NATCA Safety & Tech Update
Week of December 12, 2016

DATACOMM: Chad Geyer (ZLA) is the Article 114 Representative for DataComm. Below is his update.

The Tower Data Link Services (TDLS) Version 12 has been deployed to all 73 sites. 55 of those sites are Controller Pilot Data Link Communication (CPDLC) capable. Across the country, approximately 3000 CPDLC clearances are being sent everyday with that number increasing as additional aircraft begin to participate.

The local 48 teams that helped deploy the system were essential for a successful deployment of tower services. Their job is not finished either. These representatives will continue to support new releases, update adaptations, develop local training for enhanced functionality, and capture benefits, documentation of issues, and other support that may be needed from the program office.

Segment 1 Phase 1 (S1P1) is fully deployed and work continues on the En Route portion of DataComm known as Segment 1 Phase 2 (S1P2). S1P2 is the En Route deployment of CPDLC service. Coding by Leidos is ongoing and will take approximately three ERAM releases to include the code for initial services. Full services will be deployed approximately two years after initial service.

Initial services include Transfer of Communications, Sessions and Eligibility, Altitudes, Altimeter Settings, Speeds (limited), Airborne Reroutes (ABRR), Routes, Emergency messages, and Pilot initiated downlinks. The ability to Uplink and Downlink these messages will be integrated into the Full Data Block, Aircraft List and Menu Screens. The D-Side monitors are being replaced next year to allow for more information to be displayed.

Deployment will begin at key sites in the middle of 2018 and will take approximately 18 months to be deployed to all 20 centers.

Full Services will include additional Route functionality, additional altitude functionality, holding instructions and advisory information. This additional functionality will be deployed around the 2020/2021-time period.

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

The operational testing of the next ERAM software release, EAD600, had to be stopped when a software bug was found early in the test. The problem has been fixed and the test will restart in early January at ZSE and ZLC. The national release will be several weeks later, depending on the severity of any problems found during testing.

EAD600 is a requirement for the deployment of Pre-Departure Reroute and Airborne Reroute (PDRR/ABRR). These programs will allow Traffic Management Initiatives to be pushed directly to controllers Aircraft List so they won't need to be manually re-entered. Training for TMCs and controllers will begin in early January.

The Emergency Backup System (EBUS) will become unusable as the ERAM hardware is replaced beginning in 2018. The original plan for ERAM didn't include an independent backup system, but the Enroute Automation Workgroup (ERAW) has determined that we need one. We're in the process of getting the design finalized and the funding identified.

The National User Team (NUT) has been working current ERAM issues and been involved in the development of future programs.

- A team of Facility Tech Reps (FTRs) went to MITRE to work on an early prototype of Path Stretch.
- The team is working on a method to notify controllers if there is missing data in the NEXRAD display on scopes.
- A revised equipment template is being developed to better work with ICAO flight plans.
- The Ground Based Interval Management (GIM-S) team developed a solution for displaying transition speeds.
- The team has been working on the problems caused by incorrect ADS-B call signs.
- A Use Case has been completed regarding allowing ERAM to exchange handoffs with Non-US systems.

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) Feature Checkout occurred at the Tech Center the week of November 14th. Feature Checkout was performed on NVS Version 12B and was used to determine the completeness of available features, as well as their interaction with other features. The Stability demonstration also occurred at the Tech Center, the week of November 28th. The Stability demonstration was run to determine the systems readiness for Factory Acceptance Testing scheduled to begin in January. While the system performed well, and there has been significant improvements, it fell short of being able to begin FAT dry runs in January. Harris continues to focus on stability and fixing bugs, and the start of FAT will only shift a few months to the right.

Harris is currently reviewing FAA comments on the 50% Operator and Supervisor manuals.

Mr. Shedden was Atlantic City the week of November 14th for Feature Checkout, and the week of November 28th for the Stability demonstration. Mr. Shedden was also in Seattle for the collection of data to begin development of Operation Test and Evaluation (OT&E) scenarios.

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. AJI is reviewing the request.

NAS MONITORING EQUIPMENT (NME): Corrie Conrad (PDX) is the NME Article 114 Representative. Ms. Conrad's report to the membership is below.

There was a policy change to the 6750.24 that states when the Far Field Monitor alarms you are no longer required to downgrade from a CAT II approach to a CAT I approach. Their needs to be a software upgrade and a change to the user interface at all 16 UIC sites so that the equipment accurately reflects the changes. The ICMS sites also need to be updated, however, they are unsure on how/when they will be able to accomplish this, they are currently working on a plan.

NME - On December 14th the PMO will present an update on NME and the next investment milestone will be decided upon.

We are scheduled to proceed with a Comparative Safety Assessment in January.

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.

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

DTW: ORD declared 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: IOC (Initial Operating Capability) was declared on 11/30/16. The (REL) runway entrance lights were turned on. However, a software update is needed for the (THL) takeoff hold lights). I am scheduled to return to SFO January 17-19 for shadow operations on the THLs. Once the optimization is completed, they will be turned on.

BOS: MOA was delivered on 10/31. Design review meeting was held on 11/15. Work is ongoing to get the funding committed.

DFW: Final CSER (Contractor Site Engineering Report) was scheduled to be delivered 11/6. Pre-bid meeting for the SSC portion of the work on the west side of the airport was held on 12/7. The bid is expected to be awarded on 1/6/17 and a pre-construction meeting is scheduled for 1/19/17.

Runway Safety:

Closed Runway Occupancy Prevention Device (CROPD): Live Testing at JFK was completed. I have been awaiting an update on the JFK analysis results, which was originally targeted for December. However, due to the number of contractual products MITRE/CAASD is delivering to the FAA in December, plus the holidays. I was recently told that the report would not be available until mid-January. I am also awaiting an updated timeline to go to RNO and MDW.

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. 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. There has not been enough A or B incidents to justify calling in another meeting at this point in time. I expect the next meeting to be conducted in February/early March.

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 12/16.

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. CAR due date is 1/20/17.

Airport Construction CAR – The RTCA Airport Construction Task Group's final report is with AJV. AJV is actually in control of the way forward currently as they are reviewing the RTCA's TOC Airport Construction Task Group's recommendations. That said, an AJV POC maybe assigned to work with me in the future due to my current counterpart retiring. I am currently awaiting review and commit by AJV. Once completed, we will be able to finalize our recommendations. CAR due date is 2/28/17.

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 had its formal in brief to NATCA on 12/12. 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 was conducted at 15 airports without any surface surveillance system and we are waiting on a final report of that research. Work is ongoing.

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. My final report was submitted to IFATCA and NATCA on 12/12. Additional efforts are underway were I will begin working with the AOWG.

AOWG (Aerodrome Operations Working Group) - The AOWG is responsible for the development of SARP's and the PANS procedures pertaining to emergency response at and in the vicinity of aerodromes. Mr. Jean-Louis Pirat, Chairman of ADOP, specifically asked for my assistance on this working group due to the need of air traffic experience. I am beginning this effort now more information to follow.

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:

- The SBS PO very 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. Facilities may see these GA ADS-B operators flying more as they attempt to validate their installations and claim the rebate.

- 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.
- ADS-B IOCs have been completed at all EnRoute (ERAM and MEARTS) facilities.
    - All but one ERAM site has promoted ADS-B to the top of their sort cells. ZMA intends to wait until the end of FY17 to do so.
- 87 of 155 Terminal sites have reached their ADS-B IOC and 80 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:
    - Huntsville (HSV) ADS-B, Fusion k/o Meeting Nov 15
    - Green Bay (GRB) ADS-B IOC Nov 15
    - Burlington (BTV) ADS-B Flight Inspection Nov 15
    - Sioux Falls (FSD) ADS-B Flight Inspection Nov 16
    - Portland, ME. (PWM) ADS-B, Fusion k/o Meeting Nov 17
    - Amarillo (AMA) OSD Nov 21-23
    - Colorado Springs (COS) ADS-B Flight Inspection, Cadre Nov 29,30
    - Fort Smith (FSM) ADS-B Flight Inspection Dec 6
    - Charleston, WV. (CRW)ADS-B, Fusion k/o Meeting Dec 6
    - Myrtle Beach (MYR) OSD Dec 7,8
- 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, and a meeting is planned in January. 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

- Met with American Airlines and ACSS on Nov 29th to discuss another iteration of Merging and Spacing with hopes that is can be performed on Phoenix landing traffic. No commitments have been made by any parties involved as of yet.
- ConOps Workgroup met the week of Dec 5th. Focus for this meeting was primarily on Paired Approach.

Advanced Surveillance - Enhanced Procedural Separation (ASEPS)

- Formerly known as Space Based ADS-B (SBA), formerly known as Reduced Oceanic Separation (ROS).
- A third SRMP was held November 29 to Dec 1 that included NATCA representatives from all ATOP facilities. The previously identified 12 hazards were given initial and final rankings based upon mitigations identified by the Panel. NATCA and other SMEs continue to identify enhanced oceanic communications as a necessary mitigation for the hazards identified. Without enhanced communication the overall success of the ASEPS remains in question.
- 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.
- FLL MIA and MCO are the next facilities that will receive the tech refresh training. This training will take place early next calendar year.

ASSC:

- CLE CADRE training took place on December 1st. The facility has until the end of January to train the workforce.
- Field Familiarization is scheduled to start at CLE the week of February 6th, with IOC scheduled for late March.
- CLE is the second Key site in the program. All future production sites are in the design review phases.

ERAM Fusion

- An initial meeting with the ERAW work group was held on December 7. The focus of the discussions was a path forward to Track Based Display Mode (TBDM), a fusion display mode. The group outlined plan for 2017 that may result in a key site reaching the objectives: use of TBDM and expanded use of 3NM separation. More to come on this subject.

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.

GIM-S:

- Procedure discussion between ZAB and ZDV ongoing as well between ZLC and ZDV. Timeframes still uncertain for completion.

MEARTS Fusion:

- Barring unexpected complications, HCF and all sites that rely on the HCF MEARTS system should transition to Fusion no later than February 23.
- An Operational Suitability Demonstration is planned for December 13-15 at HCF with SBS Support personnel on site.
- 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. Sites are not expected or encouraged to start the transition without support from the SBS Program Office.

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 has begun rolling out the change nationally.
- 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, but little if any

tangible progress has been seen to date. Meanwhile the SAAT team has been working on a costly Wide Area Multilateration (WAM) design. Agency and Stadium proponents have completed negotiations over funding and announced that a shared cost agreement allowing WAM deployment to move forward.

- NATCA SBS reached out to RDU regarding continuing issues with Fusion. RDU NATCA reports that the issues have been largely resolved with STARS R27D10, which has significant tracker improvements included.
- 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:

- 976 Vehicles are ADS-B equipped at 16 airports.
  Through numerous facility outreach briefings, the team has identified a need for portable transponders. Currently, vehicle transponders are hardwired. The team is hoping to participate in a demo of portable transponders early next year in ATL.**ATL Metroplex**

The Atlanta Metroplex team implemented our up-numbered SIDs on 11/10/16, after a brief automation issue everything has gone as expected. We also implemented the New ATL STARs on 11/15/16.