

# Collaborative Trajectory Options Program

## CTOP - FREQUENTLY ASKED QUESTIONS

9/13/2013

Here are key points to keep in mind.

- ▶ The flight operator is responsible for filing the Flight Plan. The TOS is only for planning and TMI development, not for submission of a FLIGHT PLAN.
- ▶ There is only ONE TOS per flight between a city pair. This one TOS will be used for all CTOP TMI(s) implemented that day
- ▶ The TOS can be amended as often as the Flight Operator wishes (some exceptions are below)
- ▶ Only the Flight Operator who submits a FC message can submit a TOS for that flight for that day.

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**1. SHOULD WE RESEND A TOS WITH JUST ONE ROUTE ONCE WE FILE A FLIGHT PLAN WITH ATC?**

*Answer:* This is the choice of the flight operator, if you do not want a change from the route desired, then the TOS should be amended to the single route desired. Any issued/revise CTOP will assign delay only with a single route TOS.

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**2. DO MEDEVAC FLIGHTS GET PRIORITY OVER OTHER FLIGHTS IN CTOP?**

*Answer:* MEDEVAC flights would require manual coordination for exemption in any TMI.

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**3. WHAT NEEDS TO HAPPEN IF WE WON'T MEET OUR EDCT TIME?**

*Answer:* Request an updated EDCT with the Tower or TCA.

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**4. WHAT ABOUT ANY FPLS THAT HAVE BEEN FILED?**

*Answer:* No change from today's operations

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**5. IF WE PROGRAMMATICALLY SEND A TOS, THEN FILE A ROUTE BEFORE A CTOP PROGRAM IS STARTED, WHAT HAPPENS TO THE TOS AND OUR FILED ROUTE?**

*Answer:* If the flight is captured in a CTOP program after Flight Plan filing, the flight will be awarded a TOS option that may or may not match the Flight Plan. The awarded route is based on the parameters of the TOS and CTOP capacity. If the awarded route is not the same as the Flight Plan, then the flight operator can refile or wait for the tower to issue the new awarded route.

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**6. HOW ARE ROUTES AWARDED TO THE AIRLINES AND WHAT IN THE PROCESS KICKS OFF THE PROCESS OF ROUTES BEING RE-AWARDED?**

*Answer:* TOS award takes place with the issuance or revision of a CTOP TMI, or a TOS is submitted/revise when a CTOP TMI is active. We have published video presentations on CTOP Trajectory Assignment and CTOP Substitutions, they are available at

<http://tfmlearning.faa.gov/CTOP.html>

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**7. WHEN A DIRECTIONAL FCA IS SENT, WHAT INFORMATION WILL BE PROVIDED?**

*Answer:* FCA definition will be provided through the CTOP interface.

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**8. WILL THESE GENERALLY BE EXEMPTING FLIGHTS TO/FROM A CERTAIN FIR AND COULD IT EXEMPT ROUTING ON A DIRECT COURSE OR AIRWAY, ETC? CAN YOU PROVIDE EXAMPLES?**

*Answer:* Inclusion of a flight in a FCA is no different with a CTOP than how FCAs are filtered for AFP and Reroutes today. The filtering can be accomplished with a mixture of variables.

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**9. IF YOU HAVE FEA'S WITH NO FLIGHT LIST, WILL THERE BE CONDITIONAL DIRECTION INFORMATION THAT IS TRANSMITTED AT THE SAME TIME SO WE MAY DETERMINE WHAT FLIGHTS ARE AFFECTED OR NOT AFFECTED AND SO WE CAN CALCULATE ROUTES APPROPRIATELY USING ALL THE CONSTRAINTS KNOWN?**

*Answer:* All FEA/FCAs that are part of a CTOP will be viewable through the CTOP flight list that is available through the TSD-C client.

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**10. IF THE SYSTEM GOES DOWN, WHAT ASSUMPTIONS SHOULD BE MADE? FOR EXAMPLE, IF AN AIRLINE WAS AWARDED A ROUTE, IS IT ASSUMED THAT THE AWARD IS STILL VALID? DOES THE CTOP PROGRAM STOP AND AIRLINES ARE TO FILE ROUTES LIKE THEY DO NOW, ETC? WHAT IS THE PLAN FOR ADVISING THE SYSTEM AND PROGRAMS ARE BACK ON LINE?**

*Answer:* If the TFMS goes down, then the last assigned route and EDCT should be applied. Depending on the outage, the CTOP may need to be reissued or a new program issued. Watch for advisories and telcons to indicate system status and expected TMI application.

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**11. IS THERE A TIME LIMIT BEFORE DEPARTURE WHEN CTOP SWAPS WILL NO LONGER BE CONSIDERED/ACCEPTED?**

*Answer:* Current lock out for swapping is 45 minutes prior to current Estimated Time of Departure. This is determined by TFMS taking in to consideration, P-time, EDCT, L-times.

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**12. HERE IS A SCENARIO ABOUT MULTIPLE CTOPs: IN FIGURE 1, WE FILE A TOS LAX TO JFK 6 HOURS BEFORE DEPARTURE, BASED ON A CTOP THAT WAS ISSUED. HERE IS A PICTURE OF WHAT WE FILED (THE YELLOW ROUTE WAS AWARDED). A COUPLE OF HOURS LATER, ANOTHER CTOP IS ISSUED THAT IS GIVEN A HIGHER RANK THAN THE FIRST CTOP. WHAT HAPPENS IN THIS SITUATION? IS OUR AWARDED ROUTE GRANDFATHERED INTO THE NEW CTOP WITH THE SAME EDCT TIME? WILL WE HAVE THE SAME ROUTE BUT TAKE A DELAY? ARE WE EXPECTED TO FILE A NEW TOS TAKING BOTH CTOP INTO ACCOUNT?**



Figure 1

*Answer:* In the example you have drawn, all routes lead through the second CTOP. The flight will be evaluated based on CTOP capacity and awarded a route/delay based on the Adjusted Cost calculation. If the flight is within the exempt time period (i.e. within 45 minutes from departure), then the last awarded route and EDCT will be used. If you want options around the second CTOP to be considered, an updated TOS should be submitted considering both CTOPs.

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**13. WHAT IF THE SECOND CTOP ADDED HAD A LOWER RANKING THAN THE FIRST CTOP? ARE THE ANSWERS PROVIDED ABOVE DIFFERENT?**

*Answer:* If the new CTOP is of a lower rank, the flight will remain controlled by the first CTOP and no changes to the current award/EDCT.

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**14. WHEN WE ARE AWARDED A SELECTION IN OUR TOS, ARE WE AWARDED THE ROUTE OR THE FCA ENTRY TIME?**

*Answer:* The award is both route and entry time based on the route.

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**15. HERE IS AN EXAMPLE: WE FILED A TOS WITH 5 ROUTES. OF THE 5 ROUTES, WE ARE AWARDED THE ROUTE BELOW (MY FIRST CHOICE) KBBB..FIX1..FIX2..FIX3..FIX4..FIX5..FIX6..KCCC THIS ROUTE HAD AN FCA CROSSING TIME OF 1245 AT FLIGHT LEVEL 350. THE FCA FELL BETWEEN THE WAYPOINTS OF FIX2 AND FIX 3. THE DISPATCHER NEEDS TO CHANGE THE ROUTE DUE TO WEATHER CONDITIONS AT THE DESTINATION. HE FILES A NEW TOS WITH 5 ROUTES. HE CHANGES THE ROUTE HE WAS AWARDED BY ADJUSTING THE ROUTING AFTER THE FCA CROSSING AND USED THE SAME INITIAL FLIGHT LEVEL AND SPEED AS THE PREVIOUS ROUTE WHICH CALCULATED THE SAME FCA CROSSING OF 1245 AT FLIGHT LEVEL 350. KBBB..FIX1..FIX2..FIX3..FIX7..FIX8..FIX9..KCCC WILL THE FACT THAT WE FILED A NEW TOS MEAN THAT WE POTENTIALLY GIVE UP OUR ORIGINAL SELECTION BECAUSE WE FILED A NEW ROUTE EVEN THOUGH THE FCA CROSSING DID NOT CHANGE?**

*Answer:* The automation has been designed so that if you update your TOS and the new TOS has the awarded route as one of the options, then you will receive an assignment no worse than the current route.

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**16. WHAT IF THE ROUTING CHANGED COMPLETELY BUT THE FCA CROSSING TIME/FLIGHT LEVEL WAS STILL THE SAME. WOULD THIS JUST BE CONSIDERED A SWAP AND THUS WE ARE AWARDED OUR FIRST CHOICE AGAIN?**

*Answer:* This would not be a swap. If the route awarded/assigned is not part of the TOS, the automation will evaluate all options and select the least cost from the TOS options based on demand/capacity at the time.

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**17. PAGE 5 OF THE ICD V3.1 STATES THAT A FLIGHT PLAN FILED MUST "CONFORM" TO THE CTOP ASSIGNED ROUTE. WHAT DOES "CONFORM" MEAN?**

*Answer:* Conformance is between the awarded/assigned route and the filed route. TFMS will insert a protected segment to indicate the TMI route assignment to the controllers. By default the protected segment of a CTOP assigned route will start at the last fix of a SID to the first fix of a STAR.

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**18. IF NOT, HOW ARE AIRLINES SUPPOSED TO MANAGE ROUTING CHANGES THAT HAVE NO BEARING ON THE FCA CROSSING TIME?**

*Answer:* No change in how you manage routes today.

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**19. IS THERE AN ADVANTAGE TO FILING A TOS EARLY? FOR EXAMPLE, 4 AIRLINES EACH HAVE A FLIGHT THAT LEAVES WITHIN 10 MINUTES OF EACH OTHER FROM THE SAME AIRPORT ARRIVING AT THE SAME AIRPORT. AIRLINE 1 HAS FILED A TOS 23 HOURS AHEAD OF DEPARTURE TIME, AIRLINE 2 FILED AN EARLY INTENT 6 HOURS AHEAD OF DEPARTURE TIME, AIRLINE 3 FILED A TOS 4 HOURS BEFORE DEPARTURE, AND AIRLINE 4 HAS A FLIGHT PLAN FILED 3 HOURS BEFORE DEPARTURE. A CTOP IS ISSUED 2 HOURS BEFORE DEPARTURE. IN THIS SCENARIO, IS AIRLINE 1 GIVEN AN ADVANTAGE BECAUSE IT HAD A TOS FILED 23 HOURS AHEAD OF TIME?**

*Answer:* In this scenario there is no advantage to the airlines/flight operator. As a practice, delay programs are issued for several hours after the start time, i.e. control period is from 1800-0200Z. Under these conditions, the flights that are crossing the FCA(s) 2100z and later that have a TOS will be distributed based on route preference. Flights that submit a TOS after the program is issued, even with an entry time based on historical, will be reassessed for route and delay assignment at TOS submission.

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**20. WHAT IMPLICATIONS ARE THERE AROUND THE CTOP RANKING?**

*Answer:* Ranking determines which CTOP has priority over another CTOP. A flight can only be controlled by one CTOP or AFP at a time.

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**21. SHOULD WE BE CONCERNED ABOUT THE RANKING?**

*Answer:* Only to determine which one has control of a flight if included in more than one CTOP.

**22. DOES RANKING HAVE A POTENTIAL TO AFFECT THE ROUTING THAT WE GET?**

*Answer:* Yes, in that a new CTOP could take control of a flight out of an existing CTOP if the new CTOP has a higher ranking.

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**23. HOW IS THE RANKING DETERMINED?**

*Answer:* This is determined by the specialist at ATCSCC. This will be done in coordination with the TMIs that are in place or planned.

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**24. CAN THE FCAs BE DIRECTIONAL OR NOT IN PLAY WHEN FLYING TO/FROM CERTAIN REGIONS?**

*Answer:* The FCA can be single or bi-directional in the flow of traffic; they could be a polygon and capture flights from all directions. This is determined by the design of the TMI to manage the constraint.

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### **25. HOW WILL THAT (QUESTION 24) BE CONVEYED?**

*Answer:* This will be communicated as part of the coordination for the CTOP TMI and through the FCA description that is found through the FCA information data.

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### **26. HOW SOON CAN A TOS BE FILED?**

*Answer:* Current system limitation is 23 hours prior. The TOS can be filed at any time after that and earlier is better.

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### **27. IS THERE A BEST PRACTICE WHEN A TOS SHOULD BE FILED?**

*Answer:* The recommendation is to make the TOS filing part of the daily download or in the first Flight Create message. If a CTOP TMI is required, having the TOS information available will provide improved modeling on NAS impact and improve the design of the TMI.

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### **28. IF A CTOP FCA IS CANCELLED, WILL WE RECEIVE A DELETE MESSAGE?**

*Answer:* Yes, you will receive a message for a cancelation similar to the cancelation of a delay program today.

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### **29. IF THE FCA IS CHANGED BACK TO ELIGIBLE, ARE THERE ANY ASSUMPTIONS TO BE MADE, SUCH AS THE SAME FLIGHTS ARE CONSIDERED IN THE CTOP, THE TIMES AND FLIGHT LEVELS ARE THE SAME, ETC? OR WILL WE RECEIVE A COMPLETE NEW SET OF DATA? PAGE 13 OF THE ICD V 3.0**

*Answer:* Information on flight inclusion is only for a CTOP based on the included FCAs. The data is only sent during a proposed or actual CTOP TMI based on the FCA(s). If a FCA is removed from a CTOP, then later added back to the CTOP, new data will be sent.

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### **30. PAGE 15 OF THE ICD V3.0 TALKS OF A CONVENTIONAL REQUIRED REROUTE. WHAT IS THAT?**

*Answer:* This is an ATCSCC issued reroute by advisory, i.e. Wind routes to JFK, CAN1 East Playbook route, VUZ Playbook route.

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### **31. HOW IS THE HISTORICAL ROUTE DETERMINED WHEN NO FLIGHT PLAN, TOS, OR EARLY INTENT IS FILED?**

*Answer:* Early intent is based on the most flown route between a city pair over the last 14 days. This is accomplished in the current TFMS to provide FEA/FCA, Monitor Alert, and NAS Monitor demand.

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**32. PAGE 17 OF THE ICD V3.0 STATES THAT A CTOP SHOULD BE CONSIDERED ACTIVE UNTIL ALL THE CONTROLLED FLIGHTS HAVE LANDED. DOES THIS REQUIRE AIRLINES TO KEEP TRACK OF ALL THE FLIGHTS IN THE CTOP TO DETERMINE WHEN THEY HAVE ALL LANDED? WILL THE FAA SEND OUT A CANCEL MESSAGE TO CANCEL ALL CTOP?**

*Answer:* The TFMS will track all flights for a CTOP until they have all landed. There is no automatic cancelation message sent by TFMS, this is only sent by the TMC running the program and is a manual entry.

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**33. PAGE 17 OF THE ICD V3.0 STATES THAT THE TMI REVISIONS ONLY INCLUDE INFORMATION ABOUT FLIGHTS THAT HAVE CHANGED. SO IF FLIGHTS ARE REMOVED FROM THE PROGRAM, THERE IS A SPECIFIC ENTRY FOR THIS?**

*Answer:* This would be the DROP OUT message.

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**34. CAN AN FCA/FEA ONLY BELONG TO ONE CTOP?**

*Answer:* Yes.

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**35. CAN FCA/FEAS MOVE FROM ONE CTOP TO ANOTHER ONE?**

*Answer:* Yes, technically it could, procedurally it would take several steps and program revisions to accomplish this and would be discouraged as flights would transition from controlled to uncontrolled, back to controlled. Not a good way to manage a program.

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**36. WILL THE X AND Y MINUTES BEFORE AND AFTER A SLOT ENTRY TIME BE PUBLISHED? PAGE 20 ICD V3.0.**

*Answer:* There are several configurable time parameters in TFMS. We are developing a document that will have the current parameters; however, any of these could be changed by operational needs by direction of the National Operations Manager.

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**37. PAGE 4 OF ICD VER 3.1 SAYS THE FLIGHT OPERATOR SUBMITS TOSs FOR ITS LONG-HAUL FLIGHTS. WHAT IS YOUR DEFINITION OF A LONG-HAUL FLIGHT AND SHOULD WE ONLY SEND TOSs FOR THOSE FLIGHTS UNDER ALL CTOP PROGRAMS OR ONLY FOR FLIGHTS IN THE LIST OR FOR BOTH?**

*Answer:* A TOS should be submitted for all flights as early as possible. If there is not a CTOP TMI, then least cost route option will be used as an early intent message for TFMS demand modeling, replacing the historical route. A long-haul flight does not have a hard definition; it is operationally referred to as a flight that typically has more than a 3 hour ETE, or typically longer than 1000 miles between city pairs. The reference to a long-haul flight has no application in the automation; it is referred to during discussions on the planning telcons to help determine when a TMI needs to be implemented to capture the appropriate flights.

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**38. IN A SLIDE PRESENTATION IT STATES THE MOST RECENT CTOP PROGRAM WILL CONTROL. HOW ARE WE EXPECTED TO PLAN FOR THIS? IF A CTOP IS IN PLACE IN THE GREAT PLAINS AND ANOTHER IS THEN APPLIED TO THE OHIO VALLEY DO WE NEED TO SEND NEW TOSs FOR THE OHIO VALLEY CTOP AND IGNORE THE ORIGINAL CTOP AWARDS IN THE GREAT PLAINS?**

*Answer:* You can only be included in one CTOP TMI, even if you have transitioned past the controlling CTOP location.

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**39. HOW IS THE START TIME AND END TIME OF THE CTOP DEFINED?**

*Answer:* ADVZY will show earliest controlled time from all FCAs in the CTOP.

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**40. WHERE CAN I FIND THE SCOPE OF A CTOP?**

*Answer:* The Scope is defined by the filtering of the FCA(s) in the CTOP.

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**41. IS THERE GOING TO BE SLOT CREDIT SUBSTITUTION (SCS) IN CTOP?**

*Answer:* SCS does not exist in CTOP.

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**42. HOW ARE POP-UP FLIGHTS HANDLED IN CTOP?**

*Answer:* Pop-ups are flights that enter the constraint after the issuance of the CTOP.

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**43. WHAT ROUTE IS USED TO DETERMINE IF A FLIGHT IS PART OF A CTOP?**

*Answer:* Below is the TFMS demand modeling order for inclusion in a CTOP and route conformance monitoring (highest to lowest application order):

1. Filed flight plan (used only if a TOS is not supplied)
2. CTOP assigned route (route conformance monitoring)
3. Early Intent route
4. CTOP TOS least-cost route
5. Early Intent – less than 4 hours from P-time (wind intent)
6. Historical reroute

Reroute Monitor Conformance is done on all assigned routes (CTOP and Required) as defined by the protected segment of an assigned route. The ATCSCC will provide direction for route assignment when there are conflicting TMIs.

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**44. DOES THE CTOP FEED REPLACE THE CURRENT FCA/FEA FEED WE CURRENTLY USE OR IS IT IN ADDITION TO?**

*Answer:* No, it is an additional feed only on FCA associated with CTOP

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**45. WILL THERE BE ANY DUPLICATE INFORMATION ON THESE FEEDS OR DOES THE CTOP FEED ONLY FOCUS ON CTOP FEA/FCA?**

*Answer:* Possibly; the CTOP feed will focus only on FEA/FCA data that is part of a CTOP TMI.

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**46. HOW WILL THE FOS SEND A SHUTDOWN MESSAGE TO THE TFMS TO GRACEFULLY SHUT DOWN THE CONNECTION?**

*Answer:* The shutdown of a connection is your process, there is no message required to be sent into TFMS prior to shutting down a connection. When the socket connection is started back up, it will require initialization message as a new session.

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**47. I SUBMIT A TOS WITH 5 ROUTES AND I AM AWARDED MY FIRST CHOICE. THE FCA/FEA CHANGES AND I CHOOSE TO RESUBMIT A TOS WITH MY NUMBER 1 ROUTE (THAT WAS AWARDED TO ME) AND 4 NEW CHOICES FOR ROUTES THAT ARE PRODUCED USING THE NEW FCA/FEA INFORMATION. WILL I STILL BE AWARDED MY #1 ROUTE? IN WHAT CASES WILL I OR WON'T I? THE REAL QUESTION HERE IS THAT IF I RESUBMIT A TOS WILL THAT CAUSE ME TO GET A WORSE ROUTE THAN WHAT I WAS ORIGINALLY AWARDED?**

*Answer:* As long as your replacement TOS has the awarded route assignment included, you will not be awarded a route any worse than current assignment. You could receive a better route based on the Adjusted Cost calculation.

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**48. IF I HAVE A SHIP CHANGE, DO I NEED TO REFILE A TOS? WHAT ABOUT A FLEET CHANGE?**

*Answer:* Assuming that a ship change is a call sign change, then a FM message is required.

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**49. HOW DO FLIGHTS GET INTO THE FLIGHT LIST THAT IS PART OF THE FCA/FEA? HOW DOES TIME PLAY INTO WHAT FLIGHTS ARE ADDED INTO A FLIGHT LIST? FOR EXAMPLE, IF I HISTORICALLY FILE A ROUTE THAT TRAVERSES A PROPOSED FCA REGION BUT IT TRAVERSES IT 30 MINUTES PRIOR TO THE PROPOSED FCA EFFECTIVE TIME, WOULD THIS ROUTE BE PLACED IN THE LIST?**

*Answer:* Inclusion in a FCA is defined through the filters by the specialist creating the FCA, this includes a start and end time. If the flights historical trajectory will intersect with the FCA prior to the start time of the FCA, then the flight is not included in the flight list, FCA demand, or CTOP.

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**50. IS THERE ANY DIFFERENCE BETWEEN THE FEA/FCA FLIGHT LIST AND THE CTOP FLIGHT LIST OR IS THE CTOP FLIGHT LIST JUST AN ACCUMULATION OF THE FCA/FEA FLIGHT LIST THAT ARE IN THAT CTOP?**

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*Answer:* The base flight list is defined by the FCA for CTOP. The flights with assigned routes/EDCT are defined by the parameters of the CTOP program which will be a subset of the FCA.

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**51. AS YOU MAY KNOW, WE OFTEN HANDLE THE INTERNATIONAL PORTION OF A DAY'S FLIGHT, WHILE ANOTHER FPSP MAY HANDLE THE DOMESTIC LEG. SOMETIMES WE WILL CREATE AN FC MESSAGE FOR THE DOMESTIC LEG, EVEN THOUGH WE ARE NOT COMPUTING THE FLIGHT PLAN, THE OTHER PROVIDER IS. IN THE CTOP ICD, IT SAYS YOU MUST FIRST CREATE AN FC BEFORE SENDING IN A TOS, OTHERWISE YOUR TOS WILL BE REJECTED. SO THE QUESTION IS, IF I CREATE AN FC, WILL THE OTHER PROVIDER BE ABLE TO SEND IN A TOS?**

*Answer:* No, only the creator of the FC message will have rights to make modifications, submit TOS, or sub the flight.

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**52. YOUR GROUP OFTEN ENCOURAGES US TO FILE EARLY, ESPECIALLY IF GOING TO AN AIRPORT WITH A POSSIBLE PROGRAM. WITH CTOP, WE PLAN TO SEND IN OUR TOS AT 8 HOURS BEFORE ETD. WE PLAN TO TELL THE FAA TO STOP SENDING REWARD MESSAGES AT 3 HOURS BEFORE ETD. SO MY PLAN WILL NOT BE FILED UNTIL ETD -3. WHAT ABOUT THOSE IMPLICATIONS?**

*Answer:* This may limit the opportunities for improvement of your route with any program revisions. The recommended method for locking down your TOS is to update/resubmit a single line TOS with the awarded route. If there is no CTOP and you have a TOS with multiple trajectories, it is recommended to update the TOS to the desired route to prevent a new program from assigning a route other than the flight planned route. If you have only one route, any program issuance or revision will only assign delay to the flight to meet the program rate.

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**53. WILL MY 'FOS' USE THE SAME VPN THAT I SEND MY CURRENT FC MESSAGES?**

*Answer:* This does not require a new VPN connection; it will require a new IP address connection.

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**55. WITH FLEXIBLE SWAPPING, WILL TFMS CONSIDER THE TRAJECTORY OPTIONS THAT EITHER USE THE OTHER FLIGHT'S SLOT OR ROUTE OUT OF ALL CTOP FCAs?**

*Answer:* In a flexible substitution, a flight may either:

- Use the slot it is being subbed into,
- Use a route that spatially avoids all the FCAs of the CTOP and will therefore be allowed to depart at its undelayed departure time (I'm guessing this is what your think of as a route out),
- Use a route and departure time that will result in the flight crossing its Primary FCA during a non-controlled time period.

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The option chosen is whichever option results in the lowest total adjusted cost (TOS option RTC plus TOS option required delay). Two examples in which the third option is selected are as follows:

- 1) Using a particular TOS option route and the flight's undelayed departure time the flight crosses its primary FCA outside the controlled time period.
- 2) Using a particular TOS option route and a delayed departure time so that the flight crosses its primary FCA after the end of the controlled time period (and this option is also the lowest adjusted cost).

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### **56. REGARDING QUESTION 55, WILL IT ALSO TAKE ADVANTAGE OF OTHER AVAILABLE SLOTS DUE TO CANCELLATIONS OR A CHANGE IN CAPACITY?**

*Answer:* No, slots that were never allocated or slots that become available since the last full allocation due to flight cancelations, for example, are not made available to a flight being subbed. Slots that become available due to an increase in capacity are only used in the context of a full allocation event (i.e. the TMC must perform an action that will make those slots be used through performing a full allocation).

If a Flight Operator wants to try for an improved departure time or route assignment through other available slots, they would submit a new TOS (could be the same TOS options) to prompt an active CTOP trajectory allocation. An active CTOP trajectory assignment will evaluate any unused slots and the slot the flight currently owns.

*NOTE: After the active CTOP trajectory assignment, any previously owned slot is no longer owned by this flight. It receives a new slot assignment (or either an actual slot or a NOSLOT assignment). It is therefore a wise strategy to always include the flight's existing assigned trajectory in any newly submitted TOS for a flight in an active CTOP so that the flight does no worse than the adjusted cost of its current assignment.*

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### **57. IF I SWAP TWO FLIGHTS AND A FULL ALLOCATION OCCURS, HOW, IF AT ALL, IS MY SWAP PRESERVED?**

*Answer:* Through the exchange of the flights' IATs as part of the substitution processing. During the subsequent full allocations, the flights will have the opposite IAT order. This does not ensure that the flights get the same slots just that each flight is chosen in the relative allocation order that the flight whose slot they received would have had without the substitution event.

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### **58. REGARDING QUESTION 57, HOW WOULD THAT WORK IF ONE OF THE FLIGHTS WAS CANCELLED OR ROUTED OUT THROUGH A FLEXIBLE SWAP?**

*Answer:* IATs are frozen at the time that a flight is first included in an active CTOP. So, once two flights exchange IATs they are fixed until either:

- The flight is no longer part of the CTOP flight set (i.e. a dropout) or

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- It exchanges its IAT in another substitution event.

Since airlines currently have incentive to not lose valuable slots, the associated desirable IATs should be following their subbing actions. For example, if they are going to cancel a flight, they will perform all the subbing needed to transfer the maximum possible delay from other flights to that flight and before they cancel it. In the process of performing those substitutions, the least desirable IAT should move to the canceled flight.

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### **59. AGAIN REGARDING QUESTIONS 57 AND 58, HOW WOULD THAT WORK IF A TOS IS UPDATED FOR ONE OF THE FLIGHTS AND CHANGES THE IAT FOR THAT FLIGHT?**

*Answer:* IATs for flights within CTOPs are not updated due to new TOS data unless the new data makes the flight a pop-up in that CTOP. An airline could "delete" its IAT by removing the flight from the CTOP with revised flight/TOS data and then re-enter the CTOP as a pop-up with new flight/TOS data. But that strategy has potential penalties of losing a currently assigned slot and the incursion of the IAT pop-up penalty if the action occurs too close to the flight's departure time.

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### **60. WE HAVE SPECIFIED THAT WE ONLY SEND THE ROUTE STRING WITHOUT SPEED/FL GROUPS. IN THE PDF DOCUMENT (CTOP ICD v3.1\_NO\_TC) HOWEVER, THE FOLLOWING EXAMPLE IS GIVEN: "GRABE2 OKM J181 EOS/N0478F350 J181 BAILI BENKY1" SO THAT EXAMPLE CONTAINS SPEED AND FL, ALTHOUGH NOT THE ONES AT THE FRONT, AS THE ROUTE WE PRINT ON THE FPL ...SO SHALL WE REMOVE SPEED AND FL GROUPS OR ARE THEY IGNORED BY TFMS?**

*Answer:* We accept the messages with the speed/altitude, but ignore the values.

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### **61. WE HAVE FURTHERMORE SPECIFIED TO STRIP OFF DCT TOKENS. CAN YOU CONFIRM THAT IN CASE OF A DCT BETWEEN TWO WAYPOINTS WE JUST PROVIDE THE TWO WAYPOINTS IN THE ROUTE STRING? E.G.: "...OKM EOS J181 BAILI BENKY1..."**

*Answer:* Please do not strip DCT; it is required between two waypoints.

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### **62. THE PDF DOCUMENT ALSO CONTAINS THE FOLLOWING, RATHER UNINFORMATIVE, FOOTNOTE: "A ROUTE MUST BE "PARSE-ABLE" BY TFMS; THAT IS, TFMS MUST BE ABLE TO PERFORM ROUTE CONVERSION TO DERIVE WAYPOINTS AND OTHER DATA FROM THE ROUTE TEXT." WHAT'S THE ENVISIONED PROCESS IN CASE A ROUTE IS NOT PARSE-ABLE BY TFMS?**

*Answer:* If a trajectory is not able to be processed by TFMS a 522 - "ROUTE CANNOT BE PARSED BY TFMS" error will be returned for each trajectory that has an error with reasons why the route could not be parsed, such as 'Element XYZ is not adapted'

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**63. HOW DOES TFMS HANDLE AIRAC CYCLE CHANGES?**

*Answer:* TFMS cuts over to adaptation every 56 days. The new adaptation is used to process the route.

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**64. THE MESSAGE FORMAT DESCRIBES 6 X 4 BYTE INTEGERS AT THE BEGINNING OF THE MESSAGE. HOW ARE THE 4BYTE INTEGERS CODED? E.G. THE HEX VALUE 12345678; SHOULD IT BE SENT AS 12345678, 56781234, 34127856 OR 78563412?**

*Answer:* The header is a fixed-size (24-byte) binary header consisting of six, four-byte integers. We use the standard network byte order as defined in the Internet Protocol (IP) specific for packet headers (big endian).

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**65. THE MESSAGE FORMAT CONTAINS A XML MESSAGE, WHERE THE XML PART STARTS WITH <XML... BUT A WELL FORMED XML MESSAGE SHOULD START WITH <?XML... IS THIS JUST A TYPO IN THE SPECIFICATION, OR DOES YOUR SYSTEM SENDS/EXPECTS INVALID XML MESSAGES?**

*Answer:* Yes this is a typo and will be corrected in an updated ICD.

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**66. AND JUST VERIFICATION IF I UNDERSTAND THE INTERACTION BETWEEN TFMS AND CDM. A VALID FLIGHT MUST EXIST BEFORE A TOS MESSAGE CAN BE SENT. THIS CAN BE A NORMAL FILED FLIGHT OR A CDM EI MESSAGE, CORRECT?**

*Answer:* You are correct that the flight must exist in TFMS before a TOS for the flight will be accepted. In addition to the user submitted messages you mentioned above, TFMS will also create flight objects for scheduled flights based on OAG schedule data and historically observed routing for regularly flown flights. TFMS creates flight objects from OAG data 24 hours prior to the flight OAG scheduled departure time.

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**67. IF A TOS MESSAGE IS SENT AND THE TFMS SELECTS A VARIANT WHERE THE ROUTE IS DIFFERENT, IT WILL UPDATE THE FILED FLIGHT PLAN AND SEND A NOTIFICATION. THERE IS NO NEED TO FILE A FLIGHT MODIFICATION, CORRECT?**

*Answer:* If a flight's CTOP trajectory assignment occurs after a ERAM flight plan has been received and the flight is no closer than a specified amount of time to its the earliest P-time on any of the flights plan associated with the flight, then TFMS will send an amendment request to ERAM (this assumes ERAM & TFMS have been configured to send and receive amendment requests) and TFMS will send a CTOP Flight Plan Amendment [msg number 343] to the FOS to notify them that an ERAM amendment request has been sent. So, if the FOS client (i.e. airline)

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receives a CTOP Flight Plan Amendment and it is acceptable, then they don't need to send a flight plan to ERAM.

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**68. AT THE MOMENT OUR SOFTWARE CAN SEND CDM EI MESSAGES. IS THE CDM EI THE SAME THAN CDM FC/FM? ARE THEY USING THE SAME TRANSPORT MECHANISM?**

*Answer:* No. EIs provide preliminary flight plan information including the route, alt & speed. FCs can create flights in TFMS with rudimentary arrival and departure information but no route information. FMs are used to modify the simple data sent in by an FC. Furthermore, EIs are like TOSs, they may only be applied to flights that already exist in TFMS.

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**69. ARE THEY USING THE SAME TRANSPORT MECHANISM?**

*Answer:* Yes. FCs/FMs/EIs are sent over the previously existing Flight Data CDM session, not the new CTOP FOS session.

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**70. IF YOU HAVE A ICD DOCUMENT ABOUT CDM SYSTEM, PLEASE CAN YOU SENT IT TO ME?**

*Answer:* All the CDM and CTOP ICDs are online at this FAA website ==>  
<http://cdm.fly.faa.gov/de.html> (see ArincMQ ICD for CDM message).

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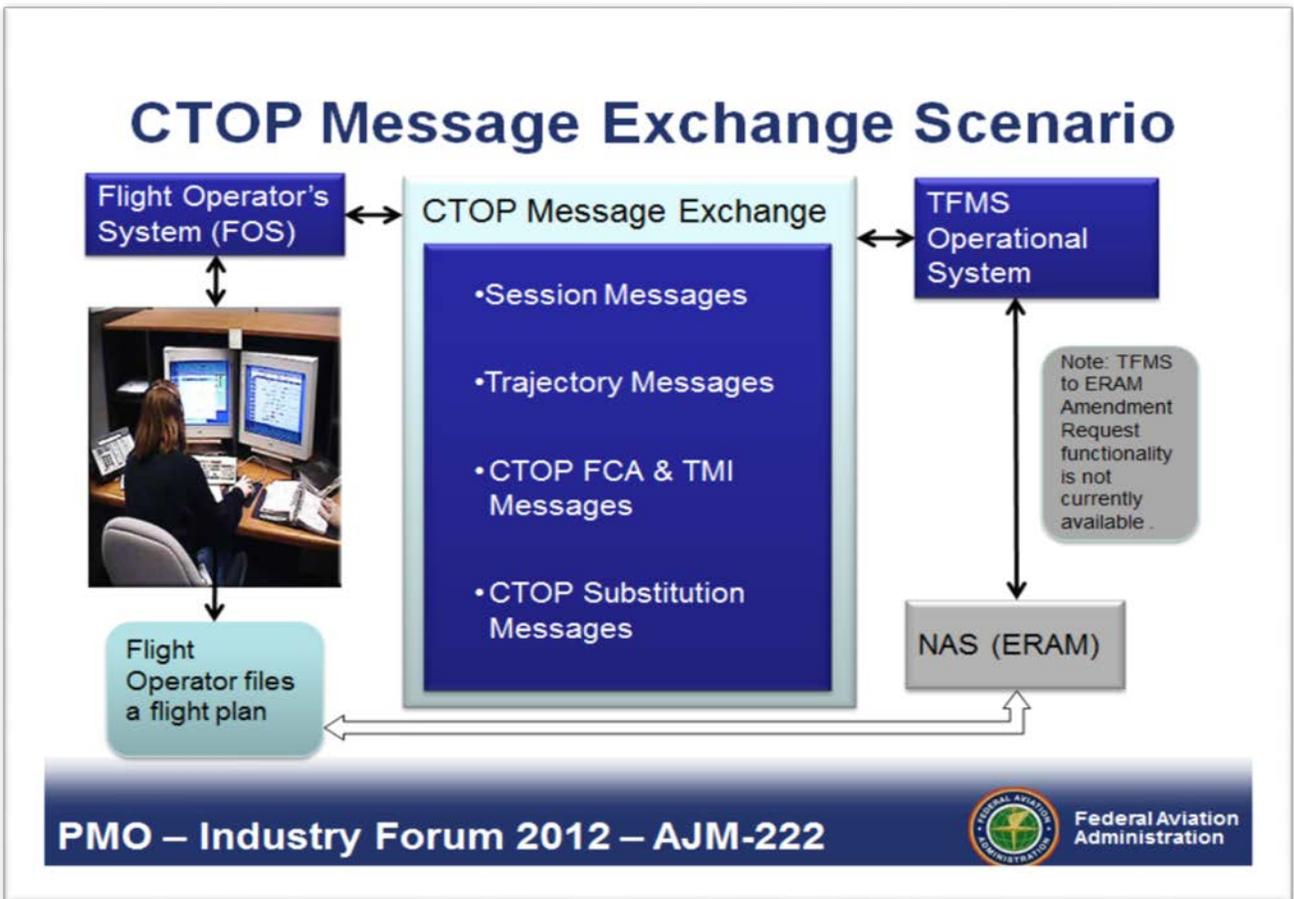
**71. DO YOU HAVE DOCUMENTATION/CHART WHICH SHOW HOW FOS/CTOP/CDM/FAA ATC EXCHANGE MESSAGES REGARDING CTOP?**

*Answer:* See diagram:

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### 72. WILL AUTOMATIC REVISION ALWAYS BE ENABLED FOR ANY ACTIVE CTOP? WHAT DETERMINES IF AUTOMATIC REVISION WILL BE ENABLED OR NOT?

*Answer:* No, This will be determined by the specialist managing the CTOP TMI and will be part of the collaborative discussion during the conference call.

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### 73. WHAT IS THE CURRENT THINKING ON THE PARAMETERS THAT TRIGGER AUTO REVISION OF AN ACTIVE CTOP?

*Answer:* The Auto Revision rates would be based on the objectives of the CTOP TMI and each FCA that is part of the CTOP. This would be discussed as part of the collaborative discussion conference call. There is not a preconceived Auto Revision rate for any CTOP application.

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### 74. FOR A FLIGHT IN AN ACTIVE CTOP WITH TOS BEING SUBMITTED, WHAT HAPPENS IF THE FLIGHT OPERATOR FILES A FLIGHT PLAN THAT DOESN'T CONFORM WITH THE CTOP ASSIGNED ROUTE?

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*Answer:* The TMC at the departure ARTCC will amend the filed flight plan to the assigned route, making the flight conformant. This could happen inside of 45 minutes from departure with coordination between ARTCC and Tower. Flight will receive a FRC from the Tower.

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**75. FOR A FLIGHT IN AN ACTIVE CTOP WITH FLIGHT PLAN BEING FILED, WHAT HAPPENS IF THE FLIGHT OPERATOR UPDATES THE TOS FOR THE FLIGHT? FURTHER, WHAT HAPPENS IF THE NEW TOS DOESN'T CONTAIN THE FLIGHT PLAN ROUTE?**

*Answer:* If the flight's TOS is updated, the TOS will be assessed based on available capacity at the current time. The flight could be assigned reduction in delay or additional delay, longer or shorter flying distance based on available capacity. If the new TOS contains the awarded route, the flight will not be impacted any more than the current assigned route. If the TOS does not contain the Flight Planned route, the TMC at the departure ARTCC will amend the flight plan to the current assigned route, or you can amend the flight plan if more than 45 minutes from departure.

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**76. IF WE HAVE A ROUTE THAT GOES THROUGH THE HIGHEST RANKED CTOP, ANOTHER ROUTE AVOIDS THE HIGHEST RANKED CTOP BUT GOES THROUGH A LOWER RANKING CTOP. WE HAVE ANOTHER ROUTE THAT AVOIDS BOTH CTOPS. IF I AM AWARDED THE 2ND ROUTE, AM I STILL BEING CONTROLLED BY THE HIGHER RANKING CTOP? IS THAT CONSIDERED A NO SLOT FOR THE HIGHER RANKING CTOP?**

*Answer:* Yes. Exempt in the lower ranked CTOP.

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**77. IF THE CAPACITY CHANGED (MOVED UP TO 100%) THROUGH THE HIGHEST RANKING CTOP, WOULD YOU JUST RERUN THAT PROGRAM OR WOULD YOU CANCEL THE HIGHEST RANKING CTOP AND THEN WE ARE CONTROLLED BY ANOTHER?**

*Answer:* It depends on the situation. If CTOP is still needed, we would keep our same route and control is still by the CTOP. If the CTOP is cancelled, then the flight is controlled by the next one. Controls would move over to the new CTOP and swapping occurs within the new CTOP. The award is the same route.

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**78. HOW MUCH TESTING HAS BEEN GOING ON?**

*Answer:* Couple of other operators asking questions. One flight operator is conducting tests.

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**79. WILL A ROUTE OUT OPTION ALWAYS BE PROVIDED FOR A CTOP ADVISORY? CAN WE GET THE ROUTE OUT OPTION IN THE XML STRING?**

*Answer:* Not all CTOPs will have route out options; will provide in the advisory form; XML? Route guidance may be very vague.

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### 80. SINGLE TOS OPTION...TALK ABOUT BEST PRACTICE AND HOW IS THIS BENEFICIAL WHEN WE ARE EXPOSING OURSELVES TO OTHER CTOPS.

*Answer:* Best to provide Least Cost option through the controlling CTOP to maintain control by that CTOP.

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### 81. PLEASE CLARIFY THE PARTIAL TOS REJECTION.

*Answer:*

```
*****
Entered TOS message
*****
<FOS_INPUT>
  <TOS_MESSAGE>
    <UNIQUE_FLT_ID_DATA>
      <ACID>DAL100</ACID>
      <ORIG>EWR</ORIG>
      <DEST>ORD</DEST>
      <IGTD>201309101800</IGTD>
    </UNIQUE_FLT_ID_DATA>
    <TOS_SEQ_NO>1</TOS_SEQ_NO>
    <TYPE>B737</TYPE>
    <TRAJ_OPTION_LIST>
      <TRAJ_OPTION>
        <TRAJ_INDEX>1</TRAJ_INDEX>
        <REL_TRAJ_COST>10</REL_TRAJ_COST>
        <ROUTE>DCT PHL DCT</ROUTE>
        <ALT>F330</ALT>
        <SPEED>N0450</SPEED>
      </TRAJ_OPTION>
      <TRAJ_OPTION>
        <TRAJ_INDEX>2</TRAJ_INDEX>
        <REL_TRAJ_COST>20</REL_TRAJ_COST>
        <ROUTE>DCT XYZWG DCT</ROUTE>
        <ALT>F330</ALT>
        <SPEED>N0450</SPEED>
      </TRAJ_OPTION>
    </TRAJ_OPTION_LIST>
  </TOS_MESSAGE>
</FOS_INPUT>
*****
Partial Accept Reply
*****
<FOS_OUTPUT>
  <TOS_ERROR_REPLY>
    <UNIQUE_FLT_ID_DATA>
      <ACID>DAL100</ACID>
```

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```
<ORIG>EWR</ORIG>
<DEST>ORD</DEST>
<IGTD>201309101800</IGTD>
</UNIQUE_FLT_ID_DATA>
<TOS_SEQ_NO>1</TOS_SEQ_NO>
<RESULT>PARTIAL_ACCEPT</RESULT>
<TRAJ_OPTION_LIST>
  <TRAJ_OPTION>
    <TRAJ_INDEX>2</TRAJ_INDEX>
    <ERROR_LIST>
      <ERROR>
        <ERROR_CODE>522</ERROR_CODE>
        <ERROR_TEXT>Element XYZWG is not adapted.</ERROR_TEXT>
      </ERROR>
    </ERROR_LIST>
  </TRAJ_OPTION>
</TRAJ_OPTION_LIST>
</TOS_ERROR_REPLY>
</FOS_OUTPUT>
```

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### **82. IF WE SEND NEW FLIGHT LEGS TO TFMS, WILL WE GET POPUPS FOR THE NEW LEGS?**

*Answer:* Must do a flight modify, not a flight create. If we do a flight modification, it is not considered a popup.

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### **83. IF I AM A MEDEVAC FLIGHT OR OTHER FLIGHT PLAN REMARK EXEMPT...HOW DO I CONVEY THIS AT ON A TOS.**

*Answer:* It's a manual coordination process today and will remain so in the future.

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