Background
The FAA’s vision for an info-centric National Airspace System (NAS) includes operations in Upper Class E Airspace, which begins at Flight Level 600 (FL600), or 60,000 feet above the Earth’s surface. Upper Class E Airspace operations have historically been limited due to the challenges that traditional, fixed wing aircraft face in the reduced atmospheric density of the upper stratosphere. However, recent investments in science, propulsion, and aerodynamics have led to the introduction of aircraft that are able to overcome these challenges and operate at very high altitudes. There is increased demand for sophisticated, high altitude, long-endurance aircraft; unmanned free balloons; airships; and supersonic aircraft that can efficiently and economically satisfy research objectives and service demands in Upper Class E Airspace. However, these opportunities present challenges for the current airspace infrastructure and management model. The FAA’s current Air Traffic Management (ATM) service delivery cannot cost-effectively scale to meet the needs of the envisioned Upper Class E Airspace environment. The predicted increase in operations, disparate vehicle performance characteristics, and unconventional operational needs requires innovative solutions through public-private partnerships and the leveraging of other related approaches, such as UAS Traffic Management (UTM). The FAA’s info-centric vision for the NAS builds on the Next Generation Air Transportation System foundation in three key areas, or pillars: operations, supporting infrastructure, and integrated safety management. The ETM project supports the operations pillar in the area of diverse operations.

Description
The FAA’s Upper Class E Airspace Traffic Management (ETM) Concept of Operations (ConOps) project is developing the vision for the management of flight operations within Upper Class E Airspace in collaboration with NASA and aviation industry stakeholders. The ConOps will describe a cooperative traffic management environment above FL600 in which operators are responsible for the coordination and execution of their diverse operations. The ConOps also will address operations transiting to/from Upper Class E Airspace and operations that straddle the boundary between Upper Class E and Class A airspaces (FL180-FL600), or 18,000-60,000 feet. The ConOps will inform future policies, regulations, services, and infrastructure required to support safe and efficient operations.
ETM supports the operational vision of an info-centric NAS that is made possible through a fully integrated information architecture with interoperable sharing of information among operators and other stakeholders. ETM is comprised of highly automated and third party-managed services that apply commercial practices to safely scale service growth in line with demand. ETM allows for the flexible use of airspace through cooperative traffic management among operators where air traffic services are not provided or available.

**Outcome(s)**

ETM ConOps v1.0 describes the foundational principles for cooperative traffic management, including:

- Foundational principles and assumptions
- Operational threads
- Roles and responsibilities
- High-level operational requirements for transit to/from Upper Class E
- Airspace contingencies during these phases
- Flexible floor concept for operations just below FL600

ETM ConOps v2.0 will integrate v1.0 and industry’s cooperative separation concept to present a comprehensive and unified vision for Upper Class E Airspace Operations.

Subsequent ETM ConOps versions will be developed, as required, to mature and/or refine concept elements and to support joint FAA/NASA/industry simulations and operational demonstrations.

**Driver(s)**

The Aerospace Industries Association (AIA) and Upper Air-space Working Group (UAWG) are actively addressing technologies and emerging operations within this airspace and have engaged the FAA and NASA to collaborate on this effort.