



SELCAL Code Pool Expansion Status

AFC Fall 2015 - Montreal

The Current Limitation



- The ICAO SELCAL register is oversubscribed
 - Current 16-tone SELCAL standard is limited to 10,290 codes
 - SELCAL register holds over 32,000 assignments
- Oversubscription is resulting in up to 6 aircraft responding to the same code
 - Over 250 known duplicate call occurrences recorded in 12 months by worldwide ANSPs
- The demand for SELCAL is still growing
 - ASRI issues approximately 2,500 per year
 - 13% year-on-year growth
 - Problem will continue to increase without action

Industry Solution



- ASRI working with SELCAL avionics vendors, manufacturers, and the FAA developed a SELCAL code pool expansion solution
- The solution expands the SELCAL system to 32 tones
 - The update would create 215,760 unique codes
- ASRI immediately began working with the various standards organizations (ICAO, RTCA, and AEEC) to move the proposed solution forward

ICAO Communications Panel



- The ASRI staff provided the proposed solution to the ICAO Working Group Maintenance (WG-M) committee for consideration
- ICAO WG-M agreed with the ASRI proposed SELCAL code pool expansion
 - The proposed date of implementation for ANSP ground station implementation based on survey feedback was September 2016
- The ICAO Communications Panel Meeting 1 was held December 1-5, 2014 in Montreal, Canada. Boeing/Airbus submitted a working paper with concerns that were addressed by ASRI at the meeting except for the completion of testing of avionics for backward compatibility. IATA also expressed concern about testing.
- It was concluded that testing for backward compatibility was required so the SELCAL code pool expansion proposal was deferred until the next ICAO approval cycle commencing in 2016.

ICAO Communications Panel



- The ICAO Communications Panel Meeting 2 was held September 28 through October 2, 2015 in Montreal, Canada.
- ASRI submitted a working paper that provided the status of avionics backward compatibility testing to date consisting of theoretical analysis, bench testing, and flight testing.
- A theoretical analysis of intermodulation products was completed on the new 16 tones being incorporated into the existing SELCAL system. The committee concluded that by ASRI excluding the issuing of the suspected tone pairs (approximately 5000), it would eliminate the probability of false triggering.
- The bench testing conducted on avionics associated with both Airbus and Boeing fleet aircraft to date indicates that all the tested legacy avionics are fully backwards compatible with the proposed SELCAL code pool expansion.

ICAO Communications Panel



- Airbus will be conducting a flight test campaign to verify backward compatibility with A320 aircraft in October. The results of the testing are expected in early November 2015.
- Additional SELCAL OEMs including Rockwell Collins, Free Flight Systems, and Honeywell Avionics are still in discussions about possible testing plans.
- The CP/2 participants were invited to:
 - note the successful SELCAL avionics backward compatibility testing and analysis conducted to date as outlined , and
 - continue to support the proposed SELCAL code pool expansion, with an expected approval process for incorporation into the ICAO SARPS commencing at CP/3 in 2016.

AEEC SELCAL Working Group



- The AEEC Executive Committee unanimously voted to approve the SELCAL Code Pool Expansion APIM at the AEEC General Session meeting held April 14-17, 2014
- American Airlines volunteered Robert Holcomb as chairman and Paul Prisaznuk is the AEEC secretary to support the SELCAL working group (WG)
- The fifth and last meeting of the SELCAL WG was held on July 7, 2015 in Washington, DC at RTCA Headquarters
 - Work continued on drafting the SELCAL standard (714A)
 - As a result of the WG meeting, a final version of the document was produced
- The AEEC Executive Committee unanimously approved the 714A document at the AEEC Mid-term meeting held September 23-24, 2015 in Seattle, WA

RTCA SC-232 Meetings



- The ASRI staff attended the RTCA Program Management Committee (PMC) meeting on June 17, 2014 in Washington, DC
 - The PMC committee approved the proposed ASRI Terms of Reference (TORs) and formed Special Committee (SC) 232 to develop a new Minimum Operational Performance Standard (MOPS) for the SELCAL system
- SC-232 held its fourth meeting July 8-9, 2015 in Washington, DC at RTCA Headquarters
 - Meeting was held in conjunction with AEEC SELCAL WG
 - The group reviewed the status of the work in other committees
 - The draft MOPS was reviewed and updated
 - An avionics backward compatibility testing results were reviewed

RTCA SC-232 Meetings



- A teleconference was held on September 22, 2015 to review open action items and status the avionics backward compatibility testing
- The next meeting of SC-232 is scheduled for November 10 - 11, 2015 in Washington DC at RTCA Headquarters
 - Primary objective will be to finalize the MOPS document for formal RTCA review and approval
 - Review the status of avionics testing for backward compatibility
- RTCA will circulate the draft MOPS and commence the Final Review and Comment (FRAC) process

RTCA SC-232 Meetings



- The final meeting of SC-232 is scheduled for January 26 - 27, 2016 in Washington, DC at RTCA Headquarters
 - Primary objective will be to disposition comments received on the draft MOPS document
 - Review the status of avionics testing for backward compatibility
- The MOPS document will be presented to the RTCA Program Management Committee for final approval in March 2016



- Questions?