

Transformative Aeronautics Concepts Program

NASA Aeronautics Autonomy Research: Programmatic Approach and Status

Aeronautics Research & Technology Roundtable
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Continuing Activities in Autonomy Research

- 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

- 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**