

Minutes of the WG1, WG4, WG6 Telecon
6/27/01

Tony Warren (Boeing)
Jonathan Hammer (CAASD)
Bob Hilb (UPS)
Richard Barhydt (NASA)
Jerry Anderson (FAA)
Steve Koczo (Collins)
Tom Foster (Collins)
Dave Spencer (MIT LL)
Ann Drumm (MIT LL)
Lee Etnyre (UPSAT)
Jim Maynard (UPSAT)
Stu Searight (FAA)
Roxaneh Chamlou (JHU)

Tony Warren presented the status of the WG4 Intent Subgroup's proposal thus far for addressing short-term intent in Rev A of the ADS-B MASPS (DO-242A). The current proposal had involved sending "raw" intent data from the MCP and FMS (selected altitude, selected heading, and FMS waypoint constraints) along with flight mode indicators that provide the aircraft's operating mode. The receiving aircraft would be required to assemble this information into an intended trajectory for the transmitting aircraft. The current ADS-B MASPS requires the transmitting aircraft to provide intent in the form of trajectory change points (TCP's). These TCP's consider information from multiple aircraft systems (autopilot, FMS, and current state) and represent the aircraft's commanded trajectory, given the current flight mode.

Jonathan Hammer, Bob Hilb, and Tom Foster expressed concern that the current proposal would place too much burden on the receiving aircraft. All cited the potential for ambiguous interpretation of intent on the receive side, given many different automation approaches across the aircraft fleet. The intent proposal must be compatible with a variety of aircraft manufacturers, including general aviation, regional and business jets, and commercial transports. Jonathan cited the intention in the current ADS-B MASPS for the transmitting aircraft to accept the burden for assembling the information. By doing so, the receiving aircraft doesn't need to process a complex trajectory for each transmitting aircraft.

Bob said that WG6 should consider whether proposed intent information is used for safety or efficiency purposes. That distinction will affect the required integrity.

Tom mentioned the decision at the May WG6 meeting in Washington to move the current ADS-B MASPS discussion on TCP's to an appendix. WG6 will not address TCP level intent in Rev A.

Jim Maynard mentioned the ICAO DAP program related to selected and target altitudes. He thought the proposed flight mode indicators should be harmonized with that effort.

Tony and Richard Barhydt are concerned that the current version of the MASPS only accommodates TCP level intent information. When operating in certain flight modes, there is no defined trajectory end point, making it impossible to define a TCP. Jonathan suggested that the DO-242 definition of TCP's could be changed to accommodate these modes.

Based on comments received during the telecon, Tony and Richard have agreed to place more emphasis for providing intent on the transmit side. They will coordinate with the Europeans on the DAP target altitude proposal and the associated flight mode indicators. The new approach will provide a method for broadcasting intent when there is no defined endpoint (as common with many of the autopilot state modes) and when TCP's are available. The proposal for DO-242A is expected to concentrate on short-term intent, including target altitude (as described in the DAP). Target altitude can be the aircraft's current altitude, the MCP selected altitude, or an FMS-derived target altitude (waypoint constraint or cruise altitude). The transmitting aircraft would make this determination. Tony and Richard will give an update on their proposal at the July WG6 meeting in Seattle.

An additional issue that should be addressed is how the discussion on short and long-term intent should be distributed between the ADS-B and ASA MASPS and whether it should be covered in the main body or an appendix.