

F-15 Saudi Arabia Electromagnetic Compatibility (EMC) and Safety of Flight Test (SOFT)

F-15 Saudi EMC/SOFT

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Why an Experimental Special Temporary Authority (STA) is Necessary:

An experimental STA is required to support EMC/SOFT testing of the APX-119 transponder on the F-15 Saudi Arabia (F-15SA). The APX-119/APM-480 or IFR-6000 **operations must be free space** in order to allow the analysis of potential EMI between the various systems. Use of a hood/hat or direct connect **is not feasible** and would prevent completion of the test.

Operation Description:

This testing will assess the EMI affects of other airplane transmitter systems to the operation of the F-15SA APX-119 transponder. This STA will support a series of test events where the APX-119 transponder will be tested as the EMI victim system while operating in conjunction with various other airplane transmitters that are potential EMI source transmitters.

The purpose of the test is to ensure that the APX-119 transponder functions normally while other airplane transmitters are in use, with no EMI effects to the transponder operations.

During the test the APX-119 will be operated in Roll Call Mode S, and will communicate with the APM-480 test set throughout the test sequence. The APM-480/IFR-6000 will provide continuous interrogations to the APX-119 and will measure the transponder reply rate and accuracy while other aircraft transmitters are operated. The test will validate that the APX-119 is not adversely affected by operation of the other aircraft transmitter systems and that the operation of transponder Mode S are not a victim of any potential EMI source. Mode S will only be used in Roll Call Mode so that no surrounding aircraft will be targetted during the interrogation sequence.