Latency Timer Value

FIT-Asia/11
Virtual meeting
23-26 August, 2021

Latency Timer Value

- Paper proposes a CPDLC Latency Timer value of 300 seconds as implemented in the North Atlantic region be adopted in Asia-Pacific.
- The Oceanic SPR (DO-306) requires that the likelihood of occurrence of an undetected late or expired message shall be no greater than remote.
- Safety Requirement SR-15 is applicable to both the aircraft and ground systems: "When the end system receives a message whose time stamp exceeds ET_{TRN} the end system shall provide an appropriate indication". ET_{TRN} is 210 seconds for RCP240 and 370 seconds for RCP400.
- Implementation development was done in the NAT and ICAO OPDLWG in 2017:
  - OPDLWG discussed need for agreement on a single global value to avoid adopting different values which may inject unnecessary hazard into an already complex situation.
  - NAT planning team emphasised that the main priority of the implementation should be sufficient mitigation of the three identified hazards associated with safety requirement SR-15 ("detected late or expired message", "undetected late or expired message", "undetected spurious/inadvertent message delivery.

Latency Timer Value

- NAT planning team considered the potential impact on ground system modifications to improve data link performance, such as the retry timers to address problematic transition areas.

- One of the solutions developed to mitigate this problem and improve system safety was automated re-tries within the logic in the ground system (as now recommended in the FANS Problem Solution Tracker).

- There was concern that using a value of 210 seconds could render the improvement ineffective.

- Ultimately it was concluded that the safest and most practical way forward was to trial a value of 300 seconds, which was projected as the minimum value that would prevent interference with the re-try timer.

Latency Timer Value

- Airways supports operations of a number of non-PBCS fleets that do not utilise operations that are dependent on RCP240.
- We consider if these non-PBCS fleets meet RCP400 then they may continue datalink operations. In this respect the use of a 300 second latency timer satisfies SR-15 for both RCP240 and RCP400 operations.
- We also note that at ICAO OPDLWG IATA proposed a clarification to Doc 9869 SR-15 that replaces the ET_{TRN} value with “a latency value as provided by the ANSP”.
- Airways decided to implement a 300 second value for the latency uplink in our Oceanic airspace as we support the idea of one global standard, we agreed with the NAT planning team reasoning, and the 300 second latency timer value supports both RCP240 and RCP400 operations.

Latency Timer Value

The meeting is invited to:

a) note the information contained in this paper; and

b) discuss any relevant matters as appropriate; and

c) propose that a 300 second latency timer value is adopted for regional use in Asia Pacific.