NATCA Safety & Tech Update
Week of August 22, 2016

AIRSPACE TECHNICAL DEMONSTRATION 2 (ATD-2): Pete Slattery (CLT) represents the membership as the Article 48 Representative for ATD-2. His report for this week is below.

On August 2nd and 3rd, NASA conducted the fifth ATD-2 University session at NASA Ames Research Center in Ca. Approximately fifty people representing FAA, airlines, and other industry personnel attended this session. Over this two-day event, the group was informed about the foundational 3T (TBFM/TFMS/TFDM) technologies that ATD-2 is building upon, the foundational research that NASA is building upon (SCDM DRM, PDRC, SARDA) in ATD-2 and the 'what' and 'where' of ATD-2. ATD-2 development and operational experts spoke directly about their areas of expertise and involvement on the project. Briefings on the latest TBFM/Surface electronic integration, surface tactical departure scheduling, surface modeling, system analysis, field shadow evaluations and ATD-2 concept of use were presented. Collaborating team members from FAA ANG, FAA surface office, FAA CLT ATCT, NATCA, and Volpe participated via phone. I presented an hour-long overview of operations at CLT and gave NATCAs perspective on the project via phone.

On August 23rd through 25th, NASA ATD-2 personnel will return to Charlotte and continue their monthly 'Engineering Shadow Evaluations'. The sessions will be held in the NASA CLT ATD-2 Lab located in the old terminal building. The primary focus of this session is AAL ramp tools. Ramp operations will play a crucial role in any attempt at departure metering in the future. There will also be follow up sessions with CLT ATCT and TMU personnel.

Future CLT Lab sessions will focus on data sharing among ATCT and AAL ramp. October shadow sessions are a follow up to the prior data sharing discussions and also begin the dialog between ZDC and CLT ATCT about using the proposed TBFM IDAC/Surface interface.

NASA engineers and human factors personnel will also return to CLT tower and TRACON this week to continue their observation of both the TMU unit and surface operations at Charlotte. The specific information they are looking for is how APREQ release times are calculated and obtained, and how this information can be replicated and improved with various ATD-2 system components.

Development of ATD-2 equipment and procedures is continuing at both the ATD-2 lab in CLT and at NASA Ames Research Center in California.

Everyone at CLT involved in these events is keeping NATCA's interests at the forefront of the input we provide and any decisions we make.

COLLABORATIVE DECISION MAKING (CDM): Ron Foley (ZOB) is NATCA's Article 48 Representative to the CDM initiative. Mr. Foley provided the following information for this week.

The groups are about to start meetings and meetings again next month with the exception of FCT future concept team. Their meeting was cancelled due to lack of tasking. They will try to resume in October. Also, there has been some significant turnover in FCT on the FAA and industry sides. This month will help them get back up to speed.
SCT's meeting will be Sept 21 at CLT.
One day meeting to get briefed on the progress of SCT Tasking 66 Early-Call-For-Release in MSP, and to continue work on SCT TASKING 69, SCT Engagement with NASA.

DATACOMM: Chad Geyer (ZLA) is the Article 48 Representative for DataComm. Below is his update.

The Tower Data Link Services (TDLS) Version 12 has been deployed to 48 sites and only 24 remain. 39 of those sites are Controller Pilot Data Link Communication (CPDLC) capable and only 16 remain. Across the country, approximately 1500 CPDLC clearances are being sent everyday with that number increasing as more sites become operational and additional aircraft begin to participate.
This update will cover route load ability. All Flight Management Systems (FMS) are not created equally. During testing at the trials sites in EWR and MEM we discovered that even though an FMS should all work the same, they don't. The first issue is sending a SID and Transition. Whenever a SID serves more than one runway, you must also send the runway assignment in the loadable message. This is why the current system sends the SID and transition in a free text message for the pilot to manually load. The pilots would prefer for the controller to always send the SID in a loadable format, but it is unrealistic considering that clearance delivery is sending the revision and they do not always know which runway the aircraft will depart from.
The second issue is arrivals and transitions. FMS's only allow the pilot to select or the system to load the arrival and then a transition if one is selectable. ERAM allows the controller to enter a flight plan at any point on the arrival and then join it. For a pilot to take that voice clearance and load it

into the FMS, they must load the transition that fix is on and then delete all the fixes prior to that point. This will also ensure that crossing restrictions associated with the SID are retained in the FMS.

The third issue is airway-to-airway intercepts. Some FMS's can create a fake fix at the intercept point. Other FMS's will just delete those airways if there is not a fix that joins them. This would essentially remove the route sent and create a direct route from the fixes before and after the airways. Aircraft also cannot accept radial routes either as a single radial or as a radial to join another radial.

Another issue is when an airport is coded as part of an airway. Some sites have coded their airports as part of an airway. The FMS needs a way to get from the airport to the airway, such a fix on the Jet Route that the aircraft can go direct to prior to joining the route. The airport itself must also be coded with the 4-letter ICAO identifier. If you tried to use the 3-letter identifier, the aircraft would interpret that as VOR.

Other automation routes that cannot be loaded are North Atlantic Tracks, locally adapted fixes, G-Keys, and fixes outside of the Flight Information Region (FIR).

The program office has been working with Centers and automation specialists to reduce the occurrences of these non-loadable routings to help with an easier transition to Controller Pilot Data Link Communications (CPDLC). With the help of the centers, automation is being changed to help make all routes in the NAS loadable and a majority of the issues have been corrected.

ENROUTE AUTOMATION MODERNIZATION (ERAM): Julio Henriques (ZNY) leads the ERAM efforts for NATCA. This update is provided by Dan Mullen (ZID).

We held several Steering Committee meetings for the operational deployment of Airborne Re-route (ABRR) and Pre-Departure Re-route (PDRR). These programs will allow Traffic Management Initiatives (TMI) and Swap routes to be pushed through TMU directly to the controlling sector so the controllers can accept the routes without having to manually enter them into ERAM. Traffic Management Subject Matter Experts (SMEs) will become familiar with the system to assist its' deployment to the field. Our goal is to have ABRR/PDRR integrated into ERAM and available for use by March 2017.

ERAM EAD511 was released August 23rd. It contains the rest of the content that didn't fit into EAD500 and several fixes for issues discovered during key site testing. EAD600 will also be key site tested at ZLC and ZSE and is planned for a mid-December release.

Task teams from the National User Team (NUT) have been working on several Corrective Action Requests (CARs) generated by ATSAP reports. They include magnetic declination processing in ERAM, destination display in Terminal data blocks, and processing foreign registered aircraft. These CARs

usually result in a change to ERAM, a change to adaptation, or training enhancements.

Some of the issues the NUT has been working include the Visual Comm Indicator, route processing and handoffs, Automated Point-outs, MERT routing and Datacomm uplinks.

Matt Tucker, NATCA Weather Rep, briefed the NUT on the upcoming improvements to the ERAM weather display and how to help get their facilities ready for the upgrade. They were also briefed by James Keith, AJV-7 Rep, on the upcoming Sector Enhancements. This was an in-depth briefing on proposed improvements to ERAM so the reps could prioritize the changes. This was done so we could have controller input on the importance of these proposed enhancements.

Tabletop Briefing Exercises were held at ZOA and ZLA the week of Aug 15th. These exercises are being held at all ARTCCs this year to help the local teams, including NATCA, Tech Ops and management be better prepared for an ERAM outage.

INTEGRATED DISPLAY SYSTEM REPLACEMENT (IDS-R): Richie Smith (N90) leads NATCA's efforts on the IDS-R project as the Article 48 Representative. Below is Mr. Smith's report.

The IDS replacement program is moving in two different directions at this time. During August a few facilities have gone IOC (S56) and some have gone ORD (MLI, PIT, RSW). What is unfortunate is that the negative news out weighs the positive. A handful of facilities have experienced workstation lock ups in NIDS software versions 3.5 and 3.5.1, which contained a fix for FDIO data being dropped. TUS actually fell back to an older software version (3.3.3) in preparation for the move into their new tower.

The new software upgrade, version 3.6, was supposed to address the fixes mentioned above, along with the long awaited IP Storm fix, which is needed at SCT and I90. Unfortunately the software failed initial testing. NATCA was there to witness and unfortunately further testing was canceled after eight successive failures of the first test case. Being that testing never progressed beyond the first test we never saw the fixes to the imbedded document issues that are still freezing workstations. A lot was learned during testing that will lead to a better product but unfortunately the build failed. This build is important for a few reasons. Not only does the SCT network need it to set up their network and pass System Acceptance Testing, I90 needs it to fix issues that they have encountered.

A few weeks ago I90's NIDS network was crippled by this IP storm issue and the network needed to be shut down. Preventive measures were taken at I90, which prompted the program office to tell NATCA that the possibility of a reoccurrence was very small. Fresh on the heels of the failure of the software

test failure I90's network was once again crippled by an IP storm. Local technicians, having learned from the last event, initiated a partial shut down of the system and order was restored in a few hours. Log data is being combed through by both the program office and AWI and at this point AWI claims that the new (fixed) software version of 3.6 would have stabilized the network before it became an issue.

To further complicate things, non-NIDS hardware cannot be ruled out as a causal factor. The NIDS system relies heavily on FTI equipment (routers) and the fact that this could be a failure point outside of the program office's control is not comforting. This possibility was proven during V3.6 testing when the simulated SCT network suffered an IP storm after a router caused a tower's sub network to break away from the host and try to create a new conflicting network, flooding the FTI lines with data.

Preliminary testing of new software is scheduled to begin during the week of August 29.

NAS VOICE SWITCH (NVS): Jon Shedden (ZFW) represents the NATCA membership as their Article 48 Representative to the NVS project. His report is below:

NAS Voice System (NVS) demo labs are currently running on Build 11.11, which is still a stability build. Harris remains focused on eliminating as many known bugs as possible. The FAA test teams are currently evaluating this latest build. Build 12 is in development (these are still beta builds), but should be deployed in the next couple of months. There will be a Stability Demonstration at the William J Hughes Technical Center in November to gauge the systems readiness for Factory Acceptance Testing (FAT). FAT was scheduled to begin in November 2016, but it has been delayed until February of 2017. Harris continues to work on defect resolution and feature integration.

Chris Lloyd (ZDC), NVS Training Lead, is currently participating in Task And Skills Analysis (TASA) for the controller, supervisor, and configuration specialist user roles on NVS. He participated in the initial review of the ATC TASA on July 13th.

Mr. Shedden was in Melbourne, FL at Harris HQ August 1st-5th and August 15th-19th to provide on-site support for development and defect detection.

Next Generation Air-Ground Communication (NEXCOM) continues deployment of new CM300/350 V2 radios to terminal facilities across the country. Deployment is going well.

Testing of a new RCAG at **Houston Center (ZHU)** has begun. This RCAG will replace the ARINC's VHF Extended Range Network (VERN) in Cancun. The FAA successfully replaced the Key West VERN last summer. These RCAG/VERN radios provide long-range directional radio coverage in

the Gulf of Mexico. The area rep, Shawn Sharpless, indicates that initial testing shows the site works as well as the VERN in regards to signal strength and coverage. The issue where the controllers hear bleed over from Mexican ATC during incoming transmissions has been resolved, and testing has resumed. Mr. Sharpless indicates that testing continues to go well.

NAS Voice Recorder Program (NVRP) is the replacement for existing NAS voice recorders (DALR, DALR2, DVRS, DVR2). The NVRP Integrated Requirements Team met on March 24th to begin validating and shaping the requirements for the initial Program Requirements (iPR) document. Key site for NVRP will be Seattle Center in the 2018 time frame.

Plantronics was awarded the **Headset** contract so almost everything will remain the same. There will be a few headset models that will no longer be available under the new contract due to obsolescence. Mr. Shedden is working with the program office and LR to develop a briefing on the changes.

The **Headset Splitter** final design has been completed. The splitter which is designed to allow three or four headsets to be connected to existing voice switches should be produced and deployed later this year. Air Traffic Services is currently looking at the quantity necessary to address the ATSAP CAR (CAR 2012-001). A SRM Panel was completed on July 19th and 20th. Chris Bakke (SLC) was in attendance representing terminal controllers. The splitter will also be a part of the headset contract and may be ordered in the same manner as headsets. Air Traffic Services is attempting to obtain funding for deployment of the splitter.

Grand Rapids Tower/TRACON (GRR) is reporting multiple issues with their aging voice switch. The Voice Switching Team in Oklahoma City (AJW-173) is working closely with GRR to resolve their issues. There's also a radio coverage/spectrum issue being worked. The controllers have presented a list of issues to Tech Ops and AJW-173. Air Traffic and Tech Ops continue meeting to develop a plan to address the outstanding issues.

Waterloo Tower/TRACON (ALO) is reporting issues with the phone system used operationally in the tower. One of the issues has been resolved (inaudible phone) while the second one remains in work.

RUNWAY SAFETY: Bridget Gee (DFW) is NATCA's Runway Safety Action Team (RSAT) Representative. She also serves as the Article 48 Representative to the Runway Status Lights (RWSL) Program. Below is her report to the membership.

Runway Status Lights (RWSL):
ORD: Being conducted in three phases: Phase 1, Runway 10L/28R, was turned online April 27, 2016. Phase 2 and 3 are scheduled to come online 2017.

Phase 1 (10L/28R): Initial Operating Capability (IOC) took place 4/27/16.

Phase 2 (10C Enhancement) – Cable work begins July 2016. Fixture installation begins early August 2016. Completion date shift due to south airfield shelter. Completion now scheduled for Spring 2017.

Phase 3 (9R Enhancement) - Scheduled to begin Spring 2017.

DTW: Hardware issues fixed and Commissioned on 4/20/16.

Phase 2 (21L): Circuits to be installed Fall 2016 or later

BWI: Construction is ongoing. Fixture installation begins August 28th. System set to come online in 2017.

SFO: Construction is ongoing. Fixtures to be shipped August 15th, installation scheduled to begin August 22nd. Initial Operating Capability (IOC) planned for late Nov 2016.

JFK: ORD declared on 6/8/16. System operating well.

BOS/DFW: Work is ongoing to secure funding from the Agency and agreements with the airport operators at BOS and DFW. JRC scheduled for September 2016.

Runway Safety

Closed Runway Occupancy Prevention Device (CROPD): Live Testing at JFK begins August 23rd. JFK's test will run for a month after which all test equipment will be removed by the contractor, data examined by MITRE, and next steps planned. RNO and MDW are also testing sites, which will take place next year. CROPD if proven reliable will be the first use of voice recognition to provide safety alerts. I was present next week for live testing at JFK.

Airport Construction Advisory Council (ACAC): The ACAC continues to support construction activities throughout the NAS and internationally. We brief weekly on current projects in the NAS.

Automation of Construction Notice Diagrams: The detailed requirements in which myself, the ACAC, and runway safety office were involved with were completed with PMO last week. I am currently waiting on the draft of requirements to be completed in order to review.

Root Cause Analysis Team (RCAT): Bridget Gee is the RCAT Industry Co-Chair on the RCAT. The RCAT will meet on September 22nd. We will review the current A and B runway incursions in the NAS then myself and my FAA counterpart will brief the RCAT results at the next Runway Safety Council (RSC) meeting on October 12th.

BNA CAR: BNA due to the airport being expanded twice since the control tower was opened in 1981. The expansions have resulted in multiple runway and exit areas having limited or completely obstructed views from the tower. The inability to observe aircraft exiting the runways, or holding in position makes it difficult for BNA controllers to effectively control traffic. Current due date August 31st.

Timely Airport Maintenance Notification CAR: This CAR was in briefed on June 21st. Research and outreach are currently being conducted. Work is ongoing.

Runway Safety Call 2 Action Communication Initiative – Runway Safety Best Practices Workgroup – We identified and reviewed Runway Safety best practices and will make recommendations for formalization where appropriate. The group in collaboration with the Runway Safety group and the Runway Safety Council will formalize the "best practices". I sit as the co-lead for this workgroup. Work is ongoing.

Runway Incursion Prevention Shortfall Analysis (RIPSA)- RIPSA is funded by the Runway Safety group. This Runway Incursion Reduction Program (RIRP) is tasked to investigate, develop, test, evaluate, and deploy low cost runway incursion prevention technologies. This is the result of the NTSB recommendation to "require, at all airports with scheduled passenger service, a ground movement safety system that will prevent runway incursions; the system should provide a direct warning capability to flight crews." Currently, research is being conducted for 15 airports without any surface surveillance system, which should be completed at the beginning of 2017. The hope is to have a low cost technology solution to reduce the risk of runway incursions and be production ready within the next 3 years.

NBAA podcast – I recently conducted a podcast with the NBAA as an outreach to corporate pilots to bring a heightened awareness to runway status lights (RWSL), which are currently at 15 of our busiest airports in the NAS. Additional outreach is being discussed.

NTSB – the NTSB is commencing a special investigation into runway incursions. The plan is to develop a Special Investigation Report (SIR) initiating a comprehensive discussion on runway safety in the National Airspace System (NAS) focusing on runway incursion cause, effect and mitigation. The report would include an overview of runway incursion history, mitigation efforts to date, areas of concern, and recommendations and suggestions to reduce the frequency and severity of systemic NAS wide and airport specific runway incursions. As the NATCA runway safety and RWSL subject matter expert, the NTSB as requested my yet to be defined support for this project.