NATCA Safety and Tech Update
Week of April 2, 2018

ATO OPERATIONAL CONTINGENCY GROUP (ATOC): Jason Grider (ZFW) is the Article 114 Representative for NATCA. Also, included in Mr. Grider's duties is Article 114 representation for the Business Continuity Plan (BCP). Mr. Grider's report for this month is below.

ATOC has been spending the last several months preparing to roll out the new approach to contingency plans for the NAS. Back in 2015 the TOCO group initiated a plan that would have all ARTCC's in the CONUS divest all of their high-altitude airspace to neighboring facilities. This plan depended on the instillation of new equipment in every ARTCC. To this date, none of the equipment has been installed. ATOC is taking the TOCO plan and refining it to be able to work with existing equipment. They are looking at what a facility can do currently.

The ATOC team traveled to ZMA for the first demo of the new concepts. Representatives from ZMA and ZSU were in attendance for this kickoff meeting. ATOC presented some of the new ideas that they will be taking to all ARTCC's during the next year. The team included Jason Grider as the NATCA article 114 representative as well as SME's from TechOps and 2nd level engineering to answer questions and provide expertise to the facilities. Additionally, a group from ATAC brought along one of their I-Sim platforms to demonstrate their abilities to simulate traffic flows through airspace. The SME's were very impressed with the functionality and ability to make changes to simulations on the fly. The ATOC group will continue to evaluate the best way to use this type of technology.

The ZSU SME's were able to brief the group at ZMA on the challenges they faced in the wake of two major hurricanes this past year. They were able to work with ATOC and other experts in the room to make improvements to their OCP's for future outages. ATOC will continue to work with both ZMA and ZSU to make incremental improvements to each of their OCP's.

After a successful start to the rollout, ATOC traveled to ZFW to continue to refine their process for going to a facility to facilitate improvements in contingency planning. At this visit ATOC did a brief run through of the newly developed Table Top Exercises (TTX) that facilities will use to test the viability of their plans. With participation from ZHU, D10 and ZFW they were able to find several areas that need some improvement. Each facility left the meeting with new goals in mind to better their plans. ATOC is planning to return to both ZFW and ZMA in the near future to dive deeper into each facility's plans and help facilitate improvements to all of them.

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 43,500 clearances a week. RNO is now a CPDLC tower. CMH is starting to run CPDLC file and fly. File and Fly is where controllers are sending CPDLC clearances but are still required to get voice read backs. This generally runs for about 10 days. RSW and CHS are now running PDC on a brand-new Tower Datalink Services (TDLS) and will begin CPDLC in about a month.

The 12.5 build was delayed until May due to some regression issues discovered in testing as well as adding some fixes that were found at LAX on 12.4a. These issues have not been reported at other towers, but with LAX being our busiest CPDLC facility it was important that we get those fixes in.

En Route site visits for Segment 1 Phase 2 (S1P2) were held with ZBW and ZMA and turnout was great. The program office spends 2 days with the facility to inform them of what En Route services will look like, what is required for training, adaptation and implementation.

The DataComm Implementation Team (DCIT) held their 59th meeting since the program began. This meeting was held in Washington, DC and covered some flight deck working group issues, Airline Operation Center (AOC) issues as well as final requirements for any tower enhancements the airlines might want to see.

The NextGen Integration Working Group (NIWG) also met in DC to discuss the rolling plan that will be delivered to the NACsc. These recommendations come from industry and are presented to the FAA.

Visited with ZTL to answer any questions that may have come up since their site briefing. Worked with their FAST team and also with SGET developers to answer any questions they may have. The FTR is fully engaged and working issues as soon as they come up. They should fully ready to go when their implementation

The program office continues to work with the key sites on installation of the EAE100 build. It now appears that EAE110 will be the first build that is deployed operational. Key Site activities may also be delayed a few weeks as new resources are brought onto the program to help with implementation and training.

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 hope to have the completed and signed scoping document governing the future use of Cadre and SMEs by next month. This has been an ongoing collaborative effort to satisfy needs and concerns of both NATCA and the FAA. Initial En-Route focus groups were conducted this month with some of the En-Route Facility Technical Representatives and one TMC. Feedback from MITRE and the FAA's E-IDS team members was very positive. The discussions and expertise provided were valuable to the team's En-Route efforts, further reinforcing our need to keep NATCA SMEs involved early and often in our technical projects.

Human Factors bi-weekly telcons began this week with the initial kickoff and a subsequent Tech Ops based discussion. This work will be ongoing for at least the next 3-4 months.

Scheduling for the Tower, TRACON, and En-Route demo work is currently in progress.

Upcoming activities:

- Weekly / bi-weekly program status and engineering telcons (ongoing)
- En-Route demo group work with MITRE (tentatively end of May)
- Tower / TRACON demo group work with MITRE (tentatively end of May)

Human Factors workgroups NATCA, FAA, and PASS (ongoing)

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 week of April 23 is still on track for testing of the new NIDS build. No key site has been coordinated for the national release schedule to this point. This software build is the last during the current contract with the vendor. A new maintenance contract is being fine-tuned and needs to be ready for a vendor in the July timeframe. Meantime the NIDS team is compiling updates/upgrades for a fall release software update. Who the vendor will be is still unknown.

The NIDS (IDSR) program is slowly catching up the the rapid installation of SWS in the NAS. Each facility (network) that has upgraded will be contacted to coordinate changes to their existing database designs and page layout. If anyone has any questions or concerns about the SWS information being included in their local database please contact NATCAs IDSR/NIDS representative, Richie Smith, at IDSR@NATCA.net.

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 now scheduled for April. 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.

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 March 1, 2018, the number of Rule Compliant ADS-B Out aircraft in the US reached 45,282. ADS-B In equipped aircraft reached 38,843. 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 need 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. 3 of 4 MEARTS facilities are operating on Fusion with ZSU next to transition.
- 120 of 155 Terminal sites have reached their ADS-B IOC, and 116 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:

    - Madison (MSN) Fusion OSD 3/14
    - Waco (ACT) ADS-B Flight Inspection 3/14
    - Toledo (TOL) Fusion OSD 3/27
    - Waco (ATCT) ADS-B IOC 4/3
    - Waco (ACT) Fusion OSD 4/3
    - Youngstown (YNG) ADS-B Flight Inspection 4/4
    - Southern California WAM Phase 2 Flight Inspection 4/10
    - Casper (CPR) ADS-B Flight Inspection 4/11
    - Toledo (TOL) Fusion Transition 4/12
    - Falmouth-Otis AFB (K90/A90) ADS-B k/o 4/18
    - Waco (ACT) Fusion Transition 4/19
    - Great Falls (GTF) ADS-B Flight Inspection 4/24
    - Youngstown (YNG) ADS-B IOC 4/24
    - Asheville (AVL) Flight Inspection 5/2
    - Youngstown (YNG) Fusion OSD 5/2

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. The SBS Article 114 work group has concluded that Duplicate ICAO Address alerts are not worthwhile for controllers. They will still be available for Flight Standards compliance monitoring efforts.
- 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 analyzed, including expanding the range beyond 15nm and further increasing the responsiveness. SBS Engineering is working diligently with Harris to incorporate these changes with additional EV parameters 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 completed.
- Paired Approach HITL in April still being finalized. Still working on lateral limit tools to be displayed to controllers.
- Awaiting safety case requested by ALPA to prove controller need to know aircraft's set speed directly from the aircraft. NATCA's need for this information was expressed on the point that IM will place more aircraft in a more efficient and confined space resulting in less room for error. Monitoring speeds will need to be more exact and instant to ensure separation is maintained.
- AIRS ConOps review started. Discussed keeping phraseology as standard as possible as all IM Programs evolve including AIRS. Currently exploring a "maintain present spacing" option for controllers and whether this option is feasible/needed in AIRS.

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:

- Due to issues with the agencies internet security department, CVG IOC was pushed to April 5th.
- Field fam at CVG has continued with very positive input from the facility.
- MCI will be the next site on the ASSC waterfall. Coordination is underway with the facility.
- PIT outreach meetings scheduled for the week of April 9th.
- PDX outreach meetings scheduled for the week of April 23rd.
- The Agency's Internet security department has created significant issues for the ASSC program. Due to their inconsistency and lack of understanding, ASSC waterfall IOC dates for upcoming sites are at risk and could likely move to the right.

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.
- Congratulation to ZUA! The facility transitioned to Fusion on March 26, 2018.
- A Fusion kickoff meeting and Air Traffic Cadre training session for San Juan (ZSU) is 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 is those that benefit Fusion tracking. Issues such as service expansion are outside of SBS scope. SBS SMEs have met with representatives from F11 and RDU to uncover more detail on their needs and concluded that additional radar feeds are warranted due to Fusion tracking performance. Other internal discussions have concluded in support of additional radar feeds at: ACY, MOB, BHM. Other NAP entries identified as Fusion tracking related are still to be discussed.

Vehicle ADS-B:

- 1289 vehicles equipped at 20 airports.
- PIT outreach scheduled for the week of April 9th
- PDX outreach scheduled for the week of April 23rd

CVG is finishing up vehicle install which will add another 176 units to the portfolio.