Traffic Flow Management Wrap-up

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San Francisco Stratus research

- Objective was to simultaneously consider weather modeling, traffic flow modeling, and operational practices
- NASA developed vision, problem statement, and selected NRA

Analysis complete: shows promise to save $4.8M/year ($9.6M with line of flight consideration) and 19% reduction in delayed flights (1092 hours/year)

Stand alone, web-based decision aid was created and can be accessed through NWS website (provided to NWS and FAA)

Operational shadow assessment being planned with the FAA for the 2011 stratus season
Key Findings from 2010

- Optimization-based scheduling models can reduce NAS delays by over 40% compared to current operations.

- Weather information must be translated, not simply displayed, to achieve maximum benefits.

- Failure to consider the integrated impact of traffic management initiatives can lead to over 50% of flights being “double delayed”, as commonly occurs in current day operations (DFW and ATL Case Studies).
What are the most important TFM integration opportunities to pursue?

- Weather Integration
  - Integration with existing FAA Decision Support Tools
  - Integration with NASA simulation systems (e.g., FACET)
- TFM + Arrival Scheduling
- TFM + DAC
- Others?
Future Research Activities

High Technical Readiness Level Activities:

• Are there HITLs that we should consider running?

• Are there opportunities for operational engineering or shadow assessments?

Low Technical Readiness Level Activities:

• Weather translation models

• Environmental impact modeling

• Scheduling and routing

• Flight prioritization techniques