



# **FEDERAL AVIATION ADMINISTRATION**

## **AIR TRAFFIC ORGANIZATION SYSTEM OPERATIONS SERVICE UNIT**



### **Air Traffic Control System Command Center Training Report on S2K+5 Initiatives**

**2005**

## **EXECUTIVE SUMMARY**

### **Introduction**

This report highlights the efforts and outcomes of this year's FAA Spring 2005 (S2K+5) Initiatives. The FAA conducted seven independent sessions that were attended by System Operations personnel and a diverse customer base from around the country. The S2K+5 sessions were kicked off at the Denver, CO Traffic Flow Management (TFM) Conference conducted on May 3-5 and completed in Phoenix, AZ. on June 16.

### **Background**

The FAA's S2K+5 initiative meetings were a continuation of the Spring 2000 training effort that began following the summer of 2000. At the 2000 end of severe weather season review the industry stakeholders identified a need for yearly information exchanges between the FAA and their customers on issues that affect all stakeholders of the National Airspace System (NAS). This years sessions utilized a different format than in the past by employing a panel of experts in a facilitated question and answer environment and solicited input from the participants via email prior to the start of the S2K+5 sessions.

### **Purpose**

S2K+5 provides an opportunity for NAS stakeholders to come together for the purpose of dialogue, education, information exchange, and to foster collaboration between NAS stakeholders to improve NAS performance during severe weather events or during constrained operations. Additionally, the S2K+5 initiatives were designed to answer customer questions about current TFM operations and to solicit feedback for future improvements in TFM.

### **Location and Dates**

Seven independent S2K+5 sessions were conducted at four sites throughout the country. The sessions were held in different regions of the country to provide a variety of customer access and opportunity to attend. The first was in Denver, CO May 3-5, 2005, followed by the meeting in Dallas, TX May 17-18. Next was the meeting in Morristown, NJ May 24-25, 2005, and last was the meeting in Phoenix, AZ June 15-16, 2005.

### **Participants**

Mike Sammartino, Director System Operation, kicked-off the initial session as part of the TFM conference with National focus. Subsequent regional sessions were attended by the FAA Managers of Tactical Operations (MTOs) for the five regions of the country, Traffic Management Officers (TMOs) for several Air Route Traffic Control Centers (ARTCCs), many local Air Traffic Control (ATC) providers from Terminal Radar Approach Controls (TRACONs) and airports, as well as customers of the system ranging from airline pilots and dispatchers, to military FAA liaisons and general aviation pilots.

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# ATCSCC Training Report on S2K+5 Initiatives

## Introduction

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### **Location and Dates:**

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Dates 2005	Session	Service Area	Venue
May 4	1	National	TFM Conference (May 3-5) Denver, CO Renaissance Denver Hotel (Marriott), 3801 Quebec Street, Denver, Colorado, 80207.
May 17/18	2/3	Central	DAL Love Field Business Jet Center 8611 Lemmon Avenue, Dallas Tx. 75209

Dates 2005	Session	Service Area	Venue
May 24/25	4/5	Eastern	Morristown, New Jersey Honeywell Corporate Headquarters 101 Columbia Road Morristown, NJ 07962
June 15/16	6/7	Western	America West Headquarters 1950 E. Buckeye Road Phoenix, Arizona 85034

**Participation:**

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Venue	Total Participates	FAA includes facilitators and support team	Customer
Denver May 4	93	62	31
Dallas May 17	48	23	25
Dallas May 18	46	26	20
Morristown May 24	54	24	30
Morristown May 25	43	17	26
Phoenix June 15	35	14	21
Phoenix June 16	19	10	9
Total	338	176	162

## Section 2: Summary

### Summary of Key Discussion Categories and Sub-Topics

The following six high level categories can be derived from the S2K sessions.

1. Delay Programs
2. Communication
3. Access to NAS (airspace)
4. Policies and Procedures
5. Tools and Technology
6. Data Quality

It is possible that many sub-topics span more than one category, but an attempt is made to place each sub-topic in a higher level category for simplicity and clarity. In all the S2K+5 venues these major topics were addressed in question and answer discussions, including exchanges of opinions and ideas.

1. Delay Programs:
  - a. GDP in support of SWAP
  - b. E-STMP
  - c. GAAP
  - d. Ground Stops (GS)
2. Communications:
  - a. Customer forums (CDM, S2K, regional forums)
  - b. General Aviation involvement in the CDM process, TFM education within the community
  - c. VIP notification
  - d. Training
  - e. Planning Team changes, including new web page
3. Access to the NAS:
  - a. DRSVM, Monitor Alert Parameter (MAP) review
  - b. Enroute issues, reroutes, CDR use
  - c. Military airspace, Special Use Airspace (SUA)
  - d. Altitude restrictions
4. Policies and Procedures
  - a. FAA internal issues
    - i. Staffing
    - ii. Shift turnover
    - iii. Overtime
  - b. Airspace improvements (i.e. FLL)
5. Tool and Technology
  - a. Airspace Flow Program development
  - b. Flow Constraint Area (FCA)/User Preferred Trajectories (UPT) use
6. Data Quality
  - a. Expansion of data quality report card

## **Priority Topics**

The Air Transportation Association (ATA) organization identified their three highest priority items to be:

1. Transcon handling - during Ground Delay Programs (GDPs)
2. Report card for data quality
3. Route availability

Following those, the participants at the Denver session identified the following as the highest priority items:

4. Multi-GDP in Support of SWAP usage for 2005
  - a. Use as a last resort; look at other options
  - b. Review process for entering and exiting GDP's
5. CDR usage and policies (/A vs /R)
6. GS (Ground Stop) management
  - a. Review process for entering and exiting GS
7. Review MAP:
  - a. MAP values in the post DRVSM environment
8. Provide airline operating cost to TMO/MTO to help determine cost per: Mile/ Minute/ Hour
  - a. ATA will provide changing figures through the ATCSCC
9. Review and validate facility Letters of Agreement (LOA's); especially altitudes to gain system efficiencies
10. System Operations getting more engaged in and with airport authorities
  - a. Also engage with ramp tower – more information exchange, interactions, and coordination (review the process)

## Action Plans

Table 1: provides an action summary.

Major Categories	Item	Discussion Topic	Session
		Action Plan (if identified during the session)	
Delay Programs			
GDPs Handling Transcon	1a	Transcon flights during GDP: GDP cancellations times may not be communicated expeditiously	Denver
		<ul style="list-style-type: none"> <li>• Communicate more clearly the expected GDP ending time. Provide as much lead time as possible to assist customers in reducing delays.</li> <li>• Brief key personnel on the need for timely communication and collaboration</li> </ul>	
	1b	Transcon flights during GDP: Can there be exemptions for Transcon flights arriving at GDP airports because the flight is taking the delay many hours in advance?	Denver
		A better understanding of the customer's requirements is needed; Take this to the CDM Stakeholders Group (CSG) for more discussion and definition of the issue.	
Communication			
Training	6	FAA courses are open if there is interest	Dallas
		Individuals need to contact the FAA ATCSCC Training Department to make sure there is space available.	



Major Categories	Item	Discussion Topic	Session
		Action Plan (if identified during the session)	
Access to NAS (airspace)			
Route availability	3	The concept of a closed route is misunderstood and it is not clear when a route may be available for use.	Denver
		<p>Implement the Severely Constrained Area (SCA) concept</p> <p>Refine the concept by defining: 1) levels of a constraints such as light, moderate, or severe 2) Pathfinder policy and usage 3) Controller determination of route closures</p> <p>FAA: Track progress of SCA concept worked by ATCSCC procedures            FAA: Provide appropriate education and training and conduct a 7210.3 review            Customer: Develop procedures and conduct required training</p>	
CDR's	7	Share some of the test CDR agreements	Dallas

Major Categories	Item	Discussion Topic	Session
		Action Plan (if identified during the session)	
Policies and Procedures			
MAP	4a	Monitor Alert Parameters: review MAP values based on DRVSM implementation	Denver
		TMO should respond to the CDM DRVSM work group (WG) to perform review of MAP values in high sectors;  TMO's could adjust MAP value by (+/- 3) as a benefit of DRVSM and communicate changes back to DRVSM workgroup	
	4b	Monitor Alert Parameters: Review MAP calculation formula	Denver
		<ul style="list-style-type: none"> <li>• Ensure all stakeholders understand MAP values.</li> <li>• TMOs should review MAP values as triggers to mandatory TMIs</li> </ul>	
Facility LOA's	5	Review and validate facility Letters of Agreements (LOA's)	Denver
		<ul style="list-style-type: none"> <li>• Check LOAs, SOPs, and facility operating handbooks to validate altitude restriction between sectors, and feeder sectors</li> <li>• Show if changes will provide cost savings; perform System Operations review on a cycle</li> <li>• Visual separation on departures or any type of restrictions that reduce throughput</li> <li>• Part of the development team, being involved at the ground level.</li> </ul>	
Tools and Technology			
Airspace Delay Program		Need for an airspace flow program was identified	All
		Airspace Flow Program (AFP) is under development in a CDM sub-working group	

Major Categories	Item	Discussion Topic	Session
		Action Plan (if identified during the session)	

Data Quality			
Report Card	2	Data quality report card: Customer want to include FAA data items in the report card being generated	Denver
		Take issue to CDM Stakeholders Group (CSG) to create a sub group to work and develop requirements	



## **Section 3: Session Discussions**

### **Summary of Session 1:** **Denver, Colorado, May 4**

#### **Introduction** – Paul Branch/Scott Fox

This conference is 1<sup>st</sup> of the S2K+5 initiative sessions – Others are:

May 17/18 – Dallas TX

May 24/25 – Morristown NJ

June 15/16 – Phoenix AZ

#### **Overview** - Mike Sammartino/MTOs:

We need to celebrate success when applicable and this should be communicated collectively. An example is April delays were down by 20% while operations were up. FAA in focusing on 180 minute taxi delays and when this occurs, the information flows to the highest levels in the agency. In one case, the customer indicated this was a normal procedure to wait for an EDCT.

Russ is planning a Growth without Gridlock II for the fall 2005 period. This forum and the remaining 3 S2K+5 initiatives will be sources for possible discussion items. Customers would like to be part of structuring the conference.

#### **Operations Planning Process** – Jim Enders

Planning telcons used to obtain and disseminate information. Changes include the assignment of a full time NTMO planner. The goal is reduce the time needed to ask for inputs during the telcons. Planners will obtain information before the telcons. There is also a web page that opens 30 minutes before the telcon to define issues and for customer input – Operational date is May 15<sup>th</sup>. A standard set of terms Possible, Probable, and Expected will be used to describe various situations.

The planning process has three phases, Pre-Telcon (investigate issues), Telcon (standardized and consistent with proposed solutions) and Post Telcon (prioritize activities, update OIS, update position log, disseminate advisory). If there are issues or concerns throughout the day, the NOMs would like customers to call rather than waiting until after the shift to enter a comment without any notification. VIP movement will be reviewed on the 0715 Telcon and not again unless there is a change. There will be a Telcon helper (an NTMO) assigned to assist the planner. The helper will be available 5 minutes before until 5 minutes after the Telcon.

The web page will have either agenda or non agenda items. Agenda items will show green and non agenda in red. It is not intended to be used like the TCA web page where specific flight issues can be addressed. It is intended for the customers to provide information for the upcoming Telcon (e.g., winds at EWR). Customers can provide a proposed solution. The customer page will show the current Operations Plan. The web page information remains on the web page. A CD will be available to explain the web page – It will also be available for download from the Command Center web site.

Planners will receive regular reviews to include a review of tapes from good and bad telcons. There will be a separate presentation that includes customer expectations available before May 15<sup>th</sup>.

**Special Olympics – Jim Enders**

Planned for Des Moines IO in 2006 – Expect 800 flights in and 800 flights out.

**System Review Status Update – Mark Libby**

Route availability not determined in a timely and expeditious manner – Command Center assigned to a communications group to work. Draft notice will be out soon –

**Action LY - Need to ensure MTOs receive the notice**

Use of CDRs is confusing – Plan to streamline CDR use. MTO-NE has received customer input. A standardized format is planned for implementation. Other MTOs also investigating. There is also an issue with the communication of CDRs – The planning Telcon will include discussion about CDR direction and the plan will also include more specifics.

FEA/FCA potential has not been fully realized. S2K training will emphasize their use. During the winter FEAs were used to identify flights eligible for Snowbird reroutes. There are various materials available to describe their use. Customers and facilities need to use the dynamic list to identify which flights to reroute. Currently being taught in 115 course in Oklahoma City

Methods of reporting real time arrival and departure delays not timely. DSP works well in NY. Training department working with facilities to ensure there are more specifics associated delay reporting. SMA and ARMT are available capabilities to provide this information.

Insufficient planning between telcons – Addressed and closed

Communications and coordination not sufficient – Assigned to communications work group. Plan to expand the use of the NY hotline as well as the ANE Tac Ops web page. There are also additional hot lines available for exclusive use during severe weather. Considering the use of Instant Messaging. ZNY SWAP statements now more specific and will be included in Command Center Advisories.

No comprehensive coordination of MIT restrictions – CDM working. Plan on continued use of Command Center Enroute Spacing Position. This year, plan to adjust spacing of west coast departures beginning at 1000 EDT.

The concept of multiple GDPs in support of SWAP lacks specific guidelines. Assigned to CDM. This is a last resort item – Will be paced by the airspace GDP.

Military airspace availability. Assigned to MTO-NE and SE. Suggested using FEA to designate hot airspace. A VACAPES LOA is in coordination regarding VS1 use. F-22s at Langley will necessitate additional airspace. The Air Force requested domestic impact

early pertaining to B-24 and AR-9. Much of the operation will not impact domestic operations through altitude segregation (the F-22 will remain High). F-22 operations are also impacting ZJX but agreements are in place for SWAP.

Inter facility issues prevent availability of airspace. Escape routes have been defined for the NY, DC, and Philadelphia airports. A database (METRO) has been developed that defines the routes and provides coordination requirements. Will be available to planners and severe weather personnel. METRO will be available to the customers at a later date.

Insufficient understanding of the cost and benefits of using Canadian routes –  
Presentation sent out – Closed

Weather forecasting insufficient – Ongoing

Training not focused and timely – Next year, plan to start earlier (February)

Stakeholders unaware of System Review action items – Status on Command Center web site.

Other:

ITWS/CWIS available in Severe Weather.

Next year's Season Review is planned for October 2005

### **Airspace GDP – Mark Libby**

The CDM Flow Evaluation Group is working to develop an Airspace FSM (AFSM) capability. The intent is to manage traffic traversing a volume of airspace. It is not the defining of an FCA and having traffic avoid the airspace. There needs to be an FAA/customer partnership to better define the concept and develop such a capability. A longer term concept may be to give the customer options to take a delay rather than traverse the airspace. One of the greatest benefits is predictability.

A meeting is scheduled for May 17<sup>th</sup> and 18<sup>th</sup> at Metron Aviation in Reston VA. The FAA is requesting consistent customer support with the same personnel attending all meetings. A tool is planned to be available in early 2006. The FAA plans to build on successes by starting small.

### **General Discussion:**

NY SWAP advisory was generally disseminated at about 1000EDT. ZNY plans to put out in conjunction with the 1115 Planning Telcon. The advisory is useful for the towers to improve their planning. For fuel planning, customers require a 2 hour lead time. Rerouted aircraft may need access to new routes that open. Also, customers need to have the best route information possible because of fuel constraints. Also, consideration should be given to implementing a CDR to a fix rather than a destination airport. It's important for everyone to understand the FCA monitor because it will be the basis for the reroute monitor.

### **Question and Answer Panel Discussion:**

**Panel members:** Mark Libby, Bob Lamond, Carmine Gallo, Doug Molin, Lorne Cass, Paul McGraw, Cliff Pierce, Jim Reis, Col Nixon, Jim Burgan, Rob Lowe Paul Branch

The panel addressed a predetermined set of questions.

How has the ATO structure impacted the customers?

The ATO openness and transparency was well received by the customers. However, connectivity between business units such as terminal and en route was initially not evident by customers. It was difficult to determine where to address issues. The customer understanding is not yet perfect but is improving. There are still barriers and a continued challenge exists.

Customers are strong supporters of TFM connectivity but because of the associated benefits have difficulty understanding TFM funding cuts. FAA facility personnel also had difficulty understanding how they fit into the organization which various communication groups are addressing. Continued communications within the FAA and with customers are an ongoing process. There now is significant energy to work with the customer and building a sense of trust. The military was a bit perplexed when the ATO structure was first presented to DoD because they did not understand the rationale for the division between Terminal and En Route. Military customers have liaisons that can help in determine where to address issues.

What issues exist with respect to budgetary constraints?

Budgets are very tight for both government of industry. Customers are very focused on cost and generally look only a couple of months into the future. Nevertheless, a longer term focus is needed to determine how best to modernize the system. The FAA needs to understand and collaborate with customers on investment benefits. There needs to be more accountability and responsibility and the FAA should be able to measure the benefits of the services provided.

What is working, what is not, and what do you want in the years ahead?

RVSM became a rule on Jan 20,2005. There is an FAA/DoD MOU that provides a way to accommodate the non equipped aircraft – This is working well with about 50 denials per week. Some units are choosing to fly below 290 which can have adverse fuel impacts. DoD is very interested in access to the NAS, SUA and to perform the air defense mission. A future challenge is the acceptance on UAVs. The chief wants to stand up 50 UAV squadrons within the next 2 years.

Customers would like a steady funding stream and would also like less of a human based system.

We have come a long way in the last 5 years. After summer 2000, S2K training was implemented which was the first time all of the stakeholders were included to include controllers. This was the first opportunity for controllers to interact with dispatchers and was a great step forward in TFM training. The current S2K training may be a step backwards with a decrease in scope due to funding constraints. Remote training may not replace face to face communication which is extremely valuable. There needs to be a greater focus on training pilots and controllers. It is hoped that different customer



representatives attend the upcoming regional training sessions. It is also hoped that customers take better advantages of the available tools such as FEA.

There has been a greater system approach taken towards moving traffic. This provides system wide benefits. For the future, we need to maintain a system perspective. System Operations is the FAA efficiency providing organization.

There has been great progress made in TFM but there is continued work ahead in terms of assigning personnel, interacting with other business lines. etc. In the southwest, a strategic planning process with ZAB that includes the military addresses daily expectations and priorities allowing for the efficient use of airspace. There are future requirements for UAVs and commercial space operations which the airspace must accommodate while also accommodating increasing domestic operations. The biggest impediment to moving aircraft are facility and personnel barriers.

When predictions are accurate (weather, sector demand, data, etc.) the system works well. When one or more of the parts are either missing or skewed, there are challenges which necessitates better planning. Any anomaly should be immediately addressed. Collaboration is fundamental to success. Examples include SOIA PRM at SFO, DAL growth at SLC, LAS and PHX growth etc. FAA/customer meetings facilitated the identification and addressing of issues.

How has the over scheduling at airports affected the system?

The FAA attempts to accommodate customer schedules however when demand exceeds capacity, delays result. Some say there is not over scheduling, the schedule reflects demand. Customers cannot schedule to IFR capacity – The gap between IFR and VFR capacity is too large. Customers are not concerned with how the gap is closed.

Scheduling is a customer business decision and as a service provider, the FAA is responsible to make the maximum use of available capacity. The FAA does a good job in managing capacity but complaints generally result due to inconsistencies in the calling of rates. Therefore, the FAA needs to improve its ability in calling accurate airport arrival rates. Some issues such as the FLL runway use are local political issues.

Customers appreciate the FAA efforts in accommodating demand.

How do we get better management of reroutes and the use of Canadian routes?

Severe weather uses either the playbook or ad hoc reroutes. An FCA can be used to identify flights affected by a reroute and customers can access this information through the Consolidated Constraint Situation Display (CCSD). Canadian reroutes result in additional costs and the FAA needs feedback on the customer desires.

Nav Canada resource requirements dictate the need to solicit Canadian routes early in the day. Planning early can give customers a greater choice. The upcoming ETMS reroute monitor will allow customers to improve the monitoring of rerouted flights. Nav Canada and the FAA have done a good job in establishing the offload routes. In the past, user fees were only paid for rerouted flights. Now, users pay a fee regardless of whether the Canadian route use was planned or due to a reroute. This political issue is costly to customers.

During SWAP, an area of opportunity is to establish system priorities to eliminate situations where local initiatives compete with the national plan and expanded MIT results. Flights lists are no longer available with FEA/FCA because it does not update – the dynamic list should be used.

The following are panel addressed questions from the audience

Is there DoD support for the FAA MOS positions?

DoD believes it is very important to have at least one MOS/OSS at each center. There are conversations in Systems Operations about the position and how it is managed. There is impetus to finalize plans for the MOS position but there are no simple answers.

Is fee for service in the future?

There will be changes in the funding for the operational system but some say no fees for service. There are no existing models to apply to the US due to the numbers of GA operations.

Is System Operations taking on an initiative to increase MAP values?

A system wide review is needed now that RVSM has been implemented. However, the perception that RVSM should facilitate a MAP increase is not correct in large sectors. The reason is the existing airspace without additional altitudes can accommodate the maximum number of aircraft a controller can control. MAP values are locally adaptable and it's important to understand that a MAP is not a do not exceed number. The FAA is reevaluating and developing standards for MAP values.

Is there a standard figure to use in determining the average cost per mile?

Yes there is and ATA has the industry averages.

**Action ATA: Provide fee structure**

What guidelines will be used for system wide GDPs in support of SWAP?

This year there will be little difference from what was accomplished last and the use of system wide GDPs will be discussed on planning Telcons. Customers believe this is a last resort tool.

There is a better idea when to employ the system wide GDP strategy and which airports to include. It's the only tool available when there are forecast "popcorn" thunderstorms. Nevertheless, many customers do not believe the multiple programs work. But when weather constrains flows to certain areas of the country, there is insufficient airspace capacity to accommodate everyone so a thinning of traffic is needed. The FAA needs to ensure that flows that do not impact a constrained areas are not impeded. They could be exempt from the beginning or possibly capped when appropriate.

A problem exists when with exempt flights because it is challenging to disseminate information about EDCT exemptions. Customers have highly automated systems and it's difficult to make changes once EDCTs are issued.

Customers want to understand the constraints and will manage their operations to avoid.

Can FEA/FCA be used in lieu of system wide GDPs in support of SWAP?

FEA/FCA can be used but it will take a lot of coordination. In the past, FEAs were used to implement selected Ground Stops. The en route spacing position is a result. An FCA can be used to monitor flows along a reroute to determine which to adjust.

Can Java FSM's directional GDP capability be used to exempt some departure locations?

Multiple GDPs days have many aircraft affected by severe weather. On such evenings, the workload associated with manually exempting departure locations would be excessive. However, the FAA is willing to explore all opportunities.

Is there a plan to design CDRs to a fix rather than a destination airport?

CDRs have become PDARs because the FAA feels compelled to provide routing to a destination. It is desired to build CDRs to a pitch point and customers can develop routings to destinations. CDRs and plays have gone through a validation process. Perhaps this can be revisited.

Where are we in addressing CDRs of /A and RNAV aircraft?

CDRs have been developed to accommodate all aircraft. However, customers want to use the existing aircraft capabilities and are willing to have CDRs requiring advanced navigation capabilities. If an aircraft cannot take a CDR customers are willing to take a delay. The FAA is working on a policy for CDR implementation.

When will the RJ fleet be CDR capable?

Some aircraft are not CDR capable necessitating the issuing of full route clearances. However many RJs are CDR capable. COA is working with BTA to ensure aircraft are capable this summer.

Can there be exemptions for TRANSCON flights arriving at a GDP airport because the flight is taking delay many hours in advance?

When GDPs are canceled, the FAA looks at demand to ensure there aren't too many flights that will be released. In many cases the cancellation may be delayed but instead, the arrival rates will be increased in the later hours. And, the closer in airports have flights delayed because aircraft cannot get into the overhead stream.

There needs to be a collective effort when entering or exiting a GDP. In addition, the FAA should improve the dissemination of cancellation times to customers.

Does GAAP work for NBAA?

GAAP works for the aviation community; it is not a program intended for GA only.

GAAP has worked at many airports but no longer works at FLL due to schedule increases. Many NBAA people are CDM participants and there now is more schedule information available. Thus GAAP may not be needed in the future.

GAAP may be used in support of SWAP and this will be explored. Some want GAAP all the time but there are ramifications due to EDCTs being issued which places extra workload on FAA facilities.

When will standardized AAR be available n OIS?

A standard is under development for which all airports will conform. A date is not yet available but it will be provided as soon as it's available. Today, information is entered separately and manually entered into NTML and OIS. Plans exist to automate the duplicative data entry.

Is the Planning Telcon web page the venue for inclusion of new participants?

New participants are welcome to attend the Planning Telcons.

Other Items:

The FAA is good at going in to GS but need to better manage exiting

Airlines want to stay at optimum altitudes –Request that facilities look into LOAs to reevaluate crossing altitudes.

**Action: MTOs**

Systems Operations should get involved with airport authorities where the authorities build runways without high speed exits or when runways are built with little benefit

Systems Operations should be involved with ramp towers. In many cases, the FAA is unaware of delay taken on the ramp. There are airport authority run ramps and airline run ramps. Customers understand how to run ramp towers but the issue occurs where municipalities run ramp towers. Customers need to work these issues.

Customers should help System Operations identify issues with items such as airspace redesign. Airspace redesign is part of Systems Operations. Plans exist for determining how to integrate traffic management into the airspace redesign process.

A similar process be used for the road shows and additional issues will be added as needed. At the Dallas and NJ road shows, there will be a lot of NBAA attendance and additional issues will most likely be identified.  
END

## **Summary of Session 2/3:** **Dallas, Texas, May 17/18**

### **Panel participants**

Day 1 & 2 Panel

Carmin Gallows (MTO Northeast), Col. Mike Rizzo (Air Force Rep Southwest Region), Bob Everson (MTO Great Lakes), Cliff Kierce (ATCSCC Specialist), Jim Burgan (MTO West), Gary Dockin (ATC Training USAir), Rob Lowe (MTO Southwest), Doug Molin (MTO Southeast).

[Note: Day 1 Only - Mike Compton (Chief Dispatcher), Richard Strunk (Flexjet Feasibility Planner) ]

### **RVSM and MAP Discussions**

*RVSM consensus is that it is great, making it easier to handle more aircraft. During convective season it allows for more maneuverability and deviations. It is great for enroute, but terminal and airport environments are still constrained.*

*RVSM benefits and implementation are limited by the monitor alert parameter (MAP) values. FAA needs to change how they operate to accommodate coordinated efforts. That way issues like frequency and MAP will not negate the benefits gained of RVSM.*

Can reduced vertical separation minima (RVSM) alleviate some of this constraint? At some point, all flights need the same airspace when they get close to the airport (descent, ascent). The challenges are considerable. It is helpful enroute, with capping and tunneling procedures. The FAA is looking at RVSM benefits. One question is how can FAA measure capacity better (can they handle more planes with RVSM?)? Not really. Most of the restrictions are airport related. For the enroute environment it means you aren't as busy, since you can maneuver more, and better handle deviations in severe weather. The enroute benefit is that aircraft may see fewer reroutes. However there are other limiting factors in some areas where airspace is an issue (i.e. human and frequency related). The work group is reevaluating MAP values to reexamine the definition of capacity. Many factors are being considered in the capacity criteria. It is a mathematical equation that may need to be revised.

For the military, this has been a process of more pain and less gain. Many military aircraft are not compliant. The one non-compliant aircraft closing a sector down is not necessarily the rule anymore. It is now workload based. The military is highly impacted since they have to stay below RVSM airspace. The pentagon is currently doing the cost benefit analysis for equipping their aircraft. Some of the RVSM airspace may be split off. There is still route congestion in some areas. There is also a serious frequency spectrum management issue. The spectrum won't allow FAA to create new sectors to handle these issues.

*Since RVSM implementation, the customers have been looking for benefits. Capacity is MAP, which is a specific number of aircraft. This is being reevaluated by the FAA. For the system as a whole it makes things more efficient since there is less vectoring. A*

*controller says human factors limit capacity, but RVSM especially helps increase holding capacity. Sometimes the space at the position limits additional capacity.*

*The military training community is limited, since they can't use the altitudes that they used to. There is more capacity to work non-compliant aircraft into the system now as the system has matured. AWACs are the most heavily impacted.*

*MIT for enroute issues are likely to be improved as well as altitude restrictions by RVSM. Currently there are efforts trying to measure the benefits. ZHU states that gulf constraints have relaxed so that MAP values were increased. This has definitely helped their situation. A concrete example was given. Late one evening an unforecasted weather event affected airspace that had bi-directional transcons. RVSM allowed the traffic to continue without major interruptions. ZAU doesn't see MIT reduction for terminal constraints; however there may be fewer departure restrictions for places like MSP and DTW that need enroute entry. Altitudes are getting increased for some city pairs in LOAs. ZDV stated that there is less rerouting occurring for MAP values since complexity has decreased. MAP values are not a hard and fast number. They require review by a supervisor, but the controller is still allowed to handle the traffic.*

## **DELAY PROGRAMS**

### **E STMP (SKI COUNTRY)**

*ZDV ski country has had slot accessibility issues. PDARs is helping to analyze the use of slots. Fractionals use approximately 30% of the slots. 47% of reservations were not used. Users should not book slots without N numbers, nor should they book multiple slots for the same plane, and they should give back slots if they are not going to be used. The FAA needs predictability, and is not sure how get it. Early intent may help with this situation. The FAA is hoping to reduce the number of STMP days. It is up to all the users to make it work. There will be a workgroup on the STMP process (not just Denver). In general, advance notice was created for corporate community so they would know if they have a slot. Unfortunately the reservation process is biased toward the people with fast computers and internet connections. On major weekends, parking is the limitation. So even when aircraft play by the rules, they still can have troubles. Local based aircraft are exempted, but it is hard to police who is actually local. The FAA considers N numbers that are physically based there are considered local. A multi-lateration radar is being considered to help, and Colorado is trying to come up with the funding for it.*

*To try and alleviate the 50% cancellations the FAA allowed more reservations, but it didn't seem to help much. Has a deposit been considered? There was an experiment conducted at Rifle where they parceled out the spots. If operators didn't use the reservation, then their credit cards were going to be charged. But people still made the reservation, since it would be cheaper to pay the \$1000 penalty than land at Rifle and transport to their desired destination. By NOTAM a STMP slot is supposed to be +/- 10 minutes. However the on-time performance is very very low. The FAA doesn't have the jurisdiction to fine customers reservations are not used. However this solution is being explored. The FAA is also having troubles since other enroute centers allow them to go.*

*It is difficult to balance reroutes versus airline desires. Airlines like STMP more because route will delay them. There is no easy answer. ZDV needs more national help from the system. On a positive note, the process has improved over previous years.*

*At FLL GDP Airport Allocation Program (GAAP)/GDP it took the focus off the airport and elevated it to a national issue. This was a fairly successful strategy that may be needed for the Ski Country situation.*

-- ZDV – STMP Ski Country - There is a working group for Ski Country. The customers are complaining about not being able to get in. About %50 of the reservations are not used. STMP is not necessarily the best instrument, but it gives it a bit of predictability. Some people who make reservations don't even own an airplane. Please give back slots if they are not being used. The FAA is trying to police the slots. They are considering shortening the NOTAM season. Colorado is looking to invest in some radar coverage equipment that may help (like that used in Alaska). Ski country playbooks are likely to get modified for next winter. Some may be eliminated and others combined. The FAA would like to get rid of STMP, and have more route structure. Bob Everson is planning to look at the issue, but the budget has been cut again. It is also hard to staff Eagle and Aspen given funding issues.

Some in the corporate community are very unhappy with ski country handling. They do not feel the program is working, and think things should go back to first come first serve. If they know when and where they need to go a year in advance how come they can't get in. There should be a better system or no system (first-come-first-serve).

There are many events like this. How can we handle them? There is a lot of volume. Some operators know they can't get a slot at an airport, and pick their customer via limo and drive them to another airport.

### **GDP in support of SWAP and Airspace Flow Program**

There is an ongoing issue of inequity of the larger airports for continually having ground delay programs (GDP's) to manage enroute traffic flow while other airports run with minimal delays. Do you feel that delays need to be spread out to all stakeholders of the National Airspace System (NAS)? Customers at the meeting are not as supportive of this type of action. However reducing volume at these airports has the greatest impact. The main issue is the ATCSCC doesn't know the demand at the smaller airports until the last minute due to unscheduled traffic. FAA realizes its not the best way to manage the traffic, but it's the only tool they currently have. They are currently looking into using an Airspace GDP to handle enroute constraints. There are still many operational issues to be resolved related to its use.

Airlines want to share the pain related to airspace constraints. There are many operators who use this airspace. Equity does not necessarily mean fair. The issues are different depending on the airport and airspace. For instance, international flights are exempt. FAA tries to allow airports that are trapped under the overhead stream to get in. GDP in

support of severe weather avoidance program (SWAP) is very labor intensive, but it is a way to reduce the volume traversing a weather impacted airspace.

There are additional constraints, such as airports and terminals. Runways and Special Use Areas (SUA) in congested areas add to the difficulty. The growth without gridlock conference addressed the fact that first come first serve may not be the best for the system. There is another conference coming up.

Yes FAA can exempt flows that are not affected by the weather (GDP in support of SWAP), but it is very labor intensive. New tools are coming on board to help alleviate.

During GDPs, the ATCSCC typically does a compression once an hour. Airlines still retain the slots. FAA centers release internals to help fill vacant slots. However if ATCSCC is not informed then flights end up holding.

Distance based programs are much better at capturing a more specific number of planes as opposed to the tiers.

*Everyone is using the airspace to get out but they are picking on the big airports to slow down. It is not equitable for the major airlines. Corporate users do not understand why delays are small at HPN vs very large at nearby TEB. Some try to use HPN instead, but don't understand the disparity. One airline feels the pain should be spread out. Some of the problem is applying a ground restriction to an airspace constraint. Its not necessarily the right tool, but it is better than a ground stop (GS). GDPs at TEB are harder to do since the demand is not as accurate. The geographic location of TEB makes it harder to balance given the airspace concerns. The FAA is working on an airspace tool to properly deal with this issue. In general the pain is shared in different ways among the airports (arrivals vs. departures competing for the same airspace). NBAA thinks weather issues should have equitable treatment. However volume/saturation issues caused by a particular operator's schedule should not delay other airports.*

*Airlines are wondering whether GDP in support of SWAP is going to continue this year. This situation only occurred on a couple occasions last year and was used to slow the system down on the Eastern half of the country when it was difficult to determine convective weather location. Overall the perspective was positive. However some operators were not as pleased when they are included. Some airline operators delay their own flights to even out flow into airport during a SWAP event.*

*Several airlines were wondering if we can we exempt flights not affected by the weather? Can a directional GDP be implemented with the new Java FSM? ATCSCC can look at doing this by exempting facilities. FAA is not sure exactly how FSM can handle this. There will still be an estimated departure clearance time (EDCT) issued but no delay associated. An Airspace GDP capability is still the ideal solution, since distance based GDPs are based on a circle around the airport. The problem with directional GDP is throughput at the airport. Traffic backs up, and an airport may end up gridlocked if FAA is not careful about implementing since may be arriving from the unaffected*



*direction but then need to depart into the impacted area. This is only supposed to be used a last resort. However it needs to be issued early enough to be implemented.*

*Tier based system was not as equitable, especially in cases like ATL 2<sup>nd</sup> tier. Initially there were automation issues that drove toward the tier based program. However technology improvements have allowed for more flexibility.*

Some flights game the system and file to a closer airport then change enroute! How can the FAA plan to do GDPs as the weather moves through, so we don't end up with large holes. The FAA is supposed to issue the equitable delay in the air. SWA would know the constraints, and if it is still constrained they would go somewhere else. This cooperation, allowed to take advantage to capacity if its there. FAA needs to transition from GS to GDP better. GDP integrity is critical to the most efficient flow. One corporate operator says first come first serve isn't a bad thing, and would prefer to hold in the air near the airport. GDPs allow this, but the holding occurs on the ground. They create a line when there is not enough capacity, so that operators can then choose to go to a different airport or arrive at their CTA (controlled time of arrival). If others do not comply then the whole system will collapse (i.e. if flights change destination enroute and are allowed in). It is predicated on the fact that all play by the rules. We can't hold flights for a GDP airport, because it takes away enroute capacity for others.

There is lots of collaboration going into an initiative, but not coming out of initiatives. Some areas have established local telcons to keep up on current information so they are not caught off guard as things occur. Sometimes the answer is an increased rate GDP as opposed to just canceling. Airport construction or closures also impact this.

*FAA will sometimes call the airlines to find out how much traffic to expect in order to dynamically adjust. The FAA is looking at what they are spending and what they are providing. More accountability is trying to bring these into line via resource management, but it is a slow process.*

*Airtran – Wondering if there is a default for modeling GDPs. FAA needs to model with realistic time frame as opposed to the eight hour default in order to better decide on scope. The problem is the data can be pretty bad. ATCSCC tends to start smaller then extend out. However they also make sure that the scope reflects the extension. As a rule, the shorter the event, the smaller the scope.*

### **Access to Airspace [ie Military and Special Use Airspace (SUA)]**

In the southwest the collaboration occurs in-between the planning telcons (PT). There is a weather briefing, then a plan is developed based on traffic. This helps coordinate with the military use times, as well as knowing when to create alternate routings etc.

It depends on the unit and its use of the airspace. Some airspace use is more predictable than others. There is a broad range. Customers must keep in mind its not always airplanes using the airspace (especially late at night). Military is expected to return the airspace if its not being used. This is an educational process within the military as well.

VACAPES LOA has just been reviewed. The letter has been updated and should be signed. Offshore radar routes are now being used heavily.

*Much of the process involves more communication to understand the location of enroute issues. It allows the FAA to know the military priorities, and it gives the military a chance to change their schedule around to accommodate FAA needs. In the Gulf, how much impromptu authority does the FAA have to access airspace? It varies greatly by the area and the types of operations occurring in the airspace.*

*Military is working on obtaining airspace to meet its changing needs. They need larger airspace volumes to accommodate new aircraft and other operations, to allow them to train like they fight. Typically the operations are in sparsely populated areas, but the airspaces above are often very busy. The Military is limited to where they can get a base appropriate to the activity.*

*How much of this training can occur in simulators to accommodate some of these needs? More and more of it is occurring. Simulators are very good for procedural things, but pilots still need the actual situations.*

*Special events, VIP movement, and security events on the east coast are closely coordinated with the FAA.*

### **Communication discussions including communications with General Aviation (GA), GA Involvement in the Process, and GA Access**

Flight Schedule Monitor (FSM) Discussion – There is a group working on putting flight plans from non-scheduled into system earlier than 2 hours. Enhanced Traffic Management System (ETMS) is only aware of these flights when it gets data from the host. The FAA is currently trying to get information into the system without assigning Beacon codes. Some flights may not take as much delay like EWR aircraft specific capacity.

*How can the general aviation (GA) community know what route to take, so that they don't have to be delayed on the ground so long? FAA works with user groups to disseminate information via NBAA GA desk, flight service station (FSS) etc. It is difficult when FAA is in a reactionary mode to get the information out to all the respective parties.*

*Flight planning services don't always have the CDR information. Could the FAA provide this information? This is public information and can be accessed via the internet. NBAA stated that many of the flight plan service providers are planning to provide this service, and will identify CDR capable operators. NBAA is unsure if the playbooks are provided. Typically this information is provided in the remarks (CDR capable). One of the corporate operators is planning to change to a vendor that does provide this information.*

National Traffic Management Log (NTML) is being implemented and analyzed. The FAA is trying to create forums to analyze how we can do things better. This has been

done in the past. CDM membership and data sharing greatly advantages some NAS users. The system needs to bring in more of the GA/corporate community. *fly.faa.gov* has a lot of system information (this was displayed to the group). CCSD display and other tools would help. Can these be disseminated through flight planning services? NBAA said they are committed to CDM and will be receiving the tools soon. This will help them see the pop-up demand and allow them to plan for the constraints. Some corporate flight departments may still not be connected, but NBAA is working on educating them. NBAA has a subscription service. FAA fills out in the field an impact statement and it gets distributed to ATCSCC and NBAA. Typically there are telcons associated with these. It is a two way street. Customers also need to be proactive. NBAA desk provides information on the big events to help give a heads up for planning with all the extra special event flights. NBAA print reports on demand and faxes information to some places, such as TEB to help be proactive.

EDCT compliance is very important. This is imperative for GDP compliance (+/- 5 minutes). This is also an education issue to make sure all are trying to make the window.

NBAA is part of the telcon every morning. The MTOs also touch base with their constituents. It is very easy to get in on the telcons. Typically 121s dominate but every time Flexjet has asked a question the FAA responds (not always as how they like but it gives an idea of how things will go and helps understand the rules). The FAA tries to work and collaborate with the customers. NBAA has a new product, a website for providing crew briefings. It basically gives access to a report for a departure center related to all the current restriction and traffic management initiatives currently in place. A flight service specialist should know this information.

Jim Enders at the FAA is working on a webpage for the planning telcon to get real time input. It should streamline the process and cut down on the time spent on the telcon, as well as increase coordination. It will allow planners to interface with the customers in between, as well as gather ideas.

Route Management Tool (RMT) with its graphic display can give users all the CDRs available for city pairs. This should help users know what routes are acceptable.

*For some, the dispatch office handles the routes, but they don't always know what route is the best. Some days, time savings is sometimes more important than the fuel burn. The planning process and telcon helps other operators know the system constraints. Certain tools are used to assist in this process such as CCFP (Collaborative Constraint Forecast Product). The FAA ATCSCC website has additional information.*

*NBAA desk is very helpful at coordinating between the FAA and its users. There are services as well as tools provided to its subscriber base. Information on member intentions is relayed to the ATC on volume as well as what ATC can expect. NBAA is making an effort to let the community know about its services. NBAA also represents AOPA.*

*Advisories can be unclear and are hard to read. Title names of advisories are unclear. The FAA is aware of this issue and is working on it.*

*The more advanced information the FAA has, the better they can react. Part of this is related to how early information is allowed to go into the system. The FAA would like to be alerted to business plan items such as schedule changes or new service.*

**FAA INTERNAL - STAFFING SHIFT TURNOVER, OVERTIME ETC**

*How has ATO organization affected the FAA? There has been a flattening of the organization to achieve more direct interface with customers. Some of it is a cultural change. The ATO change from headquarters perspective is that this is one of the most disruptive changes that has ever occurred. The goal is to change management's mindset to help service customers. Previously there were nine regions that operated nine different ways. The direction things are headed is helping, by creating some consistency of service delivery for the customers.*

**FAA IMPROVEMENTS (FL AIRSPACE REDESIGN) PLANNING TEAM WEBSITE**

*How much room is there and what will the effect of the microjets be? They fly high, but they are slow, so it will be challenging for the FAA to integrate them with the rest of the enroute traffic. Concepts related to fast lane, slow lane, are being explored, but at some point they need to be lined up for the airport.*

Texas Instruments – How will new microjets (very light jet, VLG) affect things? The FAA has not done a particular study. They will likely be using reliever airports. There is some discussion related to fast lanes/slow lane (express lane) etc. development for enroute. Airspace redesign is doing some limited consideration related to forecasting and modeling. Developing better MAP values should also help.

*There needs to be a training cycle associated with deployment of tools so the training occurs in the winter, for rollout in early Spring. The other part of the issue is making sure everyone has access to the tools, like the NBAA community. The information is often not getting out, but arenas such as the current forum help. Actually early February would be better timing for rollout so that users can get used to new tools. However chasing a development cycle from one summer to the next is hard.*

There is a national airspace redesign effort going on. FAA recognizes that the entities involved in the past were not coordinating well. Efforts are being made to fix this. In California they (Navy Lemoore) want to build a MOA where the main flow corridor is. So the planes have to move into other flows impacting the system. Need to look at it as a system.

*Customer input should drive airspace priorities. System issues need to be considered in national airspace design. Fixing one piece may not be the answer if flows from surrounding pieces are not considered.*

*Information sharing is getting better, which is helping FAA know the customer demand so they can accommodate it. However airlines tend to focus on shorter term needs, whereas the FAA often takes years to implement new airspace changes. ZME has moved around their sectors to accommodate flows since they couldn't add new ones, but this was rather effective. Environmental constraints often limit FAA options. For instance ORD modeling is often inhibited. If some of those issues could be looked at it would speed up the process. The FAA has trouble rapidly deploying to accommodate major growth. The FAA is making strides toward this goal, such as in ZME 6 week turnaround for airspace redesign.*

*There are major proposals to change how national airspace redesigns occur. Stakeholders need to be involved in the change process so that they have a stake in its success.*

#### **ENROUTE ISSUES (FUEL/ PLAYBOOKS ROUTING/ ALTITUDE RESTRICTION)**

A pilot questioned why flights must speed up for a period, then slow down and then speed up again. This is primarily explained due to miles in trail (MIT), and the difficulty of blending of different flows (vectoring). Pilots get the feeling that FAA doesn't talk to each other. For instance, FAA controllers have different stories about what is happening, or they don't communicate the issues all the time [like applicability of letters of agreement (LOAs)]. Some parts of the FAA are trying to fix this, by removing these traffic management issues from LOAs and only issuing constraints related to the particular day's flow. They are now primarily related to addressing airspace use. FAA does review these altitude crossing functions. They exist in order to reduce coordination and to achieve efficiency. Some of this is related to the fact that the regional portion of the national plan is not being communicated well to the pilots.

Time based metering is being implemented to help alleviate some of the speed up/slow down issues. CTAS provides a schedule that delivers aircraft according to an arrival rate. It is highly sensitive to the fleet mix. Metering is much more efficient than MIT, and increases capacity. However, pilots can be a little frustrated with the results, since FAA is trying to hit times. FAA is looking at multi-center programs.

FAA is at a crossroads. The types of aircraft are changing, fuel prices change how and where the planes fly. FAA needs to separate traffic management so it can communicate better, with line controllers to help manage flows. Major metro areas are at peak demand, and it is just getting heavier. These flows need to be managed to safely separate the peaks. LOAs do affect smaller planes (sometimes 100s of miles out of the way). This is why FAA is trying to change. They are trying to change the FAA culture (regions are very different).

It takes a very long time for the FAA to coordinate these routes (45 minutes +), so pre-coordinated routes were developed for significant weather events. Airlines put these in their flight planning systems. Sometimes playbooks are being used excessively at both ATCSCC and centers during localized weather. They use them instead of using smaller tactical adjustments since playbooks are easier to implement and a known quantity. The FAA is working on creating "regional playbooks" to address this.

When tops are lower the FAA can put out routes for specific altitudes. This spring has been rather tame so far. Is specific aircraft performance taken into account? Not in a reroute environment. If there are other factors, like if they can fly over the top of it, then yes.

Many centers have reroutes specific for the regions. It is hard to keep the coded departure routes (CDR) current. It is especially hard for the GA/Corporate community to get this information. There is a formal process to inform the users when things change. There needs to be a LOA, to acknowledge the clearance (some GA airports are testing this like TEB). CDRs speed up the process. CDRs are great, but they don't always go where we go. Can we have them to go arrival fixes?

*Playbooks have been very successful, sometime too successful since they are sometimes implemented when a regional or tactical adjustment is more appropriate. Parts of the regional routes will be used this summer; however they will not be published until FAA knows automation will work. CDRs are separate from playbooks. Some facilities have adapted CDRs into playbooks. CDRs require LOAs etc.*

*The extent of the reroute does not always correlate with where the weather is. Sometimes other flights are using the airspace closer in to the weather. Not everyone can file right at the edge of the weather, since it would overwhelm the sectors. Playbook modifications cause trouble since it changes a known quantity. The FAA needs to explain when the modifications are not always obvious. Sometimes operators prefer longer routes with no modifications as opposed to making all the modifications on a busy day. Airlines feel that by amending the playbook it takes away the advantage that they give. It may be easier to just issue it as a route so that airlines don't accidentally miss the change. The consensus seemed to be that if the route itself is modified then it should not be called a playbook, as opposed to just changing which centers airports were on the playbook route.*

FAA GDPs came into existence due to the high cost of fuel. When fuel is expensive customers prefer to be delayed on the ground. When fuel is cheaper, then limited airborne holding occurs more. Over the last 30 years this balance tends to swing depending on the price of fuel. It is also customer dependent. The FAA tries to accommodate different users needs and give options (like lower altitude or delay). Delays can be good if customers are saving money from reroutes. Airlines appreciate the FCAs with UPT since it gives them options.

The FAA offers direct to pilots, sometimes it actually hurts the airline (since it may not be the best wind distant route) because the pilots often take it. USA monitored, one night and all the pilots took the direct routes. It cost them \$25,000 in one night, since it was not the most fuel efficient route. However this is an internal USA issue. Some customers like to have the direct offering. The FAA does not know the full routing to know if directs are good or bad. Direct routing often has downwind effects on the rest of the

ATC system as well. The FAA does best to accommodate request for direct, however they must consider many factors.

How efficient are GDPs? It depends on the conditions. Typically the FAA makes the rate, but sometimes it is good to have a holding pool to keep pressure on the airport, say if the ceiling lifts for a bit.

Why do the airlines call saying they can't take a CDR that has been communicated several hours ago? If discussed on telcon or SPO, then they should have it. The ATC coordinator should communicate it. Inbound flights often have much less flexibility due to the tighter fuel. The result is that many other flights are impacted as the sequence is readjusted. 135 and 145 operators and RJs are pushing the limits on flight distances, so they don't have the flexibility for even short reroutes. Not as much "tankering" by the airlines which would give more routing flexibility. Corporate users keep track of fuel prices to make the decision. In general dispatchers are good at planning fuel for weather as opposed to volume. But often enroute weather or volume is a problem. USA looks to see if an airport is over capacity to know if they need extra holding fuel. It is the cost of doing business to have a couple diversions as opposed to carrying extra fuel.

*Business models of customers vary so the FAA needs to understand the dynamics of how to best serve their customers. Much of it is understanding their customer needs and changing the FAA culture so controllers know how much they are costing their customers. LOA airspace separation versus airplane separation causes some excessive burn for operators. Many of the LOAs are now being looked at as a result. During RVSM implementation LOAs were reviewed and updated which has helped reduced some restrictions. Sequencing disparate aircraft types will also increase the burn. Improved predictability and route structure vastly reduces fuel burn and costs. If the FAA knows the capabilities of the aircraft better then they can prioritize and communicate better. The FAA's challenge is that RJs are being taken to the limit which reduces traffic flow management options. Some of the playbooks exceed what the aircraft are capable of.*

Profile descents are often tied to the LOAs. The facilities are supposed to review these LOAs on an annual basis. All were reviewed and updated with RVSM. Places like ZNY must have them in place in order to operate efficiently. Basically they exist because of airspace design. For the airlines it would be helpful to know which flights will be impacted for fuel planning purposes. They have tried to find out what times of day, but it is hard to get this information. Customers like to stay as high as they can as long as they can. But FAA must keep them stratified, for example keeping TEB under JFK.

*At what point does the air route traffic control center (ARTCC) computer reroute a flight and is there anyway a dispatcher/scheduler will know when the flight is rerouted? This can happen for several different reasons such as PDARs, sector saturation, and/or fix balancing. The crew should be able to call to find out. The dispatcher needs to know if the plane can complete the route.*

*45 minutes to P time, the host computer will send out the strip. Advisories can come up with new reroutes so the ATC should reroute and the pilot should let the dispatcher know. If the airline does it, then there are two strips in the system. This 45 minute parameter can be changed by facility. It was agreed upon by Collaborative Decision Making (CDM) community so it would be clear who is supposed to implement the reroute.*

*There is no history for ATC to know how often a flight gets moved. If a flight gets hit several times, it can be challenging. There should be a way to track this. If certain flights are constantly moved then they can be looked at to see if there is a broader solution.*

--What is the status of Free Flight? It's an option at airports where demand does not exceed capacity. We seem to be moving farther away from it. When there is compacted demand, it is hard to accommodate. When demand is greater than capacity the FAA needs to apply an initiative. First the FAA considers safety, then equity, then system impacts and cost structures to help determine the best solution. West of the Mississippi, there are more free flight options (RVSM helps with this as well). The FAA assumes that the customer filing is its 'free flight', outside the major hub markets.

*ZFW – What is the possibility of mixing national airspace redesign with current reroute activities? The number of aircraft is small so they haven't done anything with it.*



**Summary of Session 4/5:**  
**Morristown, New Jersey, May 24/25**

Questions for Morristown S2K+5; May 24

1. There is an ongoing issue of inequity of the larger airports for continually having ground delay programs (GDP's) to manage enroute traffic flow while other airports run with minimal delays. Do you feel that delays need to be spread out to all stakeholders of the National Airspace System (NAS)?

*Usually Ground Delay Programs (GDPs) are implemented because of restrictions on the capacity of the airport due to terminal volume or terminal weather, or because of enroute volume or enroute weather. The utilization of GDPs is not consistent. Ground delays are given with release times to departure airports because there is a GDP at the arrival airport.*

*US Airways feels that GDPs in support of Severe Weather Avoidance Plans (SWAPs) are good, they help to cut down on wasting fuel. However, when there are isolated cells in the northeast that block traffic out to New York areas there is an inequity in proportionality. There isn't an equity of "sharing the pain."*

a. When there are GDP's for a particular enroute constraint, is it possible to exempt certain routes that are unaffected by the weather?

*Being part of GDP means taking delay on the ground and departing to the restricted airport when a slot is available—take delay on the ground at the departure end instead of in the air during the flight. GDPs are usually implemented when there is an enroute volume or enroute air constraint. Many times, the smaller airports aren't paying the "price" for the enroute constraints—they don't have high demand, the demand is usually less than what they can handle. Although smaller airports don't have GDPs, they do accrue departure delays because many times larger airports are favored to be given slots.*

*There were a few instances last year where there was lots of scattered convective weather, effecting large chunks of airspace, these instances were handled with multiple GDPs in support of SWAPs.*

*\*Can look into specifying specific facilities to not be included to delays.*

*Why aren't aircraft that have the capability to make it quickly through areas considered when airways are shutdown going out of the northeast heading to the west coast? Trying to make accommodations for particular aircraft that can move quickly still does disturb the volume and thus effecting traffic as a whole. An alternative option that has begun to put into place is to use low altitude escape routes—stay low part of time and then when possible raise altitude. Efforts do need to be made to expand options and use the escape routes more proactively. When escape routes are used they would be published as an advisory and discussed in the planning telcons.*

*Is there a process to request escape routes? Currently there is no procedure but if there is an aircraft that is flexible, coordination can be done to accommodate. For example, in U.S. Airways training class for PHL, when there is lots of overhead students*

*are thought to encourage pilots to talk to the tower about getting a lower altitude—this is a last minute thing, not something planned ahead.*

*Which is preferred—to gain altitude or airspeed quickly? It is very situational dependent, usually altitude, once at 10000 prefer air speed.*

Explain the difference between a tier based and a distance based GDP? What are the pros and cons and how does the Command Center determine which one to use?

*With distance based GDPs you can see how many customers are impacted and you can target specific areas. With tier based GDPs, airports farther away from the issuing center are sometimes affected instead of airports closer. The reason distance based GDPs haven't always been used is because the technology was not available for it. Ground Stops can also be issued used the distance based method.*

2. Often times we have difficulty in getting the military to release Special Use Airspace (SUA). Is there anything being done to get the military into the collaborative decision making (CDM) process?

*Recent events have required the air force to shift training requirements making use of SUAs more important. If SUAs are needed by the military it is important to allow them to use them, however, when they are done using it, they should give the space back. In the past, when a SUA was given to the military for a specified period of time the area would be restricted even if they were not using it and it could be used by the public. When possible, the military does try to plan the use of SUAs around significant NAS events. The RTCA is working on a broad based plan on how SUAs are to be built/designed and used.*

*Gone from “it’s our airspace go away” –SUAs are very localized, no national level coordination.*

*ZAB vastly occupied w/SUAs (60%). Different forms for different places based on necessity. Coordination btwn military and facility helped to improve efficiency for both parties.*

3. In today’s environment, whenever there is any type of weather we automatically reroute traffic to another gate resulting in longer routes and higher fuel costs. Has anyone considered developing additional playbook options that are designed for smaller, localized convective weather in lieu of creating large excessive reroutes automatically?

*Playbooks:*

- Are issued through advisories and are developed to figure out how to route airborne traffic tactically and to look at future traffic*
- Miles-in-trail may be associated.*
- Explain to all centers the routes and details.*
- Are created to address lots of constrains both terminal and enroute.*
- Give graphical representation and also has everything spelled.*
- Don’t have to worry about retyping everything each time, because they are predefined.*
- Used for more for large scale events rather than small scale.*

- *Problem— because people are more familiar with playbooks they have gotten in the habit of using them instead of figuring more localized routes.*
- *Currently working on regional playbooks to begin implementing this year.*
- *[www.fly.faa.gov](http://www.fly.faa.gov) –public website with current playbooks available, regional not available yet.*

*Collaborative Convective Forecasting Product (CCFP) is a common product used as a weather reference during the planning process instead of the different entities having different expectations. The CCFP is a good asset for strategic sense and is continuously improved but still looking into what products aren't used in decision development process.*

*With respect to weather reroutes, are airplane capabilities considered? Probably not, as long as the NAS navigates using ground based products. Some cases have been created to take airplane capabilities into consideration. There is work being done on creating more reroutes to take airplane capabilities into consideration and give airlines options.*

4. How can the FAA improve its ability to respond to changes in airspace demand? Airspace restructuring, fix/route development, etc., processes often lag far behind changes in customer needs, e.g., new hubs, new carriers, new equipment.

*The Florida market & the south are a significant part of business plans. There was an airspace redesign effort but didn't respond as fast as could have/should have. Process was modified to respond faster to airspace redesign need, working on faster turn around airspace redesign—6 week design phase. As a result of the modified redesign, the NAS will have 4 new sectors in ZMA for this next season for the Florida market. Other areas besides Florida are having redesign worked on. FLL has 3 runways, but not all 3 available for use. GDPs are based on 1 runway configuration. Local groups are against airport growth. Need to create business case to show need for access to additional runway to cut down on delays. FLL running 1000+ ops per day on one runway, if no changes are made expect almost always 45-60 minutes delay per flight.*

*When is the optimal time to put a flight plan into system? It is desired to have the flight plan 6 hours in advance. The current technology only allows users to look at flight plan through CDM gateway, other ways only get flight plan 90 minutes in advance. Try to send flight plan directly to CDM gateway. Most accurate view of model is 90 minutes in advance.*

5. How can the FAA improve its ability to collect, analyze, disseminate accurate data regarding delays and impacting conditions?

*CCSD is a tool that can display reroutes and impose weather data from CCFP. Only airlines that are CDM members have access to CCSD. Tools like CCSD need to become publicly available to whole community.*

6. Are the use of multiple GDP's the best tool we have currently to manage the NAS during convective weather? Can anyone provide us with an update concerning the use of

"directional" (fix-based) GDP's?

*There are plans to have airspace implementation plan proposed and have ppl trained on it. This summer will have cases with multiple GDPs in support of SWAP— have had as many as 14 in place at once. Understand there are some equity issues. Will see more distance based GDPs. GS another way to handle planning process. Tools available are constantly getting better resulting in level of data integrity getting better.*

a. How about airspace/sector GDP's?

7. When coming out of a GDP at the end of the evening, there appears to be very little regard to the impact of the arrival airport with respect to midnight shift staffing. Is there a better way to accomplish this?

*For example, in EWR will keep people on overtime to help balance the situation. It would help to have customers give more information if they will cancel flights or not. Planning telcon gives customer opportunity to share plans for the evening. To cut down problems, carry out/extend programs with a higher rate to make it easier to ease into regular traffic flow. Issue in DEN, overtime & budget...although there are budget constraints it may be easier to explain hrs of overtime then explaining to customer reason for delays if could have prevented some. Some facilities adjust schedule to match traffic.*

8. How have the new opportunities of reduced vertical separation minima (RVSM) changed the way we do business in the enroute environment?

*One benefit is w/ZNY east & west bound traffic routes gives flexibility to cross traffic at different routes. PDRs new analysis tool in traffic management which shows advantages from RVSM for sectors. RVSM has reduced complexity in some sectors, can separate by 1000 feet. Initially thought would have mass change in capacity, but not as much as they thought. Controllers don't have time and capability to handle all aircrafts because of sector size and limitation of # of aircraft can be seen on screen. Poss solution is add sectors with the new frequencies. Poss solution is to reexamine monitor alert parameters—planned outcome from Denver conference is that all facilities examine their monitor alert parameters.*

*Is there a mechanism to communicate to feed information to headquarters? If not, perhaps think of creating one. Currently there is not a specific mechanism, but in process of discussing with Mike Sarilo who can discuss with Russ Chew. Transmitters & receivers getting better at getting information for a narrower width.*

*8.33 ramifications are too costly for GA flights. RTCA working on long term solution for finding alternative for 8.33.*

9. Fuel management issues are a large concern with stakeholders in the NAS. Do you feel that there needs to be a better understanding between the FAA and each stakeholder regarding the fueling of aircraft in respect to reroutes and other traffic management initiatives?

*As a service provider understand emotion about fuel costs is understood. What to give options on whether to fly lower altitude, longer route, take on more delays. Need to have better communication from customers as to needs and scheduling habits. How much delay vs how much longer in air? Economic situation is dynamic depending on factors such as if long haul or short haul flight. Conflict btwn airlines if option for direct flights should be given.*

10. Why are profile descents (300 miles from airport) necessary? Are these necessary due to the high cost of fuel?

*In some markets necessary because of high volume of traffic.*

11. Are there any updates concerning coded departure routes (CDR's) in regards to the business jet community?

*MDW, IAD interested in issuing intermediate clearances.*

*How much participation from TEB, White Plains, Morristown? No one has to fuel for all CDRs. CDRs for business jet & GA communities need to sign agreement prior to clearance. Need to get away from point to point on CDRs, get to point and space on CDRs. Have coding issues with CDRs. Have to have letter of agreement signed for center and airport departing from.*

*Issue of signator—who it is? Internal FAA QA process as to where to kick off CDR information. What is the process of what saying in abbreviated system is the same between all parties? Those in enroute world find process very labor intensive. Slan A's and Slan R's, all have to be set as Slan A's.*

*\*User preferred trajectory (UPT) around FCAs... gives opportunity to airlines to route away from an area... UPT-get away from the area any method you want...how do u know identify and file around a UPT around FCA? USAirways goes to CCSD (CCSD—find flight search, displays assigned reroute, can overlay wx) Some CDR can be filed without going thru the “non-Pref approval procedure.”*

12. Is there a process to include the business jet community into the Planning Telcons? We often do not receive reroute information and have to guess which reroutes ATC will accept.

*Collaborative planning telcons, generally 5:15 am to 9:15 pm bihourly. At 6:00 am first operation plan issued. Various issues discussed. Open to customers, centers, etc. Try to do planning for anticipated events occurring later in the day. Current routes, Potential routes, terminal constraints, program and delay information. There is currently work being done on planning telcon website where facilities and customers can put concerns on webpage to have discussed at next telcon. The website is also useful for those who cannot attend telcons can always go before and after telcons and see what will be and what was discussed.*

13. In regard to severe weather avoidance program (SWAP) initiatives during this

upcoming convective weather season, what is the best way for the business jet community to interface with the ATC system?

*Website great for interface, NBAA/GA desk at ATCSCC. ZNY will begin providing SWAP implementation plan—this advisory will be issued around 11 am daily. Will include possible implementations for day, hotline information.*

14. In regard to special traffic management programs (STMP's), does the FAA have a more efficient way to assign slots to arrival aircraft? It appears that several times many requested slots go unused.

*Changes over last year regarding slots have helped a lot. Slot reservations can be made up to 72 hours in advance. There still is a great number of unused slots. Prior procedure had one time all would try to gain access and would crash system. Need to make sure if file for a slot and won't use it to cancel so it may get used by others. Some tracking down is being down for people filing several slots for the same tail number, will try to contact to see what slot will actually use, possibility of canceling all slots. Need to work together to have accurate data, possible fines, loss of certain privileges.*

15. At what point does the air route traffic control center (ARTCC) computer reroute a flight and is there anyway a dispatcher/scheduler will know when the flight is rerouted?

*June 6—new enhancement to ETMS reroute monitor—electronically identifies those airplanes that need to be rerouted and which have already been. FAA on TSD and for CDM members on CCSD. In general, for GA flights, towers get flight strips 30 mins prior to peak time. When GDP is in place, it is a good time to implement trust w/verify. Towers shouldn't let a flight leave early because it will hurt the system when it comes to arrival airport. Should try to stay within parameters of the program.*

16. Planning telcon/Operational plan (PT/OP), what have we done, what are we doing to improve the delivery of the PT/OP?

*Number of people interacting with customers at planning telcon has been reduced. Developing a process to get advanced information on customer needs via website—gives opportunity to plan telcons more efficiently to have telcons 30 minutes or less.*

17. What are the affects in the recent growth of the general aviation/corporate traffic on the NAS?

*There has been a vast increase in the number of RJs. There are 20 different civilian operators wanting to launch space vehicles in next few years. After 9/11 have been asked to comb thru specific types of aircraft which causes delays to occur...security needs. Poss of corporate jets get back into DCA? There is a proposal being discussed at a very high level. One of challenges is meeting changes in the market, move sectors*

*around, new airlines coming into system...NBAA's help has been great and helped in the success.*

18. How will the new ATO organization affect us as customers of the NAS?

*Working on how to provide support to customers. There will be a transparency of getting bang for the buck. Regional offices may be changing significantly or even going away in some cases. We are a service provider and should compete as if customers have a choice on who to use even though they don't. Design business plan according to how to help customers best.*

19. What are the FAA's plans to replace the retiring controller workforce?

*President has \$25M to support higher controllers this year. FAA & congressman have been asked to support president's budget. Users are aware and working towards hiring the new, necessary controllers.*

20. S2K+5, what is working, what is not and what do we want out of this program in the years to come?

*Good:*

- Advanced notice of forum, opportunity to submit questions, know objective of meeting.*
- Note migration of process...didn't have the right audience always, have been able to get a varied audience including controllers.*
- Input from FAA to GA community has been very helpful and S2K meetings are very important to evolving.*
- group is very responsive, agenda becomes more robust every time, get outcomes every time.*

*Suggestions for Future:*

- Do S2K Initiative meeting(s) earlier in season, prior to convective wx season so not pulling resources from facilities when needed because of wx*
- Prefer to see 2 meetings for each region...in different parts of region to get more attendance*
- Continue having a seasoned severe weather specialist—gives a lot of value on why certain routes are used, try to have one at each panel.*

*Other conversation*

*When there are volume constraints, how big of a constraint does GA put on the system? Projections are that GA aircraft are going to create some significant cases. GA flights have more flexibility on flying options. GA flights fly on demand, not on schedule. GA flights can try to schedule flights based on arrival time demand instead of departure time.*

*Is the type of aircraft considered in reroutes? Depending on circumstances the type of aircraft is considered because it is known that some flights can't handle certain routes. Customers need to make sure to have access to routes to suggest options for specific flights. Peak times of airports need to be known of too.*

*PBI uses the tunneling method—based on what aircrafts are actually ready to go. Short haul flights may be routed on low altitude routes. The method continues to be improved.*

*Both NetJet and FlexJet are creating ATC positions.*

*When ATCSCC puts out advisory that is recommended that requires over water airplane capabilities, are they received real time? Both service providers are good at providing information to crew members—each have their methods on how to use to get data.*

*Growth w/o grid locking, if delays were coming close to 90 mins pain would be spread out. Effort lasted very short period of time and doesn't seem to be around anymore, what happened?...in south Florida growth w/o grid lock is still continuing to be implemented, sometimes starting at 45 mins of delay—need to proactively share the use of the effort. Goal is to never get to 90 mins and then make effort. Can not make effort if delay is self induced. To try implement effort need to know taxi out time and how many aircraft effected. Utilizes premise that first come first serve does not always apply.*

*Controllers out of NY tracon are doing great job. Perhaps dispatchers and controllers can fly on jump seat to get perspective from pilots. Prior to 9/11 there was a familiarization program.*

#### Questions for Morristown S2K+5 - May 25

1. There is an ongoing issue of inequity of the larger airports for continually having ground delay programs (GDP's) to manage enroute traffic flow while other airports run with minimal delays. Do you feel that delays need to be spread out to all stakeholders of the National Airspace System (NAS)?

*GDPs in general are necessary (US Airways) because when demand exceeds capacity will take delay in air or on ground and bcs of fuel prefer to take on ground. Sometimes when convective wx only so many planes can go in and out, if allow traffic to go normal will have problems flushing traffic out of NE, GDPs are implemented in support of SWAPs. Limited airspace going to NE, implement GDP to take out chunks of traffic to be able flush traffic out of NE. Some inequity in GDPs in support of SWAPs bcs smaller airports not part of GDP are not affected as much going into same airspace. GDPs usually based on reduced airport capacity or when demand exceeds capacity at an airport. Need to come up w/technology based on airspace constraints not on airport constraints. Aware that there is inequity and need to come up w/more methods. In NY area traffic flows merge. When trying to get planes out of NE area there is more equity*



*when trying to get planes out of area bcs competing for gates and departure routes. Try to balance equitability when working w/dept delays, larger airports may be favored on the depts.*

*Use GDPs to manage system bcs only tool available, are we working on airspace program to deal w/situations more airspace related then airport? Have had meetings to develop airspace program, working on procedures, training. Jan 15, 2006 will have submission internally to FAA.*

*Some corporate offices have offered lots of flexibility to travel to elevate some of the delay, unlike airlines rather take delay in air than ground, fuel isn't as much of an issue, are willing to take reroutes, longer routes.*

*Has RVSM helped? For NY center (not enroute facility, small amt of airspace) have not been able to fully recognize RVSM capabilities, few high altitude sectors—can't clearly identify immediate benefit, seeing some subtle changes in operation bcs of availability of altitudes. For ZDC, RVSM has had significant & positive effect on capacity. One issue w/enroute environment, some sectors busier than b4 and having verbal transaction problems. In convective situations helps free up some altitudes. Still have learning curve, on going process of evaluating process of RVSM.*

*For corporate jets, gives choice of selecting low altitude, going faster.*

a. When there are GDP's for a particular enroute constraint, is it possible to exempt certain routes that are unaffected by the weather?

*When lots of scattered wx do multiple GDPs in support of SWAP, can look into exempting certain areas/flights that are flying in non-wx affected areas. Corporate planes are able to take advantage of water routes to avoid areas of wx and enroute congestion.*

*TEB to IAD, found if stay below 10 or go to manassas have had less delay, is this a viable option? Landing in manassas would help.*

*Is there a capability to have vertical offset (ex. J70)? Where to draw lines and where come together has lots of discussion, not much space especially around NY area. Operators encourage the usage offsets. Some offsetting is done but there is a lot of complexity. If able to create procedure/tool would help a lot.*

*System thinking—once airborne and have planned route to avoid volume and ask for direct will recause problem, encourage to stay on route.*

*Is CDR is what we need to do? CDRs need to be coordinated, take time to create. Alternative is to automatically offload traffic to set city pairs with alternative routes. Automatic offloads have been implemented in NY going west bound. CDRs would be great if towers knew exactly which one to use in instance, but don't. Aren't coordinated well enough for tower to utilize. In towers looking for flexibility and options, waiting for CDRs to be coordinated & approved takes too long—inefficient. Automatic offloads great bcs preprogrammed. Customers satisfied w/automatic offloads.*

b. Explain the difference between a tier based and a distance based GDP? What are the pros and cons and how does the Command Center determine which one to use?

*GDPs are sent to host computer and each enroute center. Tier based—who touches who, first tier are centers that touch center directly, second tiers are centers that touch centers in first tier—layout is not always equitable. Mileage based—technological advance that helps get more specific at who's coming from where. In GS venue mileage based helps a lot w/precise analysis, helps to catch flights just needed.*

2. Often times we have difficulty in getting the military to release Special Use Airspace (SUA). Is there anything being done to get the military into the collaborative decision making (CDM) process?

*Military participate in variety of CDM groups. Use SUAs for variety of things, ex. Missile launches. Sometimes can trim down amount of time used or when, others like ex not possible. In cases when possible to give up—like when SWAPs will coordinate w/TFM. Do work w/FAA as a team to collaborate the usage of SUAs. As user would be nice to go to one source about SUAs...can go to map on website but not sure of accuracy...perhaps put in CCSD—would be helpful. Will try to consolidate information on SUAs. Have SAMS computer that activate military airspace, some centers have computers with ability to activate. Trying to create a one-stop shop to have information ready to all—perhaps w/in next 6 months. Military has had philosophical change, in past military would commit to airspace for a period and would be blocked off even if not in use. Regularly work on trying to share space by cutting laterally or by shortening altitude—not known publicly but done regularly. Collaboration btwn FAA & military and all time high. Challenge: entering requests is put in manually type into system several times to communicate information to various parties involved which gives room for error—working on system to make this automated system. In past had communication problems, now process is set btwn military and FAA during am telcons—discuss events for the day and wx—all parties are aware of needs/schedule and are on same page for wx. Over the years learned what real time means and schedule means—came to agreement to be involved in each others scheduling process. Management of CAPS very collaborative and quickly...military takes into consideration needs of GA also.*

*FAA has little or no control over national security efforts—Secret service, DHS control (ex. President traveling). FAA tries to make compromise as much as possible, but doesn't have much power over.*

*Any thought of moving SUAs to areas w/o high density of air traffic? Design and approval of SUAs is nearly impossible bcs of restrictions such as environmental. Would like to move to but doesn't seem very possible.*

3. In today's environment, whenever there is any type of weather we automatically reroute traffic to another gate resulting in longer routes and higher fuel costs. Has anyone considered developing additional playbook options that are designed for smaller, localized convective weather in lieu of creating large excessive reroutes automatically?

*When wx develops need to handle airborne traffic and stop traffic until routes are developed. In past, would have to manually redo reroutes each time, now playbooks are created so they are preset—saves time, less chance of error by manually entering each time, facilities/customers are familiar w/routes. Problem: playbooks are used sometimes*

*bcs ppl are familiar w/it, not bcs its best route—at times are longer in distance, take more time. Getting playbooks w/modifications is confusing, asked to have modifications specified in notes. Have begun to create new playbooks that are good for point to point usage, working on automation, once all is ready will make public to all. Need to be more vigilant on having data available on who's flying where and what is available. NRP is available to show alternative route.*

*In ZNY have PIT (position—job is to ensure route integrity. Anything other than standard routes need to be individually coordinated within system—takes time. Alternative routes which take less time to coordinate are offered instead of standard routes to help w/coordination.*

*Has RAPT helped? RAPT takes convective forecast and projects where its going to be reference to dept routes, color coordinate display, tells when route will be open or closed. Haven't had enough experience w/using it. RAPT is a developmental project, to make it valuable tool need budget allotment but don't have needed \$\$ to prove value it a valuable tool.*

*There are not that many routes that can't file from TEB or White Plains—however, there are less fixes.*

*Preferred routes need to be coordinated, that's why it's not always that easy to use them.*

*\*UPT (user preferred trajectory) around FCA (Flow constrained area)—get around that area any way u can...FCA starts as FEA usually...demand is going to exceed capacity for that area, if no one moves out of the area will need TFM initiatives...FEA recommended but not required, FCAs required...members of CDM have access to CCSD which can display FCAs on map...with CCSD need to type flight # and if has assigned route will come up in display, will show where flight has been decided to be routes...w/CCSD can overlay wx...RMT (route management tool) benefit of being member of CDM...as dispatcher can't legally fly flight plan thru convective wx...RMT helps get around wx legally...gives options for routes and allows you to pick route and then u can file flight plan. Some CDRs can be filed w/o "non-pref approval procedure." RMT is a great way to file plan legally and have flight going.*

*ASDI vendors have plans of incorporating FCAs into their tools. Honeywell is working on website to be able to incorporate some of the features of CDM tools.*

*From corporate side, will probably not have dispatcher to help, when flying multi-leg, multi-day trip will file flight plan first day and have to accept what's coming for remainder of flights. Eventually, will have process to alert operators if route is not available...possibly have information in an automated location.*

4. How can the FAA improve its ability to respond to changes in airspace demand? Airspace restructuring, fix/route development, etc., processes often lag far behind changes in customer needs, e.g., new hubs, new carriers, new equipment.

5. How can the FAA improve its ability to collect, analyze, disseminate accurate data

regarding delays and impacting conditions?

*Over past 5-6 years partnered w/ATO (in non competitive way) to get insight into their business plans, wants, needs and learn how to satisfy the needs of the customers. NTML are being subscribed to by more and more facilities, gives more real time information. For fast growing areas accelerate the long term plans to short plans when possible. Recording of delays wasn't being attributed to correct facilities, now delay reporting goes to facility causing delay—delay charged to point of origin of delay. New OPSNET and way of reporting of delays is going in right direction. Delays are still not always being charged to correct facility, need to refine process in delay reporting and picking out source of delay. In GA community have expectations different than airline community, also don't have same tools. Training everyone to follow same procedure? FAA trying to analyze current assets and resources to see if using to best or if can use better. FAA needs to be able to move ppl assets faster to where they are needed—working on it. Working to be on cutting edge of data reporting—cut out human piece to try to prevent human error. Budget constraints are an issue sometimes. Don't utilize resources effectively, problem is probably not in structure of airspace but communication btwn groups. Don't seem to be able to effectively adapt system when new airline, change in fleet mix, change in demand—what can we do to adapt better? Quality of ppl is good but challenge is to figure out what may be needed and prepare for it even before needed. Changes in technology are not all being used fully—technologies in cockpit not being used fully bcs restrictions placed. Be proactive, look ahead. Airspace redesign usually takes 18-24 months for design and 24 months for deployment (most of the time is spent w/environmental issues—length of time depends on area) but for problems in Florida area process was accelerated to 6 weeks for design and 4 months for deployment—what is deploy in other part of the country? Some problems in NAS are bcs of bad airspace, should be top priority to redesign.*

*Environmental groups have open discussion forums and it is important to voice opinion for new runways or improvements—ex. FLL*

6. Are the use of multiple GDP's the best tool we have currently to manage the NAS during convective weather? Can anyone provide us with an update concerning the use of "directional" (fix-based) GDP's?

*So far multiple GDPs are best tool so far under certain circumstances. Can use "directional" GDPs in more places once technology becomes more robust.*

a. How about airspace/sector GDP's?

7. When coming out of a GDP at the end of the evening, there appears to be very little regard to the impact of the arrival airport with respect to midnight shift staffing. Is there a better way to accomplish this?

*Are provisions that require ATCSCC to conduct conference w/effect facilities to discuss impacts. Suggest when come out of GS and go into high rate GDP, come out of GS w/o plan afterwards which results in another GS many times. Only extreme*

*circumstances want to keep airport open past hours, at a certain point flights are cancelled.*

8. How have the new opportunities of reduced vertical separation minima (RVSM) changed the way we do business in the enroute environment?

9. Fuel management issues are a large concern with stakeholders in the NAS. Do you feel that there needs to be a better understanding between the FAA and each stakeholder regarding the fueling of aircraft in respect to reroutes and other traffic management initiatives?

*Differences on what part of the flying community you belong to—airline vs GA. GA flights are less concerned than airlines w/fuel burn. Challenge to balance the different concerns btwn the communities and within the communities—sometimes airline flexibility depends on distance of flight. Want to give customers option of flying longer route, lower altitude, or delay accumulation—in some cases can exempt aircraft from expanded MIT if willing to fly with modifications instead of sitting on ground and accumulating delay. Working on an option is to submit 3 flight plans—one preferred and two acceptable—if flight plan needs to be changed can model options submitted by customer (need to be submitted early to give time to model)—FAA needs to make sure to provide resource of information to help routes to be created (delay info, demand, capacity, etc)—major missing component is ability to predict actual demand...ability available in NY facility but not across country.*

*\*Add distance field to CDM webpage.*

10. Why are profile descents (300 miles from airport) necessary? Are these necessary due to the high cost of fuel?

*For GA planes, are there options of staying high within the 300 mile area? It is an option but have to make sure you don't reach point where you can't descend into the airport. Also depends on traffic and predictability of flow.*

11. Are there any updates concerning coded departure routes (CDR's) in regards to the business jet community?

*GA planes have more flexibility...can go at more altitudes than carrier planes.*

12. Is there a process to include the business jet community into the Planning Telcons? We often do not receive reroute information and have to guess which reroutes ATC will accept.

*Information available at [www.fly.faa.gov](http://www.fly.faa.gov)—can look at advisories, can get agenda for planning telcons and results published as advisories*

13. In regard to severe weather avoidance program (SWAP) initiatives during this

upcoming convective weather season, what is the best way for the business jet community to interface with the ATC system?

14. In regard to special traffic management programs (STMP's), does the FAA have a more efficient way to assign slots to arrival aircraft? It appears that several times many requested slots go unused.

*Work group under CDM called STMPs—been part about 2 yrs. Group has come up w/enhancements for example to expand ski season times; search function to ask for what you want; RON (remain over night) check box. Data gathered has helped cut down on misuse/abuse of system. To cut down more on misuse of system, there will be a change that once slot is reserved you still have to go back and confirm slot. Repercussions for violators could be monetary fines or banning of use of system.—being done bcs some flight plans were being filed into 5 slots...when noticed at GA desk calls were made to cancel the extra slots.*

*Possible to have clock on website to be official/real time? Will take back to group and talk w/developers. Can also join the team to have your voice heard or can contact GA desk at ATCSCC w/your needs, recommendations.*

15. At what point does the air route traffic control center (ARTCC) computer reroute a flight and is there anyway a dispatcher/scheduler will know when the flight is rerouted?

*CCSD tool—reroute monitor-gives flight search capability...gives table w/if flight is conforming or not conforming with advisories (has filed route, assigned route from sever wx).*

*Would a website w/up-to-date reroute data be helpful? Yes.*

16. Planning telcon/Operational plan (PT/OP), what have we done, what are we doing to improve the delivery of the PT/OP?

*Few people on telcons would provide more continuity. Working on web-based (available to CDM members) opportunity for customers to submit comments in btwn telcons—comments you would like to be considered/discussed during the telcon.*

17. What are the affects in the recent growth of the general aviation/corporate traffic on the NAS?

18. How will the new ATO organization affect us as customers of the NAS?  
*Priority of Russ Chew is to be a customer service organization—decisions made based on the customers best interest. B4 were designed around regional boundaries which created boundaries in how provide customer service.*

19. What are the FAA's plans to replace the retiring controller workforce?

20. S2K+5, what is working, what is not and what do we want out of this program in the years to come?

*Good:*

- *In past S2K was lots of PowerPoint's filled with information...currently interactive approach—interactive preferred.*
- *Interactive helps a lot w/communication between customers*

*Suggestions:*

- *More funding needs to be put into GA desk, will help more than just GA in long run.*
- *Conduct meeting earlier in the year (Feb/Mar)—before convective weather season.*

*Comments:*

- *From avionics manufacturer perspective, information is valuable—able to tell company here is what FAA is planning to do in the next few years and how can we help?*
- *Meeting shows evolving of industry...shows both airlines and GA each others view of things*

*Other conversations*

*Do different fixes have different altitudes? Yes, depends on where you are coming in from and where going.*

## Summary of Sessions 6/7: Phoenix, Arizona, June 15/16

### **RVSM and MAP Discussions**

An airline rep said that they're interested in a response to this as they did a lot of scrambling to get aircrafts ready. So far their pilots have used it for turbulence avoidance. But what are the effects on the Air Traffic Control side?

FAA response: There are more reroute options as a result of RVSM. For more detailed analysis, a study is currently being done and a report will come out in July.

Airline rep: What happened to cause ZOB to accept a chokepoint for EWR, for example, (or even offer it) when they didn't before? Was it a RVSM related thing?

FAA rep: Nope, that is not related.

Airline rep: We've added altitudes as a result of RVSM, has staffing been increased also as a result of more available options?

FAA response: There were no additional flights on Jan 20 when RVSM was released compared to Jan 19, but we have more options available to handle those flights. So no, staffing has not been increase.

Air Force rep: Some aircraft, the AWACS and B52 particularly, are impacted and there is a tendency to not file/fly at RVSM airspace since they don't know what the impact will be if they are denied.

FAA rep: Assuming that they are going to be denied, rather than asking first is a problem in itself. Use of the new DoD website expressing priorities to the ATCSCC floor is increasing. He would encourage the units to file, then even if the flight plans were denied they'd (FAA) have a case to re-examine things if there were many plans denied for this reason.

FAA rep: He'd like to hear from TMOs on how they think RVSM is going?

FAA SW-area TMO: They made a lot of adjustments getting ready for RVSM, and there has been an increase in sector capacity (although no MAP change yet). He hears from controllers that the same number of flights isn't as bad to work now, so he notices a definite benefit.

Airline rep: Have they noticed a decrease in Miles-in-Trail restrictions (MITs)?

TMO: No.

Airline rep: Have they noticed a change in caps as a result?

Regional FAA rep: Yeah, most things went up 1000'.

Airline rep: His impression going in was that RVSM was going to add capacity (not these other things that have been discussed like: reroute options, turbulence avoidance, etc).

Airline pilot rep: Their perspective is that RVSM would give more options for saving fuel, but they weren't necessarily banking on capacity increases.



FAA regional rep: Operational errors are down since RVSM was implemented. In addition, it will provide a new perspective for airspace redesign options going forward.  
Airline rep: Is RVSM causing early descent? And if it is, particularly for their short-hauls, maybe they wouldn't bother climbing up that much to begin with.  
FAA rep: It would be interesting to track down whether the early descents really have to do with RVSM or not (although the airline rep thinks it may be more than a coincidence).  
Airline pilot rep: You better check the duty roster to see who's working when that is observed.

### **GDP in support of SWAP discussion and Airspace Flow Program**

An airline rep said they have an issue with SWAP. Consider the example of convective weather activity in mid-west which affects traffic and constricts airspace. Often GDPs are implemented to slow the flow of traffic to LGA, PHL, etc which severely effects major carrier flights. But flows to TEB, White Plains, etc are not slowed which effectively creates inequity between airlines and GA.

FAA rep said they use multiple GDPs in support of SWAP used since it is available, it is not great they admit. The CDM group is working on an airspace flow tool, which would focus the delays rather than just slowing big airport flows.

FAA rep: The CDM team currently working on an airspace flow tool that will be available next spring. It will allow some of the target airplanes to be reached that are not being reached now. Significant delay savings possible by focusing on just the flights that go through the affected airspace. Issues with it they are working on military piece as they will be getting EDCTs for the first time and need to be trained. Why wouldn't some flights be exempt if the weather is only on one side of an airport? Flights from the other side should be released. Trust, but verify due to the communication involved.  
General comment about CDM: It is their opportunity to get early information from customers that allow them to model demand in the future. This is still much better in the closest two hour period than for 4hrs or 6 hrs lead time, but they're working on improving this.

Airline rep: comments on how to get into the CDM process (email Lorne Cass, CDM Industry POC: [lorne.cass@nwa.com](mailto:lorne.cass@nwa.com)), as well as what to expect from the airspace flow program when it's online next spring.

FAA rep: gave example on equity in GDPs between TEBs and EWR/LGA , the TEBs are taking more of their delays on departure rather than on arrivals through an official GDP.

FAA rep explained the difference between distance and tier based GDPs. An airline rep explained they like the distance based better as it makes it easier to see the effect of different situations on their delays.

FAA rep: Should we be rephrasing things to speak in terms of GDPs and GAAPs, instead of just GDPs because GA community is now more involved?

Another FAA rep first clarified the difference between GDPs and GAAPs: GAAP is designed to accommodate an airport that ETMS does not indicate a capacity problem for, but it is likely that unscheduled demand could push it beyond capacity. However, when delays reach a certain point the philosophy is to transition back to a normal GDP.

### **Access to airspace [i.e. Military and Special Use Airspace (SUA)] Discussion**

Air Force rep: communication is the issue. And oftentimes they don't have the tools to get all the necessary info.

FAA rep commented that things have improved as far as military letting them know when they're done with SUAs, but they still need to get better.

A Regional FAA Rep noted that they have a 14Z planning telcon with the military regarding CCFP and possible uses for airspace and trading off to handle particular missions and passing airspace back for civil demand pushes.

Air Force rep: this works well for them since military knows they can/should be using airspace better in the morning for instance if they know the afternoon is going to be challenging.

FAA rep: the military has explained to them that training is very important to their mission success, and they (FAA) do everything they can to accommodate them when the military has a "dire need" for it.

An airline rep: information on MOAs and SUAs is not getting to them in time to be of use. Let us use the areas when they're not being used. Ex. J65 regarding getting to Dallas and having to go around Tuscan during times when White Sands is blocked by MOA/SUA, but actually available.

FAA rep: these tradeoffs are important between not restricting military so much that training is adversely affected.

Airline rep: That's good that the direct route is given eventually, but if it's too close to departure it's not helpful. Sometimes they've already filed and fueled to go around the SUA, and therefore are burning fuel to carry fuel if they fly direct after planning for the longer route.

FAA rep: counter point, there are some legal issues involved with NOTAMS

FAA rep: testing being done w/MITRE on better info communication as far as times/availability on these areas of airspace (eg. More realtime maps)

FAA rep: mentioned that collaboration and info sharing/adjustment much improved w/planning telcons and coordination, kudos to their efforts on the military end too.

FAA Regional rep: The proposed Navy LeMoore airspace would affect about 1400 flights/day. They've had meetings with the FAA and Navy involved parties as far as their impacts. FAA has brought the facts on the economic impact on airlines from these potential reroutes (i.e. extra fuel costs).

GA Pilot: Is there a ZAB contact regarding doing flight tests that he could talk to?  
(Answer: yes, Roger Mandeville, TMO/Cust Service Representative, ZAB)

FAA rep: We're thinking towards the future for all of these military issues. There are a lot of challenges upcoming (ex. F22 flying "nose2nose at 400 mi", JSF, UAVs, etc). These will require new uses of airspace from what is being done today. We really need real-time SUA information.

Airline rep: Take the example of the SUA near Myrtle Beach, they fuel to exactly not be overweight on return from Myrtle Beach->CLT. Once that fuel planning is done, if the SUA is removed close to departure time and they are granted direct, it is not as helpful as it would be had they know earlier. In that case they would have to de-fuel before take-off on the return flight, and that fuel would be contaminated and couldn't be reused.

Another airline rep: Is there a current proposal being evaluated by the FAA? There is a chunk of airspace at contention that would directly affect 1/3 of their flights. The FAA responded that, yes, it's being evaluated.

Air Force rep: UAVs is another issue that's not getting any better. For example, Arizona National Guard will be getting some and civilian uses will be increasing greatly in the future as well.

A FAA Regional rep explained the military scheduling tool, which enables customers to enter their schedules related to training and airspace needs directly into the Seattle Center's system. This test shows a lot of promise and FAA national reps said that they are looking at deploying the same approach nationwide (w/MITRE help).

FAA rep: There is a DFW area test with realtime military use of SUAs and schedule information going on. This has a big American Eagle impact given the altitudes and routes they typically fly. It looks good, and another test is now ongoing in Ohio.

A GA pilot commented that things have improved greatly in recent years, but keep working and keep making more improvements regarding actionable planning around SUAs.

FAA rep: We will take this back to CDM group and work towards having a single, integrated data source (MOA, SUA, ATCA, etc).

FAA Regional Rep: It would be helpful if the military had one uniform policy (towards the use of airspace, etc) across the country/services. Even within the umbrella of SUAs there can be several different things going on.

FAA rep: He reiterated that great improvements have been made in communication and the FAA is also more understanding of the training needs of the military and will not snatch back airspace due to system constraints.

GA Pilot: This one issue (SUAs) could take a whole day. They've gone through the MOA when it was completely empty, they go VFR since the Center won't let them in there IFR.

FAA rep: A change in culture is going on (it takes time) as far as communication with military and trusting that what both sides say they're going to use, they actually do.

### **Communication discussions including communications with General Aviation (GA), GA Involvement in the Process, and GA Access**

A Regional FAA rep mentioned that small airports are growing (eg. Scottsdale) as are special events (Fiesta Bowl, golf tourneys, 2 NASCAR races/yr). What happens to the local fliers that are based in the location all year?

A National FAA rep responded that we need the group (workgroup, meeting in July) to work that issue of what happens to someone that goes out flying for the day and can't get back in because they don't have a slot. Workgroup is going to work on requirements of when to file the flight plans, when to verify them, etc. And NBAA folks are tuned in that the same tailnum filing several flight plans doesn't help anyone (ie. Reserving more slots than necessary), and in fact hurts their fellow GA users.

A GA pilot gave the example of filing from Teterboro to New Orleans across Atlanta Center (ZTL), but being given delays. Is there any way to find out that filing through other centers would not involve ground (departure) delays?

FAA response: check the webpage (OIS) for active advisory, as well as the info discussed during the planning telcons.

GA pilot: What if they find that out too late (already in the plane, fueled and filed)

FAA: that's the advantage of calling the NBAA desk at ATCSCC (who has web access and is right there when they might not be on the web at that point)

FAA to NBAA: what do they think about this?

NBAA has been very active w/e-STMP plans to work with home-based flights to let them back in during special events.

FAA: the FAA community could make use of service NBAA provides, in terms of asking NBAA desk to probe their subscribers about a particular event to help get some advance info on what to expect at certain events.

GA pilot: Are there any new plans in ZAB area?

FAA Regional rep: No, their main constraints are for SUAs.

GA pilot: Question related to business jets arriving from the South and getting cleared down to 4500'.

FAA Regional rep: The new PHX TRACON will have 22 scopes instead of the 14 currently. He also mentioned Phoenix Airspace Users Workgroup as a venue for voicing opinions over these issues.

Also with the East/West operations at PHX and North/South operations at the satellites, they need to go over or under, so there are not a lot of options.

GA pilot: He has been offered a couple different things (i.e. routing/clearances) recently, but the overall attitude of controllers and their unwillingness to deal with or help biz jets has been a problem.

FAA Regional rep: Call him with specifics of the attitude problems when it happens and he will address it then.

Another FAA Regional rep: Phoenix is a unique situation because they can't see the flights coming out of Scottsdale until they are at 3500'. (This is also why the ASR11 radar will be so helpful.)

GA pilot: Does everyone need to arrive at 10am? He's basically a GA guy who's observed that trends in delays occur at the same times every day.

Airline rep: Their marketing department is the driver of hubs and schedules (i.e. not the dispatchers who were primarily the audience at the meeting).

Another Airline rep: In the past they have 'voluntarily' de-peaked their schedule at a certain airport and there's no incentive to do this since a low-cost carrier came in and peaked it back up.

FAA rep: The FAA will consider all options to reduce delays, including regulations.

An FAA regional rep spoke about tremendous growth at LAS, including the increase in special events, and how this is challenging given the one runway operation.

A GA Pilot: Is this a precursor to slot control at LAS?

FAA response: No.

A GA Pilot: I don't need the long runway, I can get by with much less than that.

FAA regional response: There are still intersecting runways and airspace issues, so it's not as simple as just letting them use the shorter runway. But they've tried recently to put out a letter to airmen indicating to GA community the best times for them to operate at LAS (and the delays to expect during other periods).

A GA pilot: Is FSM/TSD available to them?

FAA response: Yes, we'll show in a couple slides how to access it (through ATCSCC website).

FAA rep: If there is a way to get a group of NBAA users together to share this type of info, that would be of great interest to educate them.

GA pilot: There's no central group or meeting that would accomplish this. There a lot of 1-2 aircraft flight departments, rather than larger "airlines". The NBAA website would likely be the best spot for communicating this.

GA Pilot: He didn't know they were doing this (changing/adding restrictions), why don't they let them know or consult with them?

FAA Rep: Until 5-10 yrs ago the concept of the FAA's "customer" did not even exist. They would do things largely out of convenience to them. But this philosophy is changing along with the new ATO and its idea of holding managers accountable. For example, they wouldn't have been invited to this type of forum 5 years ago.

FAA Rep to the GA Pilot: They have the contact information now for the TMOs, who are their service contact. Don't wait for a forum like this, instead go ahead and get in touch with them about issues they have when they come up.

NBAA Rep: It would be good to get more of these types of meetings for regional NBAA members to have their voices heard and learn more about the decision making process.

An Airline rep said that he views NBAA as potential problem solvers given their flexibility as far as being unscheduled, smaller operations, and sometimes not as concerned with fuel. Therefore it is very important to educate them about the data that is available and things they can do to help everyone out.

GA Pilot: Fuel is an issue for him, but he's an airline of one plane and two people, so yes there's much more flexibility with things like that.

GA Pilot: Regarding the TMIs shown on the OIS webpage, what is all of it based on?  
FAA Answer: ETMS, which includes all IFR flight plans.

GA Pilot: Regarding playbook reroutes, what about the people that can go over the weather?

FAA Response: We're still developing ways to be able to customize the reroutes to aircraft capabilities such as max cruise level, but we're not there yet.

**Polices, Processes and Procedures Discussions [including FAA internal issues responding to users/process improvement]:**

Airline rep: There is a good tool with information available on airport configurations, what needs to happen to stay in that configuration, etc. But this still needs improving, he'd liked to see AARs, as well as what runway is being used for what.

FAA rep: I agree that it needs improvements, but the NTML webpage has been developed which conveys some of this.

Another FAA rep: Historically there have been discrepancies in individual facilities procedures, but they addressed it and he wants to have a common formula applied everywhere to determine capacity. The MTOs have the action to improve this.

Airline rep: It would be very helpful for dispatchers to have more continuously updated info on the web (in the East/West directory, individual aps).

Regional FAA rep: National Airspace Redesign (NAR) was started 5 years ago, from Congressional deal to redesign airspace in NE area, and provided a pot of money to feed the design. But design was all that was going on, with very little actual implementation. So, they are putting together a new effort between Finance and Tactical Operations to take a different approach to this. The goal is an end to end process to actually get things implemented. This new method for National Airspace Redesign will be starting in September.

FAA rep: They have done it before (i.e. take just 6 months to implement a new sector). It was tough, but they can do it again. For him to feel like he can pitch to higher management to spark a \$2.5M redesign, he would want to expect \$30M in benefits to customers in the first year, and again in following years.

Airline rep: He's interested in this, particularly in light of previous failures in other related areas. What is beneficial to users is also likely beneficial to service providers (as it would make life easier for controllers).

FAA rep: QA page on ATCSCC website contains next day (they'd like to see it more tactical) comments, delays, etc. Kudos to Ellen King and her shop for the information they put together each day.

[Note: they tried to bring up the QA page to show but couldn't find it as it is only available on the internal webpage. Could this be something useful for customers to see?]

FAA rep: They're looking at 1. What they do from the ATCSCC side (automation of reporting across the board), and 2. How to manage the issues of ramp delay, for instance, since the FAA is not responsible for ramp movements.

FAA rep: There has been an improvement in the charging of delays (and therefore reporting). In the past all EWR departure delays were charged to EWR regardless of the actual cause (ex. en-route weather, GDP at destination).

FAA rep: There has been a new focus in the past 18-24 months on improvements in the reporting of delays, and the ATC management has additional ideas in mind that will further improve this.

FAA rep: NAVCANADA has a push-button system of accounting where the entire flight is "on the clock" from push back through the TRACON, enroute, and arrival. But there

are some issues preventing us (FAA) from just simply using the software involved with that.

FAA rep: There is a team that is looking about 3 years out, a lot of human in the loop work and working with MITRE and METRON. One example is a future concept where users provide a choice of three routes that the FAA could select one from. The biggest stumbling block for revolutionary shifts in ATC is the communication that must take place (ie. pilot to controller and vice versa). A more near term project is to have airspace be the driver of ground delays rather than forcing the situation through a GDP.

Airline rep: Does the idea of users submitting three flight plan options have anything to do with “early intent”?

FAA response: Yes. They need to open up the dialogue about possibly changing the ground rules for using the NAS. One way to do this would be possibly improving upon CDM by requiring users to provide intent 3 hours in advance of flight. Another factor that should improve this issue is the En Route Automation Modernization (ERAM).

Airline rep: Gave example of advisory issues for a specific flight that FCA did not include at first. The best wind route went through the area that later became weather. The advisory did not list ZNY destinations, but he was rerouted down through ZHU anyways. He thinks it was an isolated situation, but was trying to understand the logic that may have been at play.

FAA Regional response: The breakdown likely occurred at the Center level. He offered a couple more options for what might have happened, but they are willing to work with them in situations like that. Also, the TCA could have been an option for USA to use in that case to resolve it.

City of Phoenix Aviation Dept rep: What’s going on with the ASR11 radar delivery date?

FAA Regional rep: They are on schedule for waterfall, there’s no way to rush it at this point, probably 2007 (about the same time as the new PHX TRACON building). Another commented that the ASR11 dates are vague due to funding.

City of Phoenix rep: What about ILS approaches and the interaction w/Luke?

FAA response: The VFR transition area is close to Luke, and there are legitimate safety issues between the transition area and Luke.

### **Controller workforce/controller training**

FAA Rep: Thinking in terms of system level impact, at the training center in Oklahoma City, they are starting to teach new controllers that their world is not just their scope. It’s part of a larger system...and can have bigger impacts as well.



FAA Rep: Regarding training, the way we operate the system is much different from two years ago, but the way we train our controllers is not different than it was ten yrs ago. So that is changing as well in training, and needs to be reinforced from the traffic management level.

Airline Rep: Regarding direct routings, he acknowledges that they're trying to help, but it's not always as helpful given the system view that dispatchers have.

FAA Regional Rep: From a controller perspective, they get queried by pilots about directs, but in some circumstances (ex. GDPs) they are instructed not to give them to keep it close to the planned enroute time.

GA Pilot: They don't have the money invested for the extremely complex flight planning tools taking into account the winds, altitudes, etc. So for them directs make sense since they don't know a better way.

Another GA Pilot: They're not necessarily just going direct straight to the airport, sometimes they're going direct to some point either side of it, to vector around weather, etc.

GA Pilot: He has the winds real-time in the cockpit, aside from that it's intuition as far as which route is best.

Airline Rep: They have a company policy in place that they will not operate through certain levels of forecasted turbulence, also a "G-NOT" (? Spelling) available to help in planning (which says no directs beyond the first fix in adjacent Centers).

FAA Rep: If a pilot is offered a direct that would violate company policy it should be his responsibility to know that policy and he should decline it, it's not controller responsibility at that point.

ALPA (Air Line Pilot's Assn.) Rep: It's not that simple for pilots to just know the policies.

FAA Rep: It comes back to FAA culture and how it handles its business. We need something like the GNOT in this case.

FAA Rep: It's a training issue on both sides. He travels a lot personally and listens into channel 9 on the flights, and he hears a lot of "can I get direct"s coming from pilots. So the FAA needs to work the controller piece with TMOs, but also airlines need to work on training on their end too.

Regional Airport Rep: Directs are often done instead of following their noise abatement procedures. It happens a lot during off-shifts and with some cargo flights as well.

Airline Rep: Regarding LAS, 3 centers upstream from ZLA are feeding in directs that ZLA is choking on.

FAA Rep: The accountability improvements in the FAA will help this as well.

Airline Rep: They've been around for the transition involving this issue, and witness to the improvements in communications between LAS and ZLA.

### **FAA staffing and shift turnover**

Airline rep: Question about canceling flights vs. running late on GDPs, sometimes they have 3-5 hr delays, if they run late as opposed to canceling, are they (FAA/airport) going to be able to handle it?

FAA response: They acknowledge that with high load factors, users are less likely to cancel flights. There will be some overtime necessary by controllers to handle it, and the FAA agrees to provide this. But they do need a better way to come out of GDPs, rather than letting that pent up demand kill the facilities around the effected airport. So they'd rather see a higher rate GDP rather than canceling it all together. (i.e. Transitioning from the GDP rate to a less restrictive GDP rate for some time period, rather than flat-out canceling it.)

### **Enroute issues [Fuel/Routing/Altitude Restrictions]**

An FAA rep explained playbooks using the example of the previous day's routes. There is a manual aspect of evaluating routes and whether certain flights can go through there. As a result they were losing 45 minutes just in the coordination phase with flights on the ground. Then the next day, the same situation could be expected for the afternoon, and the same plan of attack put in place. Another ARTCC could preempt this plan largely by personal preference, and they would lose the advantage of yesterday's work. So that is what playbooks are designed to avoid and streamline the process for.

The downside of playbooks is that controllers are learning playbooks and nothing else. If there is a small cell of wx that could best be handled by a small tactical reroute, some people (at ATC) are getting too comfortable with playbooks that by default that's where they look. Where instead, they're really designed for large gate closures that really require a large reroute.

They are working on developing and using more regional reroutes.

Airline rep: When a route gets modified, they need to rebuild it by scratch themselves at the airline. Some tools are being developed that will improve this, but it is still not automatic.

Another airline rep: How do we dialogue back and forth between the people that develop playbooks and those that use them? And how is the communication done between ATCSCC, ARTCCs, etc.?

FAA response: When the playbooks were developed, they were verified with the Centers.

Airline rep: At the S2K working group they often work on what is the situation with Preferred Departure Routes (PDR), Preferred Arrival Routes (PAR), etc. But there are so many of them at this point that there is some effort being taken to get a handle on them and make their use more efficient.

Cargo Airline rep: They just want to be able to fly in when congestion isn't an issue. They do continuous descents into SDF all the time.

Airline rep: They have problems with direct routing. They have their own comprehensive flight planning tool that takes into account the best wind information. They also have up to date ATC information from dispatchers and equipment. He also showed a POET example replay on slides of how direct route got the flight out of the jet stream and wound up costing them. Morale: Don't offer those airline flights direct routing, he says.

FAA Regional rep: But we've been trained that the best service we can provide is to point aircraft directly at their destination.

Also, if that airline feels very strongly about that then their CEO needs to get involved and get it in writing.

Another Airline rep: Their company policy is to not ask for direct over 200 mi ... without asking dispatchers first.

Also regarding RVSM, they're trying to get a handling on pros/cons of its effect. In some Centers their flight distances have gone down and their flying time has gone up, so he's wondering if it's from lots of directs.

FAA rep: He'd like to use the example slides the airline provided (sanitized so it's not an airline thing) but make it an awareness issue in a newsletter to controllers or something.

NBAA rep: Those flights just want to get airborne, they are much less sensitive to fuel costs and typically carry enough to be rerouted.

Airline rep: He gave another example that the "preferred" departure route out of BOS to PHX goes through Canada. They get charged for using Canadian airspace and therefore don't want to use the pref route.

Another airline rep: They need predictability and problems can happen in both directions. For example a reroute is removed at last minute after the flight has already been loaded with extra fuel, or tactical reroute added with too little fuel and already at runway end ready to depart...and some of those reroutes involve 4000 pounds of extra fuel.

FAA Regional rep: He believes they follow 99% of what they say they will.

FAA rep: There's a point of diminishing returns with predictability (If they plan for the longer route, they could be always carrying 4000-6000 lbs of fuel more than they might need).

Airline rep: If a flight's airborne and a reroute comes up for VUZ, don't tactically send them around at that point since they're not planning for 5000lbs extra fuel (which often means leaving passengers behind).

FAA rep: Their general philosophy is that if flights are airborne over a reroute, leave them alone unless they ask to be moved back.

A GA Pilot: On the flight from ABQ->LAS ten years ago they would be granted the request to stay higher as long as possible. Now because of LOAs the request is not even considered (and they burn 1400 pounds of gas on the 1 hour flight). On the way back they need to stay below 31,000' the whole way (and burn 1800-1900 pounds of gas on that flight).

FAA Regional Rep: Last year they went through the LOAs, revisiting whether they were all necessary.

Airline Rep: They were consulted for input on some of this LOA stuff. At that time the FAA reps involved explained that the restrictions are sometimes necessary for capping, but are not needed 24-7. The airline suggested that they consider loosening the restrictions if they're not needed 24-7 (and he thinks the FAA reps listened).

FAA Regional Rep: They have been approached also by a couple regional carriers regarding whether the restrictions were necessary.

GA Pilot: When they're busy, keeping everyone below FL310 is like using a 6 lane highway rather than a 12 lane one.

FAA Regional response: But they still need to be merging flows, and the structure of the airspace is driving the restrictions more so than just the altitude caps the GA Pilot is talking about. Right now they are trying to have one sector be the sequencing sector for approach flows, but they're working on possibly improving this. TMA can be very helpful. For example they meter flights to LAS, and in turn meter to PHX.

FAA Regional Rep: Altitude restrictions and LOAs are set up to help them manage complexity. They're revisiting them to see if some of them are really necessary. Basically they're trying to reduce the complexity for controllers, so they come up with agreements with neighboring centers over how aircraft will be delivered. But he admits that those may not be the best ways to handle the situation during off-peak times.

GA Pilot: If you have your triangle of busy space, why not add a fix just outside that triangle, that users could optionally stay up longer (even if less direct) and enter the triangle later from these fixes.

Another GA Pilot: He observes that some controllers are willing to be more creative and try different things, and some are much more set in stone.

FAA Regional Rep: That is typically human nature, and the nature of their jobs. But they're trying to shift towards controlling flights in a way that best uses the aircrafts' capabilities.

## Appendix A

### S2K+5 Panel Agenda and Questions

#### **1] Denver, Colorado (kick-off)**

Schedule for Day 2 – Wednesday, May 4, 2005

8:00 AM - 6:00 PM

Introductions and Expectations – Facilitators – 20 minute

Opening Statements – Sammartino – 15 minutes

Break – 20 minutes

Operations Planning Process Changes – Enders – 20 minutes

Special Olympics Fly-In Process - Enders/Libby – 20 minutes

Break – 20 minutes

Recent System Changes & System Review Update – Libby – 20 minutes

Q&A for ATO Managers and Customer Reps – (Panel) – 90 minutes

Lunch and Administrative Time – 60 minutes

Airspace Ground Delay Programs – Enders – 20 minutes

Review of Collected Issues – Facilitators – 45 minutes

Break – 15 minutes

Identification of additional issues – Facilitators – 60 minutes

Break – 15 minutes

Issue exploration, prioritization, and closure – Facilitators – 75  
Minutes

Break - 15 minutes

Recap and close-out of day's events – Sammartino – 20 minutes

#### **2/3] Dallas, Texas**

Schedule for Tuesday, May 17 and May 18, 2005

8:00 AM – 8:15 AM- Introductions by Facilitators

8:15 AM – 8:40 AM- Welcome by Sponsor, Business Jet Center

8:40 AM – 9:00 AM- Expectations and review of agenda

9:00 AM – 9:20 AM – Break

9:20 AM - 11:30 AM – Review of Collected Issues- Facilitators

11:30 AM – 12:30 PM – Lunch Break

12:30 PM – 2:30 PM – Q&A with MTO's/Dispatchers and Schedulers

2:30 PM – 2:45 PM – Break

2:45 PM – 4:00 PM – Issue exploration, prioritization, and close

#### **4/5] Morristown, New Jersey**

Schedule for Tuesday, May 24 and Wednesday, May 25, 2005

8:00 AM - 8:15 AM- Introductions by Facilitators

8:15 AM - 8:40 AM- Welcome by Sponsor, Honeywell Corporation

8:40 AM - 9:00 AM- Expectations and review of agenda

9:00 AM - 9:20 AM - Break

9:20 AM - 11:30 AM - Review of Collected Issues- Facilitators

11:30 AM - 12:30 PM - Lunch Break

12:30 PM - 2:30 PM - Q&A with MTO's/Dispatchers and Schedulers

2:30 PM - 2:45 PM - Break

2:45 PM - 4:00 PM - Issue exploration, prioritization, and close

### **6/7 Phoenix, Arizona**

Schedule for Wednesday, June 15, and Thursday, June 16, 2005

8:00 AM - 8:15 AM- Introductions by Facilitators

8:15 AM - 8:40 AM- Welcome by Sponsor, America West Airlines

8:40 AM - 9:00 AM- Expectations and review of agenda

9:00 AM - 9:20 AM - Break

9:20 AM - 11:30 AM - Review of Collected Issues- Facilitators

11:30 AM - 12:30 PM - Lunch Break

12:30 PM - 2:30 PM - Q&A with MTO's/Dispatchers and Schedulers

2:30 PM - 2:45 PM - Break

2:45 PM - 4:00 PM - Issue exploration, prioritization, and close

### **Meeting Questions for sessions 2-7**

- There is an ongoing issue of inequity of the larger airports for continually having ground delay programs (GDP's) to manage enroute traffic flow while other airports run with minimal delays. Do you feel that delays need to be spread out to all stakeholders of the National Airspace System (NAS)?
  - a. When there are GDP's for a particular enroute constraint, is it possible to exempt certain routes that are unaffected by the weather?
  - b. Explain the difference between a tier based and a distance based GDP? What are the pros and cons and how does the Command Center determine which one to use?
- Often times we have difficulty in getting the military to release Special Use Airspace (SUA). Is there anything being done to get the military into the collaborative decision making (CDM) process?
- What will the impact be of the Navy's proposed LeMoore military operations area (MOA) and air traffic control assigned airspace (ATCAA)?
- In today's environment, whenever there is any type of weather we automatically reroute traffic to another gate resulting in longer routes and higher fuel costs. Has anyone considered developing additional playbook options that are designed for smaller, localized convective weather in lieu of creating large excessive reroutes automatically?
- How can the FAA improve its ability to respond to changes in airspace demand? Airspace restructuring, fix/route development, etc., processes often lag far behind changes in customer needs, e.g., new hubs, new carriers, new equipment.

- How can the FAA improve its ability to collect, analyze, disseminate accurate data regarding delays and impacting conditions?
- Is the use of multiple GDP's the best tool we have currently to manage the NAS during convective weather? Can anyone provide us with an update concerning the use of "directional" (fix-based) GDP's?
  - a. How about airspace/sector GDP's?
    - When coming out of a GDP at the end of the evening, there appears to be very little regard to the impact of the arrival airport with respect to midnight shift staffing. Is there a better way to accomplish this?
    - How have the new opportunities of reduced vertical separation minima (RVSM) changed the way we do business in the enroute environment?
    - Fuel management issues are a large concern with stakeholders in the NAS. Do you feel that there needs to be a better understanding between the FAA and each stakeholder regarding the fueling of aircraft in respect to reroutes and other traffic management initiatives?
    - Why are profile descents (300 miles from airport) necessary? Are these necessary due to the high cost of fuel?
    - Are there any updates concerning coded departure routes (CDR's) in regards to the business jet community?
    - Is there a process to include the business jet community into the Planning Telcons? We often do not receive reroute information and have to guess which reroutes ATC will accept.
    - In regard to severe weather avoidance program (SWAP) initiatives during this upcoming convective weather season, what is the best way for the business jet community to interface with the ATC system?
    - In regard to special traffic management programs (STMP's), does the FAA have a more efficient way to assign slots to arrival aircraft? It appears that several times many requested slots go unused.
    - At what point does the air route traffic control center (ARTCC) computer reroute a flight and is there anyway a dispatcher/scheduler will know when the flight is rerouted?
    - Planning telcon/Operational plan (PT/OP), what have we done, what are we doing to improve the delivery of the PT/OP?



- What are the affects in the recent growth of the general aviation/corporate traffic on the NAS?
- How will the new ATO organization affect us as customers of the NAS?
- What are the FAA's plans to replace the retiring controller workforce?
- S2K+5, what is working, what is not and what do we want out of this program in the years to come?

## Appendix B

### Resources

The following websites are helpful resources to:

<b>Resource</b>	<b>Link</b>
Advisories Database	<a href="http://www.fly.faa.gov/adv/advADB.jsp">http://www.fly.faa.gov/adv/advADB.jsp</a>
Flight Schedule Monitor (FSM) Training Class Schedule and Sign-up	<a href="http://www.fly.faa.gov/Products/FSM/noClass.html">http://www.fly.faa.gov/Products/FSM/noClass.html</a>
Current Reroutes	<a href="http://www.fly.faa.gov/ratreader/jsp/index.jsp">http://www.fly.faa.gov/ratreader/jsp/index.jsp</a>
Central Altitude Reservation Function (CARF)	<a href="http://www.fly.faa.gov/carf/">http://www.fly.faa.gov/carf/</a>
Current Restrictions	<a href="http://www.fly.faa.gov/current_restrictions/jsp/index.jsp">http://www.fly.faa.gov/current_restrictions/jsp/index.jsp</a>
Special Traffic Management Programs (e-STMP)	<a href="http://www.fly.faa.gov/estmp/index.html">http://www.fly.faa.gov/estmp/index.html</a>
General Aviation Airport Program (GAAP)	<a href="http://www.fly.faa.gov/gaap/jsp/gaapIndex.jsp">http://www.fly.faa.gov/gaap/jsp/gaapIndex.jsp</a>
National Airspace System Status—OIS	<a href="http://www.fly.faa.gov/ois/">http://www.fly.faa.gov/ois/</a>
Route Management Tool (previously known as Coded Departure Route (CDR))	<a href="http://www.fly.faa.gov/Products/Coded_Departure_Routes/CDM_Operational_Coded_Departur/cdm_operational_coded_departur.html">http://www.fly.faa.gov/Products/Coded_Departure_Routes/CDM_Operational_Coded_Departur/cdm_operational_coded_departur.html</a>
Special Use Airspace (SUA)	<a href="http://www.sua.faa.gov">http://www.sua.faa.gov</a>

## Appendix c

### Acronyms

AAR	Airport Arrival Rate
AAT	Director of Air Traffic
ACC	Air Control Center
ADA	Office of the Deputy Administrator
ADF	Airline Dispatcher's Federation
ADIZ	Air Defense Identification Zone
ADR	Airport Departure Route
ADZY	Advisory
AFTIN	Aeronautical Fixed Telecommunications Network
AFTW	Arizona Flight Training Workshop
AIA	Office of International Affairs
AIP	Aeronautical Information Publication
ALTRV	Altitude Reservation
ANSP	Air Navigation Service Provider
AO	Aircraft Operator
AOA	Office of the Administrator
AOC	Airline Operations Center
AOP	Program Director NAS Operations
APA	Assistant Administrator for Public Affairs
APREQ	Approval Request
APVL	Approval
ARINC	Aeronautical Radio Incorporated
ARO	Airport Reservation Office
ART	Automated Response Tool
ARTCC	Air Route Traffic Control Center
ASP	Air Traffic Management Service Provider
AT	Air Traffic
ATA	Air Traffic Airspace <i>or</i> Air Transport Association
ATC	Air Traffic Control
ATCAA	Air Traffic Control Assigned Airspace
ATCS	Air Traffic Control Specialist
ATCSCC	Air Traffic Control System Command Center
ATFM	Air Traffic Flow Management
ATM	Air Traffic Management
ATOC	Air Traffic Operational Council
ATOP	Advanced Technical and Oceanic Procedures
ATS	Associate Administrator for Air Traffic Services
ATT	Air Traffic Tactical Operations
AUS	Automated Specialist
AUTODIN	Automatic Digital Network
AVANA	Altitude Reservation Void for Aircraft Not Airborne By (Time)
AVN	Aviation System Standards

AWC	Aviation Weather Center
CARF	Central Altitude Reservation Function
CCFP	Collaborative Convective Forecast Product
CCSD	Common Constraint Situation Display
CDL	Configuration Deviation List
CDM	Collaborative Decision Making
CDR	Coded Departure Route
CDT	Controlled Departure Time
CERAP	Combined Center/Radar Approach Control
CIC	Controller In Charge
COA	Continental Airline
COB	Close of Business
COMSEC	Communications Security System
CPC	Certificated Professional Controller
CPDLC	Controller Pilot Data Link Communications
CR	Collaborative Routing
CRCT	Collaborative Routing Coordination Tool
CSA	Computer System Analyst
CT	Select Flights Ground Delay Program
CTA	Controlled Time of Arrival
CVRS	Computerized Voice Reservation System
CWA	Center Weather Advisory
CWSU	Center Weather Service Unit
DARC	Direct Access Radar Channel
DECL	Declassified
DEN	Domestic Event Network
DHS	Department of Homeland Security
DOTS	Dynamic Ocean Track System
DP	Departure Procedure
DRVSM	Domestic Reduced Vertical Separation Minima
DVRSN	Diversion
EDCT	Expect Departure Clearance Time
EFC	Expect Further Clearance
EFTO	Encrypt For Transmission Only
EIS	Environmental Impact Statement
EOF	Emergency Operations Facility
EOR	Emergency Operations Room
ESCAT	Emergency Security Control of Air Traffic
ETA	Estimated Time of Arrival
ETMS	Enhanced Traffic Management System
FAA	Federal Aviation Administration
FACSFAC	Fleet Area Control Surveillance Facility
FACT	Fuel Advisory Control Time
FADT	Fuel Advisory Delay Time
FAM	Familiarization

FAR	Federal Aviation Regulations
FCA	Flow Constrained Area
FIR	Flight Information Region
FOIA	Freedom of Information Act
FP	Flight plan
FPL	Filed Flight Plan
FSM	Flight Schedule Monitor
FSS	Flight Service Station
GDP	Ground Delay Program
GS	Ground Stop
HAR	High Altitude Redesign
HDTA	High Density Traffic Airport
HF	High Frequency
HOST	The FAA's Air Traffic Control Computer System
IATA	International Air Transport Association
IFCN	Interfacility Communication Network
IFPFP	Individual Flight Plans From This Point
IFR	Instrument Flight Rules
INATS	Interruption of Air Traffic Service
ITWS	Integrated Terminal Weather System
LADP	Local Airport Deicing Plan
LLWAS	Low Level Windshear Alert System
LOA	Letter of Agreement
MEL	Minimum Equipment List
METAR	Aviation Route Weather Report
MINIT	Minutes in Trail
MIT	Mile In Trail
MOA	Memorandum of Agreement
MOS	Military Operations Specialists
MOST	Military Operations Scheduling Tool
MTO	Manager of Tactical Operations
MVFR	Marginal Visual Flight Rules
NADIN	National Airspace Data Interchange Network
NAR	National Airspace Redesign
NARS	North Atlantic Route Scheme
NAS	National Airspace System
NAT	North Atlantic
NATS	National Air Traffic Services
NAWC-WPNS	Naval Air Warfare Center – Weapons Division
NBAA	National Business Aviation Association
NCA	Northern Control Area
NFDC	National Flight Data Center
NMCC	National Maintenance Control Center
NOAA	National Oceanic and Atmospheric Administration
NOM	NAS Operations Manager

NORAD	North American Aerospace Defense Command
NOS	National Oceanographic Service
NOTA	Northern Oceanic Transition Area
NOTAMS	Notice to Airmen (Aircraft Dispatcher)
NRP	National Route Program
NTML	National Traffic Management Log
NTMO	National Traffic Management Officer
NWS	National Weather Service
OAC	Oceanic Area Control Center
OACC	Oceanic Air Control Center
OADR	On-OR-About Date of Release
OAG	Official Airline Guide
OCC	Operations Control/Coordination Center
OIS	Operational Information System
OJF	On-the-Job Familiarization
OJT	On-the-Job Training
OJTI	On-the-Job Training Instructor
OP	Operations Plan (New)
OPI	Office of Primary Interest
OPR	Office of Primary Responsibility
OPSNET	Operations Network
ORD	Operational Readiness Demonstration
OTS	Organized Track System
PACMARF	Pacific Military Altitude Reservation
PAWG	Phoenix Airspace Working Group
PDC	Pre-departure Clearance
PDR	Preferred Departure Route
PMM	Pullman (Fix Located in Chicago Air Route Traffic Control Center)
PMS	Performance Measurement System
PMTTC	Pacific Missile Test Center
POET	Post Operational Evaluation Tool
PRM	Preferred Route Message
PT	Planning Team
QA	Quality Assurance
RAD	Route Availability Document
RDO	Regular Day Off
RMT	Route Management Tool
RRT	Random Route Trails
RVR	Runway Visual Range
RVSM	Reduced Vertical Separation Monitor
SIA	Status Information Area
SID	Standard Instrument Departure
SOP	Standard Operating Procedure
SPO	Strategic Plan of Operations (Old)

SPT	Strategic Planning Team <i>or</i> Telcon (Old)
STAR	Standard Terminal Arrival Route
STMC	Supervisory Traffic Management Coordinator
STMP	Special Traffic Management Program
SUA	Special Use Airspace
SWAP	Severe Weather Avoidance Plan
TAF	Aerodrome Forecast
TCA	Tactical Customer Advocate
TDA	Traffic Density Analyzer (Website)
TEC	Tower-En Route Control
TELCON	Telephone Conference
TM	Traffic Management
TMC	Traffic Management Coordinator
TMO	Traffic Management Officer
TMS	Traffic Management Specialist
TMSIC	Traffic Management Specialist in Charge
TMU	Traffic Management Unit
TSD	Traffic Situation Display
TSTM	Thunderstorm
UPT	User Preferred Trajectory
VACAPES	Virginia Capes (Military Operating Areas)
VFR	Visual Flight Rules
VIP	Very Important Person
VS Route	VACAPES SWAP Route
WARP	Weather and RADAR Processor
WIND	Weather Information Network Display
ZAN	Anchorage Air Route Traffic Control Center
ZBW	Boston Air Route Traffic Control Center
ZDC	Washington Air Route Traffic Control Center
ZHU	Houston Air Route Traffic Control Center
ZMA	Miami Air Route Traffic Control Center
ZMP	Minneapolis Air Route Traffic Control Center
ZNY	New York Air Route Traffic Control Center
ZOB	Cleveland Air Route Traffic Control Center