Integration of Weather Information and ATM Tools

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• Weather Information/ATM Tool Integration – a NextGen “given.”
  – NAS OPS subcommittee of REDAC formed a work group to explore this topic.
  – WAIWG explored the topic for over 1 year and reported back to REDAC in fall of 2007.

• Why integrate Weather Information into ATM Decision Support Tools?

• What does Weather Information/ATM Integration mean?
Why Integrate Weather Information into ATM Tools?

• If you believe that tomorrow’s NAS will be a CDM-type environment, and that weather will continue to cause the majority of delays in the NAS, absent weather/ATM integration, all future CDM decision makers must be skilled aviation meteorologists.
  – CDM decision makers: air traffic managers/controllers, dispatchers, pilots.
  – (ROM) 20,000 air traffic controllers/managers, 5,000 dispatchers, 500,000 pilots, 500 operational aviation meteorologists in the U.S.
  – Significant training burden to produce 20,000 + 5,000 + 500,000 – 500 = 524,500 new operational aviation meteorologists.

• NextGen assumption/dependency – common weather information (including forecasts).
  – Very little room for meteorological difference of opinion.

Too few meteorologists, too many forecast opinions.
What does Weather Information/ATM Integration Mean?

- **Simple, low tech/near term** – position all appropriate sources of weather information within reach of the air traffic decision maker.
  - Human-interpreted/human-integrated forecast $\rightarrow$ Human air traffic decision.
  - Mental integration of weather and air traffic information is very difficult.
- **Moderately complex/near and mid term** – provide air traffic management guidance (which considers machine-interpreted weather information) to human air traffic decision maker.
  - Machine-interpreted/machine-integrated forecast $\rightarrow$ Human air traffic decision
  - Route Availability Planning Tool (RAPT).
- **High tech/end game** – machine-produced air traffic management decisions in which machine-to-machine weather information has been interpreted and considered.
  - Machine-interpreted/machine-integrated forecast $\rightarrow$ Machine air traffic decision with human oversight.

Phased approach, appropriate for transitioning.