



# Transformative

## Aeronautics Concepts Program

# NASA Aeronautics Autonomy Research: Programmatic Approach and Status

Aeronautics Research & Technology Roundtable  
August 2, 2016





# Continuing Activities in Autonomy Research

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- Near-Term Outcome: Initial Autonomy Applications
  - Address critical barriers to future routine access of Unmanned Aircraft Systems (UAS) in the National Airspace System, through the development and maturation of technologies and validation of data
    - UAS Minimum Operating Performance Standards data, analysis, and recommendations for the relevant stakeholders (e.g.: RTCA groups); including: sense and avoid, terrestrial command and control communication, human systems integration ground control station guidelines
  - UAS Traffic Management (UTM)
    - Continuing UTM capability research
    - Alignment and collaboration with FAA orgs through Research Transition Team (RTT) structure
- Mid- and Far-Term Outcomes: Mission-Level Goal-Directed Autonomous Systems; and Distributed Collaborative Autonomous Systems
  - Technical Challenges (TCs) and other research activity pending
    - Autonomy-related activities within current SASO Project will be evaluated for alignment to roadmap



# New Activities in Autonomy Research

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- Autonomous Systems Project will be planned during FY17
  - New project in the Transformative Aeronautics Concepts Program
  - Programmatic Goal: to execute the Strategic Thrust 6 Assured Autonomy for Aviation Transformation roadmap
- Objectives of internal planning team
  - Provide sharp answers to questions: “why are we doing autonomy R&D?” and “is it disruptive enough?”
  - Identify foundational barriers to autonomous systems that span “ops” and “vehicle” points of view
  - Consider autonomy-related research already underway in other ARMD Projects
  - Define appropriate NASA roles to meet roadmap needs
  - **Identify TCs that follow the path defined in the Strategic Thrust roadmap, the Vision, and the NRC study**