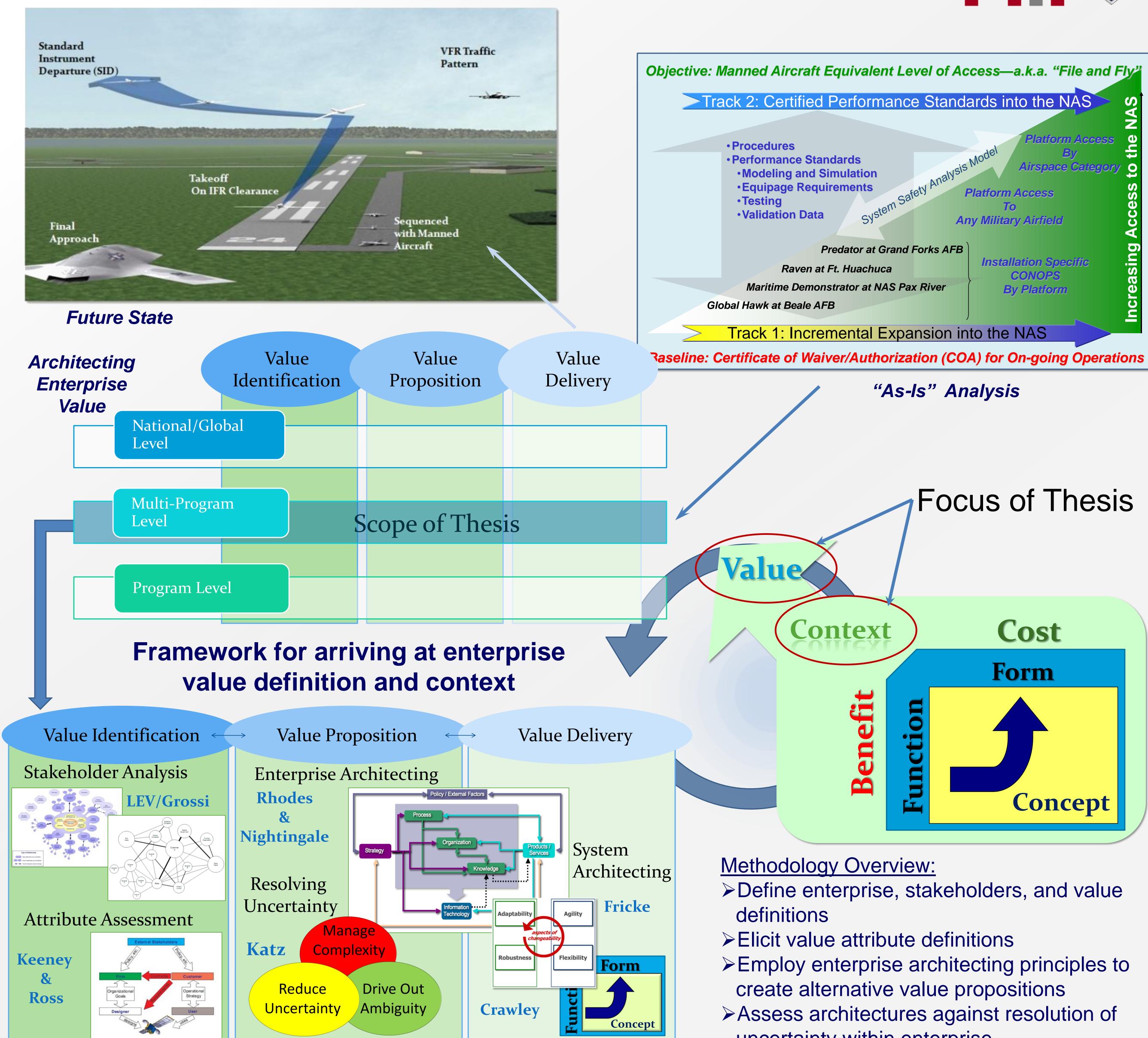
#### Methods

- –Value-Focused Thinking
- Enterprise Architecting
- Design for Changeability

### **Anticipated Contribution**

 An applied analysis of value-focused thinking to a real-world challenge using enterprise architecting principles to generate alternative value propositions for max effectiveness

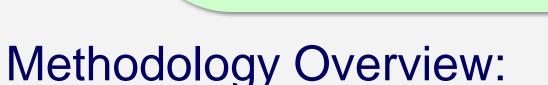
Traditional Systems Engineering approach has proven necessary but not sufficient for the highly dynamic context of the airspace integration challenge **OSD Airspace Integration Plan for UAS AI** "File and Fly" Do No Harm **JCOE CONOPS Set the Precedent COCOM CONOPS Conform Rather Than Create** CONOPS **Architectures Missions Use Cases Vignettes** Capabilities Based Assessment 14 CFR MIL-HDBK-516 **NextGen CONOPS** 7610.4M **Surface Collision Air Collision** Reliability Weather **Mission Decomposition Aviate Navigate** Communicate Manage Contingencies **Collision Avoidance Ops & Procedures Control & Communication Airworthiness** 



Luke Cropsey, Engineering Systems Division & Sloan School of Management

Email: lcropsey@mit.edu

Phone: 617-259-0689



- > Define enterprise, stakeholders, and value
- ➤ Elicit value attribute definitions
- > Employ enterprise architecting principles to create alternative value propositions
- >Assess architectures against resolution of uncertainty within enterprise
- ➤ Consider impact of design for changeability within the enterprise architecting framework