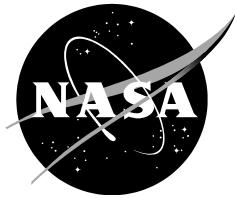


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Traffic Management Coordinator Evaluation of the Dynamic Weather Routes Concept and System

*Chester Gong
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January 2014

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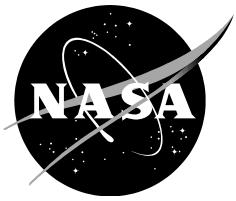
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Abstract

Dynamic Weather Routes (DWR) is a weather-avoidance system for airline dispatchers and FAA traffic managers that continually searches for and advises the user of more efficient routes around convective weather. NASA and American Airlines (AA) have been conducting an operational trial of DWR since July 17, 2012. The objective of this evaluation is to assess DWR from a traffic management coordinator (TMC) perspective, using recently retired TMCs and actual DWR reroutes advisories that were rated acceptable by AA during the operational trial. Results from the evaluation showed that the primary reasons for a TMC to modify or reject airline reroute requests were related to airspace configuration. Approximately 80 percent of the reroutes evaluated required some coordination before implementation. Analysis showed TMCs approved 62 percent of the requested DWR reroutes, resulting in 57 percent of the total requested DWR time savings.

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I. Introduction

CONVECTIVE weather is a leading cause of delay in the National Airspace System (NAS). Airline flight dispatchers file their flight plans 30 to 45 minutes prior to departure. This is typically not a problem in clear weather operations; however, this advance filing of flight plans limits the flight dispatcher's ability to adapt to dynamic weather conditions. Moreover, the convective weather the dispatcher is planning to avoid may occur hours after the flight plan is filed, when weather forecasting uncertainty is high. Consequently, flight plans are often filed conservatively (i.e., inefficiently) to avoid areas of forecasted weather. As the flight approaches the area of the originally forecasted weather, the actual weather may have moved or dissipated, rendering the original weather-avoiding flight plan obsolete.

Dynamic Weather Routes (DWR) is a trajectory-based, real-time planning tool that continually analyzes aircraft trajectories in en-route airspace in order to find more efficient routes around convective weather.¹ NASA and American Airlines (AA) have been conducting an operational trial of a DWR system prototype since July 17, 2012.² The AA trial has been limited to Fort Worth Center (ZFW) traffic only. During the trial, AA air traffic control (ATC) coordinators and dispatchers evaluate the acceptability of reroute advisories proposed by the DWR system. A DWR advisory is deemed acceptable to AA if the person doing the evaluation considered requesting the reroute from air traffic control. Although the current operational trial of DWR only involves one airline, DWR was conceived as a system to facilitate identification and coordination of time-saving reroutes between multiple airlines and an en-route Center's traffic management unit (TMU).

To date, the DWR system has only been field tested by airline ATC coordinators and dispatchers. This paper describes a human-in-the-loop simulation conducted at the NASA Ames Research Center with recently-retired traffic management coordinators (TMCs). The objective of this evaluation was to assess the operational feasibility and coordination requirements of DWR reroutes, rated acceptable to AA, from a traffic management coordinator perspective. This assessment could then be used to improve DWR reroute advisory logic in order to facilitate the air traffic control acceptance of DWR reroutes.

II. Experiment Design

In order to facilitate this TMC evaluation, changes were made to the DWR system fielded in the American Airlines operational trial. However, the test scenarios used in this experiment were derived from actual DWR advisories evaluated by American Airlines. The AA field trial system at the time was limited to Fort Worth Center traffic only. During the preparation for the AA field trial, feedback from both FAA and AA personnel suggested that the display of adjacent Center traffic would provide better awareness of downstream traffic, such as arrival streams, that may influence their rerouting decisions. Consequently, for this evaluation the DWR system displayed traffic not only in Fort Worth Center, but in all the adjacent Centers as well. The Centers adjacent to ZFW are Houston (ZHU), Memphis (ZME), Kansas City (ZKC), and Albuquerque (ZAB). Detailed descriptions of the evaluation participants, system architecture, and test procedures are described in the sections to follow.

A. Participants

Two teams of three subject matter experts (SME) participated in this evaluation. The participants were recently retired Traffic Management Coordinators (TMC) and Area Supervisors from Fort Worth Center. Each team evaluated the scenarios (described in Section II.C) once. Team 1 participated from February 26 – 28, 2013 and consisted of one Area Supervisor, one TMC, and one participant with experience at both positions. Team 2 participated from March 5 – 7, 2013 and consisted of two Area Supervisors and one TMC. In today's operations, both positions play a role in aircraft rerouting, so having representatives from both positions provided a more well-rounded evaluation. Although there were two types of SMEs taking part in these evaluations, for the remainder of this paper they will all be referred to generically as Traffic Management Coordinators, or TMCs.

B. System Architecture

The basic DWR system is described in Ref. 1 and typically consists of two user displays: one is configured for an airline system operation center (SOC) and the other for an FAA traffic management unit (TMU). The primary difference between the two is that the latter shows DWR advisories for all airlines.

In order to conduct the evaluation with three test participants independently and simultaneously, three instances of the TMU display were required. For these scenarios, the three TMU displays were connected to a single SOC display. This allowed the DWR reroute request to be sent to and evaluated by all three test participants simultaneously. Reroute request were sent to each TMU display through a prototype automated coordination system. Coordination of reroutes between the SOC and TMU in today's operations typically takes place over the telephone. The automated coordination system combined with the DWR trial planning capability allowed the users to receive and display the specific reroute request electronically. An example of this coordination system involving a SOC-initiated reroute request is described below.

Once the SOC user completes the trial planning of the desired reroute (i.e., DWR), the process of coordinating the reroute request with the TMU starts when the user presses the Send TMU button on the trial planner (Figure 1a). The coordination status of the SOC request becomes pending (PEND) as shown on the SOC coordination status window (Figure 1b). In this case, a pending status means the SOC is awaiting approval from the TMU. At the same time, an entry appears on the TMU coordination status window indicating an approval is required (APREQ) for the reroute request (Figure 1c). The TMC can then display the specific reroute request in the TMU trial planner by clicking the corresponding TP button located in the second column on the right of the coordination status window. This trial plan display function facilitates coordination by allowing both users to visualize the same trial plan route. At this point, the TMC has the option to approve, unable, or modify the requested reroute with the trial planner (Figure 1d). In this example, the TMC approves the route as requested by pressing the Approve button, causing the coordination status to change to TMU APRVD on both the TMU and SOC coordination status windows (Figure 1e and 1f, respectively). Similarly, pressing the Unable button would change the coordination status to TMU UNABLE on both displays. In this system, an approve or unable status brings the coordination process for the given reroute to an end. If the reroute request were to be modified by the TMC with the trial planner, the Send SOC button, shown inactive in Figure 1d, would become active, thus allowing the TMC to send the modified route to the SOC for approval. The coordination process for the modified



Figure 1. Automated Reroute Coordination System

route would continue until the reroute is approved, unabled, or canceled. The “Cancel Request” option is only available for the original requestor of the reroute, i.e., the SOC in this example.

C. Test Procedures

The test procedures were designed to obtain immediate feedback from the TMCs following their evaluation of each scenario. The set of scenarios were made up of thirty-nine actual DWR routes that were rated acceptable by American Airlines during the early part of the field trial (July 31 – September 29, 2012). During the AA trial, whenever a user rated a DWR as acceptable by pressing the Approve button on the trial planner, a screenshot of the actual route and traffic conditions on the display at the time was archived. The archived screenshots used in this study are presented in the Appendix. Referred to as the route evaluation scenarios, each AA-accepted DWR was evaluated individually by each of the six participants. Once the participants received a specific DWR request, they used the DWR tool to evaluate the request and indicate whether they would accept, modify, or reject it. Depending on each of their responses, the participant would then receive a corresponding questionnaire immediately after. These questionnaires are shown in Figures 2 – 4. Upon completion of the questionnaire for the specific route request, there was a group discussion to compare their evaluation results. This questionnaire/group discussion procedure was repeated for each of the thirty-nine route evaluation scenarios.

The Accept questionnaire shown in Figure 2 was presented when the requested route was accepted without modification. The Accept questions were primarily focused on understanding what coordination, if any, the TMU expected would be necessary in order to implement the requested reroute. Accept question (1), "Does the airline need to coordinate with TMU?" refers to coordination between the airline's operation center (i.e., ATC coordinator, dispatcher, or similar personnel) and the Center TMU. If airline-TMU coordination was deemed unnecessary, then it was assumed the pilot could request the reroute directly from the sector controller. Accept question (2), "What ATC coordination is needed?" addresses the coordination that occurs between the TMU and other ATC entities. Sector/intra-Center coordination refers to the coordination typically facilitated by the area supervisor between sector controllers in which deviations from the nominal traffic flow are coordinated, e.g., a rerouted departure that takes the flight through an arrival sector. As with intra-Center traffic, there is a nominal traffic flow between Centers. The adjacent Center coordination refers to the coordination that may occur between Centers when a reroute deviates from the norm. Downstream Center coordination would probably be needed if a particular reroute deviated from a more strategic traffic flow management plan such as a reroute Traffic Management Initiative (TMI), e.g., a playbook route. Such a reroute TMI may have been put in place by the Air Traffic Control System Command Center (ATCSCC) to manage primarily the traffic downstream of ZFW (e.g., arrivals into Chicago O'Hare International Airport, ORD). In this situation, a reroute issued by ZFW could impact the strategic traffic management plan in place for the downstream Centers and, therefore, the reroute would need to be coordinated with them.

The Modify questionnaire (Figure 3) was presented if a requested reroute was modified before being accepted. In addition to the coordination questions also found on the Accept questionnaire, the Modify questionnaire included a question regarding the reason(s) the original reroute request was modified. With the exception of "interferes with arrival stream," most reasons listed are self-explanatory. Center airspace is designed such that arrival traffic are segregated into their own sectors so that the controller may descend and sequence them with minimal interference from other traffic (in this case, a rerouted aircraft).

(1) Does the airline need to coordinate with TMU?

no
 yes

Comments
 Please enter your comments.

(2) What ATC coordination is needed?

no coordination is needed
 coordinate with sector(s), inter-center
 coordinate with adjacent center(s)
 coordinate with downstream center(s)

Comments
 Please enter your comments.

(3) Rate the overall level of effort (coordination, sector workload, etc) required to approve the requested route.

1 (low) 2 3 4 5 (high) N/A

Done

Figure 2. Accept questionnaire

<p>(1) What reason(s) caused the requested/proposed route to be modified?</p> <ul style="list-style-type: none"> <input type="checkbox"/> interferes with arrival stream <input type="checkbox"/> current sector congestion <input type="checkbox"/> downstream sector congestion <input type="checkbox"/> TMI (Traffic Management Initiative) <input type="checkbox"/> SUA (Special Use Airspace) <input type="checkbox"/> operational constraint(e.g. letter of agreement) <input type="checkbox"/> maneuver start time/altitude <input type="checkbox"/> too close to weather <input type="checkbox"/> other <p>Comments Please enter your comments.</p>	<p>(1) What reason(s) caused the requested/proposed route to be unable?</p> <ul style="list-style-type: none"> <input type="checkbox"/> interferes with arrival stream <input type="checkbox"/> current sector congestion <input type="checkbox"/> downstream sector congestion <input type="checkbox"/> TMI (Traffic Management Initiative) <input type="checkbox"/> SUA (Special Use Airspace) <input type="checkbox"/> operational Constraint (e.g. letter of agreement) <input type="checkbox"/> maneuver start time/altitude <input type="checkbox"/> too close to weather <input type="checkbox"/> too much workload <input type="checkbox"/> too much coordination <input type="checkbox"/> not enough information to evaluate <input type="checkbox"/> could not be modified effectively <input type="checkbox"/> should be requested in another center <input type="checkbox"/> other <p>Comments Please enter your comments.</p>
<p>(2) Does the airline need to coordinate with TMU?</p> <ul style="list-style-type: none"> <input type="radio"/> no <input checked="" type="radio"/> yes <p>Comments Please enter your comments.</p>	<p>(2) What specific conditions would make the requested/proposed route acceptable?</p> <p>Comments Please enter your comments.</p>
<p>(3) What ATC coordination is needed?</p> <ul style="list-style-type: none"> <input type="checkbox"/> no coordination needed <input type="checkbox"/> coordinate with sector(s), inter-center <input type="checkbox"/> coordinate with adjacent center(s) <input type="checkbox"/> coordinate with downstream center(s) <p>Comments Please enter your comments.</p>	
<p>(4) Rate the overall level of effort (coordination, sector workload, etc) required to approve the requested route.</p> <ul style="list-style-type: none"> <input type="radio"/> 1 (low) <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 (high) <input checked="" type="radio"/> N/A 	<input type="button" value="Done"/>

Figure 3. Modify questionnaire

The questionnaire for rejected requests did not have questions pertaining to coordination (Figure 4). It was focused on determining the reasons why a particular reroute request was rejected and what could have been changed to make the request acceptable.

Figure 4. Reject questionnaire

III. Results

The route evaluation results give insight into the potential benefits and ATC constraints associated with the use of the DWR tool during field trials with American Airlines, albeit limited to the Fort Worth Center airspace. Thirty-nine actual DWR advisories that American Airlines deemed acceptable were evaluated by the TMCs. Of the thirty-nine DWR reroute scenarios, approximately 90 percent of them were departures from DFW; the remaining four were ZFW overflights to ORD (scenarios 1, 8, 15, and 25). For reference, pictures of the requested route and traffic conditions for all scenarios as well as the associated TMC comments are documented in the Appendix.

A. Reroute Acceptance

The acceptance count of the DWR reroutes is shown in Figure 5. In most cases, there were six responses for each scenario, corresponding to each of two teams of three TMCs. Eight scenarios were not evaluated by both teams due to time constraints; thus they have only three responses. There were a total of 210 reroute evaluation responses of which 87 (41%) were accepted as requested, 43 (21%) were modified before acceptance, and 80 (38%) were rejected. In general, TMCs did not unanimously agree on the response to a given reroute request. There were only five scenarios which received unanimous agreement, four of which were accepts and the other was a reject. These four unanimous accepts could all be characterized as returning back to normal, non-weather-impacted routing. An example of a unanimously accepted reroute (Scenario 22) is shown in Figure 6. In this example, the flight to Jacksonville originally filed a route, shown in green, that took the flight northeast to LIT before turning back to the southeast towards its destination. This route was probably filed in advance to avoid convective weather which dissipated or failed to materialize southeast of the flight. The DWR reroute shown in yellow takes the aircraft direct to MEI, shortcircuiting the segment to LIT. This DWR reroute is similar to a normal southeast bound, non-weather impacted, departure route. Comments

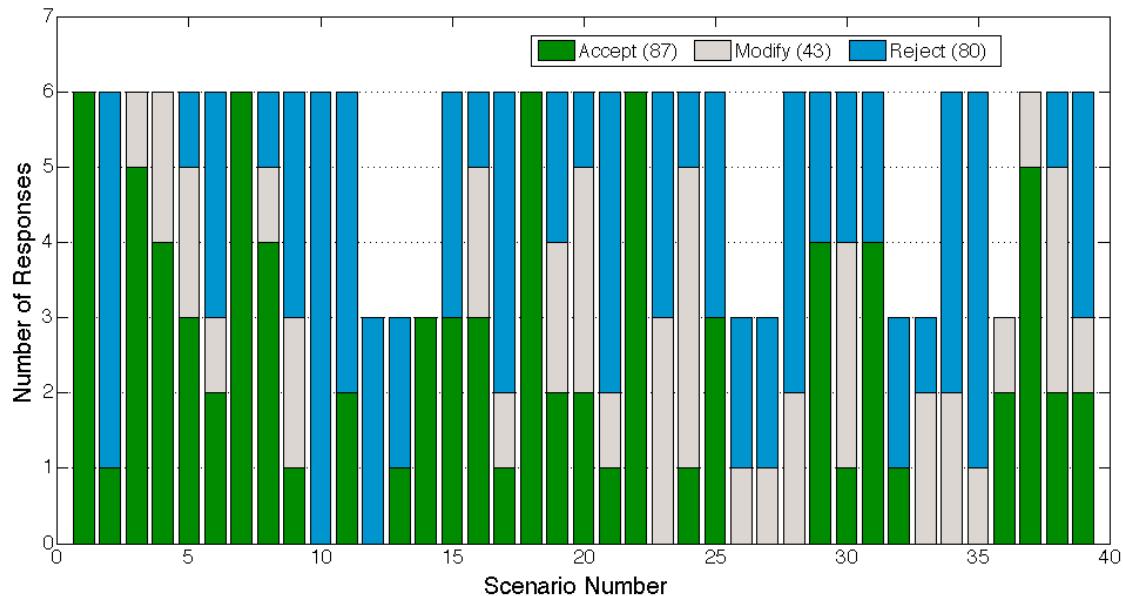


Figure 5. Reroute acceptance count

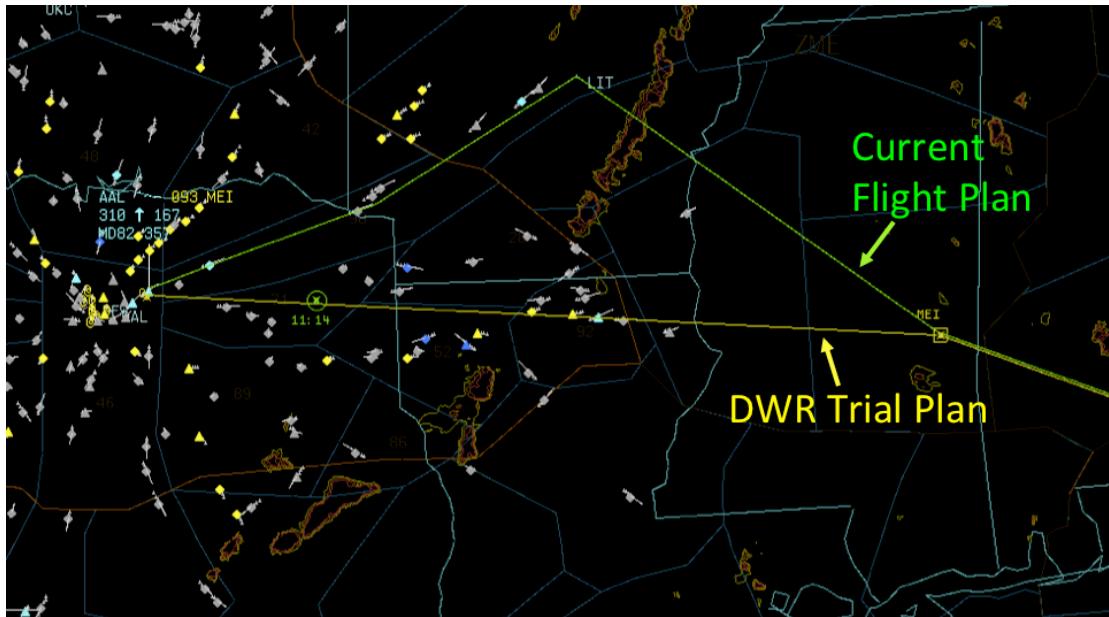


Figure 6. Scenario 22, unanimously accepted reroute

from the TMCs confirming that the reroute would return this flight to normal routing, as well as comments for other scenarios, are documented in the Appendix.

The results from the questionnaires described above were used to better understand the reasons why particular DWR reroutes rated acceptable by AA users were not acceptable to Center TMCs. Figure 7 shows a summary of reasons that caused a reroute to be modified prior to acceptance. It should be noted that more than one reason could have been selected as the cause for reroute modification. The predominant reason cited for modifying a DWR reroute was interference with an arrival stream. Sixty-five percent of the modified reroutes (28 of 43) required some modification to avoid interfering with an arrival stream before they were accepted. During the post-evaluation discussions, the TMCs verbally emphasized the importance of avoiding interference with arrival streams. Improvements to the DWR logic are underway to prevent advising routes that may interfere with arrival streams.

The next most common reason for modification was "Other," at approximately 30 percent. Unfortunately, not all potential reasons for modifying a reroute could be put on the questionnaire. In order to determine what these causes may be, TMC text comments (see Appendix) were analyzed. The most common theme in these text comments was related to airspace boundaries. An example of these airspace boundary related modifications is scenario 3, which momentarily clips a corner of Houston Center (ZHU) before entering Memphis Center (ZME). In this case, the TMC modified the route to avoid the ZHU boundary, thus avoiding the associated handoffs and automation issues that would have occurred if the flight were to transition through Center boundaries. Modifications were also made to avoid clipping individual sector boundaries.

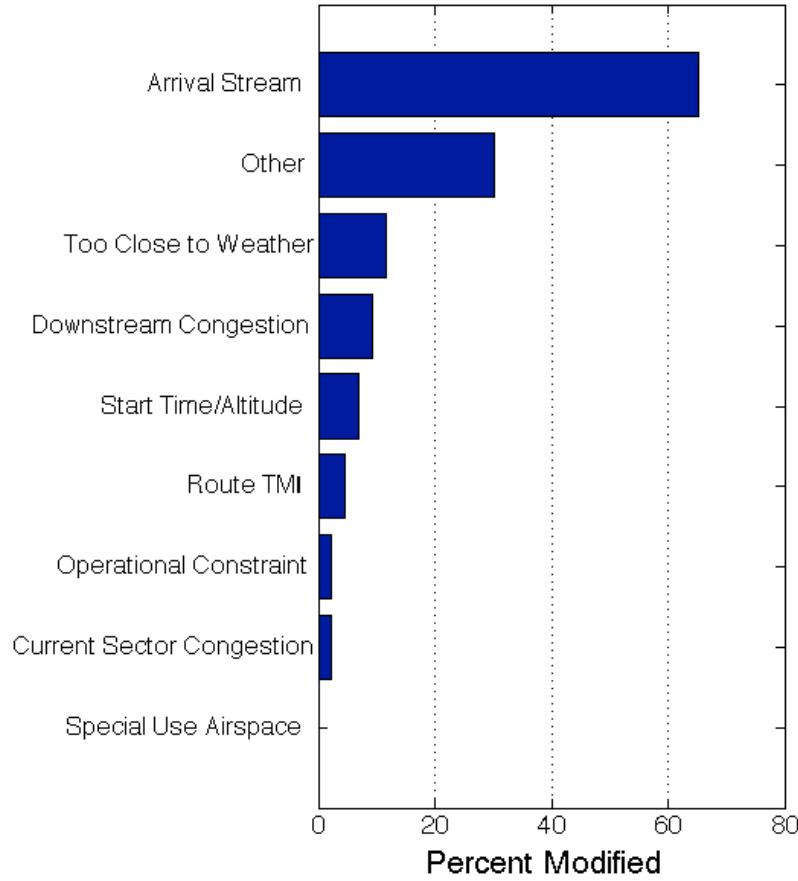


Figure 7. Reasons to modify a reroute

Another example of an airspace boundary related modification is Scenario 17, in which the TMC modified the reroute to stay within a ZFW “specialty.” A Center specialty is a group of sectors that work closely together to facilitate the smooth flow of a stream of traffic. In this case, the TMC modified the reroute to stay within the ZFW Possum specialty, which handles the northwest-bound departure stream (Figure 8). Currently, the DWR algorithm does not take airspace boundaries into consideration.

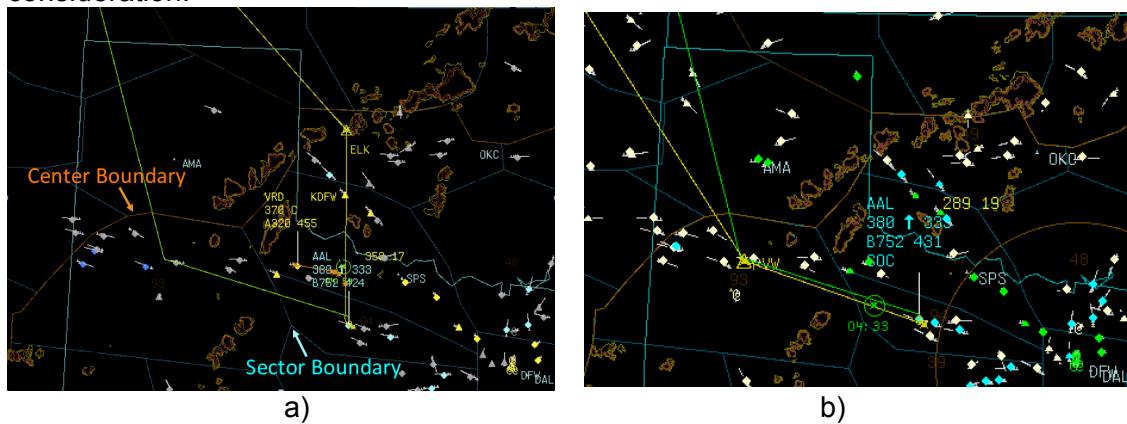


Figure 8. a) Original Scenario 17 reroute request, b) Scenario 17 Modified to stay in Center specialty

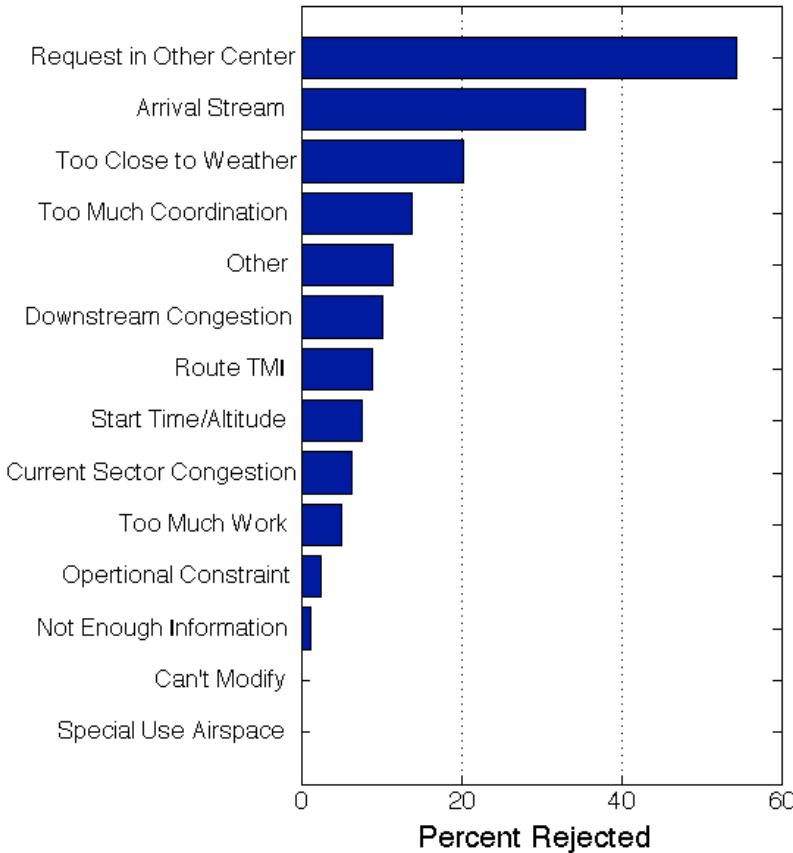


Figure 9. Reasons to reject a reroute

The third most common cause for modification was that the requested reroute was too close to weather. For these 12 percent of the cases, the TMCs used the DWR trial planner capability to modify the routes such that they would avoid the weather to their satisfaction. Since the time of this evaluation, logic has been added to the DWR algorithm to prevent reroutes from passing between narrow weather gaps.

A summary of the reasons why DWR reroute requests were rejected is shown in Figure 9. The reject questionnaire had five additional reasons for the TMCs to choose from than the modify questionnaire. As with the modified reroutes, interference with arrival streams was one of major reasons for a DWR reroute to be rejected. However, the most common reason for rejecting a DWR reroute request was “request in other Center.” This reason was cited for approximately 54 percent (43 of 80) of the rejected reroutes. This is a Center airspace boundary related issue in which the reroute request came at a time when the aircraft’s position was too near the adjacent Center’s boundary. Scenario 2 (see Appendix) is one such example: the flight was at the ZME border when the reroute request was received. The TMCs comments suggest this reroute would probably have been accepted by ZME if it had been requested from ZME or requested earlier, when the flight was further from the ZFW-ZME boundary. The proximity to the boundary does not allow enough time to coordinate and implement the reroute before the flight entered the adjacent Center’s airspace. Proximity to the ZHU boundary also caused many reroutes, such as Scenario 11, (Figure 10) to be rejected.

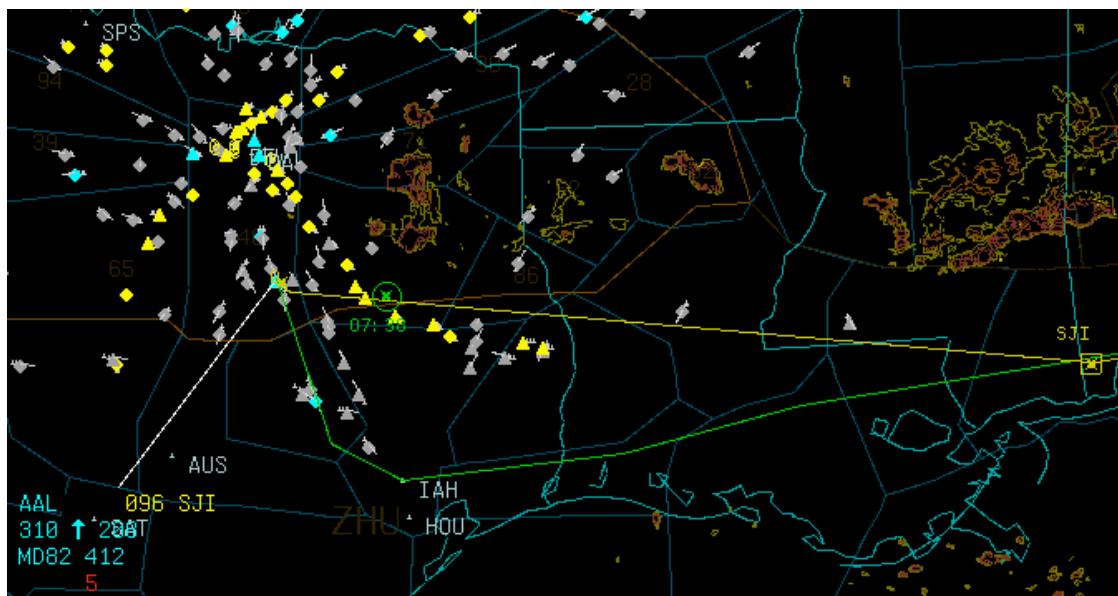


Figure 10. Scenario 11, adjacent Center coordination

The ZHU boundary is about 100 nmi. south of DFW. Southbound departures from DFW are often still climbing to their cruise altitude before they need to be handed off to ZHU. Perhaps just a specific characteristic of ZFW-ZHU airspace layout, the TMCs noted that rerouting these departures, especially those headed to the southeast, is often deferred to ZHU.

B. Coordination

A summary of the questionnaire results regarding the types of coordination required for each of the accepted and modified reroutes is shown in Figure 11. As described earlier, there are two general types of coordination requirements measured during this evaluation: airline-TMU and TMU-ATC. Airline-TMU coordination, refers to coordination between the airline's operations center (i.e., ATC coordinator, dispatcher, or similar personnel) and the Center TMU. Approximately 80 percent of the accepted and modified DWR reroutes required coordination between the TMU and airline before sending the reroute to the flight crew. For the remaining 20 percent of the reroute requests that did not need coordination between the airline and the TMU, the flight crew could have requested the reroute directly from the controller. Scenario 18 is an example where the majority of the TMCs said neither airline coordination nor ATC coordination was required (Figure 12). The flight in this scenario was far from the adjacent Center boundary and the requested reroute passed through the same ZFW sectors and specialty as its current route. However, it is not known whether these specific airspace configuration details are understood well enough by the airlines, and thus coordination with the TMU might be bypassed.

The TMU-ATC coordination results address the coordination that occurs between the TMU and other ATC entities. Approximately 16 percent of the DWR reroutes did not require any TMU-ATC coordination ("No ATC", Figure 11). Coordination with sector controllers was the most common type of ATC coordination, involving 58 percent of the accepted or modified reroutes. For these flights, sector controllers would be notified that the rerouted flight plans would be deviating from the normal flow of traffic. Operationally, this type of coordination is more accurately described as coordination between the TMC, area supervisor, and sector controller, since TMCs do not usually talk directly with the sector controllers.

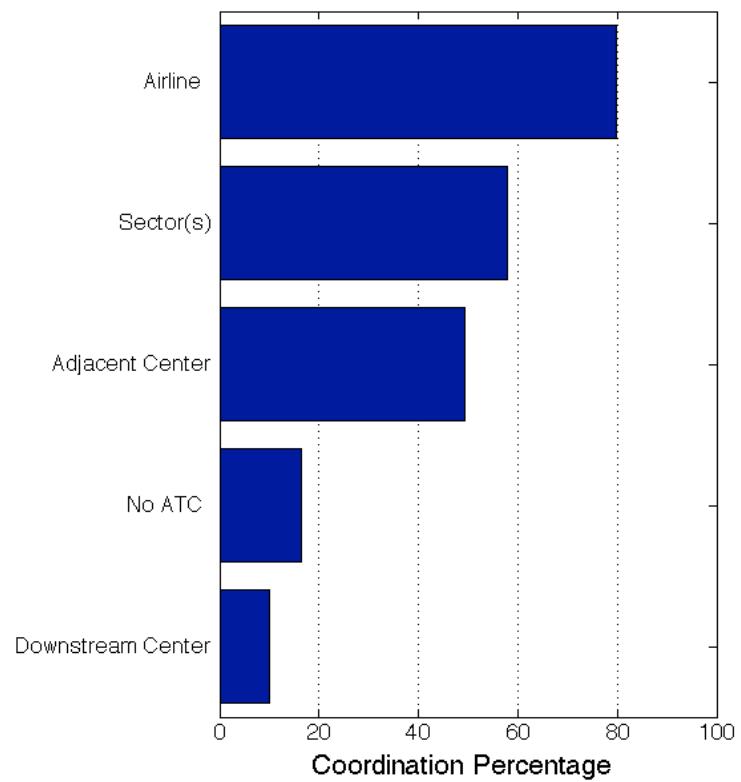


Figure 11. Types of coordination required

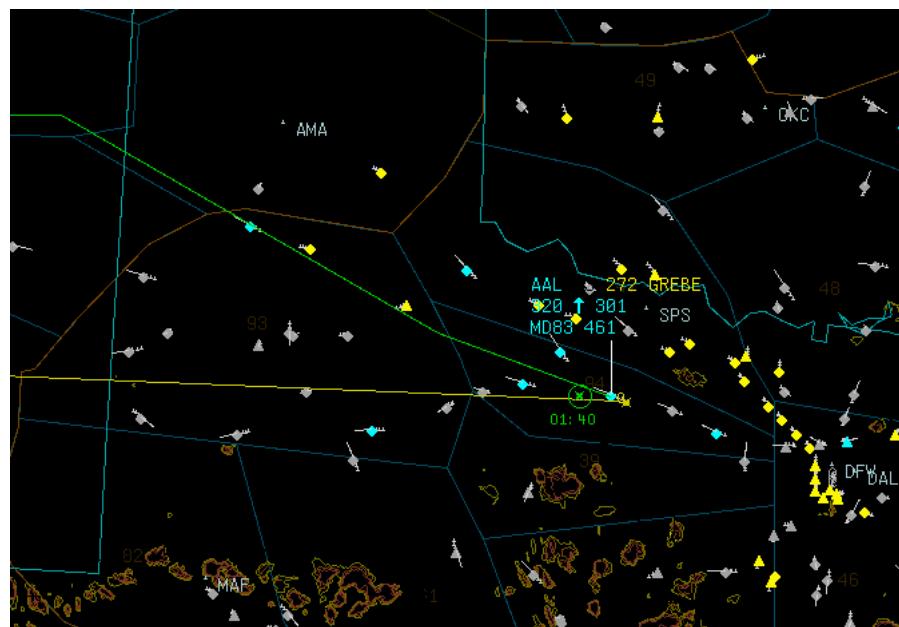


Figure 12. Scenario 18, reroute all in the same Center specialty

Approximately 50 percent of the reroutes required coordination with an adjacent Center. Adjacent Center coordination was deemed necessary if a rerouted flight was likely to go against the normal flow of traffic of a busy sector in the adjacent Center. For reroutes such as Scenario 11, departures from DFW headed to southeastern destinations such as Orlando are normally routed south over George Bush Intercontinental Airport (IAH) then east to their destination in order to avoid the northeast IAH arrival stream (see Figure 10). Reroutes implemented in ZFW may interfere with these arrivals and, therefore, may need to be coordinated with ZHU in order to get their concurrence.

Only 10 percent of the reroutes required downstream Center coordination. However, a reroute requiring downstream Center coordination could also offer the largest potential time savings. Scenario 25, shown in Figure 13, is one such example. In this case, the downstream Center to be coordinated with is Chicago Center (ZAU). The flight in this scenario is part of a series of flights destined for ORD that were effected by a reroute TMI (i.e., a playbook route) put in place in order to avoid a line of convective weather and manage the atypical arrival flow into ORD. Coordination with ZAU was necessary because rerouting this flight could disrupt the sequencing of the ORD arrivals resulting from the TMI.

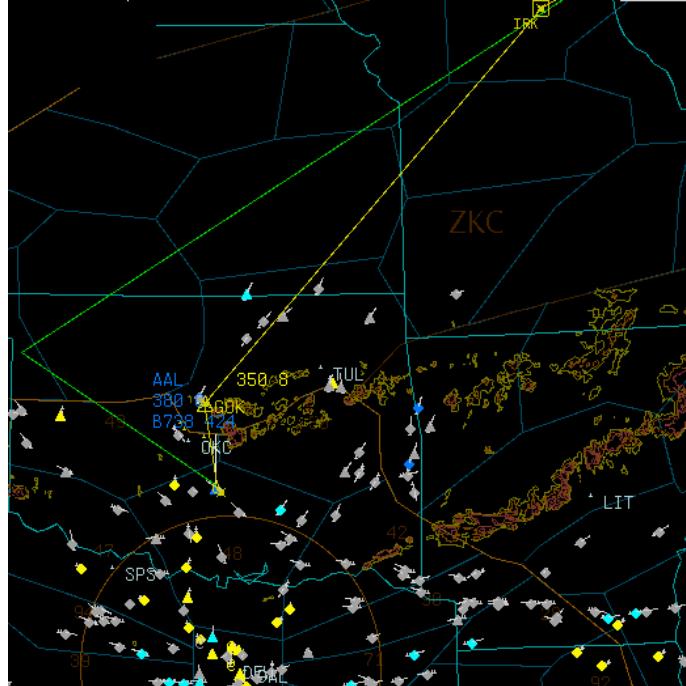


Figure 13. Scenario 25, reroute requiring downstream Center coordination

C. Flying Time Savings

The flying time savings analysis for all scenarios is shown in Figure 14. For each scenario, two time-savings values were measured: those requested by the airline and those approved by the TMCs. The requested savings were the potential time savings of the actual routes rated acceptable by American Airlines users during the trial. The approved time savings were the mean time savings of all the routes evaluated by the TMCs (i.e., approved, modified, or rejected). When a modification or delayed approval of a route is made, the approved time savings may be less than the requested amount, since the potential time savings tends to decrease with time as the flight progresses along its current route of flight. The approved time savings for a rejected route was assumed to be zero. As an example, Scenario 25 was approved by half of the TMCs and rejected by the other half. Consequently, the mean time savings for Scenario 25 was 11.8 minutes, which was approximately half of the potential requested time savings. The total approved time savings for all scenarios was 151 minutes, or 57 percent of the total requested time savings of 264 minutes.

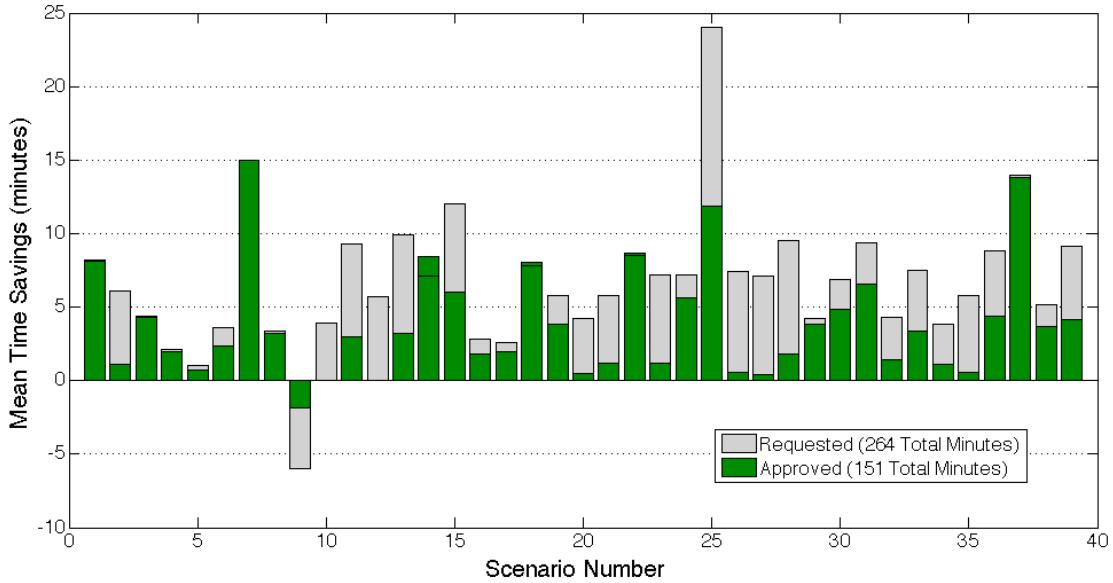


Figure 14. Mean time savings by scenario

IV. Conclusions

A Center traffic management evaluation of actual airline-desired DWR reroutes was completed. Thirty-nine DWR reroutes from field testing rated acceptable by American Airlines air traffic coordinators and flight dispatchers were evaluated by six recently retired Fort Worth Center Traffic Management Coordinators and Area Supervisors (referred to generally as TMCs) with regard to acceptability and coordination requirements.

The primary reason for modifying DWR reroute requests prior to acceptance is to avoid interference with an arrival stream. Center airspace configuration typically segregates descending arrival traffic streams into their own sectors (as they do for climbing departure flow) in order to reduce traffic complexity. Consequently, reroutes that interfere with arrivals streams may result in increased sector controller workload. Improvements to the DWR logic are underway to prevent advising routes that may interfere with arrival streams.

The second most common reason for modifying a reroute request was also airspace-configuration related. Although not explicitly identified in the questionnaire, TMC comments indicated a preference to keep reroutes in sectors with similar traffic flows (i.e., specialties).

Airspace configuration was also the primary reason for rejecting a reroute. In this case, proximity to the adjacent Center boundary caused TMCs in the ownership Center (i.e., ZFW) to reject the reroute as requested. The TMCs then suggested requesting the reroute once the aircraft entered the adjacent Center.

The TMCs indicated that the majority of the airline reroute requests needed to be coordinated. Only 20 percent of the reroute requests did not need traffic management coordination. These particular reroutes can be generally characterized as not deviating from normal traffic flow in the airspace (e.g., departure reroutes that do not pass through arrival sectors). The TMCs preferred coordination for any reroute that deviated from the “nominal” flow of traffic. The nominal flow may be predefined by Center airspace configuration or a more strategic traffic flow such as a Traffic Management Initiative issued by the ATCSCC.

This evaluation confirmed the time savings potential of DWR advisories with the TMCs accepting or modifying 62 percent of the requested reroutes for a total of 151 minutes saved. This was 57 percent of the total requested time savings of 264 minutes.

V. References

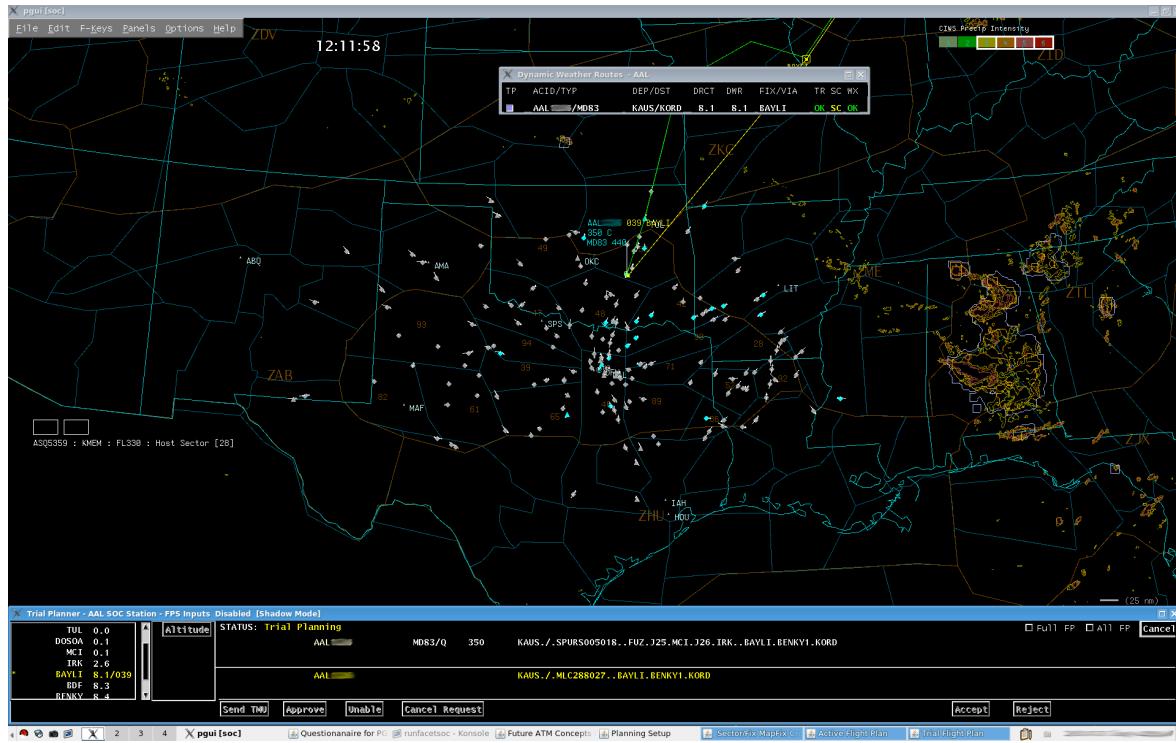
¹McNally, D., Sheth, K., Gong, C., Love, J., Lee, C.H., Sahlman, S., and Cheng, J., "Dynamic Weather Routes: A Weather Avoidance System for Near-Term Trajectory-Based Operations," 28th International Congress of the Aeronautical Sciences (ICAS), 23-28 Sep. 2012.

²McNally, D., Sheth, K., Gong, C., Borchers, P., Osborne, J., Keany, D., Scott, B., Smith, S., Sahlman, S., Lee, C., and Cheng, J., "Operational Evaluation of Dynamic Weather Routes at American Airlines," 10th USA/Europe ATM R&D Seminar (ATM2013), Chicago, Illinois, 10-13 June 2013.

Appendix

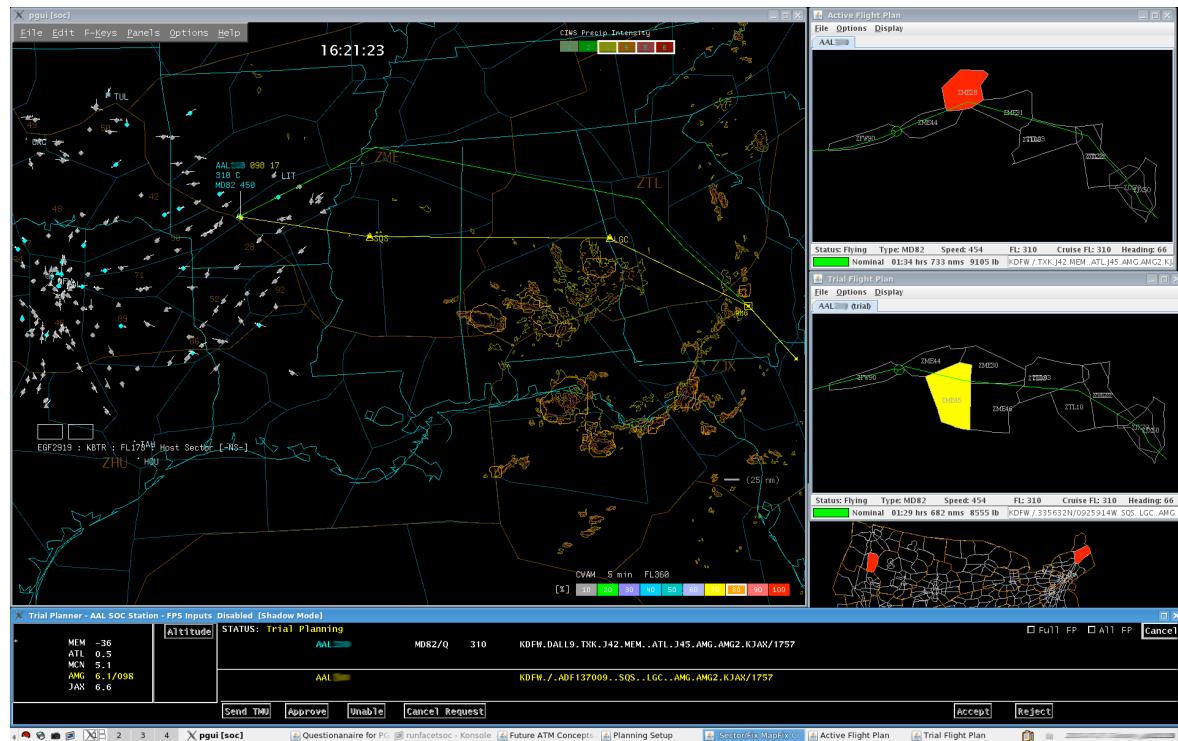
This Appendix contains screenshots and test participant comments for the set of scenarios used in this evaluation. The screenshots were captured during the early part of the American Airlines (AA) field trial (July 31 – September 29, 2012). Of the number of DWR reroutes rated acceptable by AA, thirty-nine of them where chosen as scenarios for this evaluation. The questionnaires used during this evaluation included a section that allowed the test participants to type in comments for each specific scenario. Those comments are documented verbatim with each of the scenario screenshots.

Scenario 1



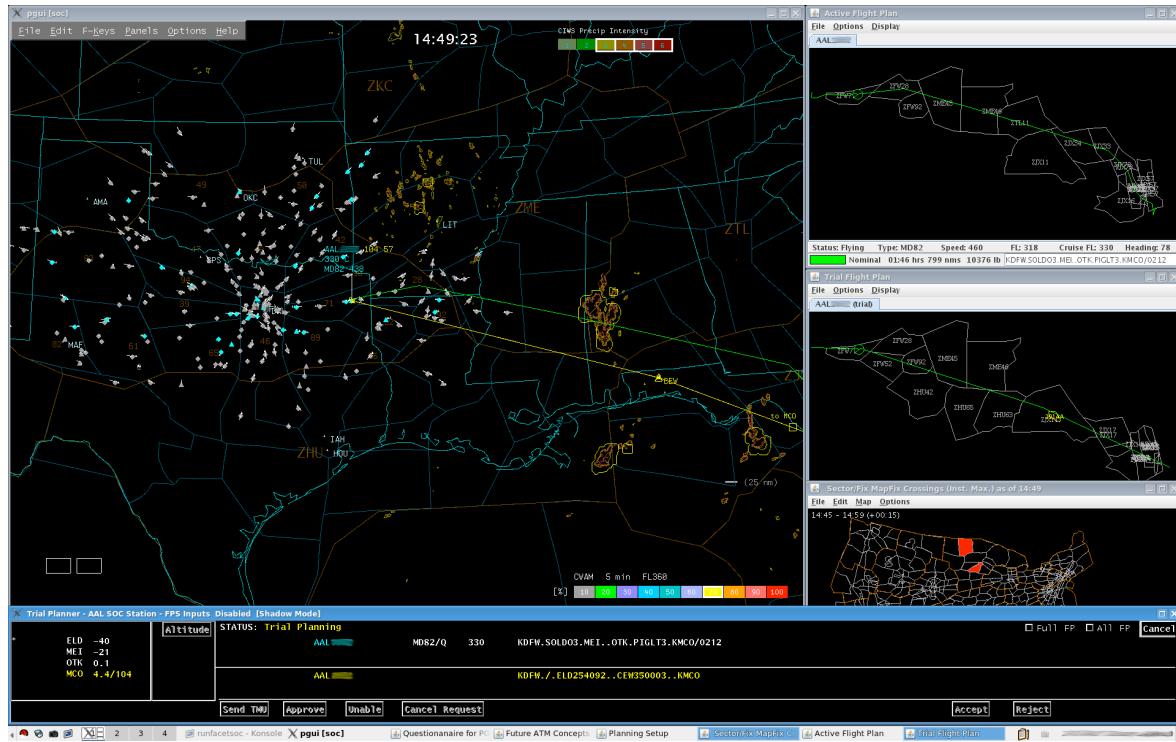
1. "AAL####/KAUS.0096<16-75-000007>", 20130226, tmu1, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments:N/C
1. " AAL####/DEST.0096<18-75-000008>", 20130226, tmu2, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments:N/C
1. " AAL####/ KAUS.0096<21-75-000009>", 20130226, tmu3, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments:"too ensure no route or sequencing program is in effect for kord"
1. " AAL####/ KAUS.0096<16-75-000009>", 20130305, tmu1, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments:"need to coord. with zkc"
1. " AAL####/ KAUS.0096<18-75-000012>", 20130305, tmu2, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments:"this scenario looks as if it brings up the question of whether or not this reroute is necessary anymore. call dcc to see if we can cancel the reroute."
1. " AAL####/ KAUS.0096<21-75-000013>", 20130305, tmu3, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments:"route does not change tie in point near ORD. this is a fairly simple request"

Scenario 2



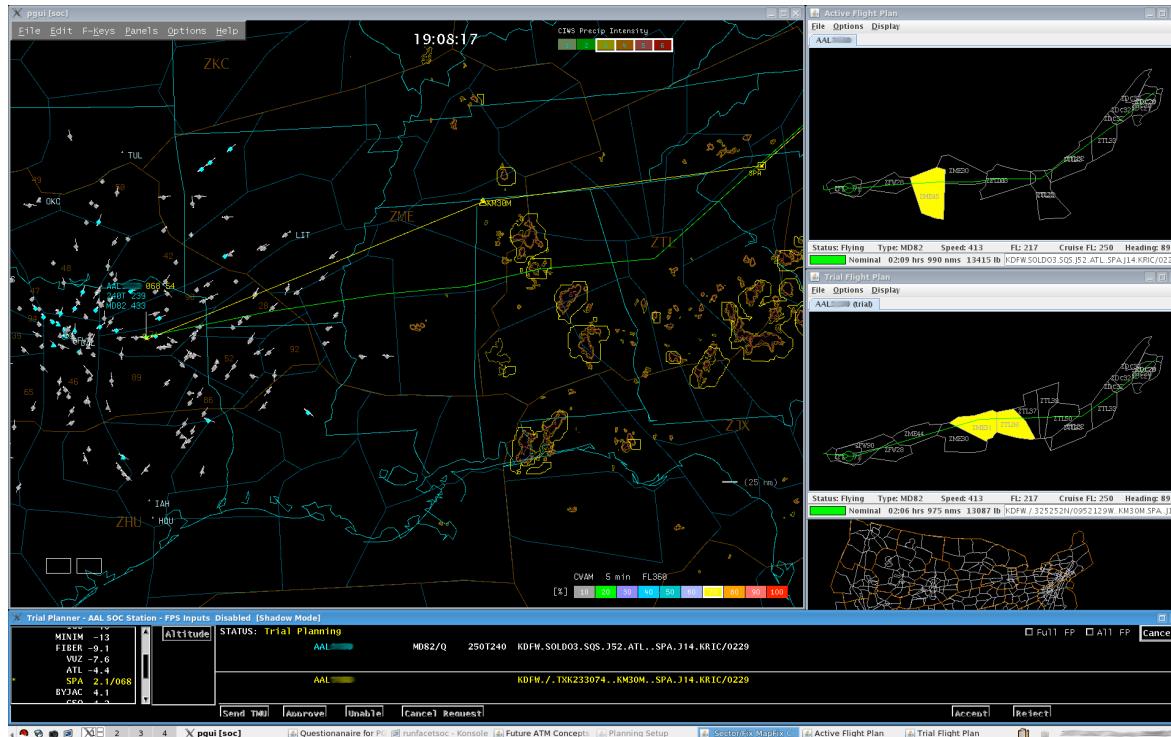
2. "AAL###/KDFW.0828<16-75-000006>", 20130226, tmu1, UNABLE
Reason for unable? "too near center boundary to effect coordination"
How could it be acceptable? N/C
2. "AAL###/KDFW.0828<18-75-000005>", 20130226, tmu2, UNABLE
Reason for unable? "too close to next center airspace. coordination required is more than what i could effectively do in that short a time"
How could it be acceptable? N/C
2. "AAL###/KDFW.0828<21-75-000007>", 20130226, tmu3, UNABLE
Reason for unable? "Too close to adjacent center. Make request sooner."
How could it be acceptable? N/C
2. "AAL###/KDFW.0828<15-75-000005>", 20130305, tmu1, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments: "acft remains within ZME on new route. additionally the acft is in the same sector in Ztl when it makes turn to south around weather"
2. "AAL###/KDFW.0828<17-75-000007>", 20130305, tmu2, UNABLE
Reason for unable? N/C
How could it be acceptable? "ask zme. they will probably approve."
2. "AAL###/KDFW.0828<20-75-000010>", 20130305, tmu3, UNABLE
Reason for unable? "should coord. with zme"
How could it be acceptable? "zfw would have needed to coord. earlier"

Scenario 3



3. "AAL####/KDFW.0492<15-75-000009>", 20130226, tmu1, MODIFIED
Reason for mod.? "Automation issues transitioning thru center boundary."
Airline coordination comments: N/C
ATC coordination comments:N/C
3. "AAL####/KDFW.0492<17-75-000008>", 20130226, tmu2, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments:"fair amount of coordination, but re-route appears to help the a/c get around the weather to his southeast. impact on the sectores to the south are where the coordination comes in to play."
3. "AAL####/KDFW.0492<20-75-000010>", 20130226, tmu3, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments:"potential weather impact at eastern edge of new route . It appears to be less of an impact than the original route."
3. "AAL####/KDFW.0492<16-75-000012>", 20130305, tmu1, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments:N/C
3. "AAL####/KDFW.0492<18-75-000006>", 20130305, tmu2, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments:"the moa downstream is small. the controller can easily vector the ac around. the sector is not alerted."
3. "AAL####/KDFW.0492<21-75-000005>", 20130305, tmu3, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments:"no coordination needed because ample flying time to facility boundary."

Scenario 4



4. "AAL####/KDFW.0942<16-75-000009>", 20130226, tmu1, ACCEPTED

Airline coordination comments: N/C
ATC coordination comments: "coord with sector 28, even though it potentially helps red sector situation. coord with ZME because trial route is still impacted, but doesn't appear any more so than prior route."
4. "AAL####/KDFW.0942<18-75-000008>", 20130226, tmu2, ACCEPTED

Airline coordination comments: N/C
ATC coordination comments: "above fl240 this is ok. lots of time for zfw to implement and to analyze impact on zme."
4. "AAL####/KDFW.0942<21-75-000007>", 20130226, tmu3, MODIFIED

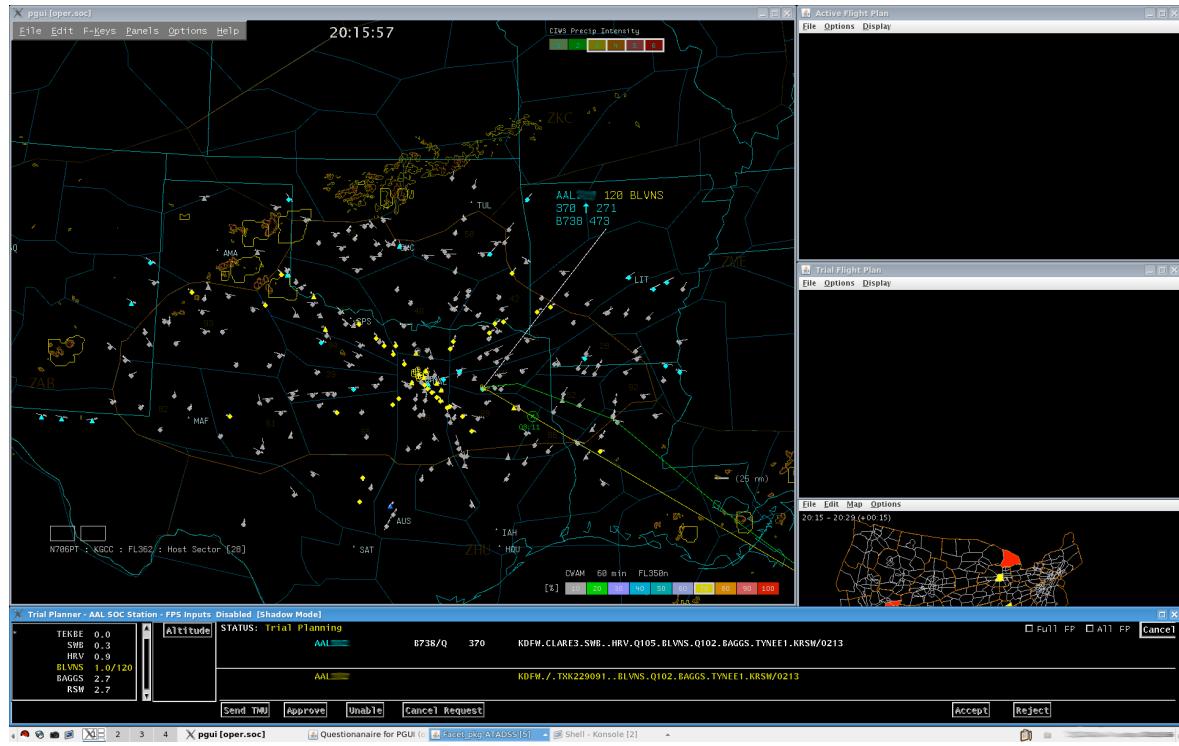
Reason for mod.? N/C
Airline coordination comments: N/C
ATC coordination comments: N/C
4. "AAL####/KDFW.0942<15-75-000013>", 20130305, tmu1, ACCEPTED

Airline coordination comments: N/C
ATC coordination comments: "the red sector now has a shorter time the flt is in sector. additionally the flight does not go thru the heart of sector28 and just clips to the north. fewer sectors are alerted on new route"
4. "AAL####/KDFW.0942<17-75-000010>", 20130305, tmu2, MODIFIED

Reason for mod.? "the next sector is very busy for a certain amount of time. modifying the route slightly makes it acceptable."
Airline coordination comments: N/C
ATC coordination comments: "if the tmc desired, he could ask the supervisor of the red sector if it was acceptable to go over the map no. for that amount of time. if he said it was, the rte. could be approved as requested."
4. "AAL####/KDFW.0942<20-75-000011>", 20130305, tmu3, ACCEPTED

Airline coordination comments: N/C
ATC coordination comments: "although aircraft enters red sector, trial plan route was less impacting than original route."

Scenario 5



5. "AAL###/KDFW.1731<16-75-000015>", 20130226, tmu1, UNABLE

Reason for unable? N/C

How could it be acceptable? "Goes thru the heart of an arrival sector. But can expect a short cut with the next sector."

5. "AAL###/KDFW.1731<18-75-000014>", 20130226, tmu2, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments: "dependent on arrival volume between zfw and zhu. If the arrival volume is okay, this route should be okay. Otherwise, this may have to be unable and re-evaluated."

5. "AAL###/KDFW.1731<21-75-000016>", 20130226, tmu3, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments: "Coordination with sect 89 supe (arrival sector)but there is no arrival demand so i would expect their approval. ZHU would have to concur"

5. "AAL###/KDFW.1731<16-75-000016>", 20130305, tmu1, ACCEPTED

Airline coordination comments: "Trial route outs aircraft into different center sector and crosses the IAH departure traffic in a different location."

ATC coordination comments: "as noted above"

5. "AAL###/KDFW.1731<18-75-000017>", 20130305, tmu2, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

ATC coordination comments: "i amended the request slightly to keep the ac clear of the arrivalstream."

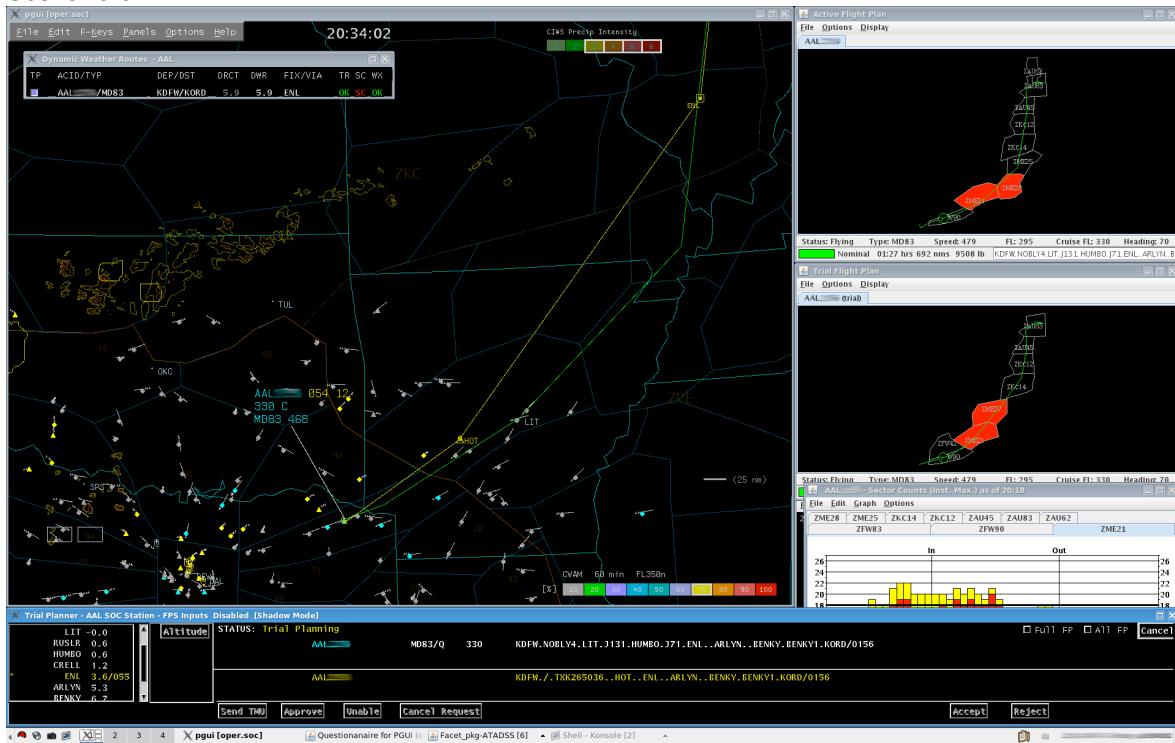
5. "AAL###/KDFW.1731<21-75-000018>", 20130305, tmu3, MODIFIED

Reason for mod.? "this minor change keeps acft clear of ZFW89 which is arrival sector and gives acft time to reach assigned altitude before crossing arrival strings."

Airline coordination comments: N/C

ATC coordination comments: N/C

Scenario 6



6. "AAL####/KDFW.1970<16-75-000017>", 20130226, tmu1, ACCEPTED

Airline coordination comments: N/C
ATC coordination comments: "Coordination with ZME due to sector saturation.
Coordination with ZKC for ORD arrival requirements."
6. "AAL####/KDFW.1970<18-75-000015>", 20130226, tmu2, UNABLE

Reason for unable? "dont know zme workload for traffic transitioning north to south and vice versa, plus east west traffic."
How could it be acceptable? N/C
6. "AAL####/KDFW.1970<21-75-000016>", 20130226, tmu3, UNABLE

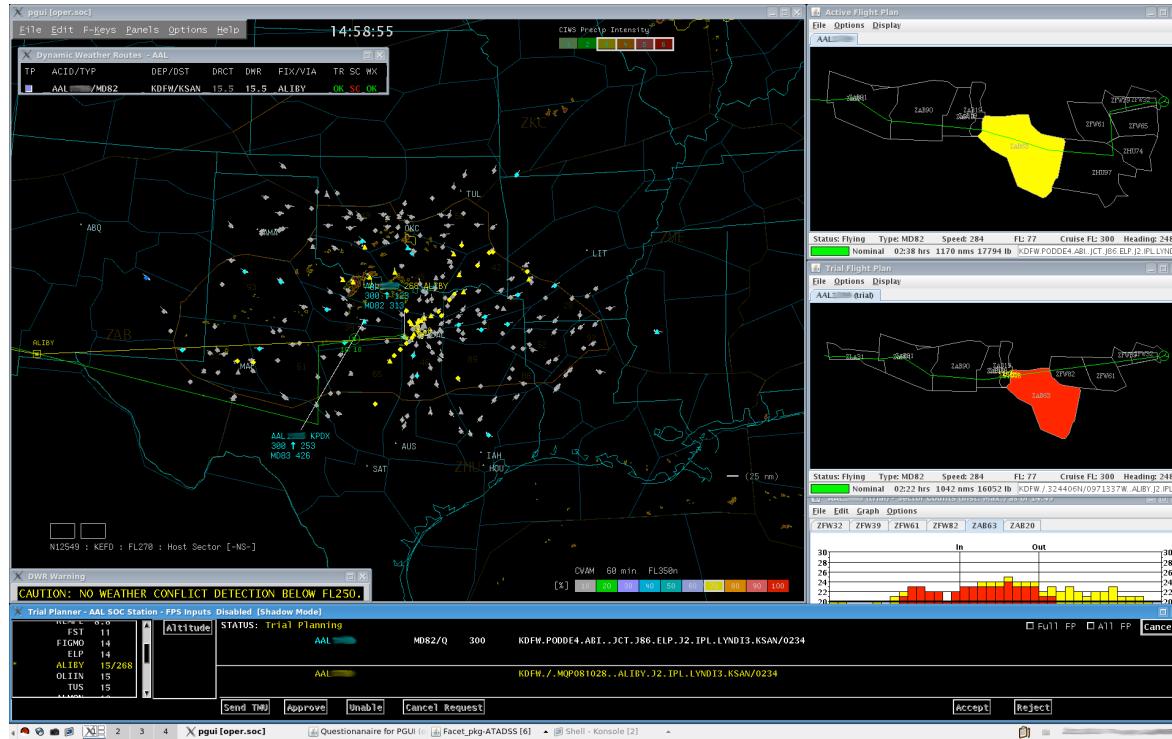
Reason for unable? "Certainly need to coordinate with ZME based on routes into ORD."
How could it be acceptable? N/C
6. "AAL####/KDFW.1970<15-75-000011>", 20130305, tmu1, UNABLE

Reason for unable? "the reroute saves little time and creates another sector over traffic limits adjacent to the first."
How could it be acceptable? "any action that would reduce the numbers in sector ZME21 and ZME27"
6. "AAL####/KDFW.2439<17-75-000013>", 20130305, tmu2, ACCEPTED

Airline coordination comments: N/C
ATC coordination comments: "this needs to be done within 3 mins. the new route cuts through an arrival sector, which can not handle many routes like this."
6. "AAL####/KDFW.1970<21-75-000014>", 20130305, tmu3, MODIFIED

Reason for mod.? N/C
Airline coordination comments: "i believe the route was TMU initiated, so coord. would have been necessary"
ATC coordination comments: "and command center"

Scenario 7



7. "AAL####/KDFW.1534<16-75-000019>", 20130226, tmu1, ACCEPTED

Airline coordination comments: N/C
ATC coordination comments:N/C
7. "AAL####/KDFW.1534<18-75-000018>", 20130226, tmu2, ACCEPTED

Airline coordination comments: N/C
ATC coordination comments:"should not be implemented until out of fl230. Impact on zhu is eliminated, but now coordination required with zab on new route. "
7. "AAL####/KDFW.1534<21-75-000020>", 20130226, tmu3, ACCEPTED

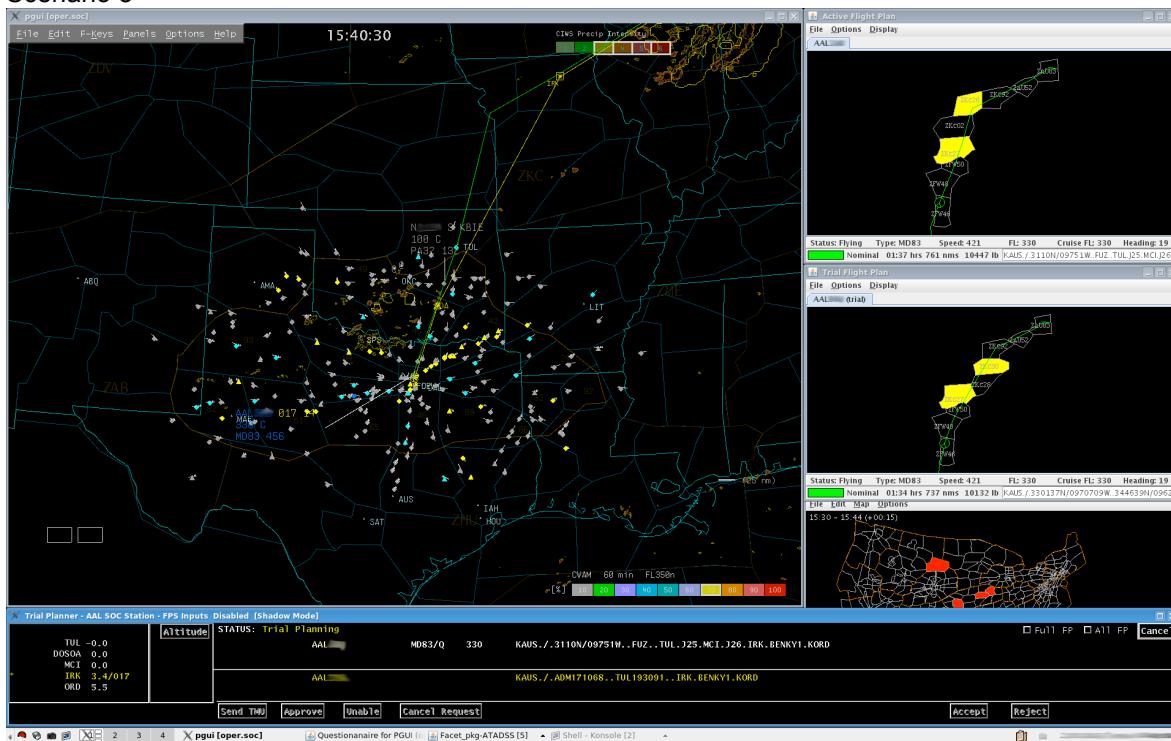
Airline coordination comments: N/C
ATC coordination comments:"Coordinate with ZFW sectors 61 and 82 to add acft . (what was reason for original route ? Coord with ZAB solely to acft entering sect 63 earlier and making it red ."
7. "AAL####/KDFW.1534<16-75-000009>", 20130305, tmu1, ACCEPTED

Airline coordination comments: "would need to coord to clear up the original route as it was in question."
ATC coordination comments:"aircraft was put into a red sector, but it was only 2 aircraft over and the trial route is more like the normal depature routing."
7. "AAL####/KDFW.1534<18-75-000010>", 20130305, tmu2, ACCEPTED

Airline coordination comments: N/C
ATC coordination comments:"advise the supe a dwr request isforthcoming. this route should help withthe congestion in the sector."
7. "AAL####/KDFW.1534<21-75-000011>", 20130305, tmu3, ACCEPTED

Airline coordination comments: N/C
ATC coordination comments:"returning acft to a normal flow route"

Scenario 8



8. "AAL###/KAUS.1251<16-75-000017>", 20130226, tmu1, ACCEPTED

Airline coordination comments: N/C
ATC coordination comments:"The new route helps with displayed weather in ZFW. Coord required with ZKC due to unknown ORD spacing and sequencing requirements"
8. "AAL###/KAUS.1251<18-75-000013>", 20130226, tmu2, ACCEPTED

Airline coordination comments: N/C
ATC coordination comments:"As long as ZKC approves the reroute, this is not a problem.The impact should be nominal since the reroute is not radically different from the original filed route of flight. Only ZKC knows the impact further north that I am not aware of."
8. "AAL###/KAUS.1251<21-75-000014>", 20130226, tmu3, UNABLE

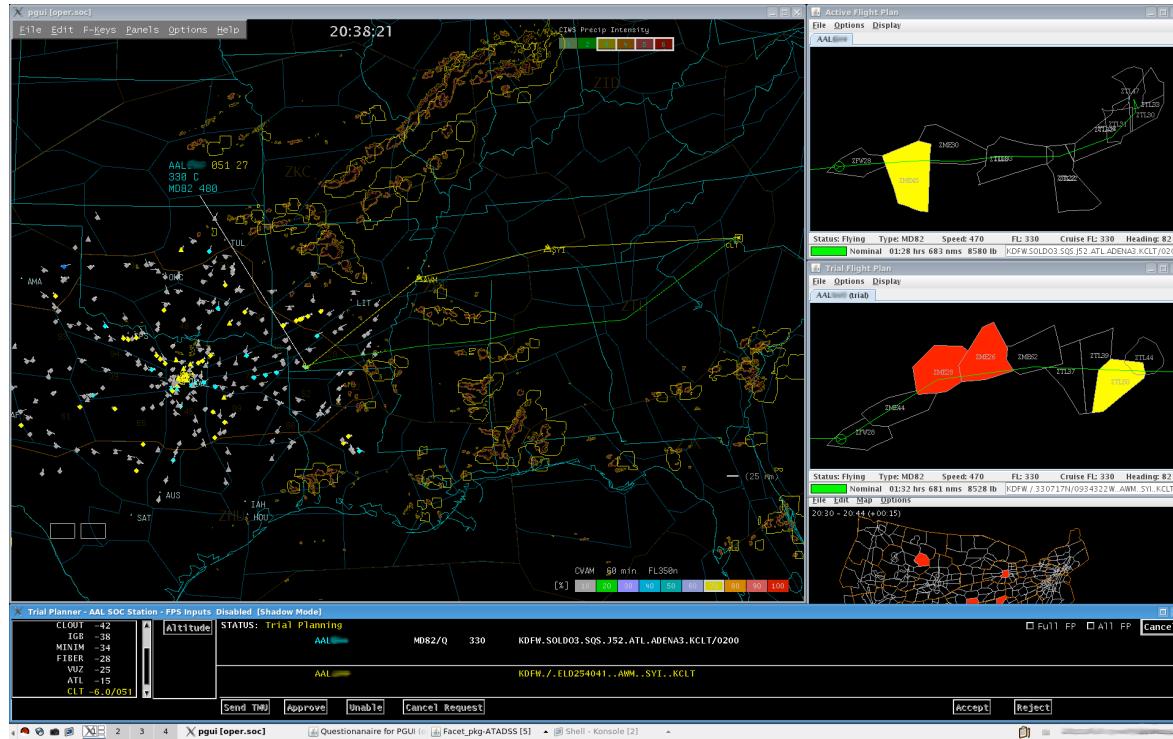
Reason for unable? N/C
How could it be acceptable? "Would have to coordinate with ZKC before approving route due to downstream sector congestion."
8. "AAL###/KAUS.1251<15-75-000010>", 20130305, tmu1, ACCEPTED

Airline coordination comments: N/C
ATC coordination comments:"less than 5 minute flying time to next sector. new route places acft back on normal routing for ORD"
8. "AAL###/KAUS.1251<17-75-000015>", 20130305, tmu2, MODIFIED

Reason for mod.? "the ac needs to go over tul for zkc."
Airline coordination comments: N/C
ATC coordination comments:"since there is a tmi out, this rte would need to be coordinated with everybody downstream, including dcc."
8. "AAL###/KAUS.1251<20-75-000012>", 20130305, tmu3, ACCEPTED

Airline coordination comments: N/C
ATC coordination comments:N/C

Scenario 9



9. "AAL###/KDFW.1429<16-75-000023>", 20130226, tmu1, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

ATC coordination comments:N/C

9. "AAL###/KDFW.1429<18-75-000022>", 20130226, tmu2, UNABLE

Reason for unable? "Easily justified to let the Memphis TMU make the call on this request"

How could it be acceptable? "Only if Memphis TMU would approve this would I justify turning an aircraft this far, this close to another Center boundary, lessening their time to react."

9. "AAL###/KDFW.1429<21-75-000024>", 20130226, tmu3, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"Coordinate with ZME due to sector saturation of possibly a lengthy duration."

9. "AAL###/KDFW.1429<16-75-000012>", 20130305, tmu1, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

ATC coordination comments:N/C

9. "AAL###/KDFW.1429<18-75-000006>", 20130305, tmu2, UNABLE

Reason for unable? "the potential to oversaturate a downstream sector is too high."

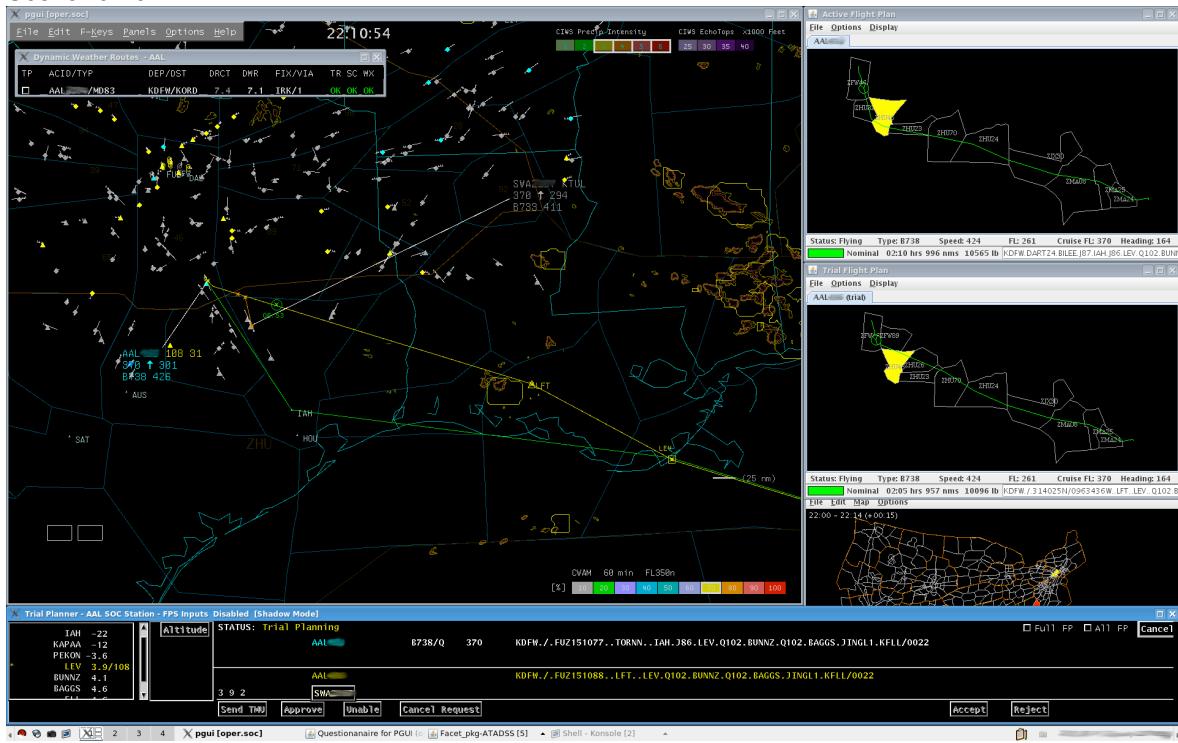
How could it be acceptable? "if the alerted sectors became unalerted. this is not likely to happen."

9. "AAL###/KDFW.1429<21-75-000008>", 20130305, tmu3, UNABLE

Reason for unable? "the largest volume of acft transitionong the weather is over LIT. putting the acft on that route further complicates the traffic flow. Except for pilot preference, changing the route costs the pilot time and creates ATC alerts."

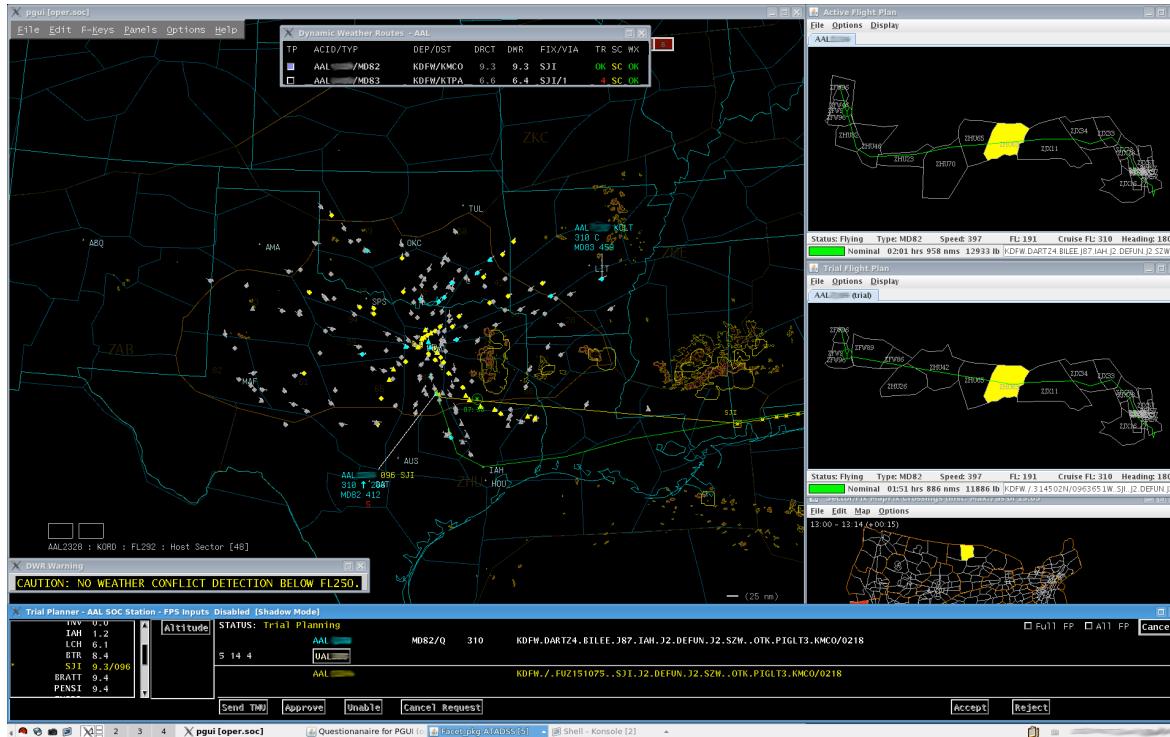
How could it be acceptable? "none"

Scenario 10



10. "AAL###/KDFW.1749<16-75-000012>", 20130226, tmu1, UNABLE
Reason for unable? "too close to ZHU boundary to effect coordination and get reroute issued."
How could it be acceptable? N/C
10. "AAL###/KDFW.1749<18-75-000013>", 20130226, tmu2, UNABLE
Reason for unable? "Far too close to ZHU to initiate this request. Too great a possibility of arrival traffic at CQY getting in the way. This would be a case where ZHU TMU would approve/disapprove this and then back coordinate with ZFW"
How could it be acceptable? "I would only initiate this at ZHU's request."
10. "AAL###/KDFW.1749<21-75-000014>", 20130226, tmu3, UNABLE
Reason for unable? "Route cuts across DFWT arrival traffic and I90 departure traffic."
How could it be acceptable? "Coordination a must with ZHU to have any chance to approving this route."
10. "AAL###/KDFW.1749<15-75-000015>", 20130305, tmu1, UNABLE
Reason for unable? "turning left puts the acft head on climbing thru decending arrivals"
How could it be acceptable? "the acft shouk ld have been routed out the east departure gate to take advantage of that route"
10. "AAL###/KDFW.1749<17-75-000014>", 20130305, tmu2, UNABLE
Reason for unable? ""
How could it be acceptable? N/C
10. "AAL###/KDFW.1749<20-75-000012>", 20130305, tmu3, UNABLE
Reason for unable? "too late to coord."
How could it be acceptable? "request earlier"

Scenario 11



11. "AAL####/KDFW.0940<16-75-000007>", 20130226, tmu1, UNABLE

Reason for unable? "Based on DFWT arrivals and I90 departures, request needs to be forwarded to ZHU."

How could it be acceptable? N/C

11. "AAL####/KDFW.0940<18-75-000008>", 20130226, tmu2, UNABLE

Reason for unable? "Again, this is too close to the ZHU boundary to be coordinated in a timely way. The aircraft is also too low to be turned to this requested route. Once he is at a higher altitude it may be approved, but by then this aircraft will be in ZHU airspace"

How could it be acceptable? N/C

11. "AAL####/KDFW.0940<21-75-000009>", 20130226, tmu3, UNABLE

Reason for unable? "Numerous acft will be and potentially be deviating along southern edge of displayed weather. This affects ZFW and ZHU and is too large of risk . Wait 30 miles and ask ZHU"

How could it be acceptable? N/C

11. "AAL####/KDFW.0940<16-75-000004>", 20130305, tmu1, ACCEPTED

Airline coordination comments: ""

ATC coordination comments:"coord needed with hou"

11. "AAL####/KDFW.0940<18-75-000005>", 20130305, tmu2, ACCEPTED

Airline coordination comments: N/C

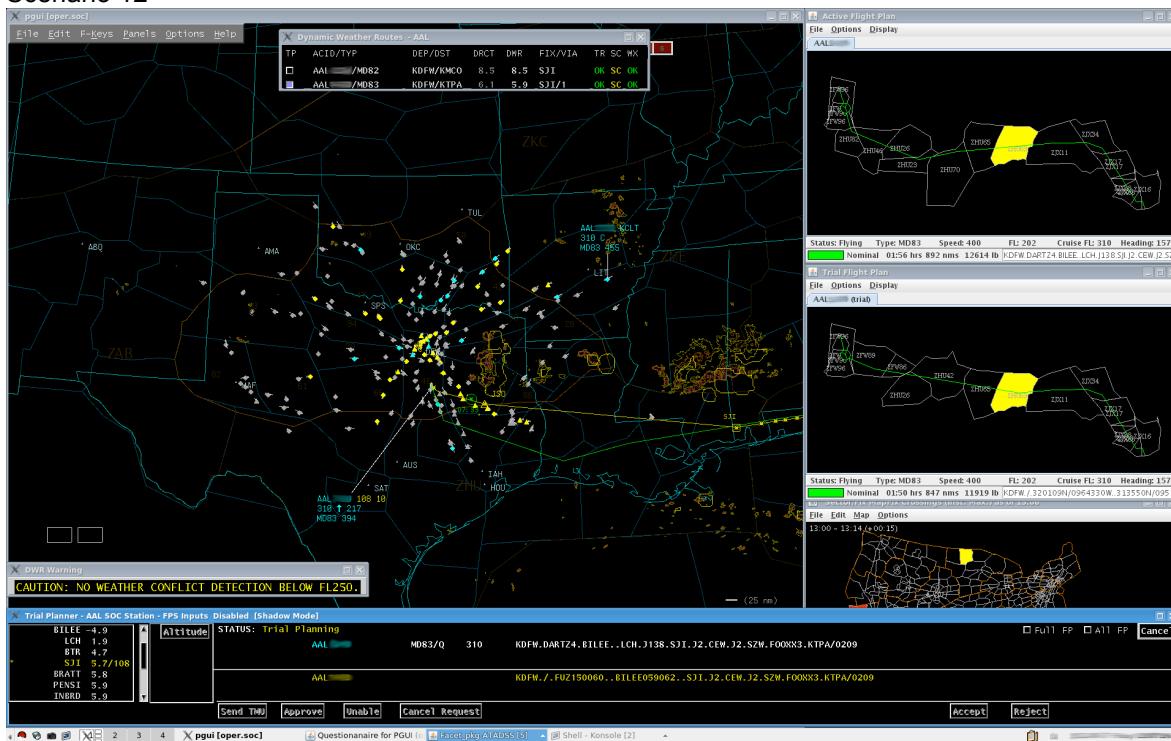
ATC coordination comments:"approved, but hurry. the ac needs to be turned and eastbound before he gets too close to zhu. in this case, within about 3 mins."

11. "AAL####/KDFW.0940<21-75-000006>", 20130305, tmu3, UNABLE

Reason for unable? "acft close to ZHU boundry. request needs to be made with ZHU"

How could it be acceptable? "ZHU approval"

Scenario 12



12. "AAL####/KDFW.1141<16-75-000008>", 20130226, tmu1, UNABLE

Reason for unable? "Should be requested with ZHU.weather is too close to acft and ZFW/ZHU boundary to approve as requested"

How could it be acceptable? N/C

12. "AAL####/KDFW.1141<18-75-000010>", 20130226, tmu2, UNABLE

Reason for unable? "Again, this request is too close to ZHU airspace and the aircraft is too low to turn this far to the east. It does depend a lot on what playbook is in effect as well."

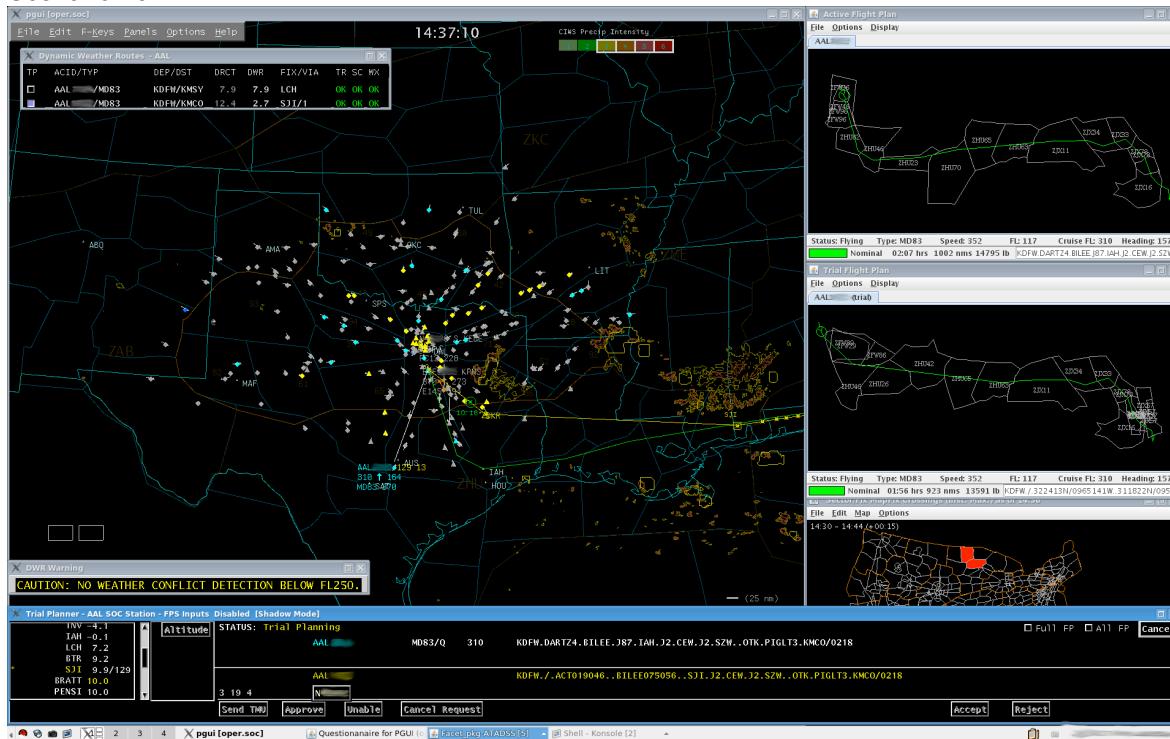
How could it be acceptable? N/C

12. "AAL####/KDFW.1141<21-75-000009>", 20130226, tmu3, UNABLE

Reason for unable? "If there were no arrivals it's possible to use escape routes to avoid weather and save time."

How could it be acceptable? N/C

Scenario 13



13. "AAL####/KDFW.2140<18-75-000009>", 20130226, tmu2, UNABLE

Reason for unable? "Aircraft too low to instigate reroute. Once the aircraft is higher then it appears that the traffic volume could allow this reroute. However, there will be a lot of coordination required, and most if not all of the coordination will be in ZHU airspace."

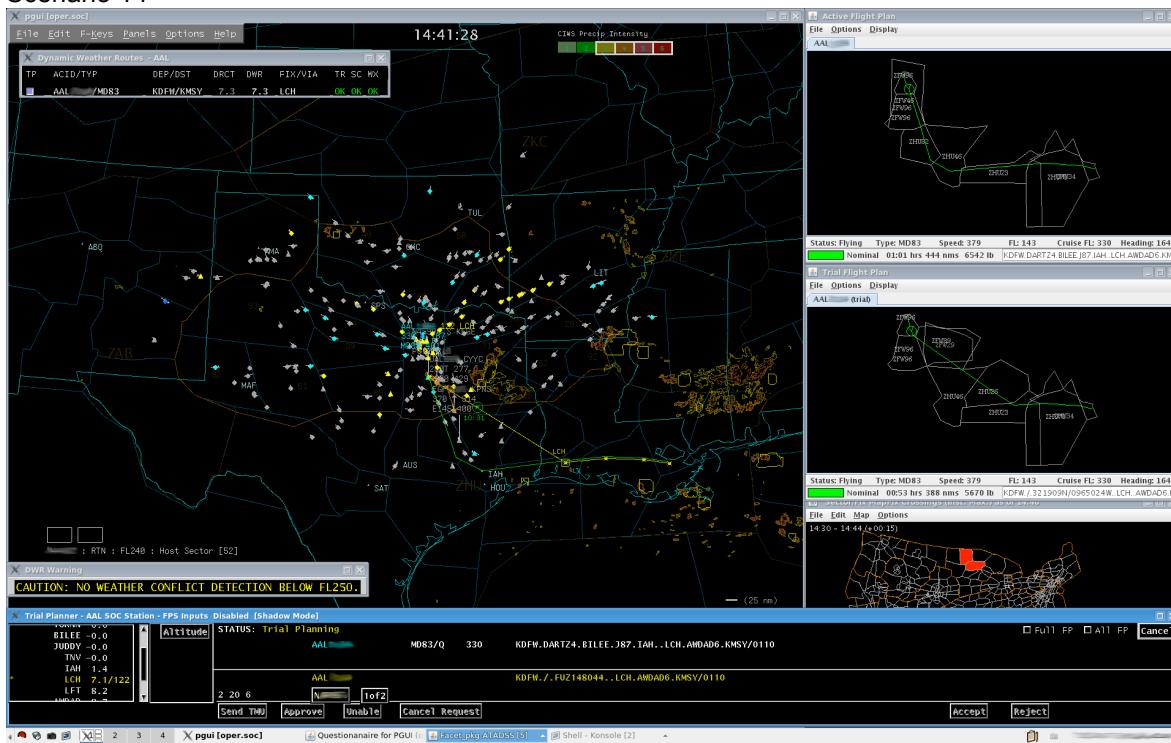
How could it be acceptable? "Only if the aircraft was level at FL310. Then there would still need to be coordination with ZHU. The traffic volume appears to be low enough for this reroute to be put in place."

13. "AAL####/KDFW.2140<21-75-000010>", 20130226, tmu3, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments: "Quick coordination required through arrival sector but only two arrivals at time of request. Then approval through ZHU coordination would be required. The aircraft might make it to ZHU boundary before coordination is complete."

Scenario 14



14. "AAL####/KDFW.0662<15-75-000008>", 20130305, tmu1, UNABLE

Reason for unable? "same reasons"

How could it be acceptable? "none"

14. "AAL####/KDFW.0662<17-75-000007>", 20130305, tmu2, ACCEPTED

Airline coordination comments: N/C

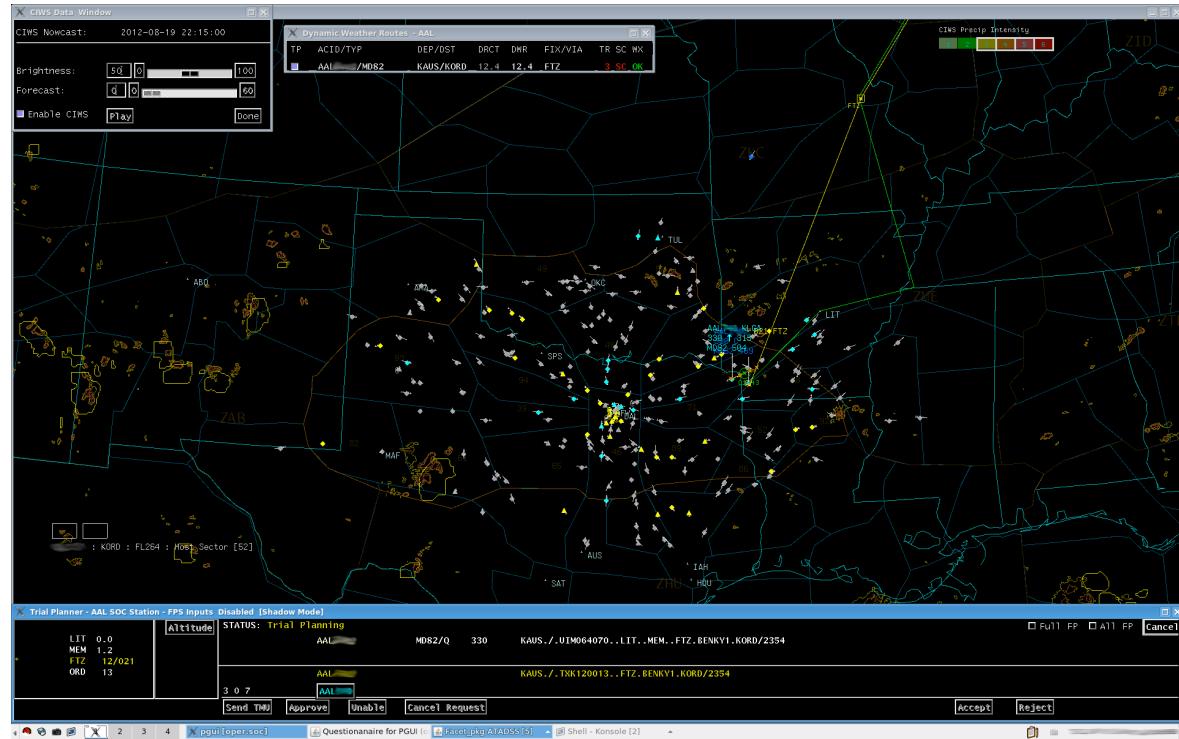
ATC coordination comments:"this could be done, but much coordination needed. the airplane would need to be pointed out to 29, and be prequed with 89 to make sure they could approve. he could ask, but the probability of being approved is probably about 50% or less."

14. "AAL####/KDFW.0662<20-75-000009>", 20130305, tmu3, ACCEPTED

Airline coordination comments: "would be approved workload based"

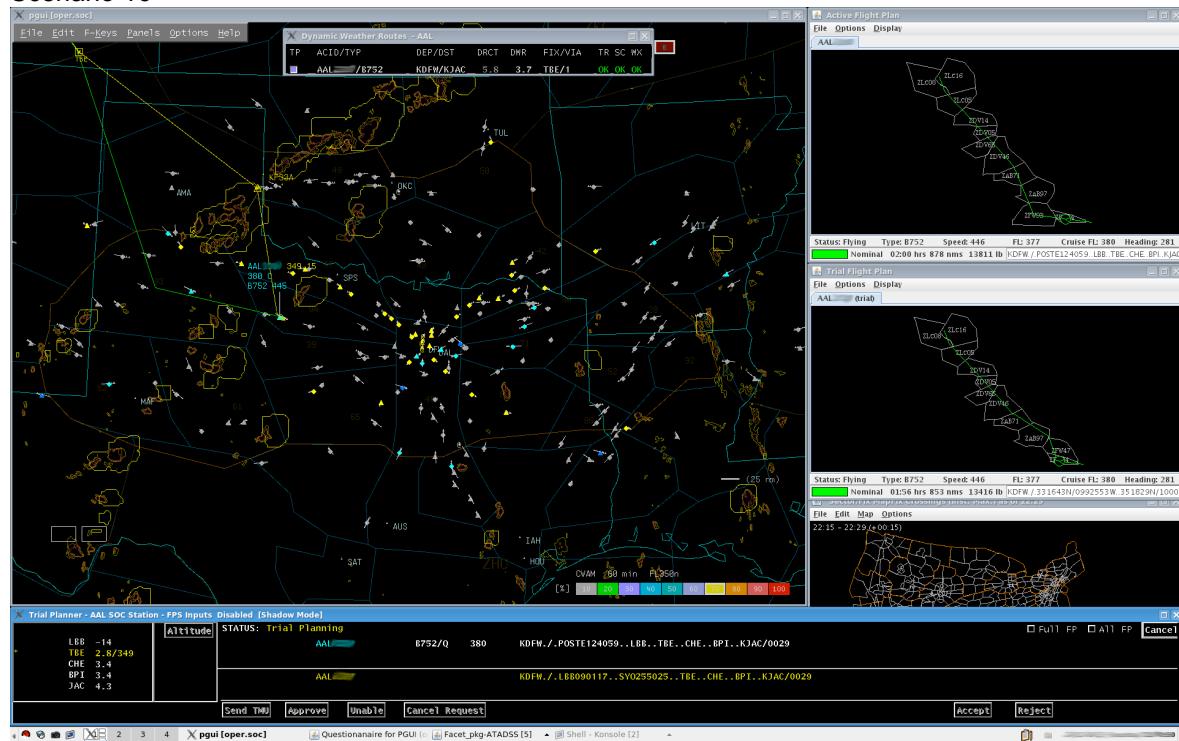
ATC coordination comments:N/C

Scenario 15



15. "AAL####/KAUS.0766<16-75-000014>", 20130226, tmu1, UNABLE
Reason for unable? "Too close to ZME's airspace. Make request with ZME."
How could it be acceptable? N/C
15. "AAL####/KAUS.0766<18-75-000012>", 20130226, tmu2, UNABLE
Reason for unable? "Too close to Center boundary. Too much coordination to be effectively initiated. By the time all coordination could be accomplished this aircraft would be in ZME airspace."
How could it be acceptable? "ZME should approve this and then back coordinate with ZFW for control."
15. "AAL####/KAUS.0766<21-75-000013>", 20130226, tmu3, UNABLE
Reason for unable? "Not enough time to effect coordination with ZME before the aircraft is already in their airspace"
How could it be acceptable? N/C
15. "AAL####/KAUS.0766<16-75-000011>", 20130305, tmu1, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments:"
15. "AAL####/KAUS.0766<21-75-000013>", 20130305, tmu3, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments:"reroute does not change complexity in sectors. tie in fix remains the same"

Scenario 16



16. "AAL####/KDFW.1263<16-75-000010>", 20130226, tmu1, UNABLE

Reason for unable? "By the time coordination is effected with sector 94 and 47 , the aircraft would make more than a 90 degree turn and have to fly between two major weather cells. "

How could it be acceptable? N/C

16. "AAL####/KDFW.1263<18-75-000009>", 20130226, tmu2, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"The sector volume in the airspace to the north of this aircraft is low enough to allow for this route with nominal coordination. The other option would be to turn the aircraft only slightly north of course and miss the weather on the west side, thereby still saving time and eliminating in house coordination."

16. "AAL####/KDFW.1263<21-75-000008>", 20130226, tmu3, ACCEPTED

Airline coordination comments: "Being an individual case sometimes is easier to accomodate a route like this. If more were planning on using this, then yes, TMU needs to be notified."

ATC coordination comments:"One aircraft on this route will have little impact to the next centers traffic based on the DWR projection."

16. "AAL####/KDFW.1263<15-75-000011>", 20130305, tmu1, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"in reality acft would continue on route and clear of wx direct CHE"

16. "AAL####/KDFW.1263<17-75-000008>", 20130305, tmu2, MODIFIED

Reason for mod.? "don't really see what good this does. "

Airline coordination comments: N/C

ATC coordination comments:"i modified and shortened the route, but kept him going out the west gate. "

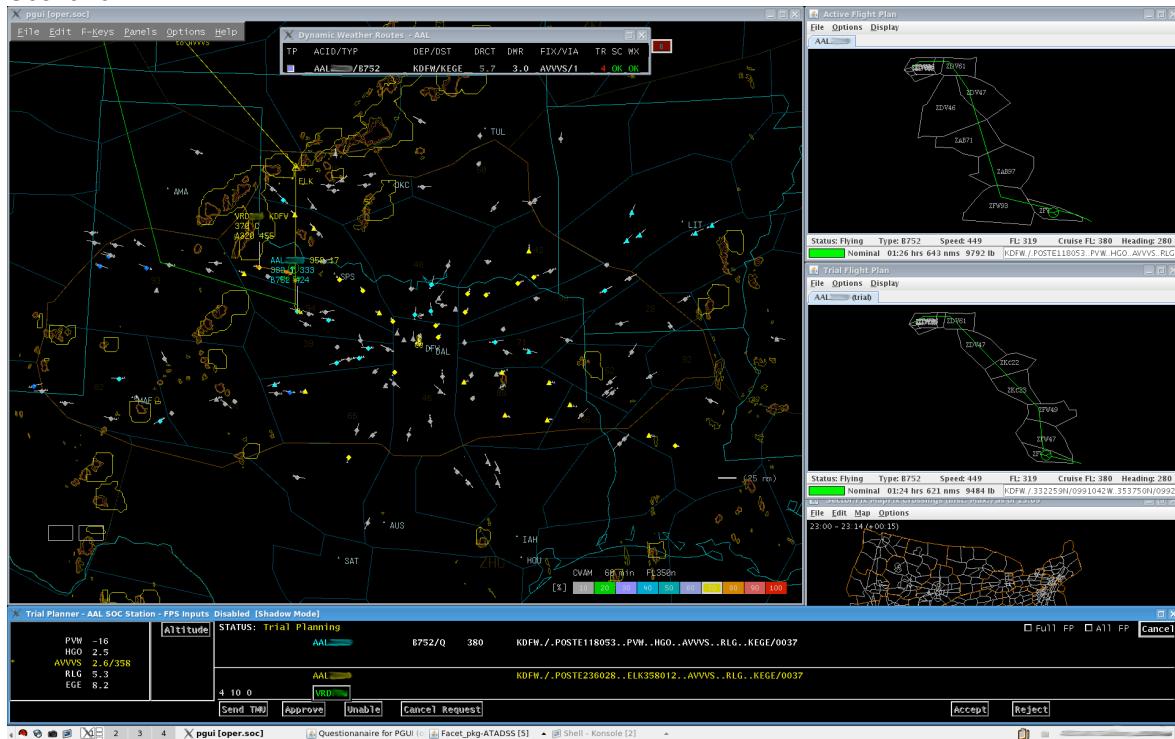
16. "AAL####/KDFW.1263<20-75-000010>", 20130305, tmu3, MODIFIED

Reason for mod.? "looking for time saving, but I would not think the pilot would agree to SOC suggested routing"

Airline coordination comments: N/C

ATC coordination comments:"current sector only"

Scenario 17



17. "AAL####/KDFW.0713<16-75-000012>", 20130226, tmu1, UNABLE

Reason for unable? "Experience tells me this is not a good routing for this aircraft. Could possibly get too close to the weather and create more problems trying to get the aircraft back on a safe, efficient route."

How could it be acceptable? N/C

17. "AAL####/KDFW.0713<18-75-000013>", 20130226, tmu2, UNABLE

Reason for unable? "Weather appears to have closed or is closing in the sector to the north."

How could it be acceptable? "The best option is to turn slightly north and then proceed more direct when the aircraft clears the western edge of the weather that is at his 1:00 position."

17. "AAL####/KDFW.0713<21-75-000014>", 20130226, tmu3, UNABLE

Reason for unable? "the workload is too high on the sector with the weather deviations already and the requested route looks dangerous."

How could it be acceptable? N/C

17. "AAL####/KDFW.0713<16-75-000017>", 20130306, tmu1, UNABLE

Reason for unable? "in reality the weather did not look good to go through"

How could it be acceptable? N/C

17. "AAL####/KDFW.0713<18-75-000018>", 20130306, tmu2, ACCEPTED

Airline coordination comments: "are you sure? there is quite a bit of wx up there, is it worth the risk of the hole closing? if you really want to, you can ask, but..."

ATC coordination comments:N/C

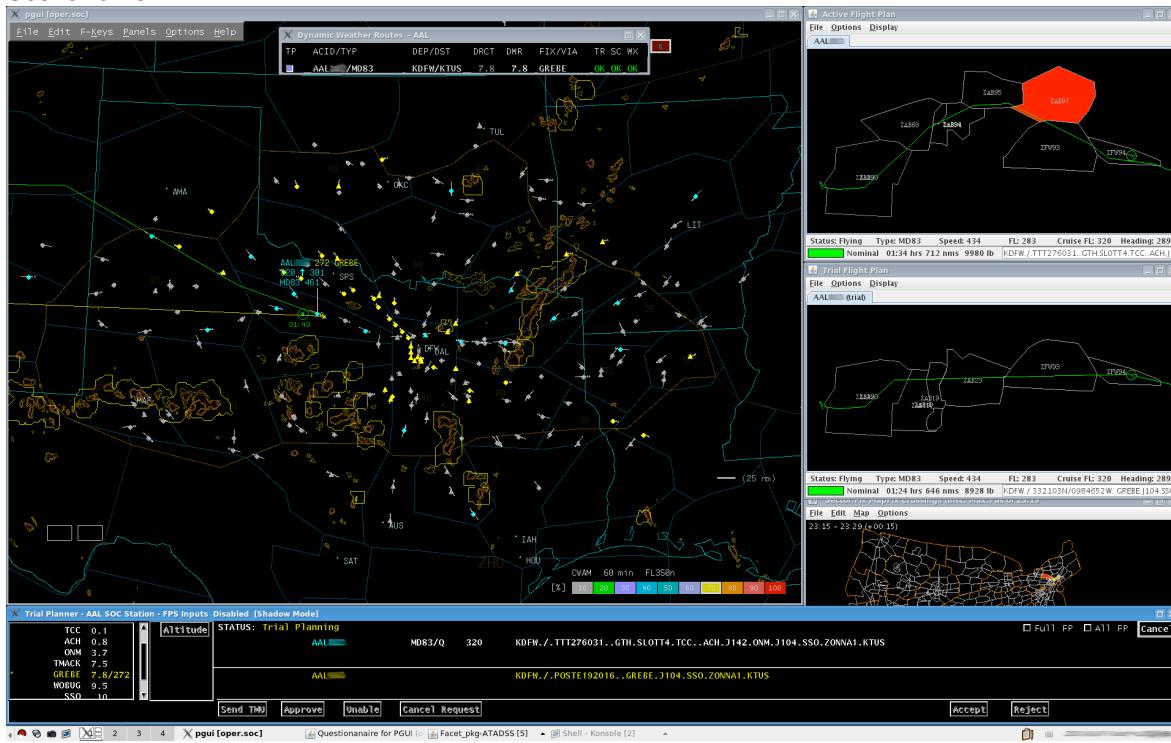
17. "AAL####/KDFW.0713<21-75-000012>", 20130306, tmu3, MODIFIED

Reason for mod.? "continue west bound and procede direct EGE"

Airline coordination comments: N/C

ATC coordination comments:"all done within the confines of ZFW Possum specialty"

Scenario 18



18. "AAL###/KDFW.1247<15-75-000011>", 20130226, tmu1, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"Coordinate with ZAB if I didnt know the reason for extensive north reroute"

18. "AAL###/KDFW.1247<17-75-000010>", 20130226, tmu2, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"The sector that is working this aircraft is in the same specialty. Coordination should not be necessary."

18. "AAL###/KDFW.1247<20-75-000009>", 20130226, tmu3, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:N/C

18. "AAL###/KDFW.1247<16-75-000020>", 20130306, tmu1, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"tie in fix remains same. no issues with route."

18. "AAL###/KDFW.1247<18-75-000017>", 20130306, tmu2, ACCEPTED

Airline coordination comments: N/C

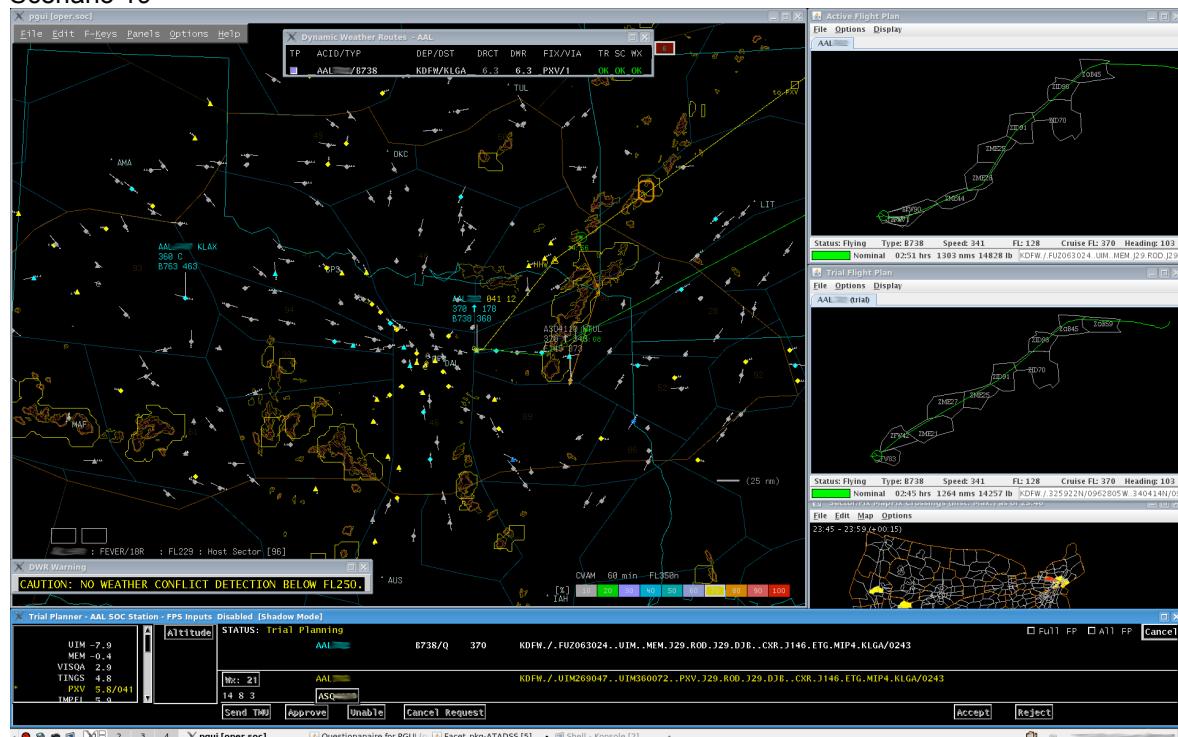
ATC coordination comments:N/C

18. "AAL###/KDFW.1247<21-75-000019>", 20130306, tmu3, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"If white sands is open, no coord is necessary"

Scenario 19



19. "AAL###/KDFW.0123<16-75-000007>", 20130226, tmu1, MODIFIED

Reason for mod.? "Reluctant to take the aircraft this way be feel like there's not much choice. Would stop additional departures eastbound and coordinate routes, via CDRs, preferably to the north, but somewhat limited going south."

Airline coordination comments: "Major conflict with the northern and southern arrival sectors."

ATC coordination comments:N/C

19. "AAL###/KDFW.0123<18-75-000006>", 20130226, tmu2, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"Even though this aircraft is still very low, the re-route appears to go through an area with very little traffic (probably due to the weather). The only impact is how this will effect the Memphis controller around Little Rock. This aircraft will probably deviate to the north anyway, so this re-route is making the best of a bad situation."

19. "AAL###/KDFW.0123<21-75-000008>", 20130226, tmu3, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"This aircraft should not be airborne in this scenario. Approval is only predicated on the fact that the aircraft has no other option. Quick coordination is required low and high altitude and deviating arrivals are impacted .. Dangerous scenario"

19. "AAL###/KDFW.0123<16-75-000015>", 20130306, tmu1, MODIFIED

Reason for mod.? "modified due to additional weather on trial route"

Airline coordination comments: "this takes him off of a weather reroute I guess."

ATC coordination comments:N/C

19. "AAL###/KDFW.0123<18-75-000013>", 20130306, tmu2, UNABLE

Reason for unable? "the proposed reroute goes through an arrival sector in zfw. it also goes through wx in zme. if he stays on his current rte, once he clears the wx, he should be in the clear."

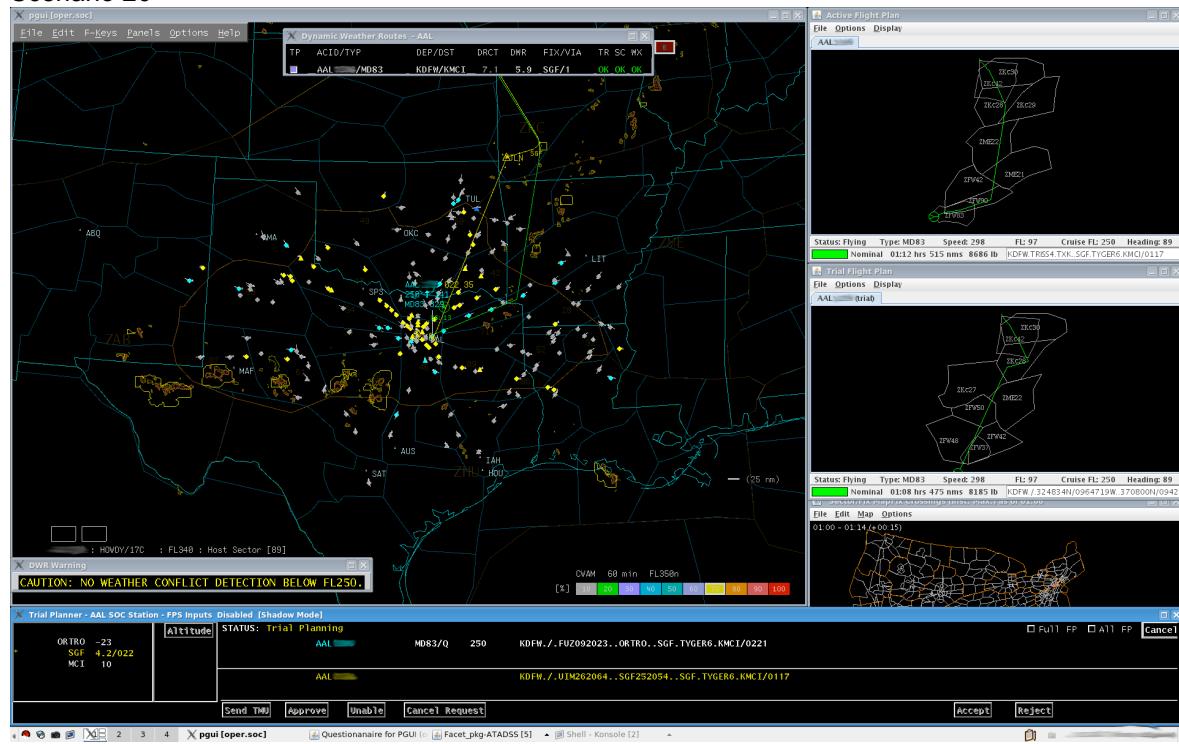
How could it be acceptable? N/C

19. "AAL###/KDFW.0123<21-75-000016>", 20130306, tmu3, UNABLE

Reason for unable? "acf to remain thru departure gate east bound with other trfc. if this request were made for weather avoidance other action would be taken/considered."

How could it be acceptable? "swap north"

Scenario 20



20. "AAL#####/KDFW.0545<15-75-000007>", 20130226, tmu1, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

ATC coordination comments:N/C

20. "AAL#####/KDFW.0545<17-75-000005>", 20130226, tmu2, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

ATC coordination comments:"Unusual route into MCI that needs to be approved. The aircraft needs to be high enough and far enough east in order for the reroute to miss arrival aircraft."

20. "AAL#####/KDFW.0545<20-75-000008>", 20130226, tmu3, ACCEPTED

Airline coordination comments: "Definitely need to call TMU ASAP due to weather ahead and the arrival traffic to the north. Can make this happen must be done as quickly as possible. Not recommended for additiional aircraft."

ATC coordination comments:N/C

20. "AAL#####/KDFW.0545<15-75-000010>", 20130306, tmu1, UNABLE

Reason for unable? "if request were made earlier ATC could have taken acft out north departure gate. since acft is climbing in ZFW airspace, he would need to continue east until reaching altitude befor ATC would consider turning north."

How could it be acceptable? "swap/route out north gate"

20. "AAL#####/KDFW.0545<17-75-000007>", 20130306, tmu2, ACCEPTED

Airline coordination comments: "this would require a lot of coordination for 1 ac, but i would try. the proposed rte is advantageous. the chance of success on this 1 ac is about 60%."

ATC coordination comments:"i could probably get the zfw supe to take this 1 ac like this. there are not many arrivals coming in. "

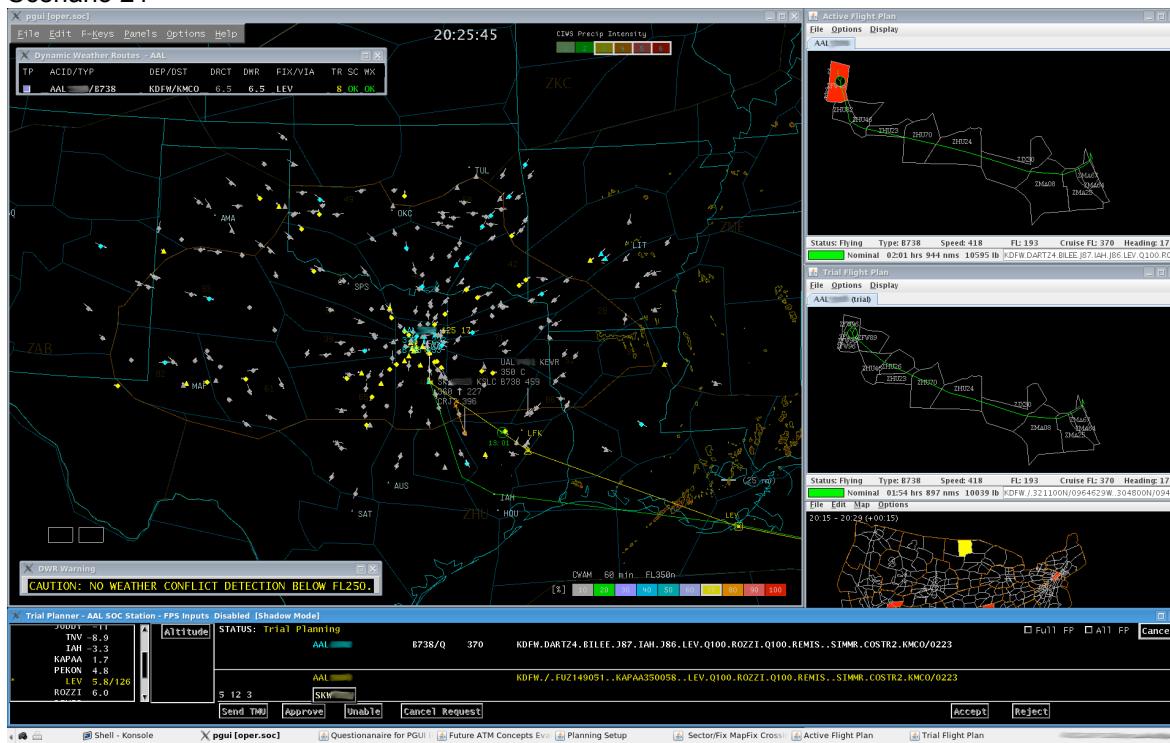
20. "AAL#####/KDFW.0545<20-75-000011>", 20130306, tmu3, MODIFIED

Reason for mod.? "modified due to weather along trial route"

Airline coordination comments: N/C

ATC coordination comments:"route still contained within east departure sectors"

Scenario 21



21. "AAL####/KDFW.1681<16-75-000007>", 20130227, tmu1, UNABLE

Reason for unable? "Not 100% sure but the filed routing complies with a LOA with ZHU in order to get south bound depts out of D10 and depts out of I90. Basically interferes with the normal flow of traffic for both streams."

How could it be acceptable? "A call from AAL requesting help in getting the aircraft to MCO, for a particular reason, would be necessary to approve this route."

21. "AAL####/KDFW.1681<18-75-000006>", 20130227, tmu2, UNABLE

Reason for unable? "Another situation where the aircraft is too low to give this re-route to without impacting arrival stram traffic a lot. Houston Center traffic is what will eventually dictate when this aircraft can turn further east if at all. The ""call"" will be Houstons and not Fort Worths. Once the aircraft is above the arrival string is the best chance for an early turn to the east."

How could it be acceptable? N/C

21. "AAL####/KDFW.1681<21-75-000008>", 20130227, tmu3, MODIFIED

Reason for mod.? "too much impact on arrival sectors low and high altitude. request needs to be coordinated or requested in ZHU"

Coordination needed? N/C

What kind? N/C

21. "AAL####/KDFW.1681<16-75-000007>", 20130306, tmu1, ACCEPTED

Airline coordination comments: "involves turning a/c through arrival sector"

ATC coordination comments: "zhu would need to be coord. with + departure secotor, but there is time."

21. "AAL####/KDFW.1681<18-75-000006>", 20130306, tmu2, UNABLE

Reason for unable? "this is really not a wx reroute. if it was, i would try to ghet it done."

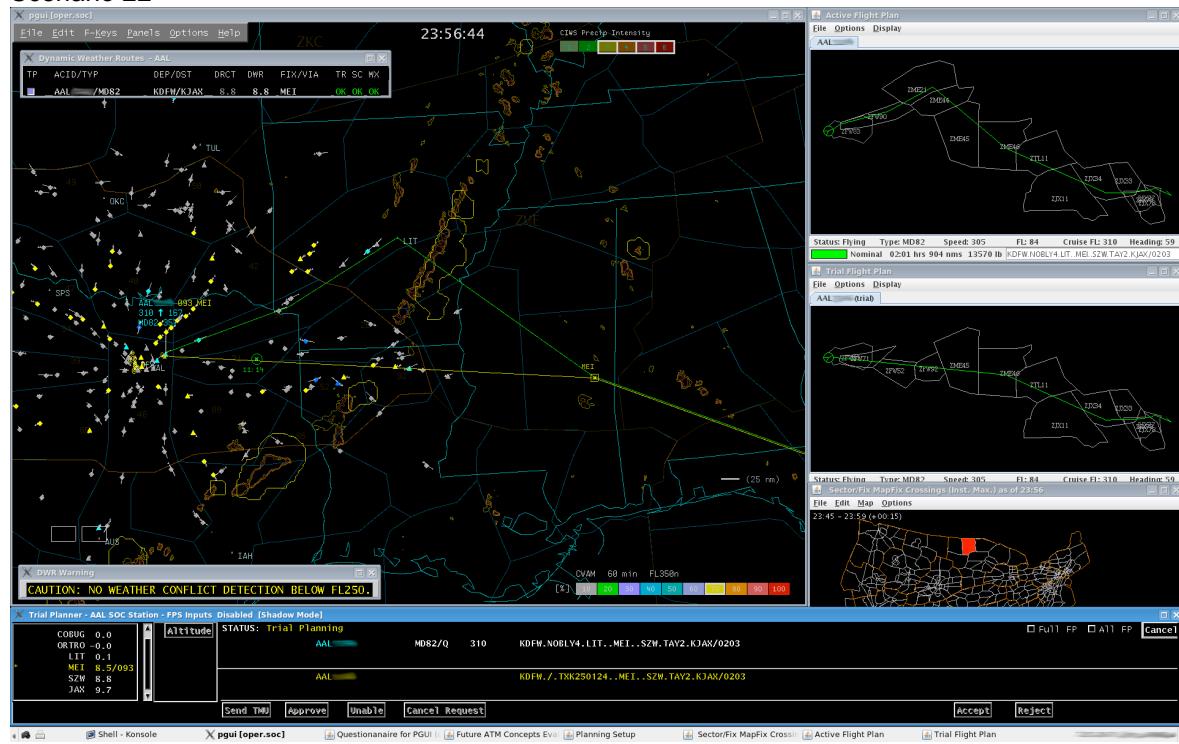
How could it be acceptable? "if wx was a factor here, it could be done."

21. "AAL####/KDFW.1681<21-75-000009>", 20130306, tmu3, UNABLE

Reason for unable? "as with all similar scenerios avoid cutting thru arrivals. ZHU should make the decision to turn east."

How could it be acceptable? "coordinatiion with ZHU and arrival sup in CQY"

Scenario 22



22. "AAL####/KDFW.0517<16-75-000010>", 20130227, tmu1, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:N/C

22. "AAL####/KDFW.0517<18-75-000008>", 20130227, tmu2, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"Re-route appears to miss the line of weather south and east of Little Rock.This looks like a normal ""no weather day"" flight plan. This re-route is easily done, easily coordinated, and should be a no brainer."

22. "AAL####/KDFW.0517<21-75-000009>", 20130227, tmu3, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"Very little action required on this flight plan."

22. "AAL####/KDFW.0517<15-75-000006>", 20130306, tmu1, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"acft continues thru departur flow gate and along a normal route"

22. "AAL####/KDFW.0517<17-75-000007>", 20130306, tmu2, ACCEPTED

Airline coordination comments: "have the pilot ask. if the controller can do it, he will."

ATC coordination comments:"i don't understand why he was filed over lit in the first place.

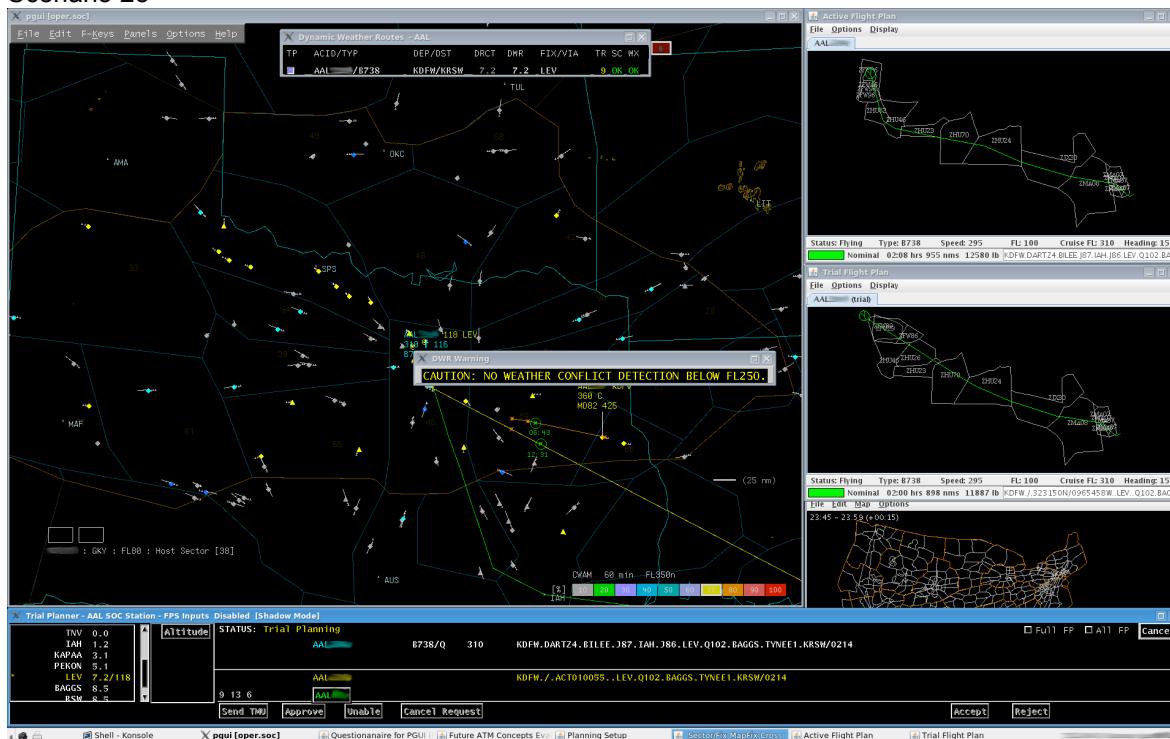
"

22. "AAL####/KDFW.0517<20-75-000009>", 20130306, tmu3, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"only coord with departure sector"

Scenario 23



23. "AAL####/KDFW.0538<16-75-000007>", 20130227, tmu1, UNABLE

Reason for unable? "This reroute requires much coordination with multiple sectors with ZHU and ZFW. Would rather reroute traffic going to south FL via the east gate. A short cut is also more probable going that direction as well."

How could it be acceptable? N/C

23. "AAL####/KDFW.0538<18-75-000008>", 20130227, tmu2, MODIFIED

Reason for mod.? "Request should have been unable. Again, this aircraft is too low and not far enough south to get a reasonably expected reroute."

Airline coordination comments: N/C

ATC coordination comments: "Only Houston Center should make the determination on when to move this aircraft. As before this aircraft may have been better served departing east instead of south."

23. "AAL####/KDFW.0538<21-75-000011>", 20130227, tmu3, MODIFIED

Reason for mod.? "interferes with arrival stream low and high altitude. Also conflicts with IAH departures. Coordination with ZHU required. Best suited to have request made with ZHU when aircraft is high enough to top IAH/HOU departures"

Airline coordination comments: N/C

ATC coordination comments: N/C

23. "AAL####/KDFW.0538<16-75-000008>", 20130306, tmu1, UNABLE

Reason for unable? "trial reroute may put a/c closer to weather."

How could it be acceptable? ???"

23. "AAL####/KDFW.0538<18-75-000009>", 20130306, tmu2, UNABLE

Reason for unable? "by the time he gets high enough to accommodate, he will be too close to the zhu boundary to give it to him. also, there is no wx involved."

How could it be acceptable? N/C

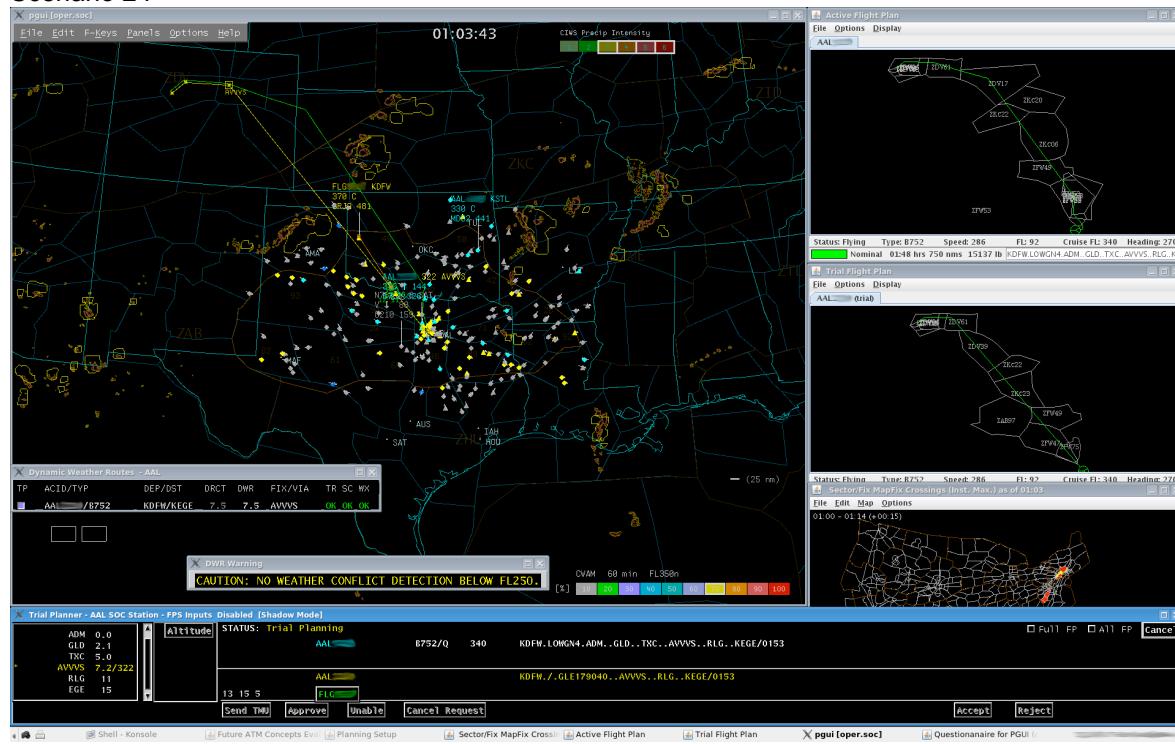
23. "AAL####/KDFW.0538<21-75-000007>", 20130306, tmu3, MODIFIED

Reason for mod.? "this would have needed coordination with sector 29/89 and a coordinated approval from ZHU"

Airline coordination comments: "in this situation, coordinate with ZHU"

ATC coordination comments: N/C

Scenario 24



24. "AAL#####/KDFW.1865<15-75-000007>", 20130227, tmu1, MODIFIED

Reason for mod.? "low and high arrival sector impact"

Airline coordination comments: N/C

ATC coordination comments:N/C

24. "AAL#####/KDFW.1865<17-75-000006>", 20130227, tmu2, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"This reroute appears to take the aircraft along the eastern side of the high arrival sector (Wichita Falls High), so it will miss the arrival stream and will have almost no impact in that sector."

24. "AAL#####/KDFW.1865<20-75-000008>", 20130227, tmu3, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

ATC coordination comments:"Route interferes more so with the low altitude arrival sector in ZFW. In addition ZDV and ZKC would have to be coordinated for this route."

24. "AAL#####/KDFW.1865<15-75-000008>", 20130306, tmu1, MODIFIED

Reason for mod.? "keep acft clear of arrival sector and then left turn direct"

Airline coordination comments: N/C

ATC coordination comments:N/C

24. "AAL#####/KDFW.1865<17-75-000011>", 20130306, tmu2, UNABLE

Reason for unable? "ask for direct somewhere when the ac levels or is close to leveling. this will miss the arrival sector."

How could it be acceptable? N/C

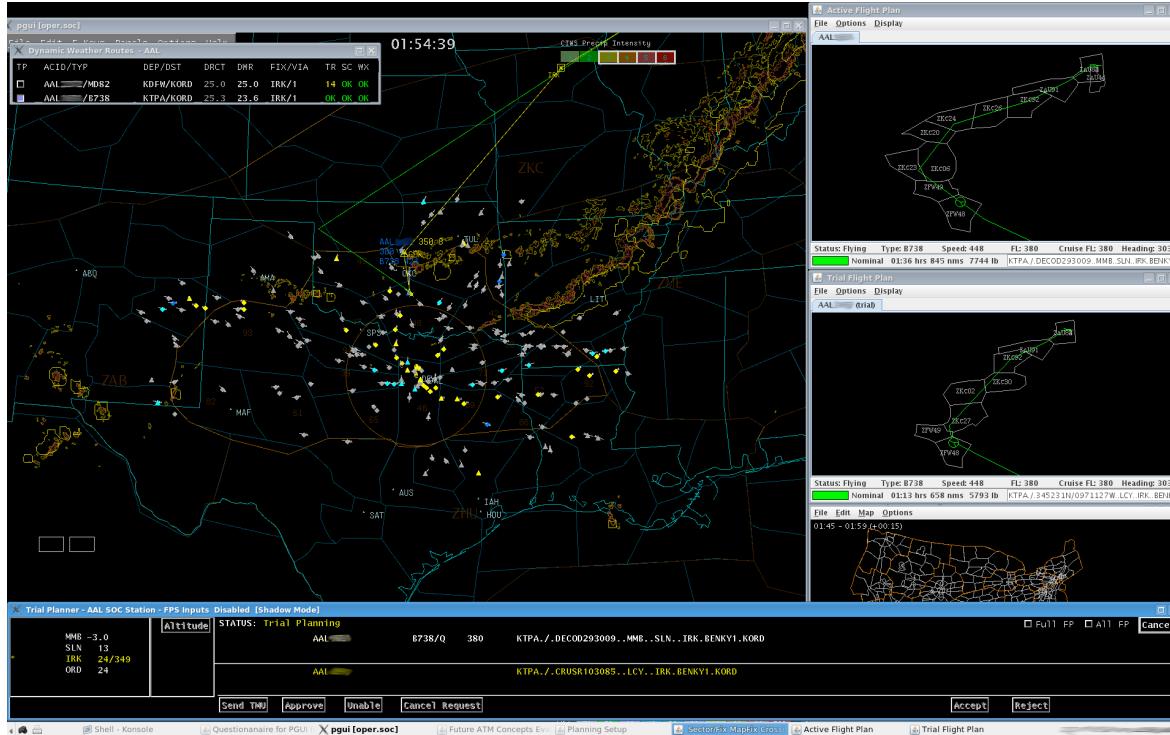
24. "AAL#####/KDFW.1865<20-75-000007>", 20130306, tmu3, MODIFIED

Reason for mod.? "needed to stay in departure sector due to arivals"

Airline coordination comments: N/C

ATC coordination comments:"coord only with departure sector"

Scenario 25



25. "AAL####/KTPA.1099<16-75-000014>", 20130227, tmu1, UNABLE

Reason for unable? "TMI routes are handed out thru the command center and are to be supported by all facilities. Good probabllity MIT is also a part of this TMI."

How could it be acceptable? N/C

25. "AAL####/KTPA.1099<18-75-000011>", 20130227, tmu2, UNABLE

Reason for unable? "Because of the TMI's in place for Chicago, only ZKC can determine whether or not this aircraft can be re-routed. This will be based solely on their traffic and whether or not this request will fit with their MIT, etc."

How could it be acceptable? "None for me."

25. "AAL####/KTPA.1099<21-75-000013>", 20130227, tmu3, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"Must get approval from ZKC prior. The sector immediately west of the weather could be majorly impacted."

25. "AAL####/KTPA.1099<16-75-000008>", 20130306, tmu1, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"With TMI restrictions in place additional coord. necessary with command center"

25. "AAL####/KTPA.1099<18-75-000010>", 20130306, tmu2, UNABLE

Reason for unable? "there is a tmi out, and i would need to get dcc approval. it may be a time to change the tmi route, but until that is done, i will not approve it."

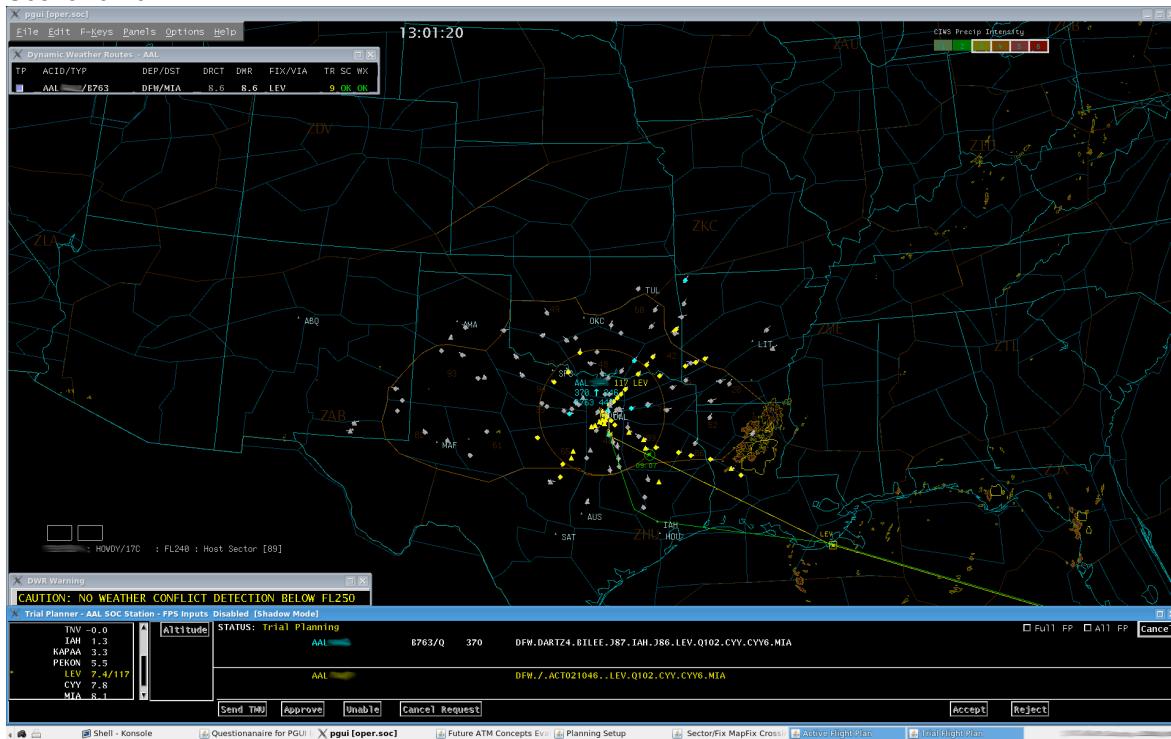
How could it be acceptable? N/C

25. "AAL####/KTPA.1099<21-75-000013>", 20130306, tmu3, ACCEPTED

Airline coordination comments: "TMI route needs to be coordinated before route approved"

ATC coordination comments:"all centers involved in the reroute need coordination"

Scenario 26



26. "AAL####/KDFW.0376<15-75-000008>", 20130227, tmu1, MODIFIED

Reason for mod.? "requested too low and soon. coordination required with ZHU . They can turn after the aircraft clears DFW arrivals and gets sufficient altitude to top IAH/HOU departures northbound."

Airline coordination comments: N/C

ATC coordination comments:N/C

26. "AAL####/KDFW.0376<17-75-000007>", 20130227, tmu2, UNABLE

Reason for unable? "Aircraft too low and not far enough to the south to be re-routed at the time of the request. Houston Center will have to make the determination as to when and where this aircraft can turn short."

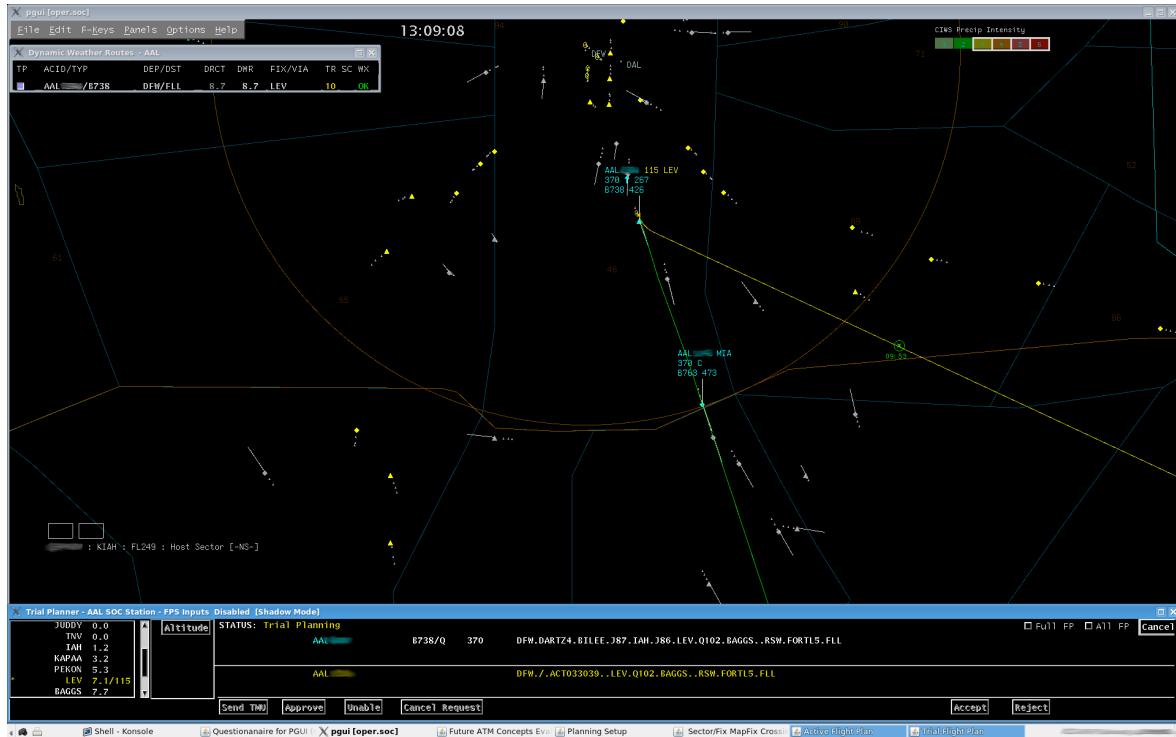
How could it be acceptable? N/C

26. "AAL####/KDFW.0376<20-75-000009>", 20130227, tmu3, UNABLE

Reason for unable? "When the request came in, the aircraft was still in D10's airspace. Depending on workload, could coordinate for maybe BILEE drct LEV but it would have to be ZHU's call."

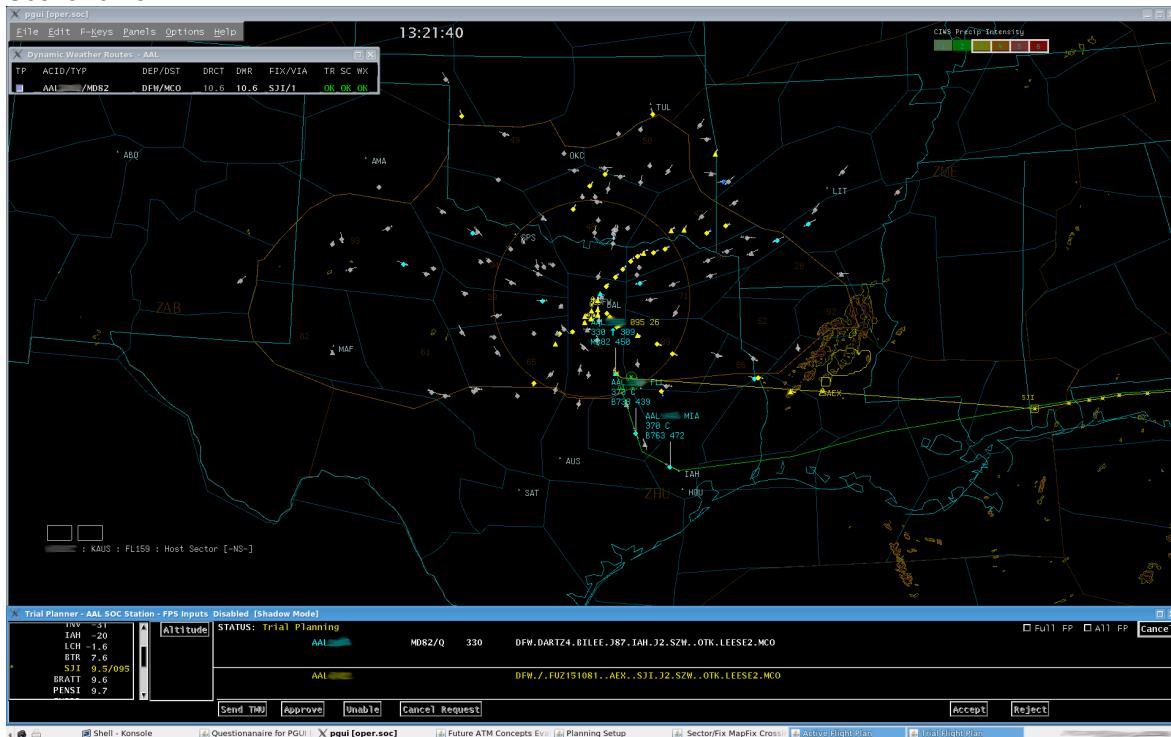
How could it be acceptable? N/C

Scenario 27



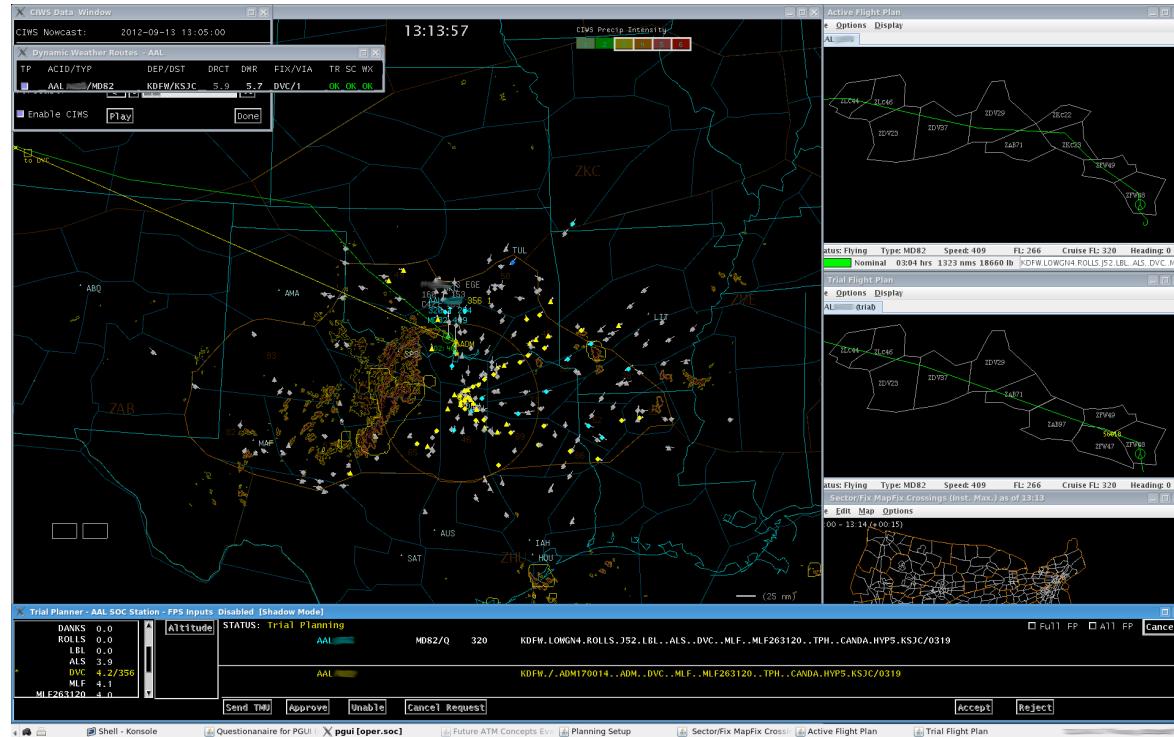
27. "AAL####/KDFW.0375<16-75-000006>", 20130227, tmu1, UNABLE
Reason for unable? "Same comments as number 26."
How could it be acceptable? N/C
27. "AAL####/KDFW.0375<18-75-000007>", 20130227, tmu2, UNABLE
Reason for unable? "Same as scenario #26"
How could it be acceptable? N/C
27. "AAL####/KDFW.0375<21-75-000008>", 20130227, tmu3, MODIFIED
Reason for mod.? "same as scenario 26"
Airline coordination comments: N/C
ATC coordination comments:N/C

Scenario 28



28. "AAL####/KDFW.0174<15-75-000009>", 20130227, tmu1, MODIFIED
Reason for mod.? "same comments as scenario 26 and 27"
Airline coordination comments: N/C
ATC coordination comments:N/C
28. "AAL####/KDFW.0174<17-75-000008>", 20130227, tmu2, UNABLE
Reason for unable? "This aircraft should have probably been sent out the east departure gate. Going south, he will be faced with the issues we've seen before. He'll need to be higher and further south to get re-routed. ZHU will have to determine this."
How could it be acceptable? N/C
28. "AAL####/KDFW.0174<20-75-000007>", 20130227, tmu3, UNABLE
Reason for unable? "Similiar to number 26 and 27. Appears there could have been an opportunity for a shortcut and savings by going out the east gate of D10."
How could it be acceptable? N/C
28. "AAL####/KDFW.0174<15-75-000009>", 20130306, tmu1, UNABLE
Reason for unable? "ZHU should make the call in these siutations"
How could it be acceptable? "coordinate with ZHU for reroute crossing bndry"
28. "AAL####/KDFW.0174<17-75-000008>", 20130306, tmu2, UNABLE
Reason for unable? "same as before. ask zhu if they can get them more direct. by the time he levels, he will be too close to the zfw-zhu boundary to do anything."
How could it be acceptable? N/C
28. "AAL####/KDFW.0174<20-75-000010>", 20130306, tmu3, MODIFIED
Reason for mod.? "kept a/c in departure sector, planning on giving zhu control to turn based on traffic"
Airline coordination comments: N/C
ATC coordination comments:"yes with zhu"

Scenario 29



29. "AAL####/KDFW.0241<16-75-000006>", 20130227, tmu1, ACCEPTED
 Airline coordination comments: "The request is essentially coordination."
 ATC coordination comments: "Based on ADM-HI workload may be a problem getting the clearance in a timely manner but otherwise it's a good choice."
29. "AAL####/KDFW.0241<18-75-000005>", 20130227, tmu2, ACCEPTED
 Airline coordination comments: N/C
 ATC coordination comments: "This appears to let the aircraft go more direct without impacting arrival traffic. (arrivals are probably not coming in on normal routes in this area due to weather.. Even if there was a normal arrival string, this request puts the aircraft far enough north so as to not be a factor with head on traffic.)"
29. "AAL####/KDFW.0241<21-75-000007>", 20130227, tmu3, UNABLE
 Reason for unable? "requested route would be through displayed weather that numerous other aircraft are obviously avoiding."
 How could it be acceptable? N/C
29. "AAL####/KDFW.0241<16-75-000009>", 20130306, tmu1, UNABLE
 Reason for unable? "by time coord takes place aircraft would be on route"
 How could it be acceptable? ""
29. "AAL####/KDFW.0241<18-75-000010>", 20130306, tmu2, ACCEPTED
 Airline coordination comments: "this will need to be worked out with the supe, bu8t it should be ok. it helps to alleviate trafic in the sector he was originally going to enter."
 ATC coordination comments: N/C
29. "AAL####/KDFW.0241<21-75-000012>", 20130306, tmu3, ACCEPTED
 Airline coordination comments: N/C
 ATC coordination comments: "this is situation where pilot should make request to controller. no effect on arrivals and no TMI"

Scenario 30



30. "AAL####/KDFW.0356<16-75-000005>", 20130227, tmu1, UNABLE

Reason for unable? "Too much conflict with ZFW arrival which probably being rerouted thru ZHU to JEN. Plus I90 depts heading west creates a very congested area in their airspace."

How could it be acceptable? N/C

30. "AAL####/KDFW.0356<18-75-000004>", 20130227, tmu2, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

ATC coordination comments: "This ammendment is probably one that will be instituted by the Houston controller. From a ZFW standpoint the aircraft has to go further south from the original reuquest so that the aircraft has a chance to get further away from the arrivals and to get higher than the arrivals. Again, though, Houston will probaably have to be making this determination."

30. "AAL####/KDFW.0356<21-75-000006>", 20130227, tmu3, MODIFIED

Reason for mod.? "coordination required and reroute is feasible after this aircraft is at a higher altitude."

Airline coordination comments: N/C

ATC coordination comments:N/C

30. "AAL####/KDFW.0356<16-75-000014>", 20130306, tmu1, MODIFIED

Reason for mod.? "controller was getting a/c around the south end of the weather and getting turned was necessary due to other lax traffic coming from east"

Airline coordination comments: N/C

ATC coordination comments:N/C

30. "AAL####/KDFW.0356<18-75-000012>", 20130306, tmu2, UNABLE

Reason for unable? "ask zhu when leveling. right now, he is in the way of too many ac to climb throught them."

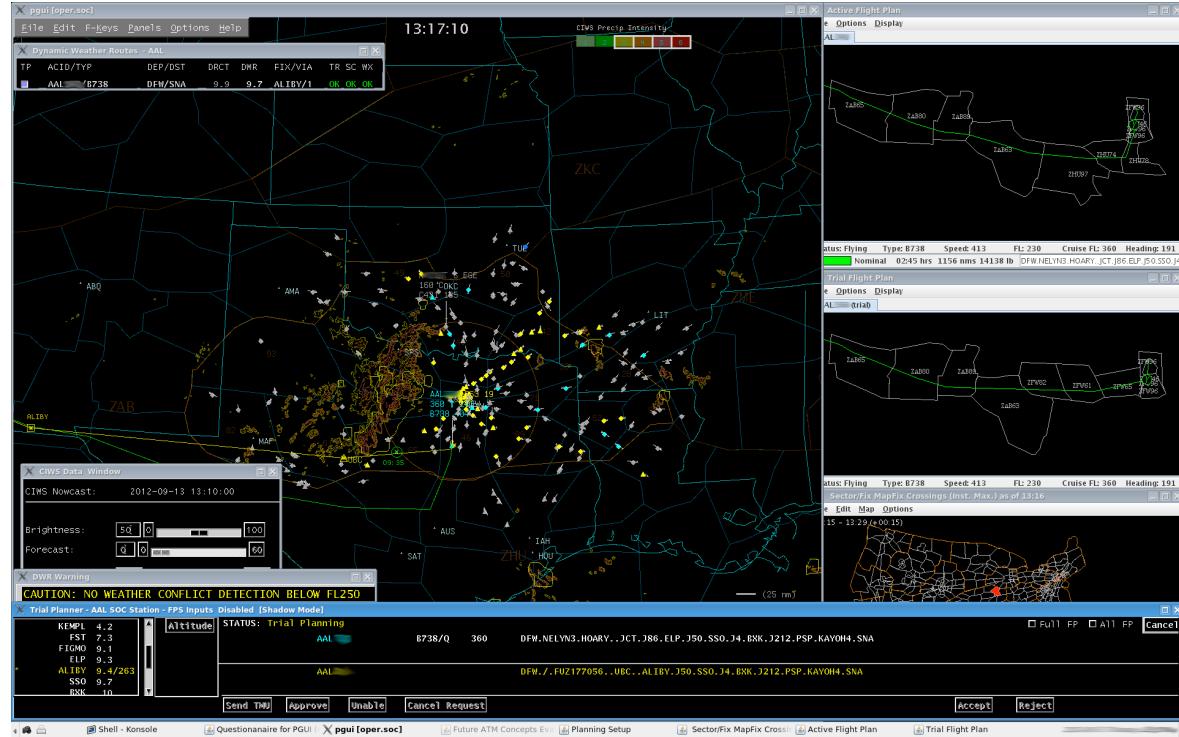
How could it be acceptable? "needs to be level."

30. "AAL####/KDFW.0356<21-75-000013>", 20130306, tmu3, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"ZHU and JEN sup need coordination. Previous acft have been turned on requested route"

Scenario 31



31. "AAL###/KDFW.0336<15-75-000007>", 20130227, tmu1, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments:"need to coordinate with the specialty along southern edge of weather to get concurrence. would also make it available after FL240"

31. "AAL###/KDFW.0336<17-75-000008>", 20130227, tmu2, ACCEPTED
Airline coordination comments: N/C
ATC coordination comments:"This request is much like the escape routes we have been discussing. This rereoute takes the aircraft through an area with nominal traffic and eliminates a lot of Houston Center involvement."

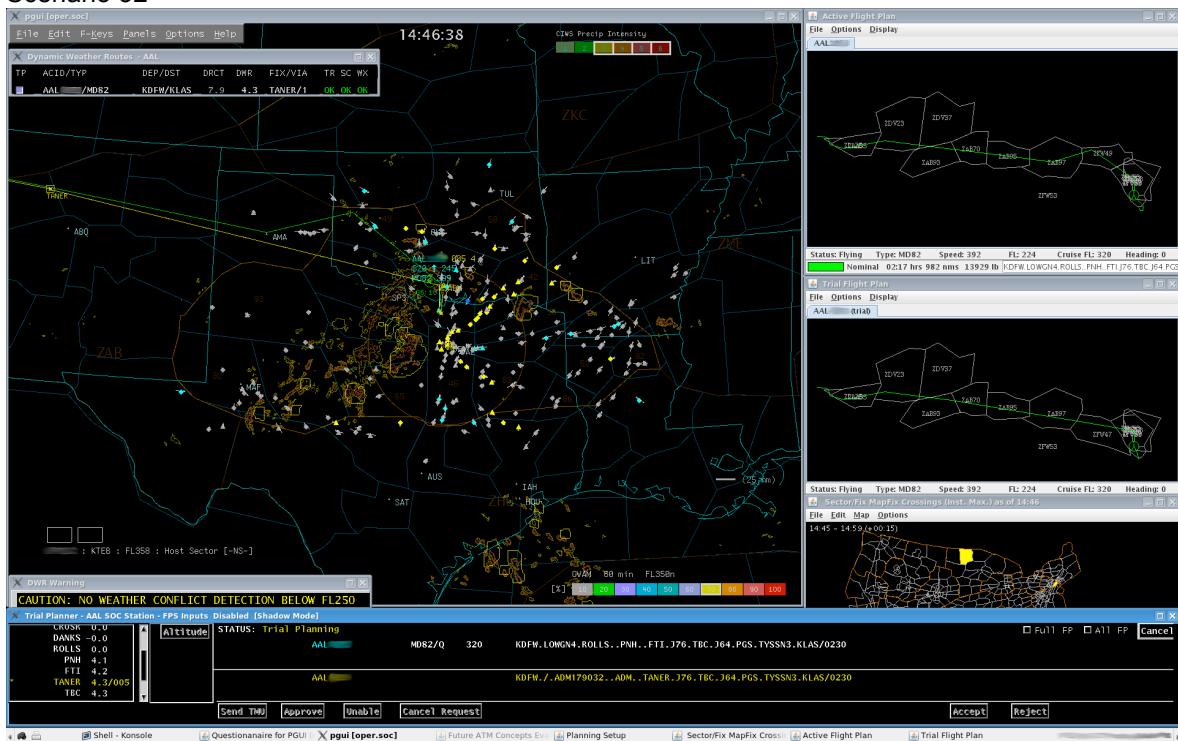
31. "AAL###/KDFW.0336<20-75-000009>", 20130227, tmu3, ACCEPTED
Airline coordination comments: "Coordination has to be completed with the dept. specialty and the arrival specialty."
ATC coordination comments:"Must be little to no arrival traffic over JEN in order for this route to be approved. This is very similiar to a ZFW CDR escape route."

31. "AAL###/KDFW.0336<15-75-000005>", 20130306, tmu1, UNABLE
Reason for unable? "so close to bndry that ZHU needs to make the call. Additionally the arrivals for DFW/DAL are flying south around the wx and turning for JEN"
How could it be acceptable? "coordination with ZHU"

31. "AAL###/KDFW.0336<17-75-000006>", 20130306, tmu2, ACCEPTED
Airline coordination comments: "because zfw is in a swap, it would be necessary to ask. when he levels, he may get it."
ATC coordination comments:"if the supe says ok, we should be able to do it."

31. "AAL###/KDFW.0336<20-75-000008>", 20130306, tmu3, UNABLE
Reason for unable? "the proposed trial route would go into the face of decending arrivals, also untimely with closeness to zhu"
How could it be acceptable? "if there was no arrival traffic."

Scenario 32



32. "AAL####/KDFW.0551<16-75-000008>", 20130227, tmu1, UNABLE

Reason for unable? "Keep the aircraft on the filed route even tho it'll probable stay well east of that route. Too close and disrupts the flow of the sector. Don't want the aircraft to attempt doing west and wind up turning back to the north."

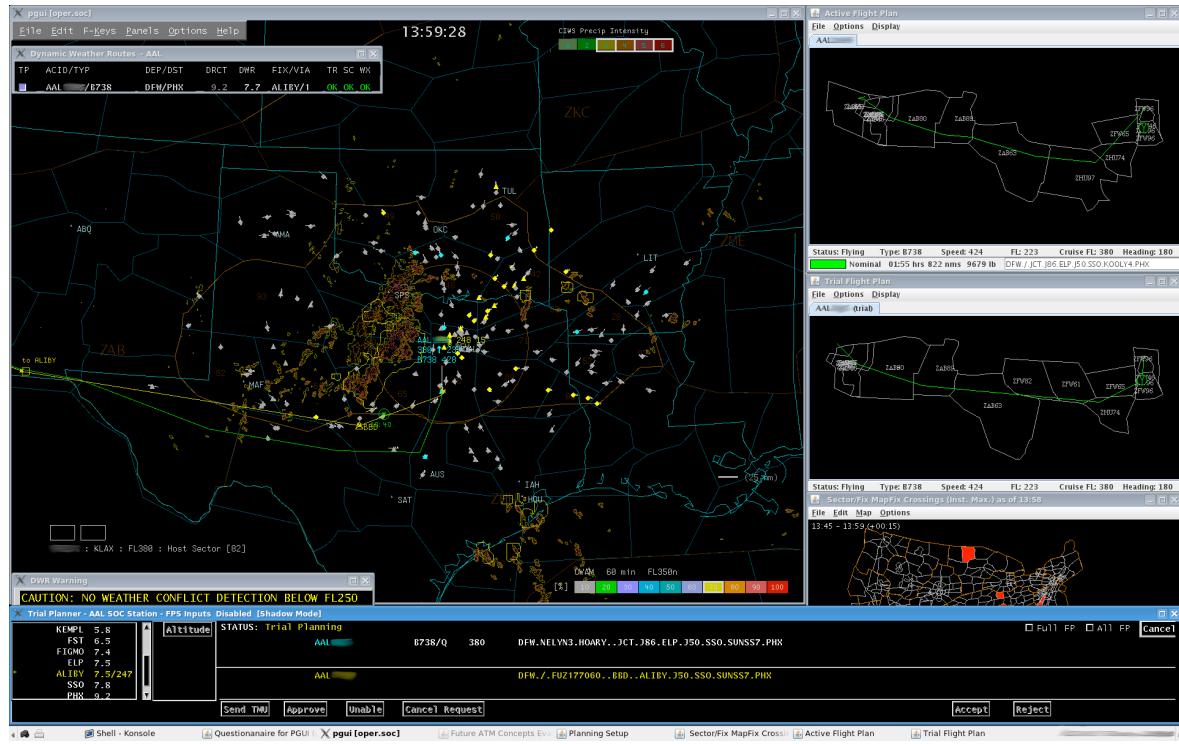
How could it be acceptable? N/C

32. "AAL####/KDFW.0551<18-75-000007>", 20130227, tmu2, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments: "Provided this does not involve a TMI to Las Vegas, this is a request that the north departure high controller can approve provided the weather allows the pilot to turn west. Very debatable whether he can turn or not. Shouldn't really be a TMU issue. The controller should be able to do this at his discretion based on pilot concurrence."

Scenario 33



33. "AAL#####KDFW.0465<15-75-000008>", 20130227, tmu1, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

ATC coordination comments:"probably let acft vacate FL240 to eliminate coord low altitude. coord with high arrival sector because demand is very low and should be approved. ZHU is deciding factor"

33. "AAL####/KDFW.0465<17-75-000006>", 20130227, tmu2, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

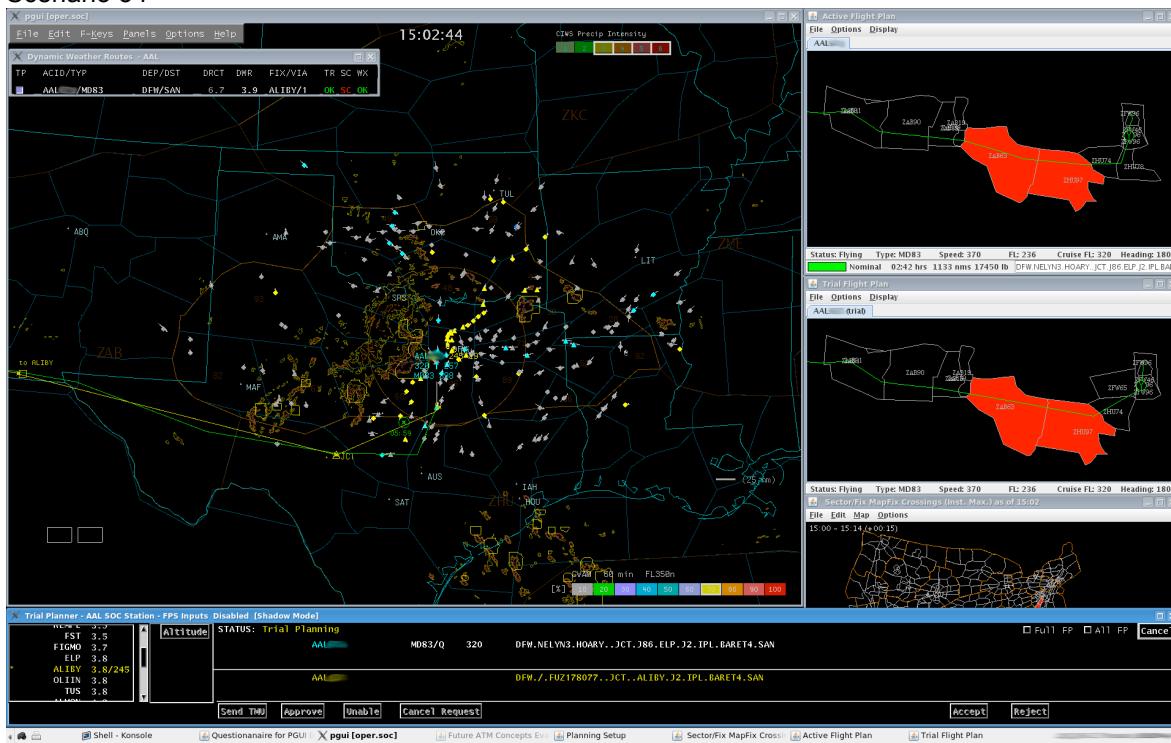
ATC coordination comments:"Very similar to the last scenario. With this route Houston can turn this aircraft to the west when it fits in with their west bound flow."

33. "AAL#####/KDFW.0465<20-75-000007>", 20130227, tmu3, UNABLE

Reason for unable? "These types of reroutes dramatically adds to the workload of TMU, supervisors, and controllers. Best to stay with what's working and concentrate on more critical issues."

How could it be acceptable? N/C

Scenario 34



34. "AAL###/KDFW.0552<16-75-000007>", 20130227, tmu1, UNABLE

Reason for unable? "Too much traffic in adjacent sector plus it puts too close to weather downstream. Best to make the request with ZHU."

How could it be acceptable? N/C

34. "AAL###/KDFW.0552<18-75-000005>", 20130227, tmu2, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

ATC coordination comments: "ZFW can release this aircraft to turn west when it is close to the center boundary. However, again, the choice on when to turn this aircraft in this instance is up to the Houston controller. It will be based solely on his workload and complexity."

34. "AAL###/KDFW.0552<21-75-000008>", 20130227, tmu3, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

ATC coordination comments: "wait until acft is high enough and far enough south to clear the arrivals from the southwest. ZHU must approve so timeliness might dictate that the request is better suited to be made with them"

34. "AAL###/KDFW.0552<16-75-000007>", 20130306, tmu1, UNABLE

Reason for unable? "route looks good but not enough time to coord., could coord release of turn to zhu controller to controller"

How could it be acceptable? N/C

34. "AAL###/KDFW.0552<18-75-000009>", 20130306, tmu2, UNABLE

Reason for unable? "by the time he got high enough to possibly approve this, he was too close to the zhu boundary."

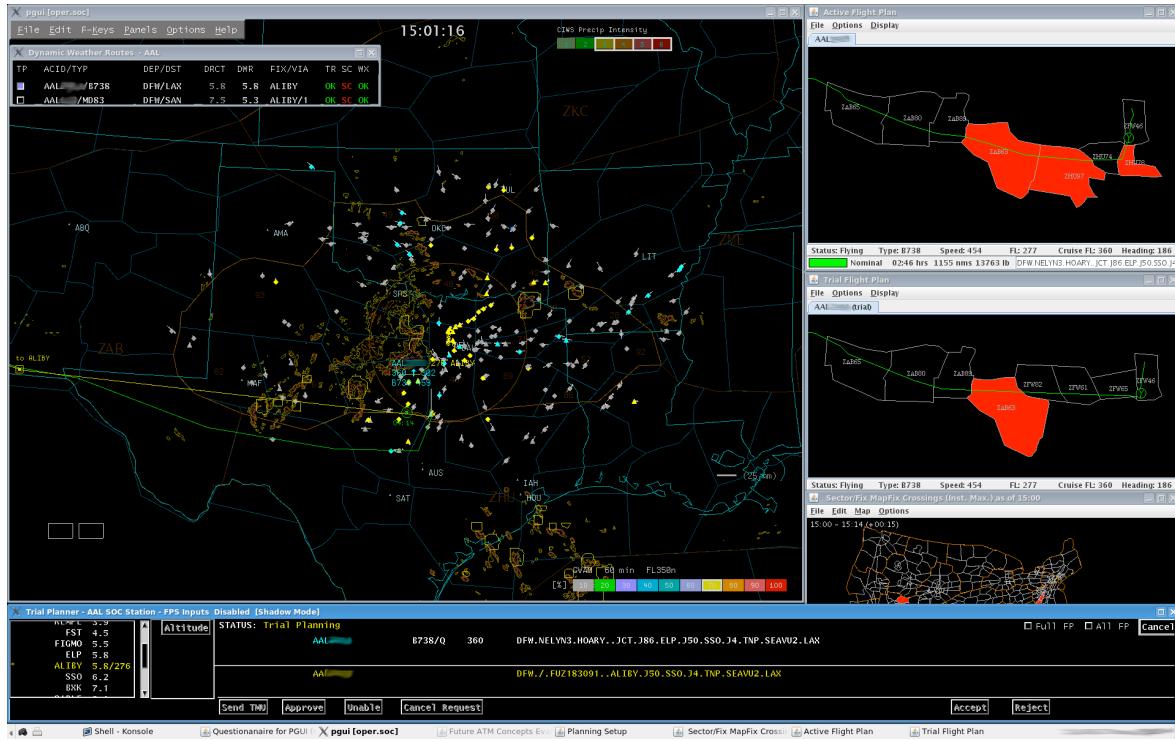
How could it be acceptable? N/C

34. "AAL###/KDFW.0552<21-75-000008>", 20130306, tmu3, UNABLE

Reason for unable? "close proximity to ZHU. Make request with them"

How could it be acceptable? "ZHU coordination"

Scenario 35



35. "AAL####/KDFW.0455<15-75-000009>", 20130227, tmu1, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

ATC coordination comments:"have to coordinate with high altitude arrivals but should be approved when far enough south to clear arrivals. Coord with ZHU mandatory. The request might be more suited to be made with forst ZHU sector the aircraft enters."

35. "AAL####/KDFW.0455<17-75-000007>", 20130227, tmu2, UNABLE

Reason for unable? "Houston will make any turns based on their traffic and their initiatives, etc. This aircraft is too close to the Houston boundary for ZFW to be making any re-routes."

How could it be acceptable? N/C

35. "AAL####/KDFW.0455<20-75-000008>", 20130227, tmu3, UNABLE

Reason for unable? "Chances are good their are playbooks in effect in ZHU airspace for transcon flights as well as for D10 arrivals. Must consider the whole picture in this particular instance."

How could it be acceptable? N/C

35. "AAL####/KDFW.0455<15-75-000010>", 20130306, tmu1, UNABLE

Reason for unable? "too close to ZHU. their call"

How could it be acceptable? "ZHU coordination"

35. "AAL####/KDFW.0455<17-75-000011>", 20130306, tmu2, UNABLE

Reason for unable? ""

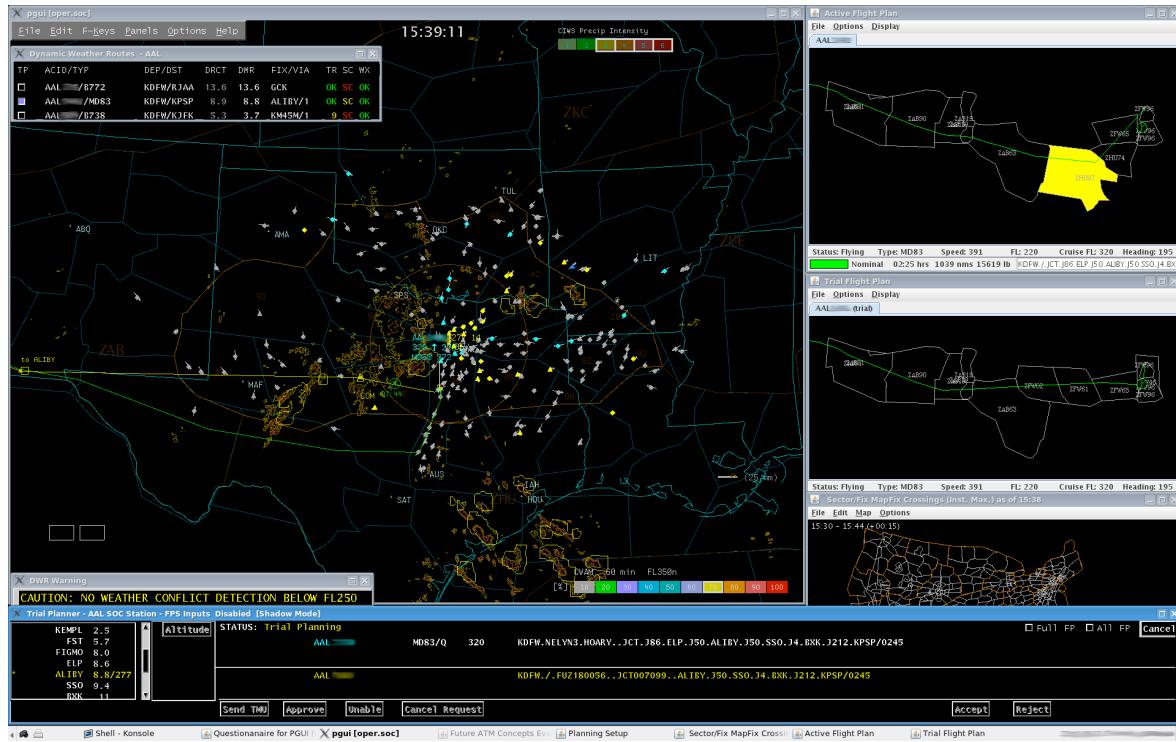
How could it be acceptable? N/C

35. "AAL####/KDFW.0455<20-75-000008>", 20130306, tmu3, UNABLE

Reason for unable? "to close to hou for zfw to be making the coord."

How could it be acceptable? "

Scenario 36



36. "AAL#####/KDFW.0023<16-75-000007>", 20130227, tmu1, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"Contingent on ZFW sectors and ZHU TMU, this route works for ZFW based on no traffic in adjacent sector."

36. "AAL#####/KDFW.0023<18-75-000004>", 20130227, tmu2, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

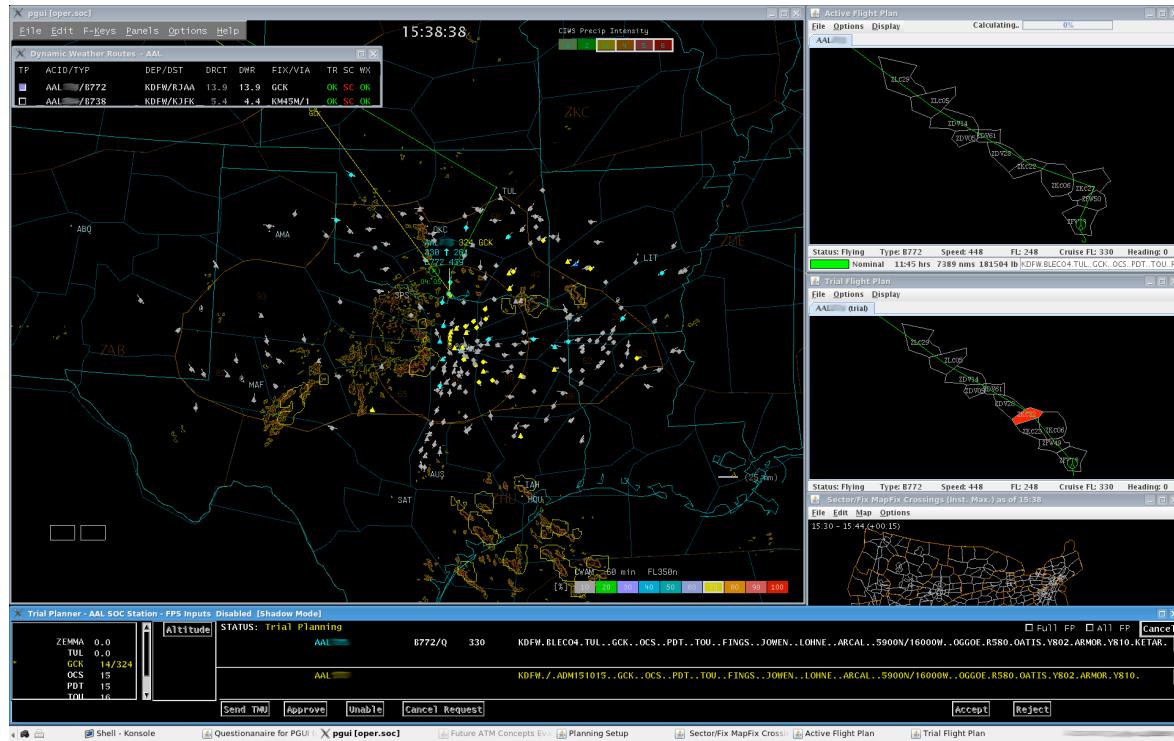
ATC coordination comments:"Strictly a case where Houston will turn this aircraft when possible based on the weather that is out by OZA as well as his traffic load."

36. "AAL#####/KDFW.0023<21-75-000006>", 20130227, tmu3, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"must coordinate to transit arrival sector, but no arrivals are present due to weather reroutes. Should be easy approval."

Scenario 37



37. "AAL###/KDFW.0119<15-75-000008>", 20130227, tmu1, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

ATC coordination comments:"coordinate with one sector to get route over OKC. Coord with ZKC for route north of OKC. Should be easy approval"

37. "AAL###/KDFW.0119<17-75-000006>", 20130227, tmu2, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"Minimal impact on everyone involved. This re-route also cuts out the first ZKC sector. Looks like a quick win-win for all."

37. "AAL###/KDFW.0119<21-75-000007>", 20130227, tmu3, ACCEPTED

Airline coordination comments: "Pilot request would get this aircraft on the DWR route."

ATC coordination comments:N/C

37. "AAL###/KDFW.0119<15-75-000006>", 20130306, tmu1, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"typical pilot to controller request"

37. "AAL###/KDFW.0119<17-75-000008>", 20130306, tmu2, ACCEPTED

Airline coordination comments: "have the pilot ask the controller for direct somewhere downstream."

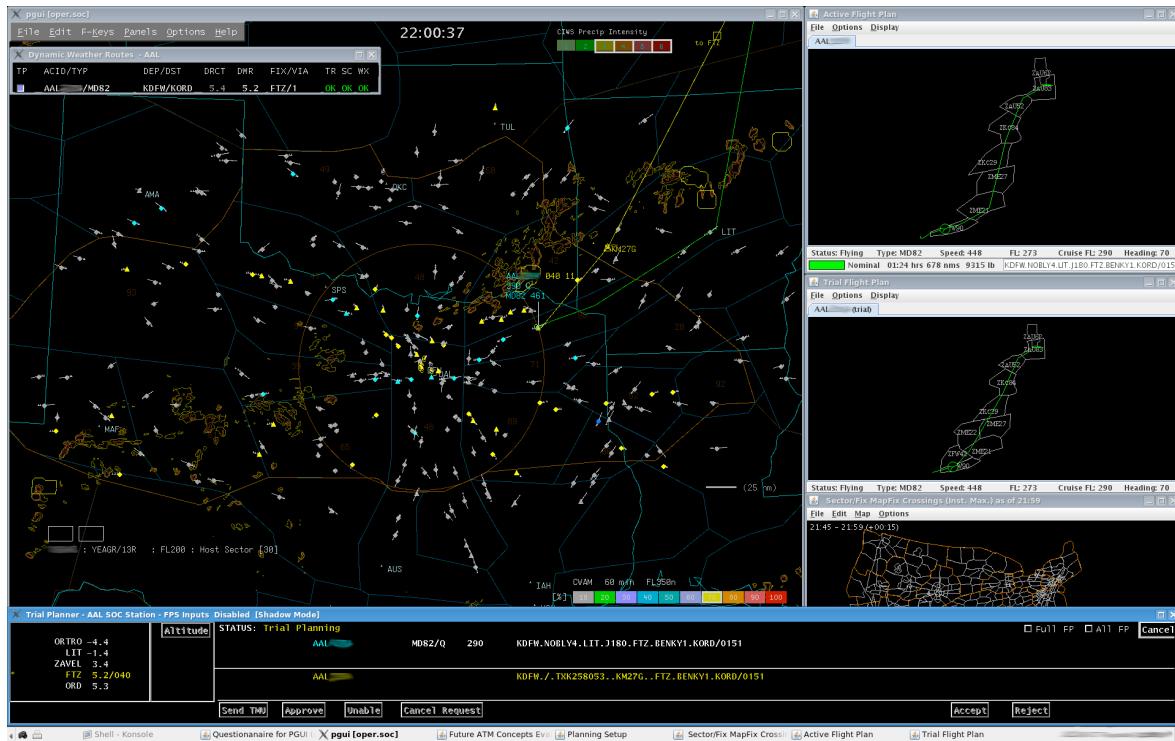
ATC coordination comments:N/C

37. "AAL###/KDFW.0119<20-75-000007>", 20130306, tmu3, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"coord with sector and allow pilot to turn clear of weather"

Scenario 38



38. "AAL####/KDFW.1317<16-75-000009>", 20130227, tmu1, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments: "Adjacent sector may ask for the aircraft to be above a certain altitude before making its turn toward FTZ or be given a pointout reference arrival traffic to be missed before turning."

38. "AAL####/KDFW.1317<18-75-000008>", 20130227, tmu2, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments: "Weather permitting the impact on other aircraft is almost nonexistent until the aircraft clears the weather northwest of LIT. The arrivals to DFW appear to be no factor either"

38. "AAL####/KDFW.1317<21-75-000010>", 20130227, tmu3, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

ATC coordination comments: "Coordination required thru arrival sector but approval should be made after the acft is east of the arrivals. ZME coordination is a must due to proximity of multiple weather areas."

38. "AAL####/KDFW.1254<15-75-000017>", 20130306, tmu1, UNABLE

Reason for unable? "other weather in another center would most likely be a problem. if approved would be affecting zme sector giving arrivals to zfw"

How could it be acceptable? N/C

38. "AAL####/KDFW.1254<17-75-000019>", 20130306, tmu2, MODIFIED

Reason for mod.? "when he clears the arrivals and gets level, we may be able to accommodate."

Airline coordination comments: "this would need to be worked out ahead of time."

ATC coordination comments:N/C

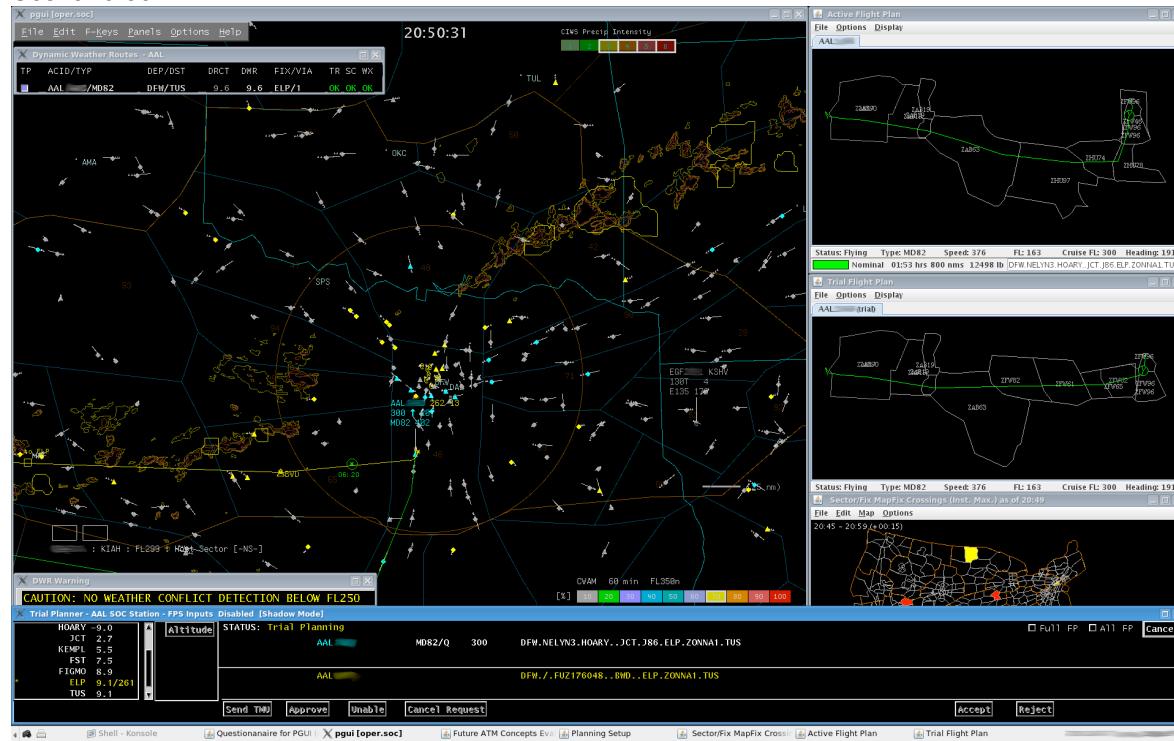
38. "AAL####/KDFW.1254<20-75-000018>", 20130306, tmu3, MODIFIED

Reason for mod.? "modified route will give aircraft time to reach altitude. approval depends on approval coordination with sector 42"

Airline coordination comments: ""

ATC coordination comments:"This route now needs to be approved with ZME and ZKC"

Scenario 39



39. "AAL####/KDFW.1260<15-75-000032>", 20130227, tmu1, MODIFIED

Reason for mod.? N/C

Airline coordination comments: N/C

ATC coordination comments:"coordination with arrival sectors first. Easy approval expected due to no arrival demand. ZHU approval is required. It appears approval would assist their traffic flow and complexity."

39. "AAL####/KDFW.1260<17-75-000031>", 20130227, tmu2, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"I would use this aircraft as a test aircraft to see what the route would do compared to the weather along the re-route. It appears that this would work and it appears that it would remove the aircraft from the Houston corridor of west bound aircraft (since he is landing ELP)"

39. "AAL####/KDFW.1260<20-75-000033>", 20130227, tmu3, ACCEPTED

Airline coordination comments: N/C

ATC coordination comments:"Traffic in adjacent sector is light and with the approval from the dept and arrival supervisor, this route should be allowed."

39. "AAL####/KDFW.1260<15-75-000021>", 20130306, tmu1, UNABLE

Reason for unable? "route puts him head on with arrivals"

How could it be acceptable? N/C

39. "AAL####/KDFW.1260<17-75-000019>", 20130306, tmu2, UNABLE

Reason for unable? N/C

How could it be acceptable? "if he were level 330 or close to it, we may be able to accommodate."

39. "AAL####/KDFW.1260<20-75-000020>", 20130306, tmu3, UNABLE

Reason for unable? N/C

How could it be acceptable? N/C