FAA/Industry Collaborative Weather Rerouting Workshop

ATC Focus Area Discussion Summaries
April 10 - 11, 2001
Topic 1: Data Acquisition & Dissemination
ATC Team

- **Weather**
  - Most reliable source/ More accurate forecast
  - Needs to be verified, e.g. planned for, never arrived (Pilots/controllers)
  - Longer forecast for planning (Meteorologists)
  - TSD weather is valuable

- **Volume**
  - TSD graphics useful
  - Need to know reroutes to effectively manage resources
  - Earlier warning (TMU)
Topic 1: Data Acquisition & Dissemination
ATC Team (concluded)

• Complexity
  – Information from controllers and pilots (current situation)
  – Information from TMU (future time)

• Strategic plan
  – Reasons for plan - big picture
    • Need good way to communicate
    • Need to be able to make controller understand
  – Everyone should have the same information
  – Availability of reroutes easier to get into computer
  – Ability to display reroute plan, rationale and impact to controllers
Topic 2: Automation & Procedures
ATC Team

• Tool that combines volume and complexity and gives indication (of change/problem)
  – More accurate Monitor Alert parameter (MAP) numbers
  – Means of expressing complexity in MAPs
  – Need to explore methods to:
    • Capture complexity numbers
    • Validate MAP numbers

• Trial planner
  – Reroutes overload sector, if so, then test moving traffic in affected sector (off-loading)
Topic 2: Automation & Procedures
ATC Team (cont’d)

• Shared information tool with:
  – Reroute information
  – IDS 4/5 capabilities
  – Weather information
  – MIT information
  – Approach plate information
  – Real-time
  – Highlight when something has changed

• Better weather display on MDM
Topic 2: Automation & Procedures
ATC Team (concluded)

• Procedures
  – Need to consult with Ops Sup to verify constraints in Area. Get info from Area before making rerouting plan. (Keep sup in the loop.)
  – Share planned reroutes based on future weather well in advance
  – Ops Sup can adjust area configuration/resources or initiate TFM restrictions based on area knowledge
  – Procedure to issue reroute
    • Sector with control of aircraft will read reroute to aircraft (till CPDLC)
    • Automatic amendment to Host
Topic 3: Practical Application in Real-Time 
ATC Team

- Identify weather problem
  - Controller
    - Relay accurate real-time weather-related information to Ops Sup
  - Ops Sup/CIC
    - Inform TMU
    - Resolve small problems
    - Initial reaction and solution to problem (short-term, tactical)
  - TMU - facility-wide weather problem identification
  - ATCSCC - system-wide weather problem identification
  - Airlines
    - Share information with ATCSCC to anticipate problems
    - Pilots - Tell controller of intentions
Topic 3: Practical Application in Real-Time
ATC Team (cont’d)

• Design reroutes
  – Controller
    • Provide feedback on what will/won’t work in sector
    • Take care of initial problems (e.g., deviations)
  – Ops Sup
    • Pass Controller information to TMU
    • Collaborate with adjacent areas/ inform TMU
    • Take care of small (now) problems
    • Suggest reroutes
  – TMU
    • Take care of bigger (future) problems
    • Plan bigger reroutes and share information. Involve affected areas before implementing.
Topic 3: Practical Application in Real-Time
ATC Team (cont’d)

• Design reroutes (cont’d)
  – ATCSCC
    • Coordinate when more than one facility involved
    • Sometimes needs to exercise authority to implement route with system impact
    • Focal point for National implementation
  – Airlines
    • Keep FAA informed of routes required by FARs
    • Share plans - information on cancellations/ substitutions etc. most important
      priorities (to the degree it impacts weather/ reroute planning)
Topic 3: Practical Application in Real-Time
ATC Team (cont’d)

• Determine reroute capacity
  – Controller
    • Provide Ops Sup with information on what traffic can be accommodated
    • Keep Ops Sup updated (in general)
  – Ops Sup
    • Based on Controller input and TMU input on plan, determine sector capacity
    • Configure sectors, utilize resources and implement TFM initiatives to maximize sector efficiency
  – TMU
    • Use automation tools (w/ accurate information) to determine capacity
    • Determine if reroute capacity is adequate for need
  – ATCSCC - Mediate plans between adjacent facilities
Topic 3: Practical Application in Real-Time ATC Team (cont’d)

• Assign specific flights to reroutes (depends on size of problem)
  – Controller - work on aircraft in sector
  – Ops Sup
    • Collaborate with adjacent area for aircraft in area
    • Monitor impact / Make adjustments
  – TMU
    • Use tools available and make assignments
    • Monitor weather
    • Make changes
  – ATCSCC - Collaborate with airlines
  – Airlines - Collaborate with ATCSCC
Topic 3: Practical Application in Real-Time
ATC Team (cont’d)

• Implement reroute strategy
  – Controller
    • Reroute active affected flights; Scan Proposed flights for compliance
  – Ops Sup
    • Disseminate information to Controller
    • Monitor Flow/ feedback to TMU
    • Apply additional restrictions if necessary
  – TMU
    • Send reroutes to affected facilities
    • Adjust reroutes as weather moves
    • Evaluate feedback from Ops Sup
    • Adjust restrictions as necessary
  – ATCSCC - Act as liaison between facilities & airlines
  – Airlines - File right routing
Topic 3: Practical Application in Real-Time
ATC Team (concluded)

• Collaboration not needed/possible when:
  – Unexpected weather develops suddenly; need to stop traffic
  – Need to react to unsafe or time-critical situation

• Important areas for next step research
  – Valid volume and complexity numbers (revised Monitor Alert platform)
  – Weather forecast accuracy
  – Reroute planning tools (research and deployment)
  – More TSD capacity - more windows in areas slows system
  – Common platform
  – More shared automation allowing ‘information on demand’