NATCA Safety & Tech Update
Week of March 5, 2018

AUTOMATED TERMINAL PROXIMITY ALERT (ATPA): Mike Sanders (SCT) represents the membership as the Article 114 Representative for ATPA. Mr. Sander's report is below.

> We are in current development for controller training in an eLMS course. This week the following SMEs Jeremy Bolduc (P50), Lacey Borgert (L30), Greg Tipton (SBA), Jeffrey French (BFL), Sara Haight (NCT) participated in an Operational Try Out (OTO) at SCT to evaluate and determine suitability. We gained some really good feedback and will be making some changes. I still don't have a definitive time on a release to the field but am hoping April timeframe. More to come.
>
> Any facility that would like to turn ATPA on, please contact me so we can go over adaptation options. That way when the eLMS training is completed your facility will be ready.

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

> Controller Pilot Data Link Communication (CPDLC) sites are now sending over 41,000 clearances a week.
> The month started in Melbourne, FL to attend the DataComm Implementation Team (DCIT). This group is made up of multiple industry participants and helps with the development and implementation of CPDLC in Domestic airspace. The group discussed changes to tower messages, future enhancements and En Route system behavior. There were also conversations on when each airline would have pilots available to participate En Route, as well, as FAA OPS approval to participate. DCIT meetings are held approximately every 6 weeks.
> The Program Office also visited ZNY and ZDC to brief facility personnel on the DataComm program and what will be involved with bringing CPDLC to Domestic U.S. Airspace. The briefing consists of:

- Program Status
- Introduction to CPDLC
- System Architecture
- Computer Human Interface (CHI)
- Functionality
- Services offered
- Procedures
- DataComm Network Service (DCNS) Coverage
- Training

- Implementation
- Route Load ability

  Both briefings were well attended and engagement from the facility was great. This was also a chance to view ATOP airspace and how they use CPDLC in Oceanic Airspace.

  RNO tower is our newest CPDLC facility and RSW and CHS are our newest PDC facilities. RSW and CHS will eventually add CPDLC to their facility as soon as they have had a chance to familiarize themselves with PDC. VNY will be adding PDC and CPDLC a little later in the year. BUF and CMH will be adding the CPDLC service later in the year as well. When all sites are completed, there will be 76 PDC sites and 62 CPDLC sites.

  En Route key sites will be installing CPDLC software on to the TTL's and OP's channels over the next few months. Once the ERAM builds are installed and systems are verified to be working well with CPDLC turned off, the process of turning on CPDLC and testing will begin. The Key Sites for turning CPDLC on are ZKC, ZME and ZID. ZTL and ZLC are also Key Sites because of the software that must be turned on at the National Application Processor (NAPP).

ENTERPRISE-INFORMATION DISPLAY SYSTEM (E-IDS): Amanda Richardson (ZOA) is the Article 114 Representative for Enterprise-Information Display System (E-IDS) work. Mrs. Richardson's report for the membership is below**.**

Background: The Enterprise Information Display System (E-IDS) project aims to replace all existing IDSs in the NAS, providing the Agency with one enterprise solution across facility types. While some customization is necessary and should be available, one system will reduce overall costs for upkeep and training, and resolve the upcoming end-of-life issues we have with our current IDSs in the field (IDS-4, ERIDS, etc.). The project is working towards finalizing requirements by the summer of this year, with a contract scheduled to be awarded in 2019.

My Program Office counterpart and I collaboratively adjusted the scoping document governing the future use of Cadre and SMEs to satisfy a few concerns. We are waiting on the status of the scoping document (after coordination through FAA Tech Labor and NATCA National) to schedule En-Route demo work and continue the Tower and TRACON efforts. Initial En-route focus groups will be conducted with MITRE and me later this month to ensure that we stay on schedule. Human Factors telcons will begin after securing Cadre (tentatively scheduled for end of March).

Upcoming activities:

- Weekly / bi-weekly program status and engineering telcons (ongoing)
- En-Route focus group work with MITRE (scheduled mid March)
- Human Factors workgroups NATCA, FAA, and PASS (scheduled end of March)
- En-Route demo work with SMEs (pending Cadre/SME scoping document)
- Tower and TRACON demo work with SMEs (continuing work pending scoping document)

FLIGHT DATA INPUT OUTPUT (FDIO): Corey Soignet (LFT) is the FDIO Article 114 Representative. Also included in Mr. Soignet's duties is Article 114 representation for the Electronic Flight Strip Transfer System (EFSTS). Mr. Soignet forwarded the information below for the membership.

FDIO

The first article testing is still on going. The FDIO Team is still identifying and completing all software tweaks to the new printer and is preparing for key site testing. The first key site install is scheduled for the end of March. ACY will be the first key site to test the new printer. Five additional key sites have been selected and consist of a Tower and TRACON and due to their unique printer demands we are also planning on using Honolulu, Alaska and Puerto Rico.

EFSTS

There is nothing to update at this time.

FIDI

There is nothing to update at this time.

INTEGRATED DISPLAY SYSTEM REPLACEMENT (IDS-R): Richie Smith (N90) leads NATCA's efforts on the IDS-R project as the Article 114 Representative. Below is Mr. Smith's report.

> The next software build for NIDS is currently under construction and testing at the vendor's facilities and FAA/NATCA testing is scheduled for the week of April 23 at the Tech Center. This will hopefully lead to a key site release in the middle of June with a national release to follow. No key site has been negotiated yet.
>
> The future of the NIDS operating system is still being debated. A new OS passed testing in the spring of 2017 but never released because the FAA never took into account how to upgrade the OS without the system being shut down and rebuilt from the ground up. This may not be a big impact at a small up/down network but at places like I90 or SCT the interruption of service (possibly days) is unacceptable. Many theories exist as to how to accomplish an uninterrupted upgrade but none have been tested or proven.
>
> As a reminder- no one at a facility should be making changes to NIDS databases other than local documentation. Recently a large network was experiencing issues that were found to be caused by local personnel making uncoordinated changes to the database. All changes need to go through the national database team. Also any issues should be entered into the AIMS system for two reasons: first to track the issues progress and secondly the system helps identify and track issues that may be a nationally experienced problem versus something only experienced locally.
>
> If anyone needs any help or has any questions about NIDS please contact NATCA's IDSR Representative Richie Smith at IDSR@natca.net.

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

> The **NAS Voice System (NVS)** schedule has officially slipped. The FAA and Harris continue to work on a new schedule. The detailed schedule is expected around the April time frame.
>
> Mr. Shedden is traveling to the WJHTC March 12th-16th to assist with the development of validation test procedures, Feature Description Document (FDD) requirements testing, and evaluation of a prototype NVS keypad.
>
> Mr. Shedden will be at the MMAC March 26th-30th participating in the scrape and load of their NVS demonstration system.

Next Generation Air-Ground Communication (NEXCOM) continues deployment of new CM300/350 V2 radios to terminal facilities across the country. Some terminal facilities in the NAS using very old radios hear a pop back or "squelch tail" when they release their transmitters. The new radios being deployed under NEXCOM Segment 2 do not have this "feature" as the squelch tail is generally regarded as undesirable in radio communications. This issue has cropped up twice now during deployment and the program office should brief future affected facilities prior to install.

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, leading up to the Final Investment Decision. Final Investment Decision will be in February 2019. Key site for NVRP will be Seattle Center in the 2020.

NVRP is currently in the source evaluation phase.

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.

The **Tone Mitigation National Workgroup** met in September 2017 to discuss potential mitigation's to the number and severity of tone/noise events across the NAS. This workgroup kicked off largely because of the number of tone/noise events occurring at PCT. One of the outcomes from these meetings was exploring the use of new headset bases, which incorporate an active limiter. The FAA is in currently in the process of procuring these new headset bases. Another outcome was investigation into and possible mitigation's for the various causes of tone/noise events. AJW-173 in Oklahoma City continues to work with PCT to identify causes and implement solutions, with the additional goal of providing guidance and best practices nationwide.

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 114 Rep, **Craig Bielek (A90), Dan Hamilton (SFO),** National Airport Surface Surveillance Capability (ASSC) Rep, **Andrew Stachowiak (I90), Tom Zarick (ZDV),** National Interval Management Rep, and **Chris Aymond (MSY),** National Terminal Interval Management Rep

ADS-B:

- As of February 1, 2018, the number of Rule Compliant ADS-B Out aircraft in the US reached 43,642. ADS-B In equipped aircraft reached 37,742. The growth in aircraft equipage has been significant, and some areas of the NAS are seeing high percentages of traffic equipped. However, the projections are still falling short of the numbers needed prior to the January 1, 2020 deadline to equip. So far, the Agency has been clear that the deadline is firm.
- Most, if not all, Air Carriers have provided the Agency with a plan to meet the deadline. However, the means to achieve those plans in the short amount of time remaining is becoming a larger question. United Airlines, Rockwell, and the SBS Program Office have partnered to make significant progress in upgrading the United B737 Rockwell avionics fleet with 110 ADS-B installations complete. American, Delta, Alaska, and many other airlines are showing increased fleet ADS-B equipage.
- For General Aviation, the very rough estimate of avionics installation capacity nationwide is 50,000 aircraft per year. The rough estimate of all NAS aircraft that need to equip is 160,000. The actual number that needs to equip could be much lower depending on the number of users that remain outside of ADS-B Rule airspace (where a transponder is required). Users that wait too close to 2020 may find that the capacity for installation falls short of demand.
- The military has already indicated they will be unable to meet the 2020 deadline. Several of their older airframes simply cannot accommodate the new avionics. The military does expect to equip newer fighters and all of their larger aircraft. To deal with the exception, the Agency is working on agreements with DOD to ensure identified radar sources remain in place.
- ADS-B IOCs have been completed at all Enroute (ERAM and MEARTS) facilities. All ERAM sites have promoted ADS-B to the top of their sort cells.
- 118 of 155 Terminal sites have reached their ADS-B IOC, and 113 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. The most recent and upcoming Terminal events:

- Asheville (AVL) ADS-B/Fusion Kickoff 2/1
- Great Falls (GTF) ADS-B/Fusion Kickoff 2/1
- Pasco (PSC) ADS-B IOC 2/1
- Fayetteville (FAY) Fusion OSD 2/5
- Champagne (CMI) ADS-B Flight Inspection (WX Reschedule) 2/6
- Pasco (PSC) Fusion OSD 2/7
- Longview (GGG) Fusion Operational 2/7
- Fayetteville (FAY) Fusion Operational 2/7
- Lake Charles (LCH) ADS-B/Fusion Kickoff 2/13
- Madison (MSN) ADS-B Flight Inspection 2/14
- Augusta (AGS) ADS-B IOC
- Augusta (AGS) Fusion OSD 2/21
- Springfield IL (SPI) ADS-B/Fusion Kickoff 2/21
- Moses Lake (MWH) Fusion Operational 2/21
- Pasco (PSC) Fusion Operational 2/26
- Toledo (TOL) ADS-B Flight Inspection 2/28
- Champaign (CMI) Fusion OSD 2/28
- Eugene (EUG) Fusion Operational 3/1
- Madison (MSN) Fusion OSD 3/14
- Waco (ACT) ADS-B Flight Inspection 3/14
- Toledo (TOL) Fusion OSD 3/27

ADS-B Avionics Issues:

- 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 aircraft reports include this information, and automation systems compare it to the filed call sign. When a mismatch occurs a Call Sign Mismatch (CSMM) alert can be generated. The issue has been highlighted in Equip 2020 meetings since ADS-B dependent applications (CAVS, Advanced Interval Management, etc.) are dependent on this functionality. Monthly tracking continues to trend upward. ***The SBS Article 114 work group has recommended disabling CSMM alerts across all automation platforms.***
- A flight test was conducted February 27 to examine the effect of ADS-B Duplicate ICAO Address on ERAM and STARS. Engineering assumptions have always been that when this condition occurs with two aircraft within 6nm, the SBS network would either drop the tracks, swap the tracks or other. The initial results of the flight test show the events are much more conservative. Test aircraft as far apart as 50nm were still dropped from the network and presented as radar only targets. This leads one to believe that Duplicate ICAO Address alerts are not worthwhile for controllers.

- NATCA SBS continues to work with the Agency toward a more proactive approach to ADS-B avionics issues that result in position error. Though these are infrequent occurrences, the Agency's ability to respond has been hampered by a lack of resources, bureaucracy, and legal constraints. 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. Multiple ATSAP reports have been filed on the known issues to date. Controllers and facilities are encouraged to report any identified events through ATSAP and any other mechanism.
- In order to reduce the number of safety compromising events in the NAS an effective, efficient response mechanism is needed. The Agency has deployed additional mitigations including enhanced validation (EV) and a No Services Aircraft List (NSAL).
    - The NSAL (aka "blacklist") is effective in dealing with chronic non-compliant aircraft, but it lacks the ability to respond quickly. As such it will likely always be needed as a backstop to compliance or enforcement issues. Any issue identified and reported immediately takes a minimum of one day to place the aircraft on the NSAL.
    - Enhanced validation (EV) shows the most promise operationally as it is a real time response to invalid ADS-B targets. The latest update to EV already deployed within 15nm around a Terminal Radar has shown positive results. Additional EV techniques are being investigated to expand the range beyond 15nm and further increase the responsiveness. Additional EV parameters should be in place in 2018. With 2020 approaching rapidly, these changes are needed sooner than later to limit the sporadic effects of non-compliant avionics.
- SBS Article 114 work group discussions resulted in all B787 aircraft being placed on the NSAL. These aircraft have a latent avionics issue that causes false position information to be displayed to the controller. This has alarmed several facilities and caused both SCT and NCT to demote ADS-B in their sort cell priorities. Boeing released a Service Bulletin to address the problem. United, American and many others have confirmed completing the Service Bulletin allowing them to be removed from the NSAL. Other B787 aircraft are slowly being pulled off of the NSAL as verification of the Service Bulletin is received by Flight Standards.

Advanced IM

- A-IM Requirements documents nearing completion. Scheduled for end of March.
- Paired Approach HITL in April still being finalized. Still a lot of concern as to how .308 rule will be applied in the scenarios.
- Paired Approach Meeting held at NCT and SFO with facility leaders and the NextGen office about a flight test to be conducted at SFO in February 2019. Concerns surrounding proposed month and time of the day requested for this flight test were made known.

- AIRS ConOps review starting this month.

ASDE-X Tech Refresh:

- If the Taxiway alert enhancement is deployed on a national scale, the PMO would need to take control. As of right now, SEA is the only facility scheduled to receive this enhancement.
- Discussions continue regarding parts obsolescence and what the best path is moving forward in addition to increasing bandwidth capacity as traffic levels increase in the NAS.
- ASDE3 radar discussions continue as the agency struggles to decide if they should go the tech refresh route, or full replacement route. No decisions have been made at this time.
- The agency is starting to align ASDE-X with ASSC on the software systems side. Although controllers will not yet have all the same functionalities on both systems, it will allow for improved system performance and fine-tuning capability, which controllers will benefit from. The goal in time is for both systems to be equal on the software and controller capability aspects.

ASSC:

- ASSC Field familiarization at CVG began on February 15th. The facility is very happy with the system thus far. System adjustments are taking place, as things are fine tuned for IOC.
- CVG IOC is scheduled the week of March 19th.
- MSY outreach briefing is scheduled for March 6th.
- MCI meetings are scheduled for the week of April 2nd.
- PIT outreach briefing is scheduled for April 10th.
- PDX outreach briefing is scheduled for April 26th.

FMA in Fusion:

- The SRMD allowing the combined use of FMA and Fusion reached final approval on November 1, and the Notice allowing the operational start is now in place. Facilities that use FMA can now use Fusion on these positions as well.
- The change in procedure is not anticipated to require additional controller training as these facilities are already trained on both FMA and Fusion.
- Fusion on the FMA position, like all other positions, requires a thorough understanding of contingency plans should a radar sensor fail.

MEARTS Fusion:

- 3nm Fusion in MEARTS is a complex undertaking requiring multiple Tower, Approach, and Enroute sectors to come online with Fusion at the same time. The lessons learned in this undertaking will help the effort with future MEARTS and ERAM sites.
- ZAN has been on Fusion since August 2015. HCF has been on Fusion since August 1, 2017.
- A significant amount of support was provided the week of January 29-February 2 at ZUA (Guam CERAP). NATCA and SBS Ops Support conducted a kickoff at the facility, provided Air Traffic Cadre training, and conducted a multi-day Operational Suitability Demonstration. ZUA intends to transition to Fusion by the March 26, 2018.

- A Fusion kickoff meeting and Air Traffic Cadre training session for San Juan (ZSU) are planned the first week of April.

Surveillance Portfolio Analysis Work Group

- Eric Labardini and James Keith (NATCA AJV-7) have been working closely with the Agency's multifaceted analysis of post 2020 radar infrastructure needs. The ADS-B business case was built on an assumption that today's robust radar infrastructure could be reduced once ADS-B becomes the predominant surveillance source.
- The Agency built their business case on an assumption that 100+ secondary radar sources could be removed throughout the NAS. This causes concern in airspace that does not require ADS-B (many Class D or other Approach Controls). NATCA has been pointing toward another option, removing overlapping radar sources completely rather than harming operational capabilities nationwide. There seems to be an awakening to this idea and analysis of the benefits is underway.
- An SRM Panel was held August 1-3 to analyze the risks associated with partial or complete removal of radar systems in a post 2020 environment. The conclusions of the Panel were that partial removal actually resulted in higher risks than complete removal. This assumes that complete removal would only occur where the effects were minimized by other overlapping radar sources nearby.
- An additional SRMD is planned for the week of April 9.

Terminal Fusion:

- 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.
- SCT issues continue to be a large focus. NATCA SBS is heavily involved in the Surveillance Automation Analysis Team (SAAT), which is examining long-term alternatives to help improve overall surveillance in the SCT airspace. The result is a multi-faceted approach including WAM, raising LGB radar, introducing other nearby radar feeds, STARS software changes, and radar software changes. In addition, SAAT is focused on mitigating tracking issues in the LA Basin due to the construction of a new NFL stadium on final approach to LAX.
    - The LGB radar site is now back online and in use at SCT. The radar site was raised from 37 feet to 67 feet. Feedback from SCT has been positive.
    - Agreements are being worked with the military to ensure availability and performance of the North Island radar. Adding this additional surveillance source shows promise for tracking issues around SAN airport.
    - WAM has been plagued by numerous fits and starts harming the confidence of the facility. The path forward is uncertain, but a remedy for interference from LA Stadium construction is desperately needed.

    - The second phase of WAM at SCT is expected to be available by May 2018.
- SAAT has been analyzing Potomac (PCT) Fusion issues for potential solutions. The facility has been struggling with a number of issues related to problem radar sites or a lack of coverage. Radar analysis is confirming the benefit of adding Quantico (NYG) radar to PCT as well as reducing obstructions near Dulles. Funding for the additional NYG feed is being sought.
- NATCA and Ops Support SMEs from SBS have been reviewing numerous requests for additional radar feeds across the NAS. The focus of our team are those that benefit Fusion tracking. Issues such as service expansion are outside of SBS scope.

Vehicle ADS-B:

- 1281 vehicles equipped at 20 airports.
  MSY outreach briefing is scheduled for March 6th in conjunction with the ASSC briefing.