SAFETY AND TECHNOLOGY DEPARTMENT UPDATE

Week ending February 19, 2016

**COLLABORATIVE DECISION MAKING (CDM):** Ron Foley (ZOB) is the National Article 48 Representative for CDM. There are several subgroups under the CDM umbrella and below is a report from one of these teams.

- **FLOW EVALUATION TEAM (FET):** Tony Smith (DCC) is the NATCA Representative to this team.
  - o The CDM/FET subgroup met in Warrenton, Virginia at the Air Traffic Control System Command Center to discuss current taskings and to prepare for the upcoming HITL testing at NASA Ames in March.
    - ▪ We met for a half day on 2/17, a full day on 2/18 and a half day on 2/19. There were 10 team members present for the meetings. Additionally, Nancy Smith from NASA joined the group on 2/18 to give a presentation on the January HITL and to discuss expectations for the March meeting.
    - ▪ This briefing walked through each days plans. Several of the group come in at various times throughout the week of March 20-25, including myself (I'll be at CFS for M-W). The HITL's are scheduled to accommodate this dynamic.
    - ▪ The March HITL's are going to continue work on the integration of CTOP with RTA and merging with TBFM. This HITL will introduce winds and variable/unpredictable releases into the problem.
  - o The group met with Jim Bedow (FAA) on 2/17 and discussed the future of the taskings being considered by the CSG for the FET subgroup. Mexican routes were again mentioned.
    - ▪ On 2/18, Mike Murphy, former team FAA lead participated in part of the morning session. In the afternoon, Mr. Greg Byus, the newly (that morning) announced temporary replacement for Jim Bedow addressed the group. Mr. Byus has been at DCC as the Support Manager and is familiar with the CDM teams and projects, but admits it will take some time to get up to speed on everything.
    - ▪ On 2/19, Mark Holben, DCC NTMO, gave the team a briefing on the changes coming to the National Planning Telcons conducted every 2 hours at the Command Center. Mr. Holben advised that starting April 4, 2016, these Telcons will now be Webinars with the ability of the Planner to utilize the Thin Client products to have TSD's and FSM's on screen to explain the route and terminal strategies as he goes through the days plans. These Webinars were first tested last year as part of the NAS Vision 2015 initiatives and were conducted daily in Severe Weather Season at 8:45 am EST. They were very well

received by the airline community for its insight into the days route plans.   Later in the day, Bob Ocon, ZNY STMC, gave the group a briefing on the ZNY Pit operations.

- o The DCM/FET team will meet next at the March HITL. The March meeting is 3/21-25.  Mr. Smith will miss the first 3 days because of CFS, but will join the group on Wednesday night to participate on 3/24-25.
- o The Spring CDM meeting will be April 20, 2016 at American Airlines.  The FET subgroup will fly in on Monday 4/18 and try to meet for a half day.
  - ▪ The team will have a full days subgroup meeting on 4/19.
  - ▪ The team will fly back on 4/21.
- **Future Concept Team (FCT)** - Will meet in March with new tasking TBD.

**TEMPORARY OPERATIONAL CONTINGENCY OFFICE (TOCO):** Tammy Norman (ZTL) is the TOCO Article 48 Representative.  This is a one year detail at the Eastern Service Center to work on this project.  Ms. Norman's report for this month is below.

- As of this week,
  - o TOCO has closed 32; cancelled 4; and is working on the remaining 14 mitigations, actions and tasks assigned from the National CAP and the TOCO Re-charter.
  - o As of this week, 70% of the work assigned to the TOCO Program is complete.
  - o The Temporary Operational Contingency Office closes on March 24, 2016.
- **Policy:** The 1900.47E (Air Traffic Control Operational Contingency Plan) was published on January 21, 2016 with an effective date of April 20, 2016.  The ATO OG mandated that each facility will conduct SRM (safety risk management) on their individual operational contingency plan (OCP) when completed.  Guidance for these requirements will be given by the regional OSG.
- **ACT-2 (Automated Contingency Tool).** The ASO Operations Support Group (OSG) invited the TOCO to meet with MITRE to discuss requirements for updating the ACT-2.  *The TASK Order reads: MITRE CAASD will evaluate the current state of automation available to address contingency planning and system resiliency within the FAA.  MITRE CAASD will analyze the current the ACT2 automated digital library; provide input evaluating the processes for data updates; review the current Contingency Plans (CP), supporting documents, CP Policy and CP implementation procedures; identify needed process improvements for validating and implementing lessons learned, along with the actual practical and execution of CPs.* The TOCO does not project the ACT-2 updated until, *possibly*, the end of the year.
- **THE DOT OIG** group was here Feb. 17th and 18th for continuation of their audit activities associated with, "FAA's Ability to Manage Air Traffic Control Disruptions", to evaluate the TOCO's  efforts to assist the FAA with mitigating the impact of recent air traffic control system disruptions and with updating contingency plans.  The ACT-2 was the first item discussed.  The group was pleased by the work the TOCO has produced.  After the analysts review the documentation the TOCO

provided, the TOCO will meet with them again. The OIG group was concerned the TOCO has not been informed of a continuation of the temporary office or creation of the permanent office.  The OIG group intends to address this issue with the TOCO's sponsors.

- **The OCP Field Team** consists of regional OSGs and TOCO members.  The team has created a baseline for enroute facility performance to assess the effectiveness of revised enroute OCPs against the administrator's efficiency targets.  The group is working toward the same for remaining tier 1 facility. The group will be helping the facilities with their OCPs, as needed.  The TOCO is studying various models to measure OCP efficiency and for training, similar to the ATAC iSIM used for metroplex studies.
- **LOOKING AHEAD:**  TOCO's tech ops specialist Jimmy Black and assistant program manager Deb Brady will be visiting Harris Corp. in Melbourne, FL to discuss implementation of technical requirements.  The ATO has found $14M (split into a 2-year span) to upgrade requirements to aid in continuity and resiliency of the NAS with ATC-Zero outages.  The TOCO has been asked to rank the 20 ARTCCs to help FAA management develop a waterfall for installation of the requirements.
- Several TOCO members will be going to the Tech Center to observe the Offshore Analysis Demo of NextGen System, as we continue developing successful OCPs for the non-CONUS facilities.

## TERMINAL AUTOMATION MODERNIZATION REPLACEMENT (TAMR):
Mitch Herrick (MIA) is the Article 48 Representative for TAMR.  The reports of the TAMR team are below.

- **STARS/TAMR**
    - o SCT has been receiving a great deal of attention due to the erratic target behavior previously discussed.  As a result of those issues the Agency and TAMR Program have employed an "all hands on deck" approach to find solutions.  A "playdate" where SCT controllers went to the Tech Center and helped Raytheon and Tech Center Personnel work on the coding of the tracker as well as an "on site" OT+E conducted at SCT were held leading up to a 72 hour run for suitability over the weekend of the 18-21 of February.  A determination will be made as to wether SCT will stay on STARS or temporarily fall back to CARTS.
    - o As with many things there are positives to take away from some of the adversity that SCT has endured:
    - o We have learned a great deal about adaptation and need for "quality" radar input.
    - o We have learned a great deal about how the STARS tracker reacts to "poor quality" radar input and what must happen to deal with it.
    - o We better understand the importance of early analysis to determine potential false targets and radar reflections.
    - o The most important and exciting thing to come out of this process is something that was developed while the SCT controllers were in attendance

at the Tech Center. A Radar Beacon Analysis Tool (RBAT) was created that will help identify which radars are providing poor input and how to assimilate the potential surveillance sources into the Fusion Tile Sets.
- o The RBAT tool is already planned for use at PCT, C90 and N90 as a preventative measure before we turn on STARS there.
- o The RBAT tool will be used to analyze existing STARS facilities where radar jumping and ghost targets have been problematic.
- **STARS/TAMR Phase 3 Segment 1 update submitted by Doug Peterson-D10**.
  - o St Louis TRACON (T75) completed a successful transition from CARTS to STARS and declared continuous operations February 5, 2016. This marks the eighth of eleven large TRACONS that were operational on the ARTS3E Common ARTS platform that are now using STARS. The transition for the ninth facility, Potomac TRACON (PCT) will begin this week. Only Chicago (C90) and New York (N90) remain.
  - o Two important software Operational Test and Evaluations were completed this month. S06.R3A drop 5 was tested and deemed operationally suitable for Southern California TRACON (SCT). This is crucial to success at SCT. This software contains significant enhancements and additional tools to deal with unsatisfactory Radar tracking performance at SCT. Installation of the new software and live operational evaluation began on Feb 19. There were a large number of potentially significant trouble reports on day one. New adaptation has been delivered each night correcting the most significant reports. These have been extremely successful and day three has shown an 88% reduction in trouble reports over day one.
  - o So6R3C was also judged operationally suitable and will be deployed at PCT. This build contains the last scheduled software enhancements to STARS that were intended to close all the operational and functional gaps, or differences between CARTS and STARS. Keysite testing for this software began Feb 20 at Dallas Fort Worth TRACON.
- **STARS/TAMR Phase 3 Segment 2 update submitted by Scott Robillard-K90**.
  - o Segment 2 is progressing at breakneck pace. The most recent transition from ARTS IIE to STARS was in FAR on February 6, 2016. STARS G4 Elite deployment is beginning a process to replace a number of legacy G1 STARS systems.
  - o The most recent activities occurred in SBA, who joined Y90 and R90 as part of the G1 to G4 Elite Tech Refresh. As S804 Realignments progress across the NAS, it is important to acknowledge that ABI has emerged and is being transformed from a former transfer site to a SEG2 STARS G4 Elite TRA-CAB.
- **STARS/TAMR Phase 1 update submitted by Jimmie White-PHL**
  - o **A90/BOS:** A plan will be put together the week of the 23rd to get Cadre training complete for FSL/EFSL functions.

- o **PIT**: Joint Site Survey (JSS) begins on the week of 3/14. Teah Lord (F11) will represent NATCA for the Phase 1 deployment team. Preparations are already underway to make this a smooth transition.
- o **F11**: During the F11 Cutover Discussion Telcon, it was learned, the preceding adaptation changed functionality the facility has been using for about a year now. These changes also affected Sanford Tower (satellite). It was believed, the changes came from the program and a Plain Language document wasn't produced explaining the changes. Actually, the changes came from the SEOSF being mandated to make these changes, not the lack of a Plain Language document. Coordination is being done to find out who or what mandated these changes and set the adaptation back to the expected functionality F11 had before the last system upgrade.
- o **CMH**: Early MDM equipment delivery and install set to begin on 3/6. On the 2/15 meeting, AT was not present while decisions were being made on install dates, times, and AT Coach rescheduling. Jill Carr (TPA) and I were on the telcon to remind the program, AT has final say with regards to equipment installation as to not disrupt the live operation. After a follow up with NATCA and the ATM, there will be another meeting on 2/23 to make changes to the install schedule.
- o **Testing**: S6R4 testing will begin on 3/1. This is merge software that begins the process of combining all STARS/ARTS platforms into one build. S6R4 testing will last 4 weeks, because of the many items associated with combining multiple platforms. Normal testing is usually a week or two.
- o **Track ball prototype Key Site**: PHL and TPA are Key Sites for the prototype track ball. TPA has received the equipment, but will not install the trackballs until after a facility evaluation, approximately a week from 2/22. PHL installed the trackballs on 2/14. Of the two prototype track balls installed, one was declared unusable 7 days into a 90 day test cycle. The removed track ball made a distracting clicking/tapping sound when being moved in all directions. The complaints drove a facility decision to replace the prototype with a legacy trackball. TLSE will retrieve the prototype, see if any corrections can be made or develop another prototype which can take a couple of months. Expect an update on prototype trackballs in the next report.
- **Surveillance update submitted by Joe Yannone-Surveillance Engineer Region X.**
  - o Removal of the "Terra Fix" at two Radars feeding C90: There are numerous false beacon targets generated at two radar feeds into C90 that cannot be eliminated other than implementing the Terra Fix Removal change at those radars. These false targets are currently being masked by the C90 CARTS system. STARS has a higher standard for radar performance compared to CARTS. OR9 and DPA are the two C90-fed radars where the most amount of beacon false targets are generated. Removing the terra fix at these two radars would eliminate a very large percentage of the false targets which would provide a HUGE benefit to the transition to TAMR. HOWEVER, when

operating in FMA mode, single sensor operation is currently the only allowed configuration and OR9 is the preferred feed for FMA.  IF the terra fix were removed from OR9 AND a non-compliant transponder were to fly into FMA coverage while operating in FMA with OR9 selected, aircraft would be presented as search-only and would have to be taken out of sequence.  Thus ORN was recommended to be used for FMA instead of OR9 should the terra fix be removed from OR9.  However, an issue was identified when using ORN in FMA - targets off the center line and coming close to the NTZ.  Until the apparent offset at ORN was resolved, C90 did not want to use ORN for FMA.  A range bias was found and corrected in the ORN radar which corrected the offset.  C90 evaluation validated that the radar fix worked and put out a change notice - effective 2/19/16 using the ORN as the primary feed for single sensor FMA/PRM procedures. Now that that is taken care of, implementation of the terra fix removal at OR9 and DPA can finally commence.

- o  <u>Common Terminal Digitizer (CTD) Testing</u>:  The CTD is an integral part of the back end of the TAMR Segment 2 waterfall to digitize the remaining ASR-8 radars, as a STARS system only accepts a digital radar feed.  In-plant DTE testing of the CTD system began at the Telephonics facility on January 20 and completed February 5 with the post test review completed February 11. Regression to be competed in two parts at Telephonics: Event A scheduled for February 29 (Sunhillo build) and Event B planned for March 15 (IE build).  CTD First Article shipment to WJHTC was scheduled for February 19, installation and checkout will begin the following week.  This system will be used for onsite DTE and OTE testing.  These efforts should officially commence mid April.  The two keysites for the CTD are Rockford (RFD) and Roanoke (ROA).  As the first keysite, RFD will also be utilized for some additional "delta OTE" testing and AT User Evaluations including side-by-side comparison of the analog ASR-8 feeding the ARTS2e with the CTD-digitized AS*-8 feeding the TAMR system.
- o  <u>Radar Accuracy at SCT</u>:  One of the main residual issues at SCT is poor tracking performance due to inaccurate radar reports in certain areas.  However, the outlier radar reports are due to the surrounding environment and are not a maintenance or radar optimization issue.  While the radars are displaying very good accuracy overall, some are displaying inaccurate target reports in very specific localized areas.  These localized areas correlate to a structure (trees, towers, hotels, office buildings, etc) in the path from the radar to the aircraft.  The obstacles are corrupting the aircraft returns thus causing the positional inaccuracies of all aircraft at and below the elevation angle impacted by the tops of the buildings. A radar analysis tool was modified to help identify these precise areas automatically.  Several sample days of radar data was "crunched' using this tool and the results were handed over to TSLE so that the data could be leveraged with the R3A Drop 5 software release to make better tracker decisions and/or eliminate the "bad areas" from these radars into the

tracker.  The 72 hour test run at SCT occured over the weekend of February 19.  Additionally developed a presentation for SBS A48WG regarding the environmental struggles of the LAX radars (i.e. poor locations) and the performance impacts due to those struggles.

- o ERAM Surveillance Analysis:  Investigating the reactions of the different radars and radar configurations when an aircraft changes codes yet the Mode S (and/or ATCBI-6) do not receive the proper response from the aircraft to detect the code change - the flight status bit was not set in the transponder replies.  ERAM (Lockheed) has provided examples and analysis has started to validate the examples and also quantify the different reports that will come from the different radar configurations when this occurs.  This information should prove helpful in the eventual ERAM software fix.
- o CTD ASR8 Performance Analysis/"Health" Assessment:  There are significant issues with some of the ASR-8 facilities that are cause for operational and programmatic (TAMR/CTD) concern.  Operational stock levels at the FAA Logistics Center are not at sufficient levels to accommodate the needs of the ASR-8 field sites.  To get ahead of the schedule, several data collection efforts (ATSAP, NAP entries, TSAP, maintenance logs, etc.) are under way to identify potential problematic sites.  Additionally we've identified a method  for bulk analysis and prioritization of potential problem sites due to failed/degraded antenna subsystems for more in-depth onsite evaluation well ahead of TAMR activities so as not to potentially impact TAMR schedules.  We are also dealing with operational problems as they exist today with facilities like DLH (search coasting issues) and TLH (beacon reliability and map "shifting") in preparation for the transition to TAMR.

**TIME BASED FLOW MANAGEMENT (TBFM):**  Eric Owens (I90) services the membership as the Article 48 Representative for TBFM.  Mr. Owens' report for this update is below.

- The TBFM National Ops Team conducted an Ops Evaluation at the FAA Tech Center to determine if the TBFM 4.4.1 build was ready for deployment.  The build will better develop the Integrated Departure and Arrival Capability (IDAC) and deliver TBFM to TBFM (T2T) capability which allows centers to see the TBFM timelines for additional centers and schedule into the arrival or departure stream.  The new build passed the Ops Eval and we installed it into the operations string at ZLA and ZOA February 15, 2016 and the Ops Team continued testing to ensure the system was working.
    - o The primary test was to determine if IDAC would work at a heavy traffic demand.  To conduct this test we stationed Ops Team members at ZLA, LAX, BUR, SAN, and LAS.
    - o The team created some additional test flight plans so we could shed use them into the system.  After a two hour test they could not crash the system so it was allowed it to go operational.  The facilities are now using IDAC in the towers listed above and SNA is scheduled to turn on IDAC in March 2016.

  - o An Ops Team member at ZOA to check the T2T functionality which is working.  The last test we will do for the 4.4.1 build is for Coupled Scheduling currently scheduled for late March 2016.
- January 28th reviewed a fix for the ZME/ZTL Meter List Arrival System (MLAS) issue identified by ZME.  The time on the Memphis Center controller's display were not updating at the same time as the Atlanta Center controller's.
  - o As a result, the times were different which caused the Memphis Center controller to think he/she was hitting their times (+ or -) one minute.  However, the Atlanta Center controller was still showing time had to be lost.  This created an issue that resulted in an operational deviation at ZME.
  - o The fix was installed February 4, 2016 and is functioning properly.
- Continued to meet with the Program Office and AJV-7 to continue development of the Terminal Sequencing and Spacing (TSAS) tool.  Our team consists of six NATCA SMEs from large TRACONs and one NATCA SME for an en route facility.  TSAS is scheduled to be deployed to the first site in 2018.
- The TBFM Ops Team is also supporting ZSE with the addition of GIM-s.

**TOWER FLIGHT DATA MANAGER (TFDM):**  Matt Baugh (IAH) leads NATCA's efforts on TFDM as the Article 48 Representative.  His report to the membership is below.

- TFDM FID (Final Investment Decision) has moved from March to April due to the recent budget cut of $60M in FY17-19.  The contract will not be awarded until a successful FID, now planned for April.
- Members of the TFDM team visited IAH on 2/2 & 2/3 to present an Operational Evaluation Review (OER) to local members of Management, NATCA, PASS, Airport Ops, and United.  The meeting went well and the facility was very interested in having the capabilities TFDM will bring the operation in the future.
- **Advanced Electronic Flight Strips (AEFS)**
  - o Mr. Baugh visited EWR and PHX with Safety and Tech Deputy Director Jim Ullmann and the PMO Article 48 Representative Jeff Woods on 2/4 & 2/5.  The purpose of the visit was to bring them up to speed on the progress of the system over the last few months so they could then attend the NAC meeting later this month with as much information as possible.
  - o Delays in acceptance of resolution comments have pushed the expected completion date of the Digital Audio Legal Recorder (DALR) NCP to the end of Feb.  This may push back the ability to add seconds to the clock and a viable time sync to the system until the 5.3.0.3 build due out in May.
  - o AJI has approved of the AEFS ATC Course Design Guide and everything is in place for the Operational Try-Out and First Course Conduct in March and April in SFO.  Once this process is completed and has been approved by AJI, the training will be considered validated for further facilities.
  - o Mr. Baugh had a telcon with Dean Lacharite (CSA NATCA Safety Representative), and the TFDM Program Manager (PM) Mike Huffman, to discuss the changing of AEFS reporting issues from the current mechanism
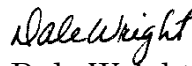
to ATSAP.  The PMO has expressed some concerns and an additional telcon is scheduled for this week in order to answer his questions.

- **PHX**
  - Training for PHX Tech Ops started the week of 1/25 and has since been completed.
  - Their system will be upgraded to the 5.3.0.2 build that is currently in CLE once a suitability/stability call has been made.
- **CLE**
  - Bill Spencer, a contractor, was sent to CLE from 2/1 - 2/5 in an attempt to capture additional information regarding a cascading GUI error that has begun.
  - Dave Flagg, and Tony Kristovich (TSLE) and Bill Spencer, were in CLE from 2/8 - 2/10 to upgrade the thin clients and install backing plates for the monitors to hold the cables in place.  They also brought a debugging thin client and hooked it up to LC in order to identify any additional memory leaks but none were found.
  - The results of the follow-up to the heads down study done in early Jan have been released.  They showed a decrease in heads down time on local and clearance delivery/flight data, with an increase at the ground position.  It was decided that future studies will include the TMC position, while SFO and LAS will have their TMC heads down study done as soon as scheduling permits.
- **EWR**
  - Training for EWR Tech Ops began the week of 1/18 and has since been completed.
  - Testing of the DSP functionality in AEFS will begin in the EWR tower cab on the mid shifts from 2/21 - 2/23.
  - Additional live testing of the system will occur on mid shifts beginning in March with members of the local team leading the effort.
- **SFO**
  - We have continued to work with the facility to identify all of their adaptation requests.  We are in the process of developing engineering builds for them to test the adaptations prior to training the facility.
  - AEFS installation in the existing tower is expected in March.  IOC in the new tower is expected in October.
  - A training suite for the TSS lab will be installed in late February or early March.
- **LAS**
  - The initial Kick-off meeting planned for 1/28 was cancelled due to the weather that affected the DC area and was rescheduled for 2/18.  The meeting went well and included representatives from LAS NATCA, management, and tech ops.  They are scheduled to move to the new tower in late August or early September and begin using AEFS at that time.

- - Installation, training, and use of AEFS in the old tower as opposed to the new tower was discussed at great length. The facility will provide a detailed schedule of how that would affect the staffing by the end of February.
  - o **CLT**
    - - IOC for CLT is planned for late 2016 to support the NASA ATD-2 project.
- • **SWIM Visualization Tool (SVT)**
  - o There was another telcon to discuss the deployment of the additional filtering capabilities. It was decided to hold off on deploying to the additional 9 facilities until AJV-7 can have more time to assess the requirements.

**VOR MINIMUM OPERATIONAL NETWORK (MON):** John Vogelsang (P31) is the Article 48 Representative for the VOR MON project. Mr. Vogelsang's report is below.

- • All of the telcons that were scheduled since my last update were cancelled but we did have a meeting in DC with members of several PBN groups present. The group met for two days and discussed the process of VOR discontinuance.
- • It seems a lot of the folks on the Tech Ops and engineering side of the Agency don't really grasp what is needed on the Air Traffic side. There was a desire by Tech Ops and engineering to have the SRMs done in group form at the SA level instead of at the facility level where they should be.
- • NATCA is currently working with the Agency to ensure that as we move away from ground based NAVAIDs we do so in a safe manner. Many of the VORs slated for removal have dozens of IFPs attached and each and every one must be looked at to determine whether it needs to be replaced or removed. The locals are the best source for that information.


*Dale Wright*

Dale Wright
Director
Safety and Technology