

NATCA Safety & Tech Update Week of January 2, 2017

TERMINAL AUTOMATION MODERNIZATION REPLACEMENT (TAMR): Aaron Rose (NCT) is the TAMR Article 114 Representative for NATCA. His report to the membership is below.

The holiday season has arrived and work as you can imagine started to slow down. Not because there was no work but because the decision makers are on leave. Decisions coming from above this time of the year are always slow. One aspect that needed attention and received it was Southern California Tracon tracking issues. Mr. Rose with the help of TSLE (Second Level Engineering) from the Tech Center traveled to SCT the week of Dec. 12th to assist with new adaptation. SCT controllers Mike Sanders, Mike Smith, and Matt Morter reviewed tracking issues side by side with old and new adaptation. They reported a huge improvement to the overall tracking in the Los Angeles Basin. The new adaptation was loaded on the operational string the night of Dec. 15th. Initial reports from the operational floor are promising. As of today the reports of bad tracking have diminished drastically. Mr. Rose is coordinating daily with SCT to ensure the new adaptation is up to par.

Mr. Rose has coordinated with Jason Grider (NATCA) about ATO Operational Contingency Group. TAMR will meet with this group in the beginning of January.

With the introduction of FUSION in the terminal world, LRRs (long range radar) need to be optimized to work within the terminal environment. NATCA TAMR is working with Western ERC to have all LRRs optimized starting with QPK in Colorado and QPL in the Washington D.C. area. This needs to be done without degrading Enroute tracking. AJW is the Agency's surveillance group responsible for radar sensors. Mr. Rose is working closely with Joe Yannone (NATCA Engineer), Eric Labardini (NATCA Art 114 SBS) and Mike Ragucci (NATCA Western ERC) on radar issues that continue to plague Centennial Tower and PCT.

TAMR Art 114 meeting was held in Atlantic City, NJ on Dec. 7th. Discussed Section 804 and how it is impacting TAMR deployment. Site rules, which can change adaptation on a local level, were also discussed; we will be working hard to implement these rules into the STARS baseline software. Money has been earmarked for this effort and the benefits to both the OSF and facilities are immense. Having to keep track of 130 individual rules is overwhelming to the OSF. Topics also included advancements to communications between programs and what worked well in 2016 and how to improve in 2017.

I would like to thank all the hard working individuals on the NATCA TAMR team that ensure the program continues on time and under budget.

TAMR Systems Engineering Update submitted by Kyle Ness (M98)

Mr. Ness was at the FAA tech center the week of December 6-8 to attend a number of meetings including the STARS Software Planning Board to discuss content for the S6R9 build scheduled for 2018. This software build is the first beyond the planned 'merge' and will incorporate over 40 software fixes and enhancements that will benefit all terminal STARS facilities. Among these features are: ATPA processing of VFR Flights, enhancing the display of coordination lists, IFDT toggle via keyboard entry, advancing automatic handoff and improvements to DSA mode.

The STARS Program Technical Report (PTR) working group meeting was held December 8 at the FAA Technical Center. The focus of this meeting was to review the ranked list of STARS software problems and improvements and identify items that have been made obsolete or are no longer of interest. NATCA SMEs from PHL, M98 and RSW reviewed over 60 PTRs and closed many. This will bring the PTR catalog more into focus as the STARS software planning group looks to the list to identify future software build content. The meeting concluded with a lengthy discussion of the STARS weather presentation and recap of the evolution of efforts to improve the weather display in the STARS software. The call to improve terminal weather presentation has been ongoing for years as controllers consistently raise concerns about the difficulty to discern weather levels based on display colors and graphics in addition to the quality of weather data from ASR radar antennas. The efforts to address these concerns has taken various forms but has been hampered due in part to the complex nature of the weather display as it pertains to Human Factors, requirements and budgetary constraints. Nonetheless, the NATCA SMEs agreed that the weather display remains a significant problem in the field and a renewed effort should be undertaken to pursue a revised weather presentation that applies proposed NextGen weather constructs.

Mr. Ness coordinated with (ERAM) NATCA National Terminal Representative Jim McAllister to address two potential STARS functions that improve inter-facility handoffs and additional information exchanged between STARS and ERAM in the lines three and four of their respective data blocks. By working in parallel on these initiatives, each representative hopes to achieve a desired outcome in a timely manner.

STARS software version S4R27a drop 2 was tested by NATCA SMEs December 14 and successfully passed OT&E. This improved version resolves a Predicted Track Line (PTL) anomaly associated with tracker changes in the original R27 build. Detroit (D21) is a likely key site. This is expected to be the last software build for the S4 baseline as the legacy STARS sites transition to the S6R4 software version in the coming year.

Work continues in the field to alleviate tracking issues at SCT and PCT. N90 is nearing completion of an improved AT coach parameter to better handle simulated ILS approaches.

Upcoming SE Events:

PTRWG	January 19
R4 Site Briefings	January 17, 19 & 24
S6R6 OT&E	January 31 – February 16

TAMR Deployment Lead report submitted Scott Robillard (K90)

Merry Christmas from the NATCA STARS Deployment team. Over this holiday moratorium, the TAMR NATCA team has been preparing for an unprecedented level of work in one calendar year. During the past 3 years we have been gradually increasing the level of work. This starts with site surveys approximately 18 months prior and concludes with an IOC event on STARS. For the vast majority of these transitions, the level of work involves transitioning from ARTS IIE to STARS. During 2017, these sites will see NextGen automation platforms turned on in their facilities.

SEG2 ARTS IIE to STARS G4 ELITE

MGM, LEX, CHS, BTR, MWH, MLI, DLH, MOB, BGR, ABI, SUX, RFD (ASR8 CTD Key Site), GGG (ASR8), FAY, PSC, ROA (ASR8 CTD Key Site), MSN, AGS, CMI, TOL, NMM, ACT, YNG, CPR (ASR8), AVL (ASR8), ASE, GTF (ASR8) AND SPI for a total of 28

Phase 1 G1/2 to STARS G4

DAB, D21, CVG, CMH, P50, SAT, PIT, CLT for a total of 8

PHASE 1 G1/2 to STARS G4 ELITE

IND, ABQ, TUL, ICT, R90, Y90, SBA for a total of 7

This level of activity and transition to an automation system has never been attempted for 43 operational cutovers in one year. There are two complicating issues to this level of work and each presents its own challenges.

First, in order to complete the STARS waterfall and eliminate all Common ARTS systems in the NAS (ARTS IIE and IIIE), the TAMR program must digitize the 41 ASR8s that feed automations systems currently. Some of these are already digitized with a near end of life asset in the TDX-2000. By the end of the waterfall, all TDX-2000 are to be replaced with the successor equipment. That equipment is called the Common Terminal Digitizer (CTD). It will replace some legacy components of the ASR8 itself and not merely digitize the signal. As an example, the old analog radar receivers in the ASR8 will be replaced with state-of-the-art digital equipment. However, the system is behind schedule and is threatening to derail the waterfall. Successful deployment Key Sites ROA and RFD will allow for continued deployment at analog ASR8 sites. However, further delay will leave those ARTS IIE sites in Common ARTS.

Second, and key to the overall success of the TAMR program is having the entire NAS on one software baseline. This means achieving a state where all facilities in the NAS are running the same software and have same software capabilities. Once deployment of the common software baseline is complete, facilities from N90 to SCT to EVV to IND will all have access to the same advanced automations available to the site.

The first sites have already transitioned to the R4 software baseline. NATCA and the TAMR program are activity working to develop a deployment waterfall of the R4 build. This is a very large change to legacy STARS sites and is not like a normal adaptation change.

With 43 operation cutovers, deployment of the CTD to digitize the ARS8 and the deployment of the R4 Software build, it promises to be a highly active TAMR year.

TERMINAL FLIGHT DATA MANAGER (TFDM): Matt Baugh (IAH) is the Article 114 Representative for TFDM. Mr. Baugh's update is below.

Terminal Flight Data Manager (TFDM):

We are continuing to work towards the initial build for TFDM that will be deployed to PHX in 2018 with an IOC date in 2019. The first step in that process will be an early demo of what we have worked on so far. This demo is scheduled for the last week in January 1/31 - 2/2. There, Leidos will show us, for the first time, the fruits of our labors for the last 7 months. There will be additional demos later with more of an official connotation and with more capabilities.

Additional work has been done in regards to the number and sizes of monitors that TFDM will deploy. Currently, we are pushing for Ultra HD monitors in all operational areas, varying from 24" - 42". The number and sizes of each display will ultimately be decided by each facility upon our initial site visits, currently scheduled as far out as 3 years in advance.

Advanced Electronic Flight Strips (AEFS)

The newest build, 5.3.0.3, has been going through it's final testing stages in the tech center and is planned to go through final site testing the first week of January in CLE during the mids. NATCA and FAA SME's ran through numerous "stress tests" of this build 12/5-9, and only found 1 major issue, lag. That has since been addressed and we are ready to move on to midnight testing in CLE. Once this testing is completed, and with the facilities "OK", we will leave the system running for them to utilize day-to-day. A few major issues that have been addressed with this build are system stability and operating speed.

- **PHX**
 - The current plan is to have the PHX cadres trained the last week of January and begin mid testing the first two weeks of February. Like CLE, once their team has made a decision to do so, we will set up a plan to train the rest of their work force for them to begin using the updated system on a daily basis.
- **CLE**
 - CLE personnel have been undergoing delta training for the newest build and as of last week, only 2 controllers had not received the training. Because their current operating system is more recent, they did not require as much familiarization with the system as PHX will.
- **EWR**
 - Nothing new
- **SFO**
 - Nothing new
- **LAS**
 - Nothing new
- **CLT**
 - Hardware installation in the equipment room was completed during the second week of December.
 - Additional coordination with the facility is still needed to determine what modifications, if any, are needed in order to install the monitors in the cab for its eventual use.
 - Our current timetable is to have CLT operational by the late spring, 2017, with IOC in the early fall to coincide with ATD-2.

SWIM Visualization Tool (SVT)

PHL declared IOC in mid December and have been using the system regularly ever since.

There is another surface viewer prototype, developed by MITRE, in use at the Command Center known as NAS Operational Dashboard (NOD). We are attempting to set up an operational demonstration of this equipment to ensure that we are able to capture its capabilities with TFDM. Since this was done out of house, I have concerns that TFDM will not meet some of it's capabilities.

NEXTGEN: Kevin McLaughlin (SCT) is the National NextGen Representative for NATCA. His report to the membership is below.

Future of Radar Surveillance

On November 2, 2015 H.R. 1314 became Public Law 114-75 Bipartisan Budget Act of 2015. Among the numerous sections of this Act is Title X Spectrum Pipeline.

Title X contains provisions facilitating the transfer from government use and control to industry significant swaths of the electronic real estate known The Radio Spectrum. Specifically, according to Title X, the Secretary of Commerce shall submit to the President and the Federal Communication Commission (FCC) a report identifying 30 megahertz of spectrum below the frequency of 3 gigahertz for reallocation to non-Federal use and not later than 2024 begin a process to initiate competitive bidding for licenses to this spectrum.

Ok so what? The impact of this legislation is the creation of a four Agency consortium (FAA, DoD, DHS, and NOAA) with the objective of vacating the 1300-1350 MHz spectrums by consolidating long-range surveillance, short-range surveillance, and weather radar spectrum requirements. These activities will be funded through the Spectrum Reallocation Fund (SRF), via the SENSR (Spectrum Efficient National Surveillance Radar program) pipeline once approved by a Technical Panel staffed by FCC, Office of Management and Budget (OMB), and National Telecommunication and Information Administration (NTIA). The first public DOT/FAA action on this initiative was a Request for Information (RFI) that closed on October 18, 2016. An RFI is essentially marketplace survey to assess the level of interest and capability among potential qualified vendors, and obtain industry input to assist the FAA in finalizing its acquisition strategy. The likely vehicle for the consolidation of government spectrum needs is the use of Multifunction Phased Array Radar (MPAR). MPAR could potentially absorb and fulfill the

operational requirements currently provided by CARSR, ASR4, ASR8, ASR9, ASR11, GPN81 and NEXRAD. The OMB Director has earmarked 500M to undertake the research, development, and planning necessary to facilitate this transformation.

Obviously the cost for replacing all these sites will be enormous and we all have watched how funding, or lack of it, affects tech innovation and implementation in our sector of aviation. The driver of this program is that a recent auction of similar frequency real estate yielded approximately 42.4 billion dollars. That source of revenue will be an extremely attractive target, especially to the incoming business orientated administration. This revenue windfall could be leveraged for numerous aviation infrastructure improvements, including the replacement of our aging radar surveillance sites, which are approaching end of service life.

VOR MINIMUM OPERATING NETWORK (MON): John Vogelsang (P31) is the Article 114 Representative on the VOR MON project. His update is below.

The entire VOR MON team met the week after Thanksgiving to discuss future FY waterfalls and the program in general. We discussed the need for the PBN co-leads to be involved with the program at the service area level. The first FY17 VOR that will be discontinued is BTL on 2/2/17. Later in FY17 the following VORs will be discontinued:

- ECA
- MXW
- BRD
- DDD
- ENW
- HRK
- HWW
- RIS
- STE
- SYO
- ABB
- DKK
- JKS

Most of these are the “low hanging fruit” as they have few, if any procedures attached to them. As we go forward into FY18 and beyond, the VORs will have many more procedures, airways and fixes attached so there will be more work involved to mitigate these before they can be turned off and removed from the NAS. The waterfalls are subject to change based on circumstances but the tentative FY18 waterfall is:

- AOO

- EWA
- HLL
- HUL
- HVN
- HZL
- MMJ
- OTT
- PNE
- PXT
- RNL
- RUT
- TDG
- ASP
- BUU
- DAK
- FLP
- GBG
- IJX
- LAN
- LJT
- LWV
- PSI
- TVT

NATCA is working with the program manager on the issue of what some in the program are calling “too many MON airports in the S. California area”. NATCA disagrees with this and will make sure there is no reduction in these airports, which are needed in the event of a GPS outage/failure under IFR conditions.