

**RTCA Special Committee 186, Working Group 5**

**ADS-B UAT MOPS**

**Meeting #5**

**Assigning DME Channel 17X**

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(Reference Action Item 3-7)

**Summary**

In the International Civil Aviation Organization Distance Measuring Equipment channel plan, there is a footnote stating that "...DME operating channel No. 17X may be assigned for emergency use". The Purpose of this paper is to provide guidance as to the intent of that footnote.

## **Background**

To facilitate international aviation, the International Civil Aviation Organization (ICAO) has developed a standardized Distance Measuring Equipment (DME) channel plan. This plan defines DME interrogation and reply frequencies, and also pairs those DME channels with VHF Omni-directional Range (VOR), Instrument Landing System (ILS), and/or microwave landing system (MLS) channels. The intent was to allow the pilot to select a single channel to tune all of his navigation systems.

Because of this hard-pairing however, if VHF nav aids are unusable – for example due to interference from FM broadcast stations – the associated DME channel pair is also fallow. This is particularly evident in a footnote to the channel plan, where, because of its close proximity to the FM band, ICAO noted that “108.0 MHz is not scheduled for assignment to ILS service. The associated DME operating channel No. 17X may be assigned for emergency use”. Because of this note, 17X is not used in the United States for operational DME’s. Instead, it (together with 18X) is reserved for DME ramp testers. This condition has driven 17X – or 978 MHz – to be the leading candidate frequency for the operational UAT system.

Review of 978 MHz use in Europe however, lead to the discovery that it is being utilized to a limited extent there. As a result, the working group asked for clarification of the term “emergency use”.

## **Result**

It turns out there is no straightforward answer. I polled several members of the ICAO secretariat, and received the following information:

### Message #1

Re your question concerning the use of 978 MHz for UAT. I talked to some people here about interpretation of "emergency use" for 17X. As there is no explicit explanation of this note, I would submit that "contingency" is really what is meant and the intent of the note is to support, if necessary, contingency routes. However, the only reference I found so far in ICAO books is a reference to "contingency RNAV routes" which are not very relevant to the subject. I am still trying to find out more to substantiate the case when you have to install DME or TACAN for a temporary contingency route. Maybe it has never happened before.

### Message #2

1. Following my previous message concerning a note in Annex 10 (Vol.I Chapter 3, Table A) on "emergency use" of the DME 17X (978 MHz) channel I checked a couple of old reports and had an additional consultation with XX, ATM Section, which is the ANB section in charge of contingency planning.

2. Old documents indicate that the words "may be assigned to emergency service" had been in this note for years until AWOP/9 in 1982

developed a VHF/DME/MLS channel plan and changed these words to "may be assigned for emergency use". This change does not make much difference, particularly in view of the fact that there is no explanation available as to why "emergency" was there from the outset.

3. From my conversation with XX, it appears that there is no meaningful scenario of a DME channel assignment for emergency purposes. Thus, the only reasonable interpretation of the note in question is that the note covers a situation which, according to current terminology, is referred to as contingency rather than emergency. And like myself, XX couldn't recall any contingency situation when the DME 17X channel assignment was sought for international use. This might be different in the national context, though we don't know if such assignments have ever occurred in States.

### **Conclusion**

The group is invited to explain to me what this means.