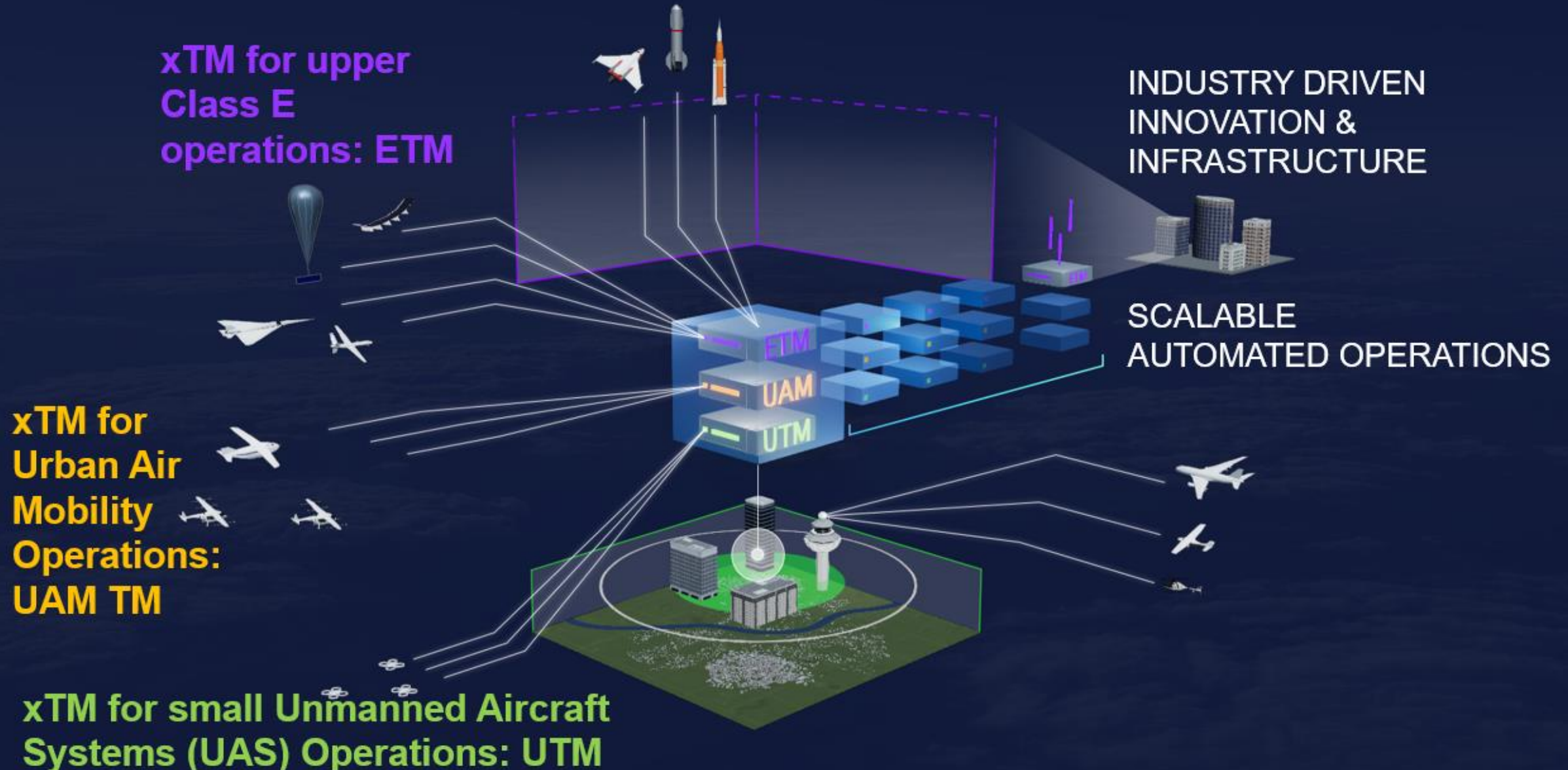




Upper Class E Traffic Management (ETM) and ATM-X

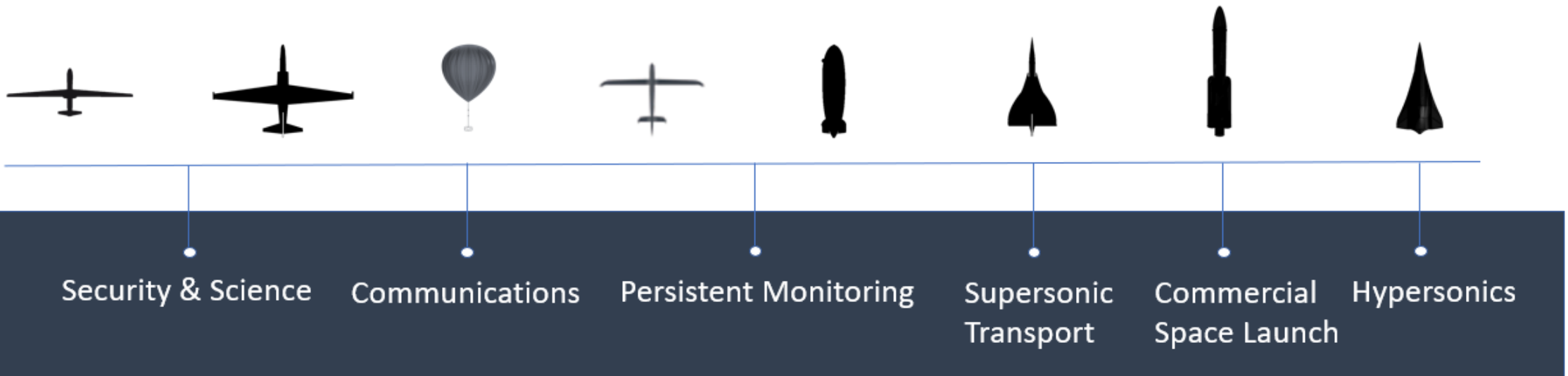
Jeffrey Homola
NASA Ames Research Center
AUVSI XPONENTIAL 2022

Extensible Traffic Management (xTM) in ATM-X



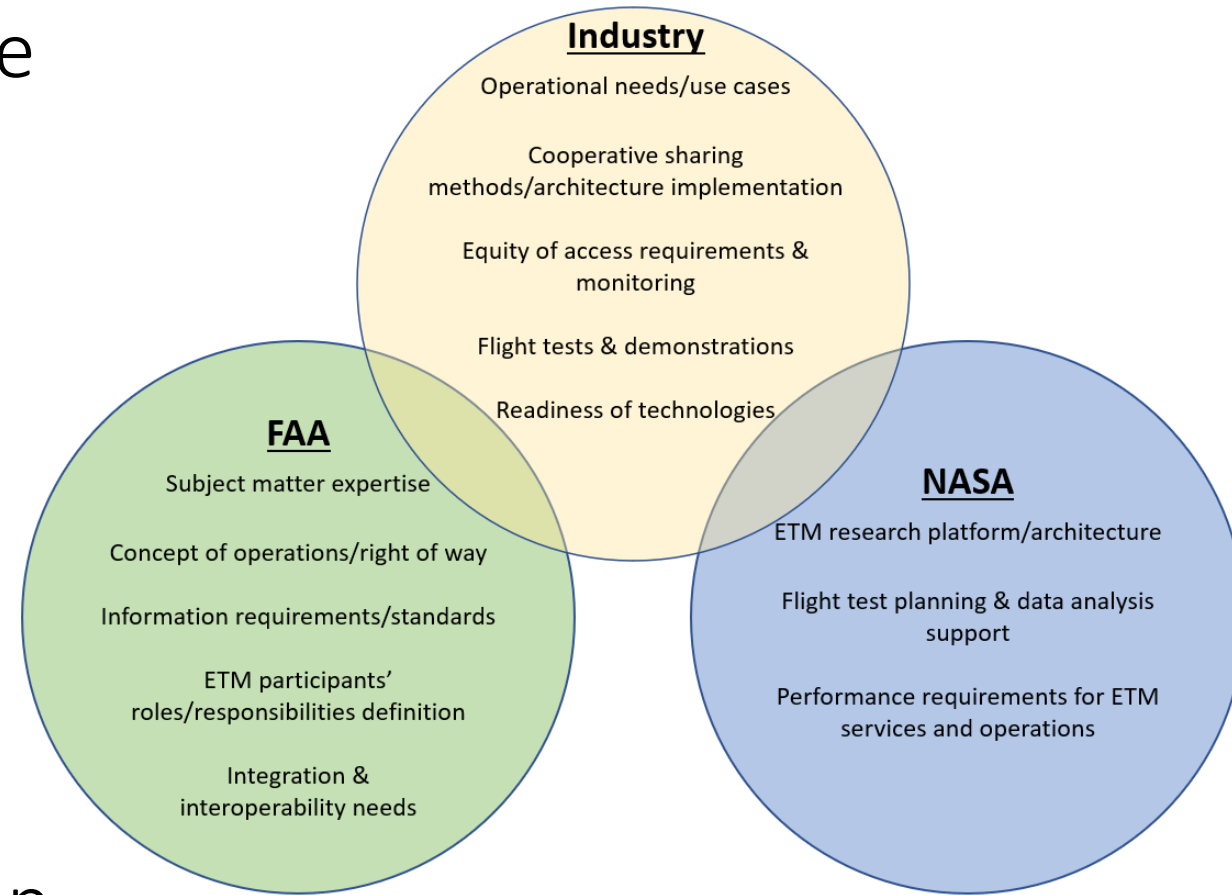
Upper Class E Traffic Management (ETM)

- What is ETM?
 - A cooperative approach to stratospheric airspace integration and management that is safe, scalable, efficient, and fair that accommodates all missions and use cases
- Why is ETM needed?
 - New entrants are emerging
 - Existing users need continued safety and access
 - Demand for Upper Class E airspace use is projected to increase
 - A diverse set of vehicle and operation types are expected
 - In the US, ATC services are limited or not provided in Upper E, which will impact the ability for industry to scale



ETM Engagement

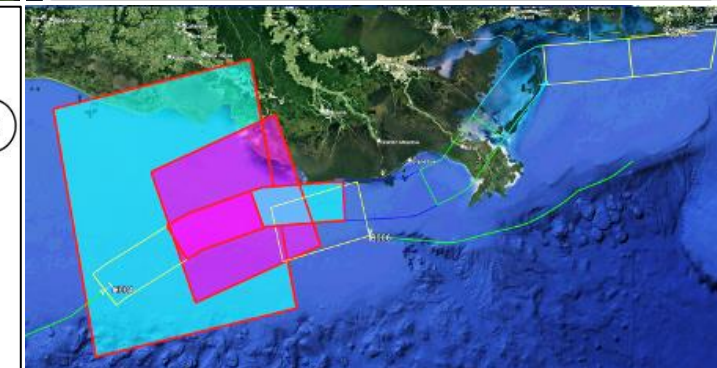
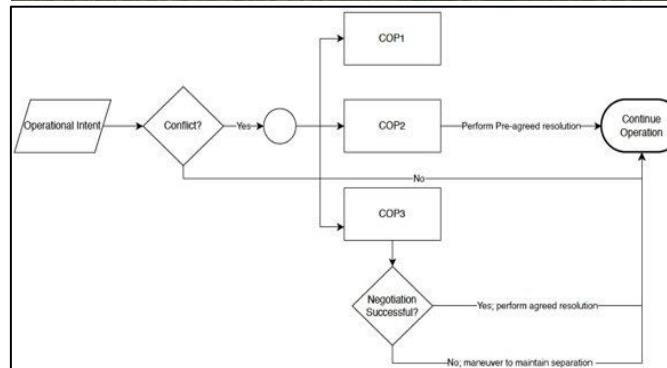
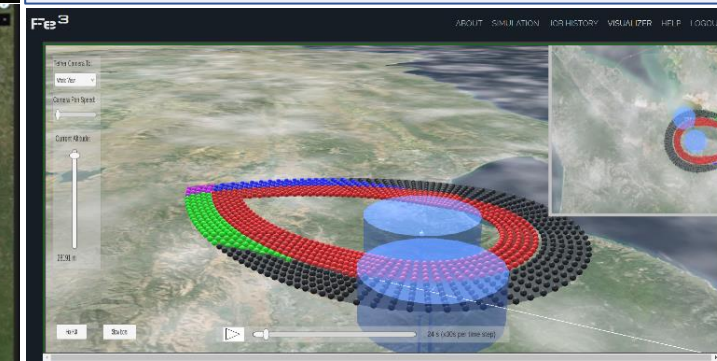
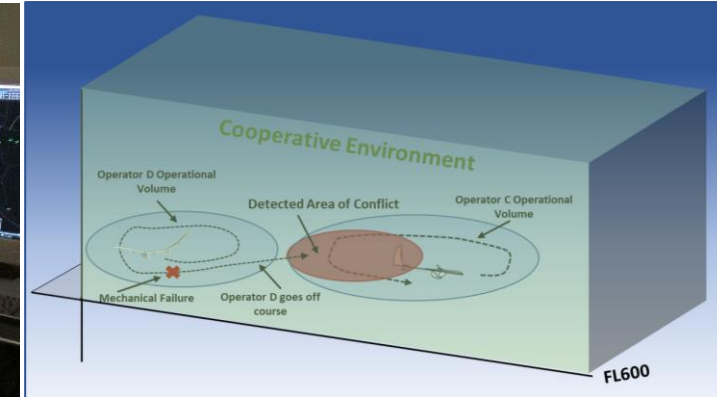
- Progression of ETM requires close collaboration with multiple stakeholders
 - Industry
 - FAA
 - Other regulatory agencies and organizations
 - DoD and other federal agencies
- Regular meetings and events conducted with stakeholder group input and perspectives



ETM Research & Development

Research and Development in ETM requires a multi-faceted approach and parallel efforts:

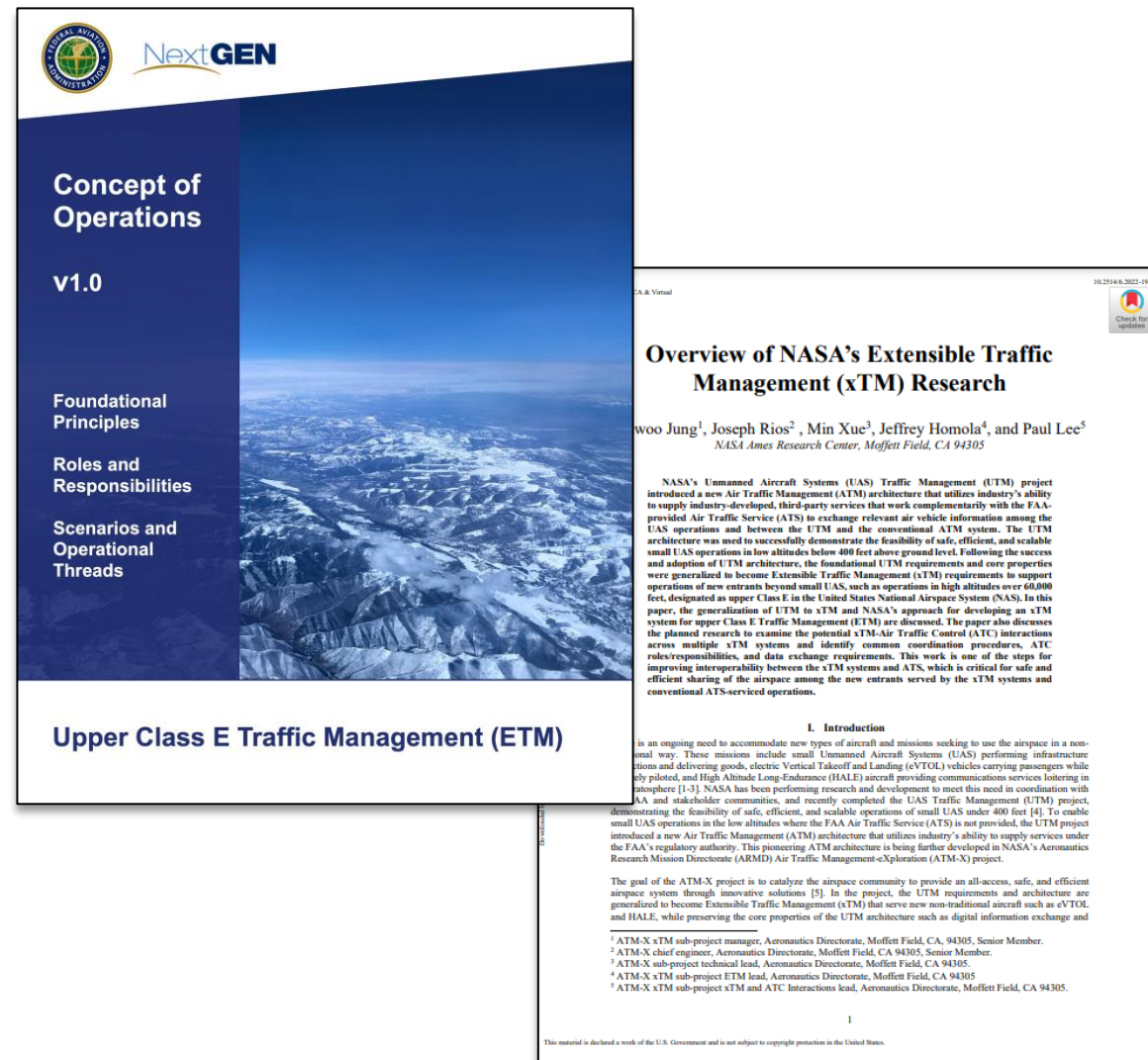
- Use case development and concept refinement
- Algorithm development and modeling for:
 - Operation Intent formulation
 - Separation analysis and conflict management
- Development of Cooperative Operating Practices
- Real Time and Fast Time simulation
- Data visualization
- Architecture development and implementation
- Participant connectivity





ETM Path Ahead

- Announcement of Collaborative Opportunity (ACO) to be released
- Working toward ETM connectivity evaluation
- Next ETM meeting in May on the topic of communications considerations for ETM operators
- Additional publications in progress and to be formally released
- Concept refinement and planned Concept of Operations update





Questions?

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