

Flow Evaluation Team

-FET-



CDM

Collaborative
Decision Making

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THE OSU

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American Airlines

JetBlue

JetBlue

FAA/NATCA

FAA/AJO



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Overview of FET Tasking's

- Task 80--Trajectory Options Set (TOS) Development
- Task 85--AFP Capacity and Strategies
- Task 92--Surface CDM Departure Metering and NAS Scheduling (joint)
- Task 96--CDR Reduction
- Task 98--Route Planning, Assessment and Coordination (IARC)
- Task 99--Route Strategies to Support NASA
- Task 100--Real-Time Coordination, Collaboration, and Info Exchange



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FET TASKING – 80/ - Trajectory Options Set (TOS) Development

Tasking

Project Description and Scope of Work:

- This tasking will identify the relevant classes of scenarios and potential benefits to flight operators in developing TOS capabilities.
- FET will identify shortfalls in current automation and processes for both industry and the FAA.
- The group will explore opportunities utilizing PDRR/ABRR to support TOS usage.



FET TASKING – 80/ - Trajectory Options Set (TOS) Development

Tasking Continued:

There are a number of previously submitted recommendations related to PDRR enhancements. Program Management Office (PMO) and vendors are determining a timeline for future implementation, including:

- Providing an indicator within the departure viewer that will help identify flights that have submitted a TOS.
- Incorporate a search/find function in the departure viewer to allow flights to be queried efficiently.
- Allow departure viewer to coordinate with TFDM to show the departure queues on a surface map.
- Purge TOS routes in the RAD once a flight departs.
- Increase the number of alternate TOS's allowed beyond the current limit of 5.
- Allow TOS to be accessible in SWIM.
- Use of TOS to expedite implementation of escape routes using PDRR.
- Use of TOS to coordinate identification of pathfinders using PDRR.



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FET TASKING – 80/ - Trajectory Options Set (TOS) Development

Tasking Continued:

With ABRR, the team submitted the following recommendations:

- Reroutes to increase flight efficiency due to a constraint dissipating or failing to develop.
- Use of ABRR with TOSs when playbook routing has been cancelled. This can also be used as an alternate when efficient routing becomes available.
- In future meetings the team will solely focus on the ABRR component to explore other areas and opportunities.

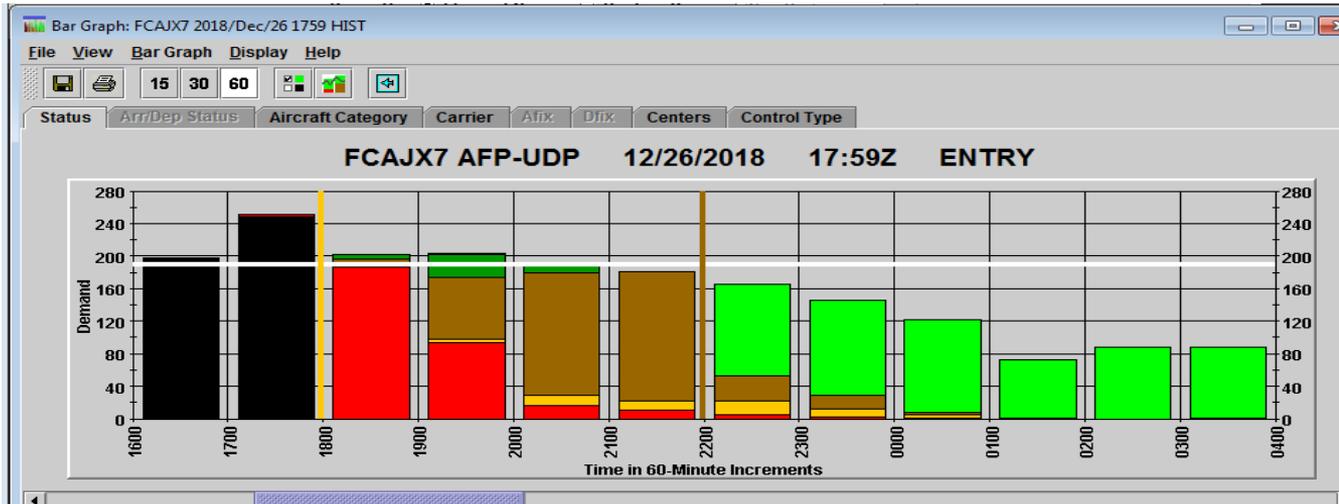


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FET TASKING-85/ AFP Capacity and Strategies

FET was tasked reviewing current AFP strategies and methods for determining AFP capacity.



FET TASKING-85/ AFP Capacity and Strategies Continued:

Focus areas:

- This tasking consisted of two components:
 1. Explore current AFP rates to determine if opportunities exist to facilitate future changes.
 2. Explore research into the area of AFP/FCA capacity.
- FET met with various FAA representatives from ZIX in 2019. Collectively, we examined ZIX's current AFP route and rate structure. The FET briefed the ATCSCC AFP workgroup which has taken our examination to other areas of the country including the North east Corridor (NEC). Enhancements, adjustments and efficiencies continue to be developed for Northeast AFPs.
- For the second portion of this tasking, the team delivered our final report to the CSG in August on current state of the art AFP Capacity Estimation technology from various aviation vendors.
- **This tasking is CLOSED.**



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FET TASKING - 92/S-CDM Departure Metering and NAS Scheduling

- The SCT/FET have been tasked to work with the Surface and NEXTGEN Office to validate the suitability of surface metering capability for use at TFDM equipped facilities. These capabilities, processes and procedures can aid operators in efficiently managing delays/push-back schedules, saving fuel, reducing tarmac time along with increasing predictability. NASA will brief SCT/FET periodically throughout the project lifecycle. SCT/FET will provide continuous stakeholder feedback.
- **Surface CDM Team (SCT) will brief in further detail.**



FET TASKING - 96/Playbook/CDR Reduction

- This tasking examined the 5 year usage of present CDRs (over 36k current CDRs) to determine whether opportunities existed to reduce database congestion.
- Data mining completed March 2020. FET met with all FAA facilities over the course of the spring/summer to brief out findings specific to their operations.
- Facilities are in various stages of examining the data to eliminate unused CDRs from the database including the following results:
 - 1.) ZAB has removed 434 CDR from the Route Management Database.
 - 2.) ZTL continues to refine and evaluate their CDR usage for further efficiencies/possible CDR reduction.

This task has been Closed.



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FET TASKING - 98/Route Planning, Assessment and Coordination: IARC

Tasking is sponsored by NASA/SBIR with an objective of providing an all inclusive platform allowing for efficient management of all IFR Preferred Routes, playbooks, CDR's, etc.

- Integrated Adaptive Route Capability (IRAC) consists of a web based prototype. that will ensure all IFR pre-validated routes, CDRs, and playbooks will be accessible, managed and coordinated on a single web platform.
- Provides forecast weather impact information on selected routes.
- Allow users to submit for validation/approval routes that are not common in existing databases but could enrich route selection choices in the database for all stakeholders.



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FET TASKING - 99/Route Strategies to Support NASA Research

- This tasking looks to improve operational efficiency through route optimization.
- The team continues to work with NASA to develop a list of perceived inefficient playbook/CDR routes.
- Overall end state is to provide NASA with feedback on potential refinements to FAA tools and procedures that would directly impact route strategies.



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FET/SCT TASKING - 100/Real-time Coordination, Collaboration and Information Exchange

- This tasking aims to evaluate real-time coordination to support traffic managers with operational information on constraints, preferences and capabilities.
- The team continues to collaborate with MITRE on the development of the NAS Operations Dashboard (NOD). Together, we continue to identify areas for improved collaboration and coordination utilizing a common platform for both FAA and industry.
- FET has conducted multiple live tests throughout the summer exercising the capabilities of this tool. Primary test area focused on the DC market, highlighting the use for pathfinders, low level escape routes, fix balancing, as well as priority (COVID) flights demonstrating proof of concept. FET continues to work on improving operational efficiency through route optimization.
- Subsequent tests for the winter period will incorporate input from the Surface CDM team as well.

One of the greatest successes of this task thus far is the speed and efficiency at which user recommendations have been incorporated into the NOD .



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NAS Operations Dash Board (NOD) Alternate Route/Pathfinder Capability (Prototype)

- National Operations Dashboard (NOD) incorporates a multifaceted informational platform that can allow Traffic Management personnel to evaluate current operations within the NAS.
- Since 2018, the FET team has collaboratively worked with MITRE in developing the Alternate Route/Pathfinder Capability currently incorporated within the NOD platform.
- This function allows for stakeholders and Traffic Management Units to apply for alternate routing during Severe Weather events, NAS challenges etc. under the following format:
- Questions/comments over NOD Capabilities can be sent to MITRE at nod-support@mitre.org
 1. Pathfinder
 2. Low Altitude Routes
 3. Fix Balancing
 4. Priority Flight
 5. CDR



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NOD/Pathfinder Capability

Access to Pathfinder/Alternate Route tool is gained through Departure Resource Status Tab in the NAS Operations Dashboard

NAS Operations Dashboard EVALUATION PROGRESS 75% Current Time: 2020-May-02 11:39:48 Threshold Set: NOD_CALIBRATED System Status

Table View | Map View | Split View | **Departure Resource Status** | TMI | Alert Thresholds | Live/Playback Mode | Contact | How to Use | SLA | Data Status

Airport	Holding	Diversions	Arrival Performance	TAF	Airport Throughput	Avg/Max Taxi Time	Outages	Metering Enabled	Large MIT
ATL	0 0	0 0	0 12	4 0	1 0	0 0	Rwy 10/28 Closure	Yes: 1	0
BOS				5SM				Yes: 1	
CLT								Yes: 1	
DEN			Demand/AAR 1100: 1/NA	45M			Rwy 8/25 Closure		
DFW								Yes: 1	
DTW			Demand/AAR 1100: 19/NA		Arr over Dep Last 15: 8		Rwy Construction 4R/22L	Yes: 2	
EWR							Rwy 11/29 closure	Yes: 1	
IAD								Yes: 1	
JFK			Demand/AAR 1100: 1/NA					Yes: 1	
LAS			Demand/AAR 1100: 0/NA						
LAX			Demand/AAR 1100: 4/NA	55M					
LGA			Demand/AAR 1100: 1/NA				Rwy 4/22 Closure	Yes: 1	
MCO							Rwy 18L/16R Closure		
Update Time	02/1139	02/1139	02/1124	02/1139	02/1139	02/1139	02/1116	02/1138	02/1138

OPS Plan: 02/1121

Current Ops Plan 02/1123

Grid | Help

www.fly.faa.gov/ota/
www.faa.gov/coronavirus/map/

EVENT TIME: 02/1200 - AND LATER

FAVORABLE WEATHER CONDITIONS THROUGHOUT THE NAS TODAY. NOT EXPECTING ANY TERMINAL OR EN ROUTE INITIATIVES. BLUE ANGELS/THUNDERBIRDS FLYOVERS SCHEDULED FOR THE DC/ATL AREAS. EXPECT MINIMAL IMPACT TO LOCAL OPERATIONS.

TERMINAL ACTIVE:
NONE

TERMINAL PLANNED:
NONE

TERMINAL CONSTRAINTS:



NOD/Pathfinder Capability

Under the Departure Resource Status Tab you will find the Candidate Entry/Removal tab, Pathfinder/Alternate Route Candidates tab, and Viewer Tracker tab:

The screenshot displays the NAS Operations Dashboard interface. At the top left, the logo reads "NAS Operations Dashboard" with "EVALUATION PROTOTYPE" in red text to its right. Below the logo is a horizontal menu of tabs: "Table View", "Map View", "Split View", "Departure Resource Status", "TMI", "Alert Thresholds", "Live/Playback Mode", "Contact", "How to Use", and "SLA". The "Departure Resource Status" tab is currently selected. Below this menu is a second row of tabs: "DRS Regions", "SWAP Statement", "Route RQD ADVZY", "Candidate Entry/Removal", "Pathfinder/Alternate Route Candidates", "Viewer/Tracker", and "Help". A yellow rectangular box highlights the "Candidate Entry/Removal", "Pathfinder/Alternate Route Candidates", and "Viewer/Tracker" tabs. A yellow arrow points from the bottom right towards the "Pathfinder/Alternate Route Candidates" tab. Below the second row of tabs is a third row: "EAST-NORTH", "CENTRAL-NORTH", and "WEST-NORTH". At the bottom of the dashboard is a fourth row of tabs: "Weather Impact", "ZNY Restrictions", "PHL Restrictions", "ZDC Restrictions", and "PCT Restrictions".



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NOD/Pathfinder Capability

Industry Inputs - Candidate Entry/Removal:

DRS Regions SWAP Statement Route RQD ADVZY Candidate Entry/Removal Pathfinder/Alternate Route Candidates Viewer/Tracker Help

Enter Candidate Flight Information:

Reason:

NAS Element:

FlightID (e.g., ABC123):

Origin (e.g., KLGA):

Destination (e.g., KATL):

NAS Route:

ETD:

Submitter:

Additional Comments:

Candidate Flights Show Ineligible Flights

Entry	Flight ID	Origin	Dest.	ETD	Taxi	Reason	NAS Element	Submitter	Comments	Status	Remove
-------	-----------	--------	-------	-----	------	--------	-------------	-----------	----------	--------	--------

- Pathfinder
 - By selecting Pathfinder, the NAS element will appear and the user can select the airways or the fixes that the flight will be willing and able to take.
- Low Altitude Routes
 - By selecting Low Altitude Routes, the NAS element will populate with the different low altitude routes that the flight will be willing and able to take.
- Fix Balancing
 - By selecting Fix Balancing, the NAS element will appear and the user can select the fixes that the flight will be willing and able to take
- Priority Flight
 - By selecting Priority Flight, there will be no NAS element populated, but the additional comments field will be required to be completed.



NOD/Pathfinder Capability

Alternate Candidate Entry Method:

The screenshot displays the NAS Operations Dashboard interface. The main map shows the Baltimore/Washington International Thurgood Marshall Airport (BWI) with two flight paths highlighted in pink. The flight paths are labeled with numbers 10, 15, and 20. The flight information panel on the right shows the following details:

ACID:	Find
ATL	
BOS	
BWI	Arrivals Departures
CLT	VTE3105 (0)
DCA	SWA1434 (1)
DEN	SWA3205 (34)
DFW	SWA675 (4)
DTW	
EWR	
FLL	
IAD	
IAH	
JFK	
LAS	
LAX	
LGA	
MCO	
MDW	
MEN	
ML	
MS	
OR	
PH	
PH	
SA	
SE	
SL	

The flight information panel for BWI shows the following details:

- ACID: SWA1434
- Op Type: DEPARTURE
- Destination: KCLT
- Nas Route: KBWI TERPZ7 GLANC, LYH MARJC4 KCLT 10101
- Departure Status: FILED
- Departure Time: 04/22/2020 14:20Z
- Filed Airspeed: 0
- Filed Altitude: 0
- AC Type: B737
- Taxi Time: 1

A red box highlights the 'Create Candidate' button at the bottom of the flight information panel.



NOD/Pathfinder Capability

Alternate Candidate Entry Method:

The screenshot displays the 'NAS Operations Dashboard' with the 'Candidate Entry/Removal' tab selected. The 'Enter Candidate Flight Information' form includes fields for Reason, NAS Element, Flight ID, Origin, Destination, NAS Route, ETD, Submitter, and Additional Comments. Below the form is a 'Candidate Flights' table with a 'Show Ineligible Flights' checkbox. A red box highlights the table, and a red arrow points to the 'Remove' button for the entry with Flight ID SWA1434.

Entry	Flight ID	Origin	Dest.	ETD	Taxi	Reason	NAS Element	Submitter	Comments	Status	Remove
22/1357	SWA1576	KDCA	KMCO	22/1401	00:09	Pathfinder	COLIN	DRT		DEPARTED	
22/1419	SWA1434	KBWI	KCLT	22/1420	00:01	Pathfinder	TERPZ	DRT		PENDING	Remove

- Prior to the flight taking off, the operator can remove the flight from consideration by clicking on Remove in the candidate flight list.
- After clicking remove, a confirmation box will appear to confirm the removal.
- The Candidate Flight list will indicate that the flight has been removed.

The CDM community will adhere to ethical standards by only adding/removing their own operation's flights.



NOD/Pathfinder Capability

Priority Flight Feature:

NAS Operations Dashboard EVALUATION PROTOTYPE Current Time: 2020-Apr-28 21:58:19
Threshold Set: NOD_CALIBRATED

Table View | Map View | Split View | **Departure Resource Status** | Alert Thresholds | Live/Playback Mode | Contact | How to Use | SLA | Data Status

EAST-NORTH | CENTRAL-NORTH | **Candidate Entry/Removal** | Pathfinder/Alternate Route Candidates | Viewer/Tracker

Enter Candidate Flight Information:

Reason:

NAS Element:

FlightID (e.g., ABC123):

Origin (e.g., KLGA):

Destination (e.g., KATL):

NAS Route: KDCA.HORTO3.BUFFR.J518.DJB.J34.BAE.J16.MCW.OBH.BRWRY.LAWGR1.KDEN/0332

ETD: 28/2214

Submitter:

Additional Comments:

Candidate Flights Show Ineligible Flights

A Priority Flight example

Note: No NAS element

Additional comment entry is required

When submitted the flight will populate as a candidate flight

NOD/Pathfinder Capability

Pathfinder Alternate Route Candidates:

Pathfinder Alternate Route Candidates:

EAST-NORTH		CENTRAL-NORTH		Candidate Entry/Removal		Pathfinder/Alternate Route Candidates		Viewer/Tracker		
Flight data update time: 2020 Apr 29 at 18:01										
Pathfinder Candidates										
Grayed-out flights are ineligible for designation as Pathfinders								<input checked="" type="checkbox"/> Show Ineligible Flights		
FlightID	NAS Element	Origin	Destination	ETD	Surface Time	Comments	View on Surface	▲	Status	
RPA4299	J220	KDCA	KPIT	29/1748	00:13	How bout direct?			DEPARTED	
NKS133	COLIN	KBWI	KMCO	29/1710	00:27	goin' to see Mickey			DEPARTED	
SWA597	OTTTO	KBWI	KBNA	29/1712	00:13				DEPARTED	
N599TA	MAULS	KDCA	KBTR	29/1753	00:10				DEPARTED	
RPA4511	MOL	KDCA	KMSY	29/1721	00:10	We have been out for over 60 minutes and can take re-route over MOL			DEPARTED	
N142QS	ROZBO	KIAD	PANC	29/1701	00:08				DEPARTED	
N148AA	GVE	KIAD	KPHF	29/1712	00:09	test			DEPARTED	
Fix Balancing / Low Altitude Route Candidates										
Grayed-out flights are ineligible for Alternate Routes								<input checked="" type="checkbox"/> Show Ineligible Flights		
Reroute Reason	FlightID	NAS Element	Origin	Destination	ETD	Surface Time	Comments	View on Surface	▲	Status
Fix Balancing	UAL322	COLIN	KIAD	KDEN		00:00	FUELED 4 CDR OVR COLIN			NOT FOUND
Low Altitude Routes	SWA911	SERMN South	LGA	BWI		00:00	#8 in lineup			NOT FOUND
Priority Flights										
Grayed-out flights are ineligible for Priority								<input type="checkbox"/> Show Ineligible Flights		
FlightID	Origin	Destination	ETD	Surface Time	Comments	View on Surface	▲	Status		
DAL2247	KBWI	KATL	29/1840	00:00	Try again. If Sternie can't get to MSY, get him to ATL for a tattoo.			ELIGIBLE		

FAA participants can select from the candidate list and choose the flights that meet their operational efficiency goals.

Note: An NTML entry is required in the restriction page of the appropriate NAS element to view and track pathfinders.



NOD/Pathfinder Capability

Viewer Tracker Tab:

Fix Balancing From

Fix Balancing From	To Fix	Last 2 Hours (Counts)
NEION	GAYEL	1
GAYEL	GREKI	1

Pathfinder

Pathfinder	Active (Flight Count)	Last 2 Hours (Counts)	Priority	Active (Flight Count)	Last 2 Hours (Counts)	Low Alt. Route	Active (Flight Count)	Last 2 Hours (Counts)
ZNY West capping							8	8

Flights: Showing All

Reason	Entry Time	FlightID	Origin	Destination	NAS Element	Comments	Route	ATD	View on Surface	View on Map
LOW_ALT	22:1203	LN878CS	KPHL	KDPA	ZNY West capping		KPHL./PHL332028.PENS	22:1359	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LOW_ALT	22:1220	AAL1781	KPHL	KDEN	ZNY West capping		KPHL./ETX175021.BWZ2	22:1241	<input type="checkbox"/>	<input type="checkbox"/>
LOW_ALT	22:1233	UPS5546	KPHL	KSJC	ZNY West capping		KPHL./PTW.SARAA.RAV		<input type="checkbox"/>	<input type="checkbox"/>
LOW_ALT	22:1237	AAL696	KPHL	KLAS	ZNY West capping		KPHL./PARKE261040.LNR	22:1237	<input type="checkbox"/>	<input type="checkbox"/>
FIX_BALAN	22:1327	CAL5321	KJFK	PANC	NEION->GAYEL		KJFK./JFK046019.GAYEL	22:1327	<input type="checkbox"/>	<input type="checkbox"/>
LOW_ALT	22:1342	AAL566	PHL	LAX	ZNY West capping		KPHL./PTW.SARAA.RAV		<input type="checkbox"/>	<input type="checkbox"/>
LOW_ALT	22:1350	JIA5165	PHL	GRR	ZNY West capping		KPHL./PTW.SARAA.RAV		<input type="checkbox"/>	<input type="checkbox"/>
LOW_ALT	22:1455	EJA775	KPHL	KSFO	ZNY West capping		KPHL./PTW.SARAA.RAV		<input type="checkbox"/>	<input type="checkbox"/>
LOW_ALT	22:1501	UPS2424	KPHL	KLGB	ZNY West capping		KPHL./PTW.SARAA.RAV		<input type="checkbox"/>	<input type="checkbox"/>
FIX_BALAN	22:1514	EJM889	KHPN	KHPN	GAYEL->GREKI		KHPN./PWL163014.VLR	22:1506	<input type="checkbox"/>	<input type="checkbox"/>

- The Viewer Tracker tab allows the user to follow the flights as they are flying on their routes once airborne and on the surface.
- By checking the View on Map Box, you will see the flight path displayed on the map.
- The blue line will be the actual flight path and the grey line will be the filed route.



NOD/Pathfinder Capability

Viewer Tracker Tab Continued:

NAS Operations Dashboard EVALUATION PROTOTYPE Current Time: 2020-Apr-29 18:07:52
Threshold Set: NOD_CALIBRATED

Table View | Map View | Split View | Departure Resource Status | Alert Thresholds | Live/Playback Mode | Contact | How to Use | SLA | Data Status

EAST-NORTH | CENTRAL-NORTH | Candidate Entry/Removal | Pathfinder/Alternate Route Candidates | **Viewer/Tracker**

Counts: double click on a count to list those flights Flight data update time: 2020 Apr 29 at 18:07

Pathfinder	Active (Flight Count)	Last 2 Hours (Counts)	Priority	Active (Flight Count)	Last 2 Hours (Counts)	Low Alt. Route	Active (Flight Count)	Last 2 Hours (Counts)
			PRIORITY	4	4	ZNY West capping	3	3
						LIMBO		

Flights: **LOW ALT ROUTES ZNY West capping 2HR**

Reason	Entry Time	FlightID	Origin	Destination	NAS Element	Comments	Route	ATD	View on Surface	View on Map
LOW_ALT_	29/1501	DCM9350	KPHL	KLAX	ZNY West capping		KPHL_PTW_SARAA_RAV	29/1803	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LOW_ALT_	29/1512	ASA1331	KPHL	KSEA	ZNY West capping		KPHL_ABR306072_MLP_C	29/1512	<input type="checkbox"/>	<input type="checkbox"/>
LOW_ALT_	29/1321	UPS5546	KPHL	KSJC	ZNY West capping		KPHL_SEG130032_DVV_	29/1538	<input type="checkbox"/>	<input type="checkbox"/>

Carrier: off

Double clicking on a number (For example the number 3 in Active (Flight Counts) in the Low Altitude Route Box)

- The flights will populate the display which shows the flight data.
- This also allows the user to view them on the map by checking the View on Map Box.
- Carrier specific filtering is also accessed here (outlined in blue).



NOD/Pathfinder Capability CDR Capability

The screenshot displays the NAS Operations Dashboard interface. At the top, it shows the current time as 2020-Jul-30 10:20:37 and the threshold set as NOD_CALIBRATED. The main navigation bar includes tabs for Table View, Map View, Split View, and various operational status tabs like Departure, Resource, Status, TMI, PERTI, Alert Thresholds, Live/Playback Mode, Contact, How to Use, SLA, and Data Status. Below this, there are sub-tabs for DRS Regions, SWAP Statement, Route ROD ADVZY, Candidate Entry/Removal, Pathfinder/Alternate Route Candidates, Viewer/Tracker, and Help. The 'Candidate Entry/Removal' tab is active, showing a form to 'Enter Candidate Flight Information'. The form includes fields for Reason (a dropdown menu), NAS Element, FlightID (e.g., ABC123), Origin (e.g., KLGA), Destination (e.g., KATL), NAS Route, ETD, Submitter, and Additional Comments. A 'Route Options' button is located to the right of the FlightID field, highlighted by a red arrow. A 'NEW' label is placed next to the button. Below the form is a 'Candidate Flights' table with columns for Entry, Flight ID, Origin, Dest., ETD, Taxi, Reason, NAS Element, Submitter, Comments, Status, and Remove. A checkbox for 'Show Ineligible Flights' is checked. To the right of the form is a map showing a flight route over a geographical area, with a 'ZDC' label on the map. The map has tabs for 'Map' and 'Satellite', and settings for 'Fix Display Settings...' and 'Route Display Settings...'.

A description of the Route Options visualization and selection capability follows:

Route Options Button - Allows for route options to be accessed after a minimum of Origin and destination is populated on the candidate entry/removal tab.



NOD/Pathfinder Capability CDR Capability

NAS Operations Dashboard EVALUATION PROTOTYPE
Current Time: 2020-Jul-29 16:36:29
Threshold Set: NOD_CALIBRATED

Table View | Map View | Split View | Departure Resource Status | TMI | PERTI | Alert Thresholds | Live/Playback Mode | Contact | How to Use | SLA | Data Status

DRS Regions | SWAP Statement | Route RQD ADVZY | **Candidate Entry/Removal** | Pathfinder/Alternate Route Candidates | View/Tracker | Help

Map | Satellite | Fix Display Settings... | Route Display Settings...

Enter Candidate Flight Information:

Reason:

NAS Element:

FlightID (e.g., ABC123):

Origin (e.g., KLAG): **Route Options** **2. Left Click**

Destination (e.g., KATL): **1. Fill in Origin and Destination**

NAS Route:

ETD:

Submitter:

Additional Comments:

Candidate Flights Show Ineligible Flights

Entry	Flight ID	Origin	Dest.	ETD	Taxi	Reason	NAS Element	Submitter	Comments	Status	Remove
-------	-----------	--------	-------	-----	------	--------	-------------	-----------	----------	--------	--------

To See Route Options:

1. Fill in Origin and Destination on Candidate Entry/Removal Tab
2. Left click Route Options Button



NOD/Pathfinder Capability CDR Capability

NAS Operations Dashboard EVALUATION PROTOTYPE Current Time: 2020-Jul-30 10:27:52
Threshold Set: NOD_CALIBRATED

Table View | Map View | Split View | **Departure Resource Status** | TMI | PERTI | Alert Thresholds | Live/Playback Mode | Contact | How to Use | SLA | Data Status

DRS Regions | SWAP Statement | Route RQD ADVZY | **Candidate Entry/Removal** | Pathfinder/Alternate Route Candidates | Viewer/Tracker | Help

Enter Candidate Flight Information:

Reason:

NAS Element:

FlightID (e.g., ABC123):

Origin (e.g., KLGa): Route Options

Destination (e.g., KATL):

NAS Route:

ETD:

Submitter:

Additional Comments:

kdca-klga CDRs:

Name	DepFix	Route	ARD
<input type="checkbox"/> DCALGA00	AGARD	AGARD KORRY4 KLGa	196
<input type="checkbox"/> DCALGA10	JERES	JERES J220 FORTT	302
<input type="checkbox"/> DCALGA20	AGARD	AGARD SIE V139	325
<input type="checkbox"/> DCALGA11	JERES	JERES J211 LEONI	501

↑

CDRs for DCA to LGA

Submit Clear Form

Candidate Flights Show Ineligible Flights

Entry	Flight ID	Origin	Dest.	ETD	Taxi	Reason	Remove

NOTE: NOD software will accept lower case, capitalization, and the use of K as a prefix when identifying Origin and Destination

NOD/Pathfinder Capability CDR Capability

CDR List

kdca-klga CDRs:				
Name	DepFix	Route		ARD
<input type="checkbox"/> DCALGA00	AGARD	AGARD KORRY4 KLGA		196
<input type="checkbox"/> DCALGA10	JERES	JERES J220 FORTT		302
<input type="checkbox"/> DCALGA20	AGARD	AGARD SIE V139		325
<input type="checkbox"/> DCALGA11	JERES	JERES J211 LEONI		501

Approximate Route
Distance

CDR
name

Departure
Fix Name

Route String -
Hover over to
view full route



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NOD/Pathfinder Capability CDR Capability

Visualizing Routes

Enter Candidate Flight Information:

Reason:

NAS Element:

FlightID (e.g., ABC123):

Origin (e.g., KLGA):

Destination (e.g., KATL):

NAS Route:

ETD:

Submitter:

Additional Comments:

Route Options

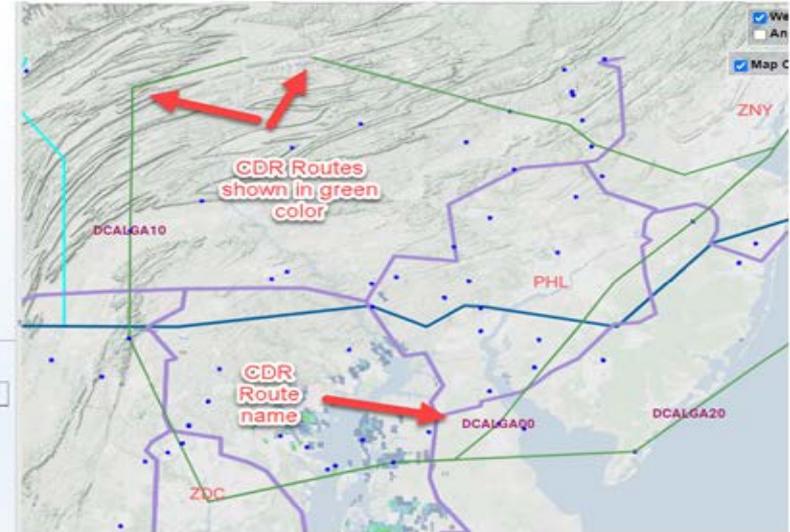
kdca-kiga CDRs:

Name	DepFix	Route	ARD
<input checked="" type="checkbox"/> DCALGA00	AGARD	AGARD KORRY4 KLGA	196
<input checked="" type="checkbox"/> DCALGA10	JERES	JERES J220 FORTT	302
<input checked="" type="checkbox"/> DCALGA20	AGARD	AGARD SIE V139	325
<input type="checkbox"/> DCALGA11	JERES	JERES J211 LEONI	501

Candidate Flights Show Ineligible Flights

Entry	Flight ID	Origin	Dest.	ETD	Taxi	Reason	NAS Element	Submitter	Comments	Status	Remove
-------	-----------	--------	-------	-----	------	--------	-------------	-----------	----------	--------	--------

Select CDRs for viewing



NOD/Pathfinder Capability CDR Capability

Sending CDR selections to Additional Comments section

Enter Candidate Flight Information:

Reason:

NAS Element:

FlightID (e.g., ABC123):

Origin (e.g., KLGA):

Destination (e.g., KATL):

NAS Route:

ETD:

Submitter:

Additional Comments:

Automation remembers order of CDR selection for viewing

Route Options

Name	DepFix	Route	ARD
<input checked="" type="checkbox"/> DCALGA00	AGARD	AGARD KORRY4 KLGA	196
<input checked="" type="checkbox"/> DCALGA10	JERES	JERES J220 FORTT	302
<input checked="" type="checkbox"/> DCALGA20	AGARD	AGARD S/E V139	325
<input type="checkbox"/> DCALGA11	JERES	JERES J211 LEONI	501

Left mouse click anywhere to populate CDR choices into Additional Comments section

CDR Routes shown in green color

CDR Route name

Populated Additional Comments section:

1. DCALGA00
2. DCALGA10
3. DCALGA20



NOD/Pathfinder Capability CDR Capability

NAS Operations Dashboard EVALUATION PROTOTYPE Current Time: 2020-Jul-30 10:54:04
Threshold Set: NOD_CALIBRATED System Status

Table View | Map View | Split View | **Departure Resource Status** | TMI | PERTI | Alert Thresholds | Live/Playback Mode | Contact | How to Use | SLA | Data Status

DRS Regions | SWAP Statement | Route RQD ADVZY | **Candidate Entry/Removal** | Pathfinder/Alternate Route Candidates | Viewer/Tracker | Help

Enter Candidate Flight Information:

Reason:

NAS Element:

FlightID (e.g., ABC123):

Origin (e.g., KLGA):

Destination (e.g., KATL):

NAS Route:

ETD:

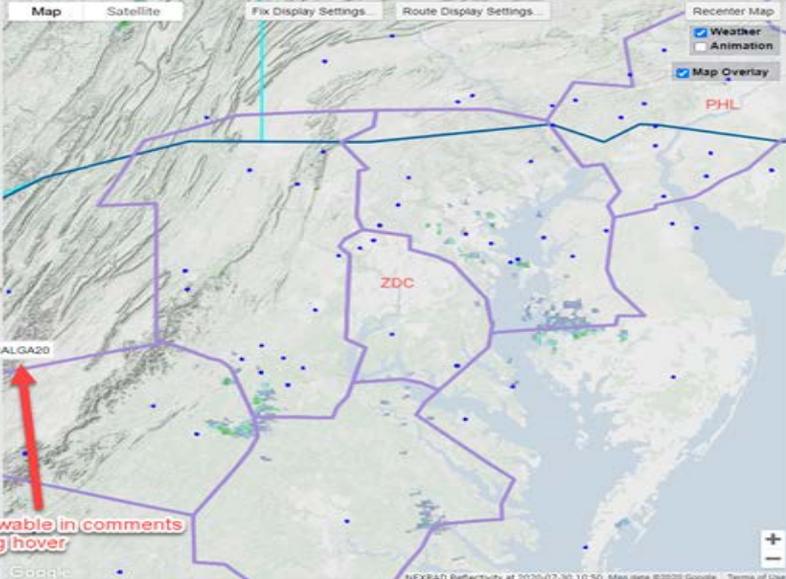
Submitter:

Additional Comments:

Candidate Flights Show Ineligible Flights

Entry	Flight ID	Origin	Dest.	ETD	Taxi	Reason	NAS Element	Submitter	Comm	1 DCALGA00	2 DCALGA10	3 DCALGA20
30/1053	AAL123	KDCA	KLGA		00:00	Pathfinder	JERES	HB	[...]	PENDING	<input type="button" value="Remove"/>	

CDR Choices now viewable in comments area using hover



Map | Satellite | Fix Display Settings... | Route Display Settings... | Recenter Map | Weather | Animation | Map Overlay

PHL

ZDC

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NOD/Pathfinder Capability CDR Capability

Airport Taxi Status

ACID: Find

ATL

BOS

BWI

CLT

DCA

DEN

DFW

DTW

EWR

FLL

IAD

IAH

JFK

Arrange by: A-Z

BWI

Arrivals

Departures

AAL1183 (0)

AAL2670 (1)

ACID: AAL2670

Op Type: DEPARTURE

Destination: KCLT

Nas Route: KBWI.TERPZ7.GLANC..L.YH.CHSLY4.KCLT/0105

Departure Status: FILED

Departure Time: 07/30/2020 11:19Z

Filed Airspeed: 0

Filed Altitude: 0

AC Type: B738

Taxi Time: 1

Create Candidate

CDRs Choices visible in comments section on both Candidate Entry/Removal and Pathfinder Route Candidate Tabs

Using Create Candidate button

Auto Populates Flight ID, Origin, Destination, and NAS Route



CDM

Collaborative
Decision Making

NOD/Pathfinder Capability CDR Capability

NAS Operations Dashboard EVALUATION PROTOTYPE Current Time: Threshold Set:

Table View | Map View | Split View | **Departure Resource Status** | TMI | PERTI | Alert Thresholds | Live/Playback Mode | Contact | How to Use

DRS Regions | SWAP Statement | Route RQD ADVZY | **Candidate Entry/Removal** | Pathfinder/Alternate Route Candidates | Viewer/Tracker | Help

Enter Candidate Flight Information:

Reason:

NAS Element:

FlightID (e.g., ABC123): Route Options

Origin (e.g., KLGA):

Destination (e.g., KATL):

NAS Route:

ETD:

Submitter:

Additional Comments:

KBWI-KCLT CDRs:

Name	DepFix	Route	ARD	Extra
<input type="checkbox"/> BWICLT00	GLANC	GLANC LYH CHSLY4	316	-26
<input type="checkbox"/> BWICLT32	COLIN	COLIN J61 HUBBS	373	31
<input type="checkbox"/> BWICLT55	MAULS	MAULS Q40 FEEDS	409	67
<input type="checkbox"/> BWICLT60	OTTTO	OTTTO Q80 WISTA	445	103
<input type="checkbox"/> BWICLT40	COLIN	COLIN J61 HUBBS	454	112
<input type="checkbox"/> BWICLT41	COLIN	COLIN J61 HUBBS	454	112
<input type="checkbox"/> BWICLTC1	COLIN	COLIN J61 HUBBS	454	112
<input type="checkbox"/> BWICLT63	OTTTO	OTTTO Q68 HVQ	461	119

Current Flight-plan (points to FlightID)

Extra mile column - compares distance of current flight-plan to CDR (points to Extra column)

Then Finish selecting CDR preferences, complete Candidate Entry/Removal form and submit



Flow Evaluation Team

Questions?



CDM

Collaborative
Decision Making