NATCA Safety & Tech Update
Week of December 11, 2017

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.

Mr. Grider and the ATOC team have spent the month of November working on end of year deliverables. The group has been split into ARTCC, TRACON, Tower, and Oceanic to focus on developing guide books for each specialty on how to create OCP's. Each segment has been evaluating existing OCP's throughout the NAS to verify their viability to be implemented during an ATC-0 event. Several items have been identified as areas for improvement. The ARTCC guidebook has been put out as a rough draft and the group is working with MITRE to put the information into a usable format.

ATOC is in the process of identifying test facilities for the group to reach out to and work directly with using the new guidebooks to develop OCP's that can be implemented using existing equipment. The focus is on being able to divest some airspace to adjacent facilities. Building specific routes into and out of contingency airports. Identifying what frequencies, RADAR's, and scopes would be needed to divest airspace to allow the use of the ATC-0 airspace. These plans expand on the use of CPSS non-RADAR routes that severely limit the capacity of the airspace.

Mr. Grider has been in discussions with the agency on how to move personnel to an adjacent facility during a divestment event. Negotiations for this type of activity are planned to begin at the start of the calendar year.

BCP work is still mostly on hold until funding can be released to the group.

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 that was projected to be completed in December. We have been on hold due to vendor programmer issues. In the last couple of weeks, it has been brought to our attention that there is an existing CBI lesson provided by Raytheon. NATCA was never involved with the development or consulted with the content. It appears to be lacking in a few ways so we are exploring the options to bringing this up to our standards. More to come soon and hopefully we can get one of these two training platforms completed and distributed to the field.

Any facility that would like to turn ATPA on, please contact me so we can go over adaptation options. That way when the ELMS/CBI training is completed your facility will be ready.

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

Last week Controller Pilot Data Link Communication (CPDLC) sites sent over 5600 clearances a day. We have also added a new site that is sending CPDLC clearances, Joint Base Andrew (ADW). Over the coming months the Program Office will be turning on the CPDLC at BUF, CMH, and RNO. The Program Office will also be installing a Tower Data Link Services (TDLS) system at RSW, CHS, and VNY. These sites will also have CPDLC service available.

The DataComm Implementation Team (DCIT) had its 57th meeting to discuss all aspects of the DataComm program. The group continues to engage all parties that represent different groups that will deploy the DataComm CPDLC service. This group includes Airlines, Pilots, AOC representatives, members from Boeing and Airbus, Avionics manufacturers, Flight Standards, NATCA Controllers, Leidos, IFCET, and General Aviation groups and manufactures. The group works on End-to-End documentation of how CPDLC will be used and also helps contribute to benefits analysis, interoperability testing and training for pilots. The group also helps with design and message sets that will make the system more user friendly.

Briefed the Pilot and Controller Phraseology System Integration (PCPSI) Team on the status of DataComm and what was coming their way. Several Pilots commented on the tower CPDLC system and how they prefer this method to PDC. The group was interested on how CPDLC will be used En Route and was concerned about the level of training their pilots will receive.

The Program Office briefed ZMP personnel on the En Route deployment of DataComm. Every center in the contiguous U.S. will receive the same briefing. The deployment to En Route will begin next summer and end near the end of 2019. The system allows controllers to transfer communications, send altitudes and altimeters, issue crossing restrictions, send route information that can be loaded at the push of a button and also allow for pilot requests for direct to fix and altitude changes.

The Segment 1 Phase 2 (S1P2) System Preliminary Design Review (SPDR) for full services was completed at Leidos last month. This is the additional content that will be deployed after initial services. The services that will be added are holding instructions, advisory messages; pilot requested routes and additional functionality added to initial services.

ENROUTE AUTOMATION MODERNIZATION (ERAM): Julio Henriques (ZNY) leads the ERAM efforts for NATCA. Rex Jackson (ZDC) provides this update.

The Facility Tech Reps (FTRs) continue to work in their home facilities to up level to EAD700 and enable ABRR/PDRR. At this time there are nineteen facilities on EAD700 and nine have enabled ABRR/PDRR. Some of the changes provide new tools to the controller via Automated Point Outs and sector specific reroutes input through TMU.

- The December National User Team meeting has been cancelled. The next User Team meeting is scheduled for the second week in March.

- The EnRoute Automation Workgroup (ERAW) received a briefing from SLE that ZLC and ZTL will be the EAE100 Keysites, with ZID participating in TTL testing.

- A subgroup of the National Data Comm (NDC) team worked for two days to develop a complex aggressive plan to train the new TTL SGET, National CADRE, and Ghost Pilots to support the Data Comm deployment. There will be thirty-two CADRE and thirty-two Ghost Pilots, selected by NATCA from EnRoute facilities, to provide additional support to the Data Comm program deployment.

- The Stars Enhancement 2 Task Team continued working on the differences between Stars and ERAM automation platforms. The transfer of 4th line data from one facility to the next is the task team's #1 priority enhancement, followed by Point Out, Airspace Transfer, and Messaging. The transfer of 4th line data will be briefed to the National User Team next week.

- The following is a sample of the issues the National User Team has worked on over the past few weeks:

• A174189: Radar Service Terminated OUC
  - The team discussed and reached consensus on the changes to the Radar Service Terminated use case. This functionality will the allow the controller to uplink a "Contact" or "Monitor TOC" along with a "Radar Service Terminated" message when the flight is entering a non-radar environment. All team members have concurred and the use case has been sent to SLE and the Data Com team.

•A174400: Route Switch Functionality
- The team discussed and reached consensus on the changes to the Dynamic Route On/Off Switch use case. This will provide a safeguard to protect against route load ability issues identified after Data Comm Initial Services is deployed. All team members have concurred and the use case has been sent to SLE and the Data Comm team.

•Menus and Views OUC
- The team discussed and reached consensus on the changes to the Menus and Views use case. This change includes additional controller response options of "Unable Due To Traffic" and "Unable Due To Airspace Restriction" for a Request Direct To Fix from a flight via Data Comm. All team members have concurred and the use case has been sent to SLE and the Data Comm team.

•ER 182677: Excessive FAV Trajectory Penetrations
- The team was briefed on short and long-term solutions to the issue. The discussion is ongoing and the final solution has not been decided.

•ER 176378: Two flights with the same route show different Protected Route Segments
- The TBFM workgroup continues to explore a solution to this complex issue. The National User Team anticipates an update over the next few weeks.

ICAO Full Template Task Team continues to provide feedback and options to the National User Team. The task team will work on examples from current day issues to demonstrate the functionality of the template.

ENTERPRISE-INFORMATION DISPLAY SYSTEM (E-IDS): Amanda Hodge (ZOA) is the Article 114 Representative for Enterprise-Information Display System (E-IDS) work. Ms. Hodge'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 next year, with a contract scheduled to be awarded in 2019.

The E-IDS Team, in conjunction with AJV-7 and NATCA, finalized the E-IDS Site List. NATCA National reviewed the list; with no issues noted NATCA provided concurrence on the E-IDS Site List. The E-IDS Team will use the finalized list to determine an appropriate waterfall.

E-IDS Team Members participated in a telcon to discuss and provide input on the most desired E-IDS engineering solution. Three alternatives were discussed in depth, and then each participant ranked the alternatives in a variety of categories based on experience and point of view (Air Traffic, Tech Ops, Engineering, etc.). MITRE is compiling the data so that the best alternative can be chosen.

Initial En-Route work completed with MITRE Team Members. We discussed ERIDS data and how best to present the E-IDS demos to future En-Route SMEs.

The upcoming holiday schedule (with associated moratoriums and heavy leave usage) will impact the amount of E-IDS activities through January 2018. Activity is expected to increase in the beginning of the New Year.

Upcoming activities:
- Tower and TRACON demo work with SMEs (ongoing)
- En-Route focus group and demo work with SMEs (ongoing)

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 now dealing with numerous software tweaks to the new printer. To date BOCA and the FDIO Team are correcting all issues then multiple tests are done to ensure the printer is working properly. The key site install was slipped back again to mid 2018. The plan is to have 5 key sites consisting 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.

NIDS software version 3.6.3 was released nationally on October 24. As of the last National Site Telcon held during the last week of November 13 of the 41 NIDS networks have upgraded the software. No issues have been reported to date.

The next software update is tentatively scheduled for delivery for testing during late March of 2018. This means that the earliest anticipated release window would be June 2018. Hopefully no compilations impact those dates. Additional discussion is taking place about updating and upgrading the NIDS operating system. Early in 2017 a new OS (2.0.2) passed testing at the technical center but was never fielded due to other priorities. The current discussions include two operating systems- one to aid in lab testing and one to increase security compliance.

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) Factory Acceptance Testing (FAT) Dry Run ended June 23rd. The system still has stability problems so Harris will continue working on defect resolution prior to starting formal FAT. Formal FAT was scheduled to start July 18th, but has been officially delayed. The FAA is working with Harris to address the impacts to the deployment schedule because of this delay.

Harris has kicked off Release 1.1 Stability Assessment Testing (RSAT) along with rapid development to improve stability in the next several months.

Mr. Shedden was in Melbourne, FL November 27th-December 1st participating in the RSAT activities.

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. Key site for NVRP will be Seattle Center in the 2018 time frame.

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.

Springfield ATCT (SGF) has been having issue with their newly installed IVSR. There's been a telcon on November 22nd discussing the issues with the facility. Monique Pauley (2nd Level Support - IVSR) may be traveling to the site to assist with their issues.

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 November 1, 2017, the number of Rule Compliant ADS-B Out aircraft in the US reached 38,982. ADS-B In equipped aircraft reached 34,025. Compare this to one year ago when 19,489 aircraft were ADS-B Out equipped, and 18,857 were ADS-B In equipped. The growth has been significant but 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. The stage is set for a potential showdown, as the date looms closer.
- 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 planned ADS-B installations complete. American, Delta, Alaska, and many other airlines are showing increased fleet ADS-B equipage.
- The SBS PO 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 numbers 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.
- 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.
- 110 of 155 Terminal sites have reached their ADS-B IOC, and 105 are operating on Fusion. Compare this to one year ago when 87 IOCs were achieved and 80 sites were 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:

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- Waco (ACT) ADS-B/Fusion Kickoff 11/13
- Abilene (ABI) ADS-B Flight Inspection 11/15
- Mobile (MOB) ADS-B IOC 11/15
- Mobile (MOB) Fusion OSD 11/15
- Bangor (BGR) Fusion OSD 11/20
- Longview (GGG) ADS-B Flight Inspection 11/29
- Casper (CPR) ADS-B/Fusion Kickoff 11/29
- Youngstown (YNG) ADS-B/Fusion Kickoff 11/30
- Sioux City (SUX) ADS-B IOC 12/1
- Moses Lake (MWH) ADS-B Flight Inspection 12/6
- Bangor (BGR) Fusion Operational 12/5
- Mobile (MOB) Fusion Operational 12/5
- Duluth (DLH) ADS-B IOC 12/12
- Duluth (DLH) Fusion OSD 12/12
- Pasco (PSC) ADS-B Flight Inspection 12/13
- Abilene (ABI) ADS-B IOC 12/14
- Abilene (ABI) Fusion OSD 12/20
- Fayetteville (FAY) ADS-B Flight Inspection (WX Reschedule) 12/20
- Sioux City (SUX) Fusion OSD 1/3/18
- Pasco (PSC) Fusion OSD 1/3/18
- Champagne (CMI) ADS-B Flight Inspection 1/10
- Moses Lake (MHW) Fusion OSD 1/10

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 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.***
- 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).
- Governance of the NSAL has been a concern. Though all parties appear to be in agreement that issues identified by facilities are not debatable, there is no formal governance at the moment and issues are being dealt with on a case-by-case basis. NATCA is working with the Agency to streamline this process as much as possible. However, all indications are that there will always be lag time in adding aircraft to the NSAL. First, the issue has to be identified by a facility after a significant event has occurred. Second, the PO needs to be notified. Third, the PO needs to direct the provider to implement the NSAL change. This can mean days pass before resolution.
- The current version of enhanced validation (EV) has a limited effect (15nm around a Terminal Radar) on these issues. Additional EV techniques are being investigated to expand the range beyond 15nm and tighten the parameters used. Initial review of the operational implications is positive. Further, this is a real time benefit that limits the effect on operations. SBS Article 114 members were briefed on the concepts, and most should be in place in 2018. A few remaining EV techniques are still indefinite with regard to funding and timing. With 2020 approaching rapidly, these changes are needed sooner than later to limit the random effects of avionics issues.
- 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 has released a Service Bulletin to address the problem. United, American and a few foreign carriers have confirmed completing the Service Bulletin allowing them to be removed from the NSAL. All other B787 aircraft will remain on the NSAL until verification of the Service Bulletin is received.

Advanced IM
- A-IM Requirements work still moving forward.
- Paired Approach Ground Tools demonstration currently being planned for early January at Mitre.
- With American Airlines decision to move forward with AIRS, a formal kickoff meeting is being scheduled for the middle of January.

ASDE-X Tech Refresh:
- Dan Hamilton is working with Bridget Gee (runway safety Rep) In the development of Taxiway alerts. Testing of the new alert could occur in early January.
- BOS PVD and BDL were trained the week of Nov 6th.

ASSC:
- CVG Cadre training completed the week of Nov 27th.
- CVG will start Field Familiarization in early February with IOC on track for March.
- ASSC with ADS-B only SRMP conducted on Nov 14 & 15. No high hazards were found. SRM Document is now in process

FMA in Fusion:
- The SRMD allowing the combined use of FMA and Fusion reached final approval on November 1.
- Operational start of FMA use of Fusion is now pending a Notice allowing this operation. The approval of this Notice is slowly making its way through the Agency.
- The change in procedure is not anticipated to require additional controller training as these facilities are already trained on both FMA and Fusion. Only a notice to controllers once FMA is allowed with the Fused display mode.
- 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.
- Plans are being made for the continued deploying 3NM Fusion in MEARTS at ZSU and ZUA. Due to the significant impact of Hurricane Irma on Puerto Rico (ZSU), the focus for the time being will be on ZUA (Guam).

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.

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.
- 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. The CTD schedule is the driver for TAMR Elite rollout and therefore the drive for the follow up ADS-B/Fusion rollout.
- 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.
    - The first phase of WAM at SCT achieved an IOC on August 10, and was soon promoted to the highest priority in sort cells. Analysis of formerly identified radar tracking issues showed much improvement with WAM implemented. Feedback from SCT personnel has been very positive. However, a false track event on October 19 caused the site to lose confidence. Analysis revealed the root cause and mitigation has been put in place to reduce the likelihood of a recurrence. SCT is now working toward re-enabling the WAM service in the near future.
- 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.
- SBS Article 114 agreed to a path forward to add multiple radars to CLE in support of Fusion. The radar sensors should be incorporated at CLE by June 2018.
- Recent N90 discussions on a transition to Fusion have centered on the continued staffing concerns. The facility is in a critical state and does not expect to be able to support Fusion transition activities until September 2018.

Vehicle ADS-B:
- 1279 vehicles equipped at 20 airports.
- Further inquiries continue to come in regarding equipping airports in the NAS.
- A reorganization of performance compliance and monitoring is currently underway.