NATCA Safety & Tech Update
Week of November 14, 2016

AIRSPACE TECHNICAL DEMONSTRATION 2 (ATD-2): Pete Slattery (CLT) represents the membership as the Article 114 Representative for ATD-2. His report for is below.

> October Shadow Engineering Sessions at the CLT ATD-2 Lab had members from ZDC TMU, as well as CLT airport Ramp personnel participate in order to observe how the system will impact their operations.
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> On October 19th and 20th, TMU workforce members from Washington Center (ZDC) met with CLT ATCT, FAA HQ and NASA personnel in the Charlotte ATD-2 lab for the 4th ATD-2 shadow session. Oct 19th was dedicated specifically to help ZDC ramp up on the latest ATD-2 tools and shadow evaluation process. On Oct 20t the team agreed on the TBFM/ATD-2 integration plan as well as the airspace scenarios that the electronic coordination technology would likely be used. Strong collaboration and fast progress in this meeting resulted in ample time for system shadow scheduling. ATD-2 shadow testing was the focus of the afternoon session.
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> On October 20th, workforce members of CLT ATCT, AAL CLT ramp, CLT airport ops, FAA HQ and NASA met in the Charlotte ATD-2 lab for a follow up session on 'data exchange and integration'. The focus of this session was on recapping the progress made last month and getting additional feedback from CLT workforce personnel on areas of required clarification. Outcomes form this meeting were specific requirements for some data exchange capability and additional design work on some of the lesser mature areas.
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> Shadow engineering sessions for November are scheduled for the 16th and 17th. These sessions will be a bit lower key than previous months since NASA believes they have a sufficient amount of information from previous sessions and are still incorporating it into the software. There will be NASA engineers shadowing TMCs in both the TRACON and the tower during this same time.
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> As always, NATCA representatives participating in these sessions are looking out for the best interests of the workforce to ensure that the ATD-2 system works in a manner that best suits controllers needs.

COLLABORATIVE DECISION MAKING (CDM): Kyle Andrews (ORD) is the NATCA Representative to the Surface Concept Team (SCT). Mr. Andrews forwarded the information below for the membership.

There were no face-to-face meetings in November, but the Airport Surface Efficiency Office gave information on the following activities.
Tasking 66 "TBFM Prescheduling Test in MSP" is nearing conclusion with mixed results. The airports in the coverage area with flights to MSP had already started a program where ground delays of more than thirty minutes triggered automatic releases, with ZMP controllers then working out the spacing to MSP in the air.
Because of this, significantly lower benefits were seen from the TBFM trial as compared to the DCA-LGA prescheduling test that took place last spring. Also, the MSP test created extra workload for the controllers, by increasing the number of missed windows and adding additional release calls. This highlights one of the difficulties that has repeatedly happened with these tests - the variables are not constrained enough to determine what is producing beneficial changes.
CDM Steering Group (CSG) has received a proposal for a new SCT tasking that will recommend SCT engagement with TFDM as it continues to be introduced to industry. The NextGen Integration Work Group (NIWG) will be presented this proposal in December, and, if approved, the SCT will move on it in early 2017.

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

ZDC had to operate on EBUS for a short period during the midshift on Oct 20 when their system's internal clock got out of sync and the ERAM channel failed. This wouldn't normally have had an impact to the operation, but one of the two channels had been taken offline for testing. A new release of ERAM to prevent the problem from recurring was built and sent to all ARTCCs.

The Test and Training Lab (TTL) phase of site testing the latest version of ERAM (EAD600) was completed at ZLC and ZSE the first week of November. That testing went very well, but when ZLC loaded the release on the Operational channel, a new problem was uncovered. We determined that there was not an acceptable mitigation to work around the problem, so the Operational phase of testing was postponed until a new release can be built and distributed.

The Airborne Reroute (ABRR) and ERAM teams have been working for the last several months to get that program ready for deployment. ABRR and PDRR (Pre-Departure Reroute) will allow controllers and TMCs to use automation to distribute and accept Traffic Management Initiatives so they won't have to be hand written and retyped. There have been several software changes needed in both ERAM and TFMS software, and those changes will be complete by January. We've been working on a deployment schedule with

the intention of making this program available prior to Swap Season this spring.

The National User Team has weekly telecons to work automation issues and procedures. Some of their work the last few weeks includes:

- ER 166602 ERAM Processing Enhancement for non ICAO
- ER 162528 Multiple SD-Keys
- The task team will create a problem statement based on an adaptation solution. The desired behavior is to create more/different keys available through adaptation; this may include have two functions enabled by a single key.
- Data Com Use Cases
- Minor edits to two use cases are pending; these have been sent back to the Data Com team. Once these changes are completed all team members will have concurred with the updated use cases.
- ER 159834 GIMS Display of Transition Speed
- SIG 1674 CRR Auto Add
- Handoff to Non-US
- ER 167950 Changed Portion of Route not Cyan Coded
- The desired behavior is to correct the coordination of the "???" coding from ERAM to TFMS; currently this is not handled correctly. In addition to the problem statement the team discussed data analysis of incidences of XXX and ??? in routings today, how TMC's envision using the new tool and long term solutions for processing routes that contain ???.
- ER 159834 GIMS Display of Transition Speed

NAS VOICE SWITCH (NVS): Jon Shedden (ZFW) represents the NATCA membership as their Article 114 Representative to the NVS project. His report is below.

NAS Voice System (NVS) demo labs are currently running on Build 12B. Harris continues to focus on stability and fixing bugs as we lead up the FAA Stability Demonstration. The Stability Demonstration is the precursor to the beginning of the FAA's Factory Acceptance Test (FAT), and is scheduled for the week of November 28th. FAT was scheduled to begin in November 2016, but it has been delayed until February of 2017. Harris also continues to work on feature integration. The NVS Feature Checkout is scheduled to occur the week of November 14th at the Tech Center.

Chris Lloyd (ZDC), NVS Training Lead, reviewed the 50% Operator manual and the 50% Supervisor manual. We are also reviewing the Tech Ops Task and Skills Analysis (TASA) as it relates to the Configuration Specialist user role.

Mr. Shedden was in Anchorage and Kenai the week of October 17th to work on NVS requirements for Alaska FSS. It was a very productive meeting as we came away with low-level requirements necessary to deploy NVS to the AFSS Parent facilities. Mr. Shedden was also in Seattle the week of October 24th briefing the three key sites on system configuration and the collection process.

Mr. Shedden will be at the Tech Center November 15-18 for NVS Feature Checkout, and November 28-December 2 for the NVS Stability Demonstration. Mr. Shedden will be in Seattle December 4-8 working with the NVS Test Team and the 3 Key Sites to begin the process of developing test scenarios for Operational Test and Evaluation.

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

NAS Voice Recorder Program (NVRP) is the replacement for existing NAS voice recorders (DALR, DALR2, DVRS, DVR2). The Program Office presented to the JRC and received approval to proceed to Final Investment Analysis. Key site for NVRP will be Seattle Center in the 2018 time frame.

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. A SRM Panel was completed on July 19th and 20th. 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. There's one outstanding issue where a RADAR site is causing interference in the Tower Cab. That issue continues to be worked.

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.

Mr. Shedden is participating in the rewrite of **FAA Order 6510.4 (A/G Order)**. The last version was written in 1980. There are both new and existing requirements in the order dictating how Air Traffic must use A/G frequencies. NATCA received a briefing from the Spectrum Office on September 27th. We have requested a SRM panel be convened to address the safety issues associated with this requirement.

RUNWAY SAFETY: Bridget Gee (DFW) is NATCA's Runway Safety Action Team (RSAT) Representative. She also serves as the Article 114 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) –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): 3 REL (Runway Edge Lights) to be installed Spring 2017

BWI: Construction is ongoing. System set to come online in 2017.

SFO: Air Traffic Cadre training was completed on 10/31. I will be present for Shadow Operations (a process in which validation is completed to verify the timing of the (REL) runway entrance lights and (THL) takeoff hold lights) scheduled for 11/15-11/17. The Pre-IOC meeting with air traffic, which is scheduled for 11/16. Initial Operating Capability (IOC) scheduled for 11/30/16.

BOS: MOA was delivered on 10/31. Design review meeting is scheduled to be held on 11/15.

DFW: Final CSER (Contractor Site Engineering Report) was scheduled to be delivered 11/6.

Runway Safety:

Closed Runway Occupancy Prevention Device (CROPD): Live Testing at JFK was completed. No report with JFK results has been provided at this time. RNO and MDW will also be testing sites, which will take place next year.

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: Multiple meetings and edits have been conducted for the detailed requirements in which myself, the ACAC, and Runway Safety office were involved in. I am currently waiting on the draft of final requirements to be completed in order to review. Also, the timeline may be pushed back. We are currently working to make sure this does not occur. I will know more within the next few weeks.

Root Cause Analysis Team (RCAT): Bridget Gee is the RCAT Industry Co-Chair on the RCAT. The last RCAT met on September 22nd. We reviewed the current A and B runway incursions in the NAS as well as began a data dig on category C incursions. My FAA counterpart and myself briefed the RCAT results at the Runway Safety Council (RSC) meeting on October 12th. We currently do not have another RCAT scheduled at this time. Initially, it was scheduled for the first week of December, however the number of A's and B's we currently have do not warrant another meeting at this point. Most likely, we will continue with our next meeting late January or February.

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. The CAR was submitted to the ERC 10/6. The ERC did not concur. This effort is ongoing with a new due date of 11/30.

Timely Airport Maintenance Notification CAR: This CAR was in briefed on June 21st. Research and outreach are currently being conducted. This CAR is also part of the Top 5 additionally two SRM panels will be commenced this month. Work is ongoing.

Airport Construction CAR – The RTCA Airport Construction Task Group's final report is with AJV. I am currently awaiting review and commit by AJV. Once completed, we will be able to finalize our recommendations.

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.

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.

ICAO – ADOP (Aerodrome Design and Operations Panel) – Representatives from around the globe met for the ADOP/2 panel last week in Montreal, Canada. We discussed over 400 pages of documentation. There were many topics covered such as and not limited heliport design and operations, assessment and reporting of runway surface conditions, international provisions addressing ground handling, aerodrome pavement management, enhancement of airport capacity, the 2nd edition of PANS-Aerodrome Doc 9981, and aerodrome emergency response. I am working on a detailed report, which will be provided with in the next week.

SURVEILLANCE BROADCAST SERVICES (SBS) OFFICE: Eric Labardini (ZHU) is the Article 114 Representative to the SBS Office. Below is the update for SBS.

The NATCA Surveillance and Broadcast Services (SBS) team includes: **Eric Labardini (ZHU),** National SBS Article 48 Rep, **Craig Bielek (A90), Dan Hamilton (SFO),** National Airport Surface Surveillance Capability (ASSC) Rep, **Andrew Stachowiak (I90),** and **Tom Zarick (ZDV),** National Interval Management Rep.

ADS-B:

- As of October 31: 19,489 of 27,196 equipped aircraft are broadcasting ADS-B Rule compliant avionics in the NAS. The difference in the two numbers represents problem avionics that are normally screened by ATC automation systems.
- An issue not screened by automation systems but an important assumption for future ADS-B dependent applications is the broadcast call sign of the user. ADS-B sends this information to automation systems for comparison to the filed call sign. When a mismatch occurs a Call Sign Mismatch (CSMM) alert can be generated. Data from ZAN showed over 2100 CSMM alerts were generated in just one month (March 2017). This prompted SBS Article 48 to recommend all MEARTS sites disable CSMM alerts and poll all ERAM sites to gauge the extent of the problem. In July 2017, over 44,000 CSMM conditions were present in all ERAM sites! Obviously, a lot of work is needed and fortunately CSMM alerts are disabled in all ERAM, STARS, and ASDE/ASSC sites. MEARTS sites can do the same with Build 16.01 or later. In October 2016, the number grew to over 55,000 CSMM conditions present in ERAM. Obviously the Agency has a long way to correct this issue.
- The SBS PO rough estimate of avionics installation capacity nationwide is 50,000 aircraft per year. With the January 1, 2020 deadline to equip quickly approaching, concern is high that equipage levels will fall short of the estimated total NAS fleet (100,000-160,000). Users that wait too close to 2020 may find that the availability of installers falls short of demand. The Agency has launched a new incentive $500 rebate program for a limited number of piston single engine aircraft.
- ADS-B IOCs have been completed at all EnRoute (ERAM and MEARTS) facilities.
    - ZSE, ZAB, ZAU, and ZMP completed their planned sort cell promotions on Oct 13.
    - All but one ERAM site has promoted ADS-B to the top of their sort cells. Still awaiting a decision from ZMA.
- 84 of 155 Terminal sites have reached their ADS-B IOC and 79 are operating on Fusion. The majority of the remaining Terminal sites are ARTS 2E sites awaiting an upgrade to the ELITE (STARS) build. The Terminal ADS-B/Fusion transition proceeds in this order: Kickoff meeting, ADS-B Flight

Inspection, ADS-B IOC, Fusion Operational Suitability Demonstration (OSD) and Fusion Operations.

- NATCA SBS team members Craig Bielek and Andrew Stachowiak have been extremely busy supporting the aggressive SBS schedule.
- The most recent Terminal events:
    - Atlantic City (ACY) Transitioned to Fusion Oct 18
    - Gulfport (GPT) Transitioned to Fusion Oct 19
    - Myrtle Beach (MYR) Flight Inspection Oct 19
    - Fairbanks (FAI) Operational Suitability Demonstration completed Oct 20
    - Amarillo (AMA) ADS-B IOC on Nov 1
    - Roswell (ROW) Kickoff Nov 1
    - Wilkes-Barre (AVP) Kickoff Nov 1
    - Fort Wayne (FWA) kickoff Nov 3
    - Fairbanks (FAI) Transition to Fusion Nov 3
    - Spokane (GEG) Operational suitability demonstration completed Nov 8
    - Spokane (GEG) Transition to Fusion Nov 9
- NATCA SBS continues to work with the Agency toward a more proactive approach to ADS-B avionics issues. Though these issues are rare, the Agency's approach to date has been hampered by a lack of resources devoted to investigating flagged issues within the SBS Compliance Monitor. These issues occur when standards for installation or configuration within aircraft or ground systems are not met. ADS-B is a cooperative surveillance source relying on the position information determined onboard the aircraft. In order to reduce or prevent the number of safety compromising events in the NAS we need a proactive, timely response.
- NATCA SBS is asking the Agency to reopen analysis of the risk associated with erroneous position in the ADS-B SRMD. The frequency of issues to date warrants more discussion on the topic. The Agency has indicated a non-compliant aircraft list may be developed, and this may be an appropriate mitigation for the risk. However, an SRM Panel is the appropriate place to make that determination.

Advanced IM/FIM-S

- Third and final IM/TSAS Integration Demo was held at Mitre the week of Nov 7th in preparation for HITL to be conducted in early 2017.

Advanced Surveillance - Enhanced Procedural Separation (ASEPS)

- Formerly known as Space Based ADS-B (SBA), formerly known as Reduced Oceanic Separation (ROS). Ah yes, the time honored Agency tradition of renaming and renaming a program. :)
- ASEPS has now had two SRMP meetings. The second held Aug 23-25 in SFO included NATCA representatives from all ATOP facilities. 12 hazards were identified, and actual rankings and more discussion will occur at the next SRMP planned Nov 29-Dec 1 in Phoenix.

- ASEPS continues to explore a reduced oceanic separation standard. This may be supported by Space Based ADS-B or with changes to ADS-C, currently used in ATOP. In any environment, including oceanic, separation standards are closely tied to the combined performance of communication, navigation, and surveillance. While SBA represents are dramatic change in surveillance, little is changing in the ability to communicate with aircraft. This affects response times and much more. NATCA ATOP SMEs have weighed in during our SRMPs that ADS-C backup is desired even with the introduction of SBA.

ASDE-X Tech Refresh:

- Training meetings continue as the team updates the CBI.
- This program continues to run smoothly with minimal issues

ASSC:

- Things are running smoothly at SFO. Controllers are very pleased with the system. Although fine-tuning continues, the system is operating without any issues.
- CLE CADRE training takes place on December 1st. Field familiarization will start in February. Everything is still on track to IOC in March.

FMA in Fusion:

- The safety analysis work is the remaining major step in this process. Operational evaluation and SRMP have concluded, but the safety analysis documentation needs to be incorporated before the SRMD can be circulated for approval. Timelines continue to project an operational start by mid-2017.

MEARTS Fusion:

- A Technical Interchange Meeting (TIM) was held at HCF October 18-19. The discussion was very productive and all parties came away with a comprehensive plan to transition to Fusion. Barring unexpected complications, HCF and all sites that rely on the HCF MEARTS system should transition to Fusion no later than February 23.
- The transition to Fusion in MEARTS is complicated by the fact that Fusion is an "all or nothing" display mode in MEARTS. Unlike STARS but similar to ERAM, sectors cannot change easily between display modes. Instead, the entire facility and all facilities that receive a feed from the MEARTS facility go to Fusion at once. This means all on site Fusion evaluations and training for all sites needs to be accomplished within 45 days per the SBS MOU. A complex and resource intensive effort.
- The SRMD and Order allowing 3nm Fusion in MEARTS have been fully approved by the Agency.

Terminal Fusion:

- NATCA remains very focused on the Common Terminal Digitizer (CTD) effort necessary to incorporate numerous ASR-8 sites into STARS Elite as well as Fusion.
- An issue with TDW displays seems to be close to resolution. Both the Agency and NATCA agreed to an adaptation parameter to resolve the issue with target size. Operational Eval and key site testing at Evansville (EVV) have

been completed. TSLE is expected to begin deploying the change nationally very soon.

- SCT issues continue to be a large focus. NATCA SBS is heavily involved in the SAAT team, which is examining long-term alternatives to help improve overall surveillance in the SCT airspace. The first efforts are aimed at mitigating the effect of the new Stadium near LAX. NATCA and the Agency have agreed to move forward with raising the LGB radar site. We are also working on a Wide Area Multilateration (WAM) design. Agency and Stadium proponents are in negotiation over funding.
- NATCA SBS continues to work with Greensboro (GSO) on radar and adaptation problems preventing them from transitioning to Fusion.
- NATCA SBS reached out to RDU regarding continuing issues with Fusion. The facility has requested additional radar sensor feeds via a NAP entry. Tree clearing around the RDU ASR was supposed to have been completed, but may still be affecting the presentation. More to follow.
- Las Vegas (L30) has successfully completed their OSD but has not determined when they will transition to Fusion. NATCA SBS is trying to work with the facility on any internally identified obstacles or issues.
- The Fusion Focus Group continues to track and resolve facility reported issues with Fusion. These are largely issues with the underlying surveillance infrastructure, and experts from all fields are available to assist. Please report any issues to your OSF and our NATCA SBS group for assistance. It is critical that actual data is recorded for evaluation and resolution.

Vehicle ADS-B:

- Outreach meeting for HNL takes place on November 15th.