



Omni Wifi Code: atd2rocks

**AGENDA
WEDNESDAY, SEPTEMBER 4, 2019**

TIME	DESCRIPTION	PRESENTER	LOCATION
0730 - 0800	Registration		Fountain View
0800 - 0815	Welcome	Akbar Sultan, NASA	Texas Learning Center
0815 - 0845	Workshop Overview and Perspectives	Al Capps	Texas Learning Center
0845 - 1000	Preparing for the Transition to TFD and a Data-Driven NAS. Perspectives from Industry and FAA leaders	Workshop Panel	Texas Learning Center
1000 - 1015	Break		
1015 - 1130	BREAKOUT 1 – Topic A		Texas Learning Center
	BREAKOUT 1 – Topic B		Trinity II
	BREAKOUT 1 – Topic C		Park West E/F
1130 - 1245	Lunch	Dover's Grille or Morsels (Omni) Shuttle to Salata & nearby eateries	
1245 - 1345	BREAKOUT 2 – Topic A		Texas Learning Center
	BREAKOUT 2 – Topic B		Trinity II
	BREAKOUT 2 – Topic C		Park West E/F
1345 - 1400	Break		
1400 - 1500	BREAKOUT 3 – Topic A		Texas Learning Center
	BREAKOUT 3 – Topic B		Trinity II
	BREAKOUT 3 – Topic C		Park West E/F
1500 - 1510	Break		
1510 - 1610	BREAKOUT 4 – Topic A		Texas Learning Center
	BREAKOUT 4 – Topic B		Trinity II
	BREAKOUT 4 – Topic C		Park West E/F
1620 - 1700	Close/Summary of Day 1 and Preview of Day 2	Al Capps	Texas Learning Center
1700 - 1800	(Optional) Extra-Innings Q/A Session with ATD-2	ATD-2 Technical Lead Representatives	Trinity I (Demo Room)
1800 - 2000	Networking Social Outing	Green Gator Cajun Sports Bar @ Toyota Music Factory	



AGENDA
THURSDAY, SEPTEMBER 5, 2019

TIME	DESCRIPTION	PRESENTER	LOCATION
0715 - 0800	(Optional) Pre-Game Q/A Session with ATD-2	ATD-2 Technical Lead Representatives	Trinity I (Demo Room)
0800 - 0815	Welcome	Lorne Cass, AAL	Texas Learning Center
0815 - 0830	Brief review of day 1 feedback and a preview of day 2 activities	Al Capps	Texas Learning Center
0830 - 0940	Discuss early results of ongoing evaluation of Trajectory Options Set (TOS) with Surface for Metroplex departures	Workshop Panel	Texas Learning Center
0940 - 0950	Break		
0950 - 1050	BREAKOUT 5 – Topic A		Texas Learning Center
	BREAKOUT 5 – Topic B		Trinity II
	BREAKOUT 5 – Topic C		Park West E/F
1050 - 1100	Break		
1100 - 1215	Opportunity for formulation input into NASA's future aviation plans (with NASA ATD and ATM-X projects)	NASA ATD and ATM-X Project Representatives	Texas Learning Center
1215 - 1345	Lunch	Dover's Grille or Morsels (Omni) Shuttle to Torchy's Tacos & nearby eateries	
1345 - 1445	BREAKOUT 7 – Topic A		Texas Learning Center
	BREAKOUT 7 – Topic B		Trinity II
	BREAKOUT 7 – Topic C		Park West E/F
1445 - 1455	Break		
1455 - 1555	BREAKOUT 8 – Topic A		Texas Learning Center
	BREAKOUT 8 – Topic B		Trinity II
	BREAKOUT 8 – Topic C		Park West E/F
1555 - 1605	Break		
1605 - 1705	Workshop wrap-up and discussion on any additional tech transfer needs of the ATD-2 team	Al Capps	Texas Learning Center
1705 - 1800	(Optional) Extra-Innings Q/A Session with ATD-2	ATD-2 Technical Lead Representatives	Trinity I (Demo Room)



SUBMIT QUESTIONS ONLINE

Submit your questions for our session presenters online from your mobile device or computer via our NASA Conference I/O tool. Upvote questions added by others.

Please select the link below corresponding to the meeting room you are in.

Texas Learning Center (Large conference area)

[//arc.cnf.io/sessions/qznr](https://arc.cnf.io/sessions/qznr)

Trinity II (Breakout Room)

[//arc.cnf.io/sessions/zynb](https://arc.cnf.io/sessions/zynb)

Park West E/F (Breakout Room)

[//arc.cnf.io/sessions/hn3b](https://arc.cnf.io/sessions/hn3b)



Workshop Panels

The workshop includes one panel each day whereby attendees can engage with Industry and FAA leadership on subjects that are relevant in a future environment with TFDM and SWIM. The Day 1 panel will encourage the sharing of perspectives on capabilities needed from the aviation community to be ready to use future technologies. The Day 2 panel will communicate initial results from an ongoing field demonstration that is focused on the future 3T/SWIM visions.

Submit your questions online via our NASA Conference I/O tool: [//arc.cnf.io/sessions/qznr](https://arc.cnf.io/sessions/qznr)

Date/Time	Title	Panelists	Moderator	Description
Sep 4 08:45-10:00	Preparing for the Transition to TFDM and a Data-Driven NAS. Perspectives from Industry and FAA leaders	Mike Huffman – FAA TFDM Josh Gustin – FAA SWIFT Rob Goldman – Delta Air Lines Carol Huegel – American Airlines Rick Dalton – Southwest Airlines Ernie Stellings – NBAA Paul Sichko – DFW Airport	Al Capps – NASA ATD-2	This panel will introduce you to aviation leaders that have helped pave the way for TFDM in a 3T (TFDM/TBFM/TFMS) context with SWIM. Panelist will share their perspectives on these emerging technologies and the needs from the aviation community during this transition. Audience members will be able to ask questions of the panelists, facilitated by the moderator.
Sep 5 08:30-09:40	Discuss early results of ongoing evaluation of Trajectory Options Set (TOS) with Surface for Metroplex departures	Josh Griffith (SWA) Ron Ooten (SWA) Tim Niznik (AAL) Bob Shirley (AAL) John Short – NATCA ATD-2 lead Joseph Friend – ATCT STMC Kenny West – ZFW ATC	Greg Juro – NASA ATD-2 Eric Chevalley- NASA ATD-2	After a brief introduction of the field evaluation, operational participants will have the opportunity to share first hand experiences and insights into lessons learned of the ongoing field demonstration. Audience members will be able to ask questions of the panelists, facilitated by the moderator.



Color	Workshop Tracks – Descriptions Below
Yellow	Surface System Capabilities (TFDM pre-cursor lessons learned)
Orange	Understanding and Quantifying NAS Performance and Benefits (Analytical Focus)
Grey	Understanding TFDM from a multi-system decision support viewpoint
Green	Future Vision and Needs of the NAS (Enabled by TFDM, SWIM and collaboration)

Table 1- Legend of Available Tracks

Breakout Sessions Overview

Submit your questions online via our NASA Conference I/O tool; see arc.cnf.io links below for each room

Day	Breakout	Time	Topic A - Texas Learning Center //arc.cnf.io/sessions/qznr	Topic B – Trinity II //arc.cnf.io/sessions/zynb	Topic C - Park West E/F //arc.cnf.io/sessions/hn3b
4-Sep	1	1015 – 1130	'Fuser in the cloud' overview and latest updates/needs	Future surface decision support overview (with ATD-2 demo)	SWIM-Fused data products used by ATD-2 analysts for quantifying NAS performance and benefits (part 1)
4-Sep	2	1245 – 1345	Latest strategic surface metering system and progress status in CLT (extending freeze horizon)	Understanding TMIs in the NAS (Part 1)	SWIM-Fused data products used by ATD-2 analysts for quantifying NAS performance and benefits (part 2)
4-Sep	3	1400 – 1500	Opportunities for Mobile Applications in the 3T environment	Evolving operational roles (ATC and Operator) with TFDM in the 3T environment	Benefits of Pre-scheduling into the overhead stream with EOBTs (analytical focus)
4-Sep	4	1510 – 1610	New TFDM Terminal Publication (TTP) SWIM data, how to sign up and how to benefit from it	Pre-scheduling with EOBTs, its benefits and complexities (operationally focused)	Benefits of surface departure metering while 'doing no harm' to other operational metrics
5-Sep	5	0950 – 1050	Industry/FAA future needs/expectations for the implementation of TFDM into the NAS.	Understanding TMIs in the NAS (Part 2)	Simulation and modeling used in surface analysis
5-Sep	6	1100 – 1215	Opportunity for formulation input into NASA's future aviation plans (with NASA ATD and ATM-X projects)		
5-Sep	7	1345 – 1445	Substituting flights in TFDM with SWIM	Analytical evidence of surface compliance leading to more efficient overhead stream scheduling	Ramp Traffic Console Capabilities and Use in Operational Environment (part 1)
5-Sep	8	1455 – 1555	Benefits of good EOBTs to Surface Metering	Metroplex TOS Departures, initial results and next steps input	Ramp Traffic Console Capabilities and Use in Operational Environment (part 2)



Yellow Track – Surface System Capabilities (TFDM pre-cursor lessons learned and needs)

Description: This track focuses on the broad set of capabilities in the future surface system that include both FAA TFDM and components and Industry components. The ATD-2 system will be the basis for this discussion, understanding that ATD-2 is informing the FAA’s TFDM Program and future Industry requirements.

Yellow Track	Name	Moderators	Description
1B	Future surface decision support overview (with ATD-2 demo)	Yoon Jung (NASA ATD-2) Liang Chen (NASA ATD-2) Isaac Robeson (NASA ATD-2)	Overview of wide set of capabilities available in both the FAA and Industry components of the surface system. This will include a demonstration of the latest ATD-2 system as is running in CLT, which includes both ATCT and Ramp tools.
2A	Latest strategic surface metering system and progress status in CLT (extending freeze horizon)	Isaac Robeson (NASA ATD-2) Yoon Jung (NASA ATD-2) Liang Chen (NASA ATD-2)	Description of the field evaluation of surface metering deployed by NASA in CLT that began with a more tactical decision timeline and progressively expanded toward more strategic timelines. This will include an update on the latest status of the ongoing research and lessons learned.
4A	New TFDM Terminal Publication (TTP) SWIM data, how to sign up and how to benefit from it	Shawn Gorman (NASA ATD-2) Eric Van Brunt (TFDM)	Learn the many benefits of the newest SWIM feed from the surface system. This will discuss current options to onboard with this feed, allow participants to ask questions and provide some examples of how the data can be used.
5A	Industry/FAA future needs/expectations for the implementation of TFDM into the NAS.	Mike Huffman (FAA TFDM) Eric Cole (TFDM CSIT Lead) Carol Huegel (AAL)	Open discussion with CLT ATD-2 launch carrier and FAA TFDM leadership about the needs and expectations required by both FAA and industry to implement TFDM at both the national and airport level. Will include a discussion of the CSIT activities at each site.
7A	Substituting flights in TFDM with SWIM	Melissa Brown (MITRE) Eric Cole (TFDM CSIT Lead)	Learn from FAA TFDM system experts about the SWIM interface (TFCS) that will be available to allow flight specific substitutions for flights in a SMP, such as direct and indirect substitution rules and what it includes and does not include.
7C	Ramp Traffic Console Capabilities and Use in Operational Environment (part 1)	Debi Bakowski (NASA ATD-2) Cynthia Freedman (NASA ATD-2) Yoon Jung (NASA ATD-2)	This overview of ramp traffic control (RTC) and ramp manager traffic console (RMTC) features will discuss operational use cases that cover surface metering, notification and optional hold of APREQ (approval request/call for release), EDCT (expected departure clearance time), and ground stops.
8C	Ramp Traffic Console Capabilities and Use in Operational Environment (part 2)	Debi Bakowski (NASA ATD-2) Cynthia Freedman (NASA ATD-2) Yoon Jung (NASA ATD-2)	This is a continuation of part 1 discussion of the ramp control system. This session will also provide an opportunity for the community input on any additional tech transfer needs for this capability.



Orange Track – Understanding and Quantifying NAS Performance and Benefits (Analytical Focus)

Description: This track focuses on data-rich analysis methodologies used to gather results from field data and modeling work. This begins with a deep dive on the (highly evolved) data that ATD-2 analysts leverage for their analysis. Operational results of the ATD-2 system that demonstrate benefits while ‘doing no harm’ to key operational metrics. Surface modeling analysis from MIT Lincoln Laboratory that addresses the fuel savings benefits associated with good EOBTs. The process of calibrating the surface system and understanding surface metering performance will also be discussed.

Orange Track	Name	Moderators	Description
1C	SWIM-Fused data products used by ATD-2 analysts for quantifying NAS performance and benefits (part 1)	Andrew Churchill (NASA ATD-2) Jeremy Coupe (NASA ATD-2)	The data used in ATD-2 analysis begins from a fused data stream from numerous SWIM sources, then undergoes additional processing to derive commonly used metrics. This has been a consistent focus of the analysis team and is the basis for many benefits and performance analyses that will be described in other sessions.
2C	SWIM-Fused data products used by ATD-2 analysts for quantifying NAS performance and benefits (part 2)	Andrew Churchill (NASA ATD-2) Jeremy Coupe (NASA ATD-2)	This is a continuation of part 1 discussion of the data used by ATD-2 analysts. This session will also provide an opportunity for the community input on any additional tech transfer needs for this capability.
3C	Benefits of Pre-scheduling into the overhead stream with EOBTs (analytical focus)	Jeremy Coupe (NASA ATD-2)	Evidence collected and explanation of the metrics used that demonstrate benefit from early electronic scheduling of departing flights from CLT into other airports which leverage Earliest Off Block Times (EOBTs) and Time-Based Flow Management automation.
4C	Benefits of surface departure metering while ‘doing no harm’ to other operational metrics	Jeremy Coupe (NASA ATD-2)	Learn how the ATD-2 analytical team has used various sources and metrics to verify that the operational system follows a <i>do no harm</i> mandate while also providing efficiency and predictability benefits.
5C	Simulation and modeling used in surface analysis	Hanbong Lee (NASA ATD-2) Aditya Saraf (ATAC)	What fast time simulations and modeling techniques are currently in the works, including EOBT quality impact study? An opportunity to provide input on analytical results that are most important to communicate to Industry from ATD-2 simulation.
7B	Analytical evidence of surface compliance leading to more efficient overhead stream scheduling	Todd Callantine (NASA ATD-2) Jeremy Coupe (NASA ATD-2) Bob Staudenmeier (NASA ATD-2)	This will discuss how TBFM operational metrics and surface metrics were combined for analysis into the benefits associated with overhead stream scheduling with better surface compliance from the ATD-2 system.
8A	Benefits of good EOBTs to Surface Metering	Tom Reynolds (MIT-LL) Jeremy Coupe (NASA ATD-2)	Learn how MIT has created a model that estimates the tradeoffs of EOBT accuracy and how this translate to fuel savings during a surface metering procedure (SMP). Spoiler alert: Better EOBTs lead to deeper fuel savings! Come see the estimates.



Grey Track – Understanding TFDM from a multi-system decision support viewpoint

Description: This track will leverage the expertise of current and retired air traffic managers with experience on ATD-2 to discuss the complex layers of traffic management initiatives that can exist in the current National Airspace System (NAS) and how they meet up with surface technology. Operational ATC experts with significant real-world experience with NAS Traffic Management Initiatives (TMIs) will walk through examples of scenarios that are commonly experienced. Data that was once only present in the TMCs mind is now being made available digitally and used within ATD-2 processing. Examples of progress in the digital transformation of TMIs will be given, as well as areas where additional evolution is needed.

Grey Track	Name	Moderators	Description
2B	Understanding TMIs in the NAS (Part 1)	Bob Staudenmeier (NASA ATD-2)	Examples from TMC experts on commonly occurring, and various types of TMIs from Center, TRACON and Surface perspectives will be discussed as well as how they develop and are communicated in the NAS.
3B	Evolving operational roles (ATC and Operator) with TFDM in the 3T environment	Bob Staudenmeier (NASA ATD-2) Mike Hoprich (CLT NATCA)	As the surface system is deployed across the NAS and fully integrated with existing FAA decision support, the roles of both ATC and Operators are expected to change. This will discuss first hand examples of this evolution as experienced at CLT.
4B	Pre-scheduling with EOBTs, its benefits and complexities (operationally focused)	Bob Staudenmeier (NASA ATD-2) Mike Hoprich (CLT NATCA)	Learn how ongoing electronic scheduling is being done in the ATD-2 system today. We will describe the buffers in use for flights with EOBT versus no EOBT (Spoiler alert: there is an advantage to providing an EOBT!); performance of pre-scheduling to date and future plans; and how this matches future TFDM system.
5B	Understanding TMIs in the NAS (Part 2)	Bob Staudenmeier (NASA ATD-2) Brian Phipps (NASA ATD-2)	Continues Part 1 discussion by using ATD-2 technology as a stand-in for expected TMI entries in the future TFDM system. This topic will focus on the importance of stream insertion and how flights can meet both tactical and strategic constraints and will briefly cover the TMI data being made available in the new TTP SWIM feed.



Green Track – Future Vision and Needs of the NAS (Enabled by 3T, SWIM and collaboration)

Description: This track focuses on future technologies and research that builds upon progress in the area of 3T (TFDM, TFMS, TBFM) evolution and SWIM related advances. NASA and its partners will present capabilities that are believed to be on the horizon and elicit input from the aviation community on emerging plans.

Green Track	Name	Moderators	Description
1A	'Fuser in the cloud' overview and latest updates/needs	Shawn Gorman (NASA ATD-2) Brian Phipps (NASA ATD-2) Al Capps (NASA ATD-2)	The 'Fuser' is the name of the SWIM data integration service that has been built, utilized and evolved on ATD-2 to synchronize trajectory predictions from multiple decision support tools. NASA is researching ways to make this data stream available for broader consumption as an example implementation that would help reduce the burden for consumers while enabling access to data that would help industry prepare and innovate for TFDM (e.g. integrates TTP feed).
3A	Opportunities for Mobile Applications in the 3T environment	Craig Johnson (MITRE) Ernie Stellings (NBAA)	Learn about the latest innovations on mobile applications currently in use by general aviation pilots at CLT and DAL. This leverages SWIM data feeds from the future surface system that will be available at your favorite airport.
6A	Opportunity for formulation input into NASA's future aviation plans (with NASA ATD and ATM-X projects)	Al Capps (NASA ATD-2) Kevin Witzberger (NASA ATD) William Chan (NASA ATM-X) Bryan Barmore (NASA ATM-X)	NASA is currently formulating its plans for follow-on related work that builds upon knowledge gained in ATD related activities and collaborative engagements with the aviation community. The NASA Air Traffic Management – eXploration (ATM-X) project has the desire to continue this engagement with the aviation industry and capture industry inputs to continue development of their plans and is supporting this outreach with the ATD-2 team. Don't miss your chance to provide input!
8B	Metroplex TOS Departures, initial results and next steps input	Greg Juro (NASA ATD-2) Eric Chevalley (NASA ATD-2) Field demo representatives	Deeper dive on the latest status of the ATD-2 Phase 3 field demonstration, initial results and emerging needs. Early discussion of FY20 plans in this area.