

**FANS Interoperability Team Meeting  
(FIT/22)**

**Santiago, Chile  
3-4 March 2015**

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**Agenda Item 4 – Working Papers**

**YBBB FANS1/A Performance during 2014**

**Presented by Airservices Australia**

**SUMMARY**

FANS1/A communications and surveillance performance in the YBBB FIR is presented for the year 2014.

**1. INTRODUCTION**

- 1.1 FANS1/A communications and surveillance performance in the YBBB FIR is presented. The results are based on data collected for the year 2014 according to the GOLD Appendix D specifications. Plots are included in the Appendix at the end of the paper.
- 1.2 The actual time and duration of scheduled CSP outages were taken from a recent FAA publication<sup>1</sup>. The period covered was January to mid-November 2014. Downlinks sent during those outages to affected GES were removed from the GOLD data. Duplicate ADS-C messages were also excluded from the GOLD data.
- 1.3 System availability and continuity were not determined for this working paper. A local process for identifying unscheduled CSP outages has not yet been developed.

**2. DISCUSSION**

- 2.1 **ADS-C Performance.** The RSP180 requirement is for 99.9% of downlinks to be received within 180 seconds, and for 95% of downlinks to be received within 90 seconds. For 2014 99.6% were received within 180 seconds and 98.8% within 90 seconds. Of the 29 aircraft types monitored (with more than 100 downlinks), all except GLF6 (347 downlinks) exceeded the 95% 90 seconds requirement. Four exceeded 99.9% at 180 seconds and a further 14 exceeded 99.5% at 180 seconds.

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<sup>1</sup> 'PBCS monitoring in US Pacific oceanic airspace', Attachment to IP-18, RASMAG MAWG/, Dec 2014.

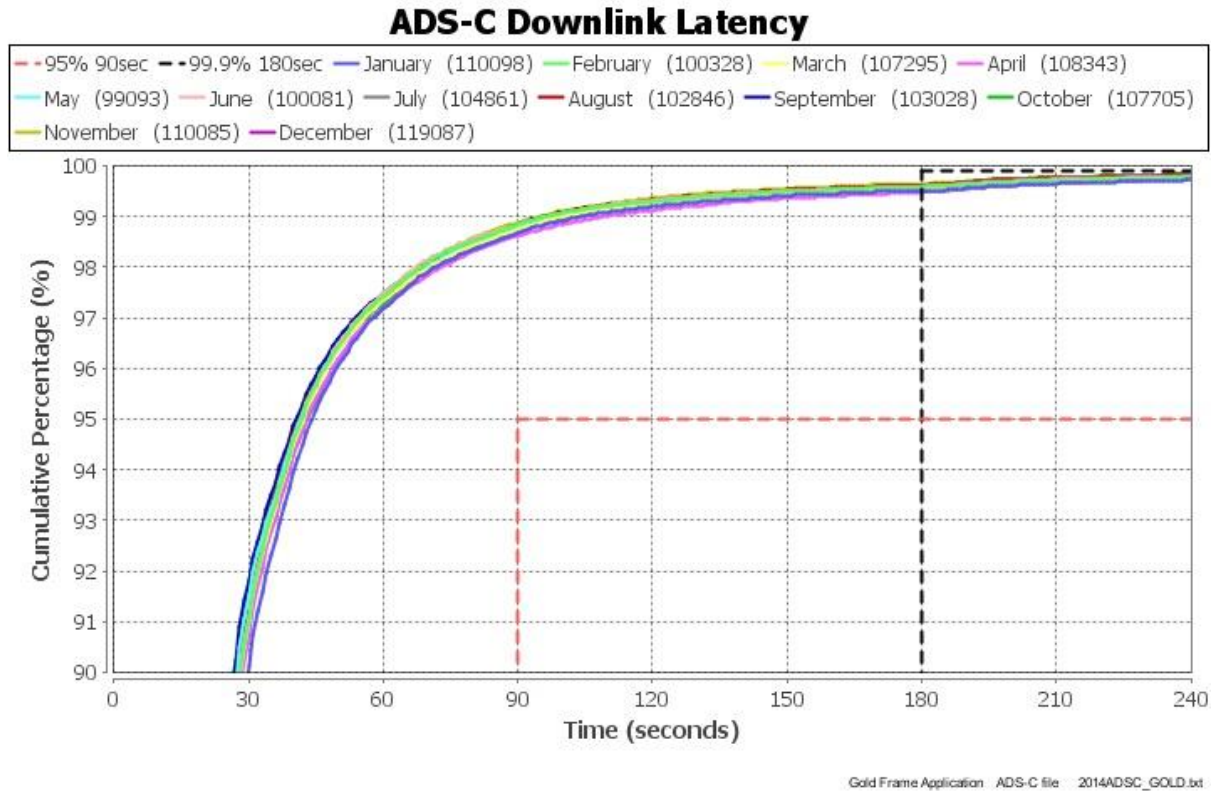
- 2.2 **CPDLC Performance (RCTP).** Over all RGS the performance is 99.2% by 120 seconds and 99.4% by 150 seconds. This meets the RCP240 RCTP requirement of 95% of transactions completed by 120 seconds, but falls short of 99.9% completed by 150 seconds.
- 2.3 **CPDLC Performance (RCP).** Over all RGS the performance is 99.2% by 180 seconds and 99.5% by 210 seconds. This meets the RCP240 RCP requirement of 95% of transactions completed by 180 seconds, but falls short of 99.9% completed by 210 seconds.
- 2.4 **Iridium Performance.** Plots of performance for the GES IG1 show that ADS-C latency, and CPDLC ACP do not meet the RCP240 95% and 99.9% requirements. The number of CPDLC downlinks to IG1 is relatively low. However the ADS-C latency curve for IG1 is based on 6203 downlinks and that curve is consistently below the others in the plot. There were not enough IGW1 downlinks to consider them further.

### 3. ACTION BY THE MEETING

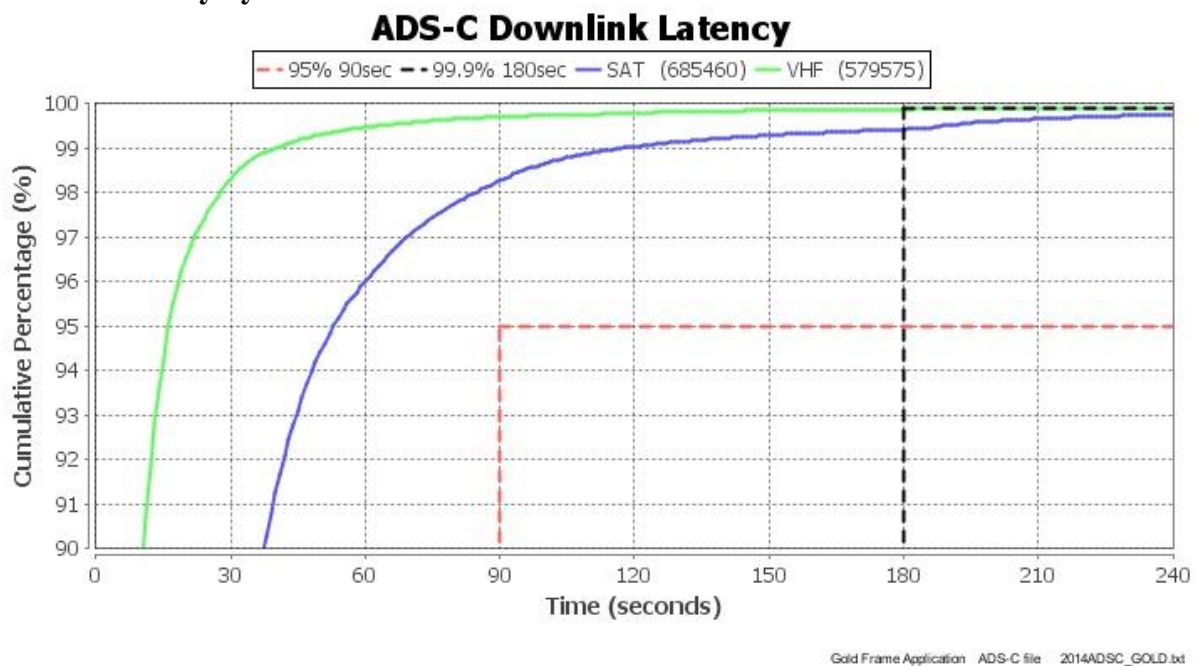
- 3.1 The meeting is invited to:
- a) Note the observed performance of ADS-C/CPDLC data link in YBBB.
  - b) Provide guidance on best practice for communications outage detection from the GOLD data.

### Appendix A: Performance Data YBBB

#### ADS-C: Latency by month

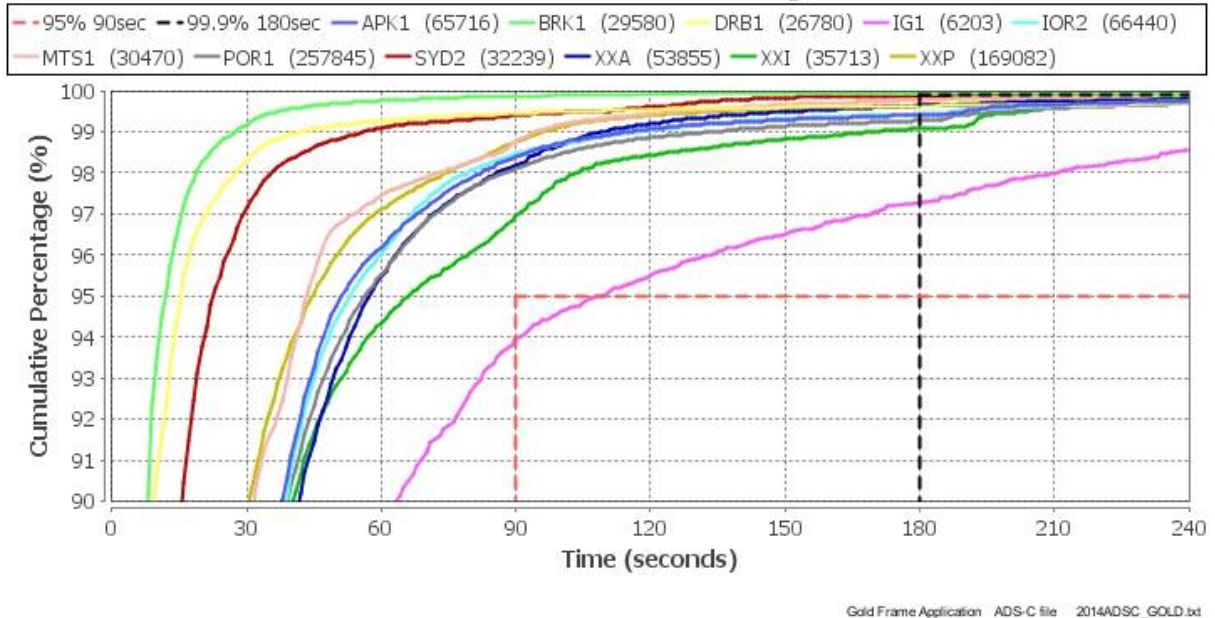


#### ADS-C: Latency by media



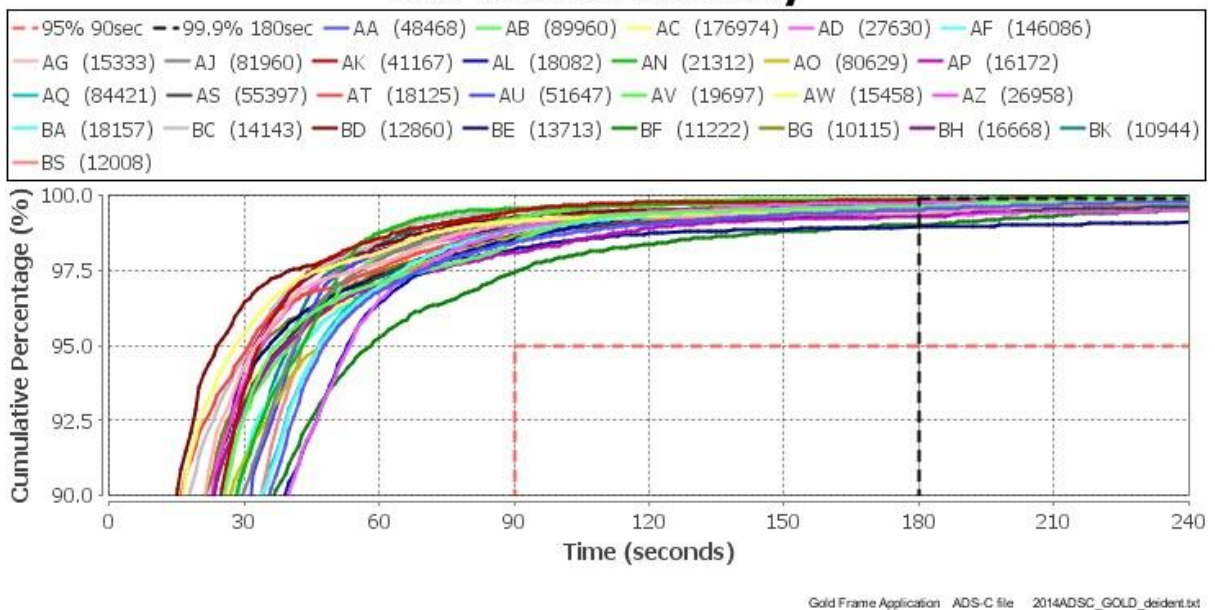
**ADS-C: Latency for GES with more than 10000 downlinks, plus Iridium IG1**  
– IG1 curve is low

**ADS-C Downlink Latency**

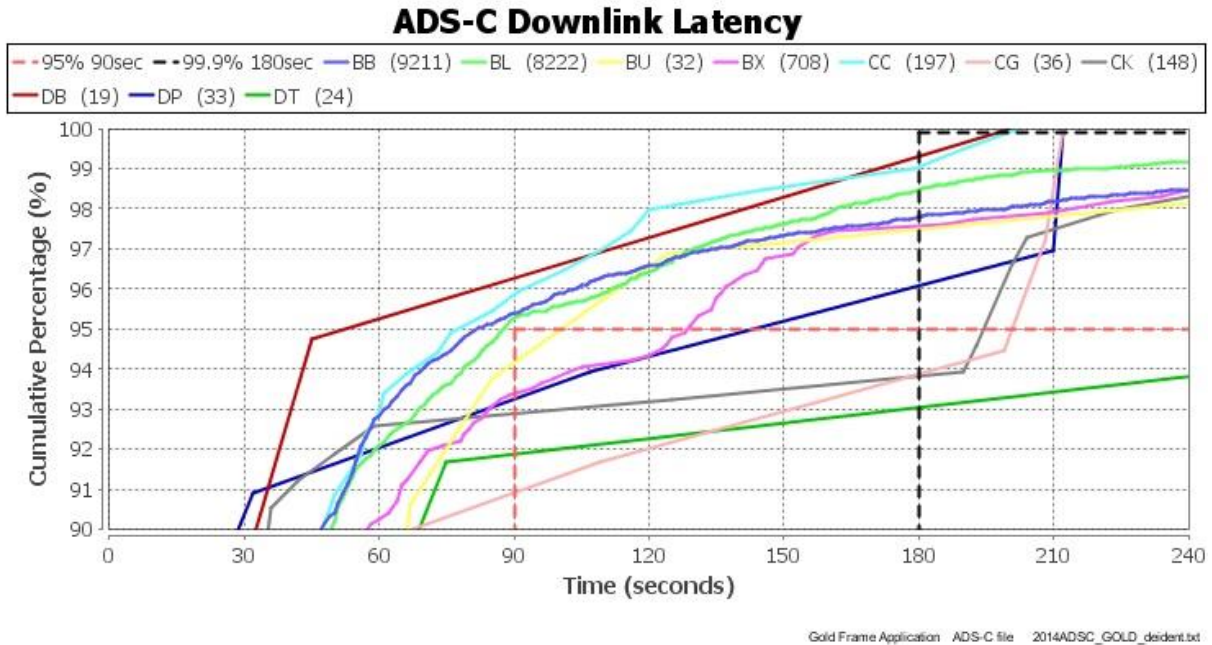


**ADS-C: Latency for operators with more than 10000 downlinks**

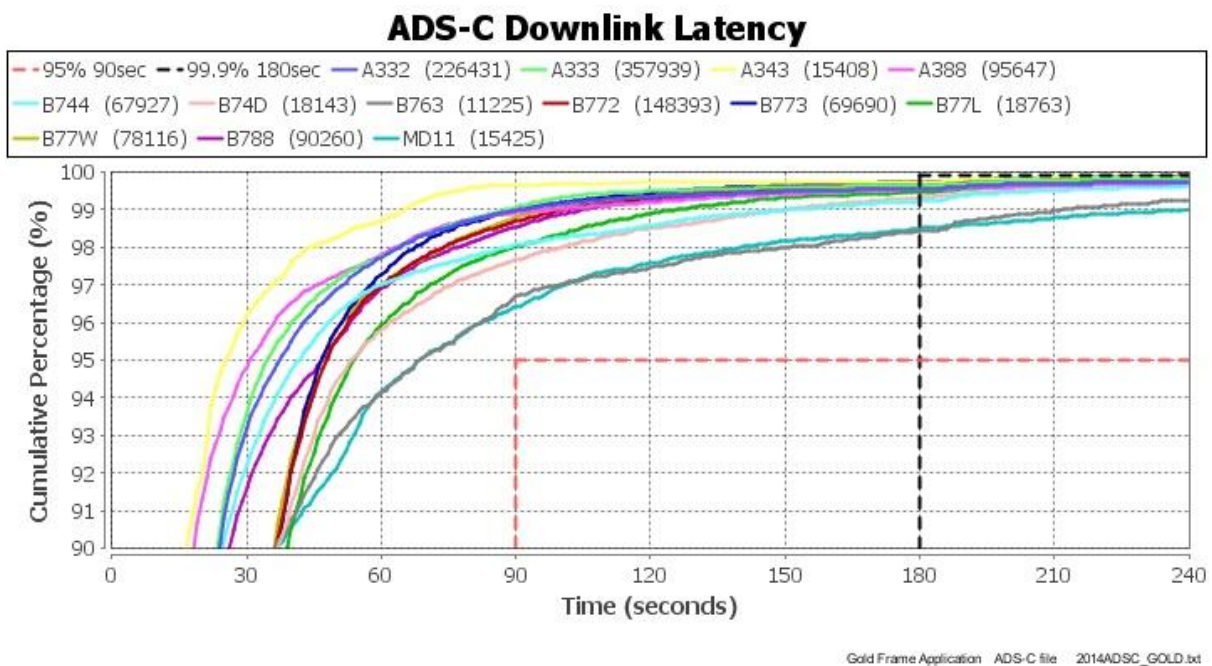
**ADS-C Downlink Latency**



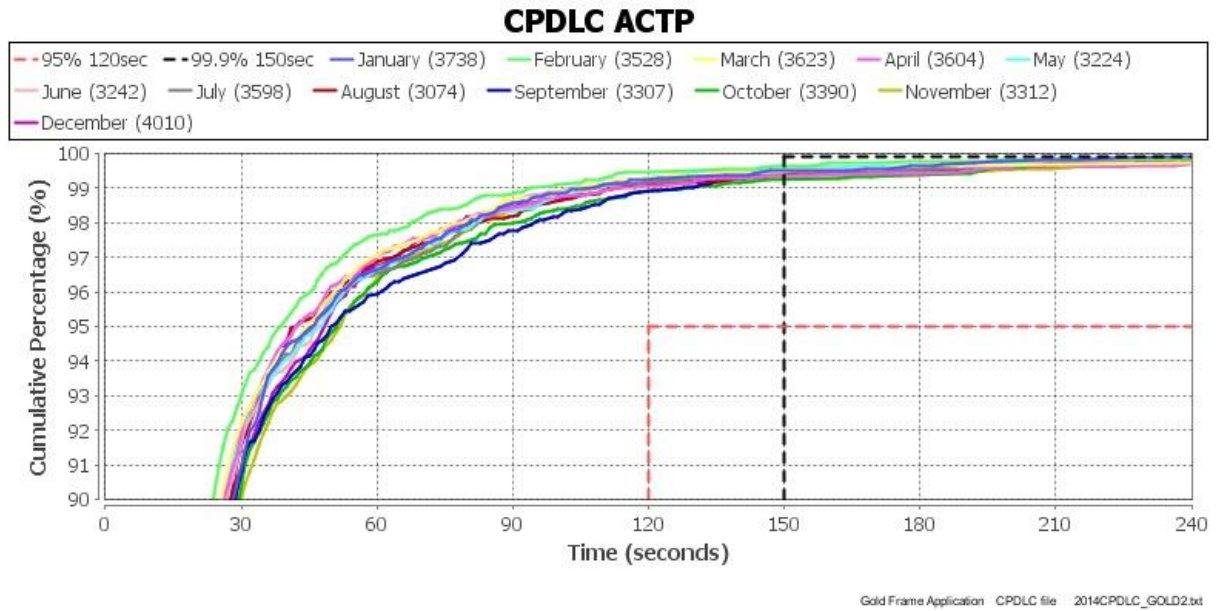
**ADS-C: Latency for worst 10 operators at 90 seconds**



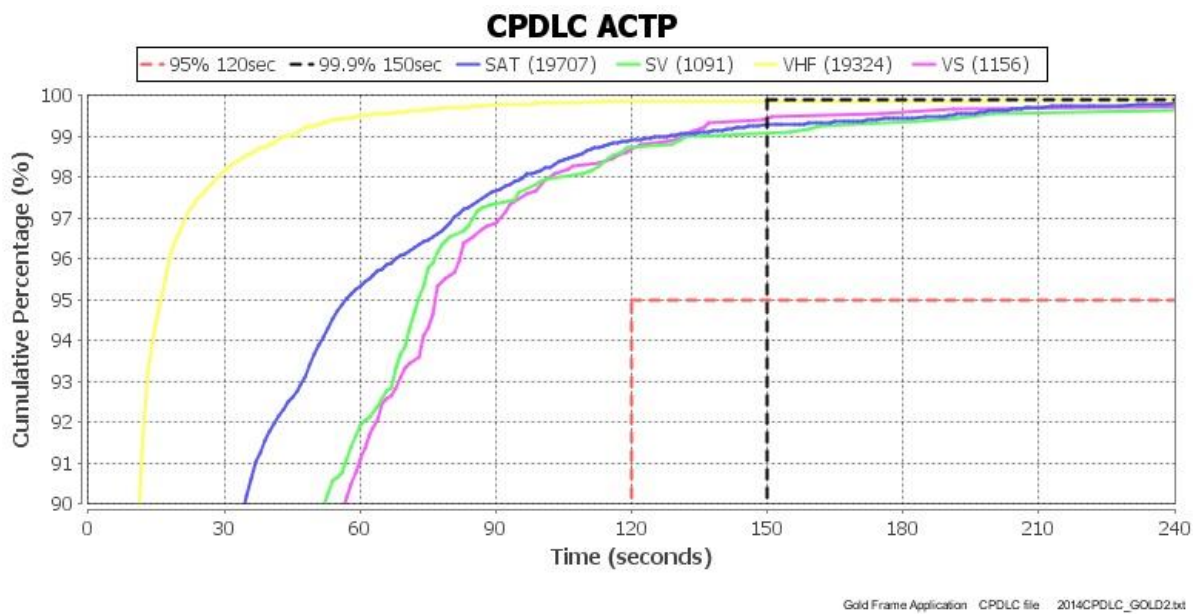
**ADS-C: Latency for aircraft types with more than 10000 downlinks – B763 and MD11 are below the main group**



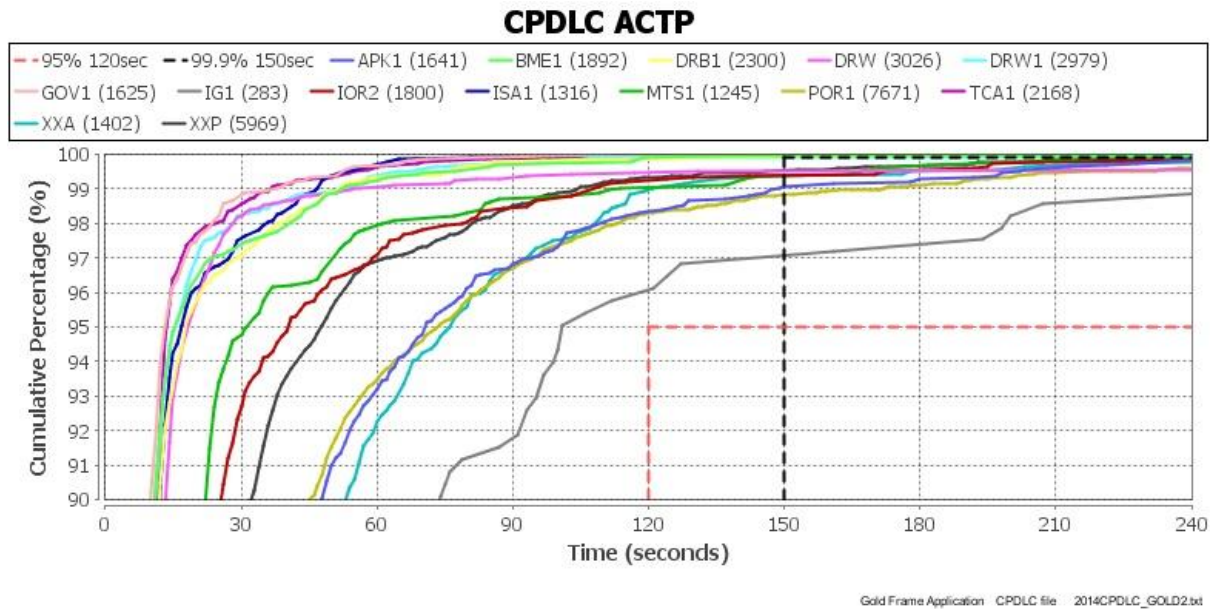
**CPDLC: ACTP by month**



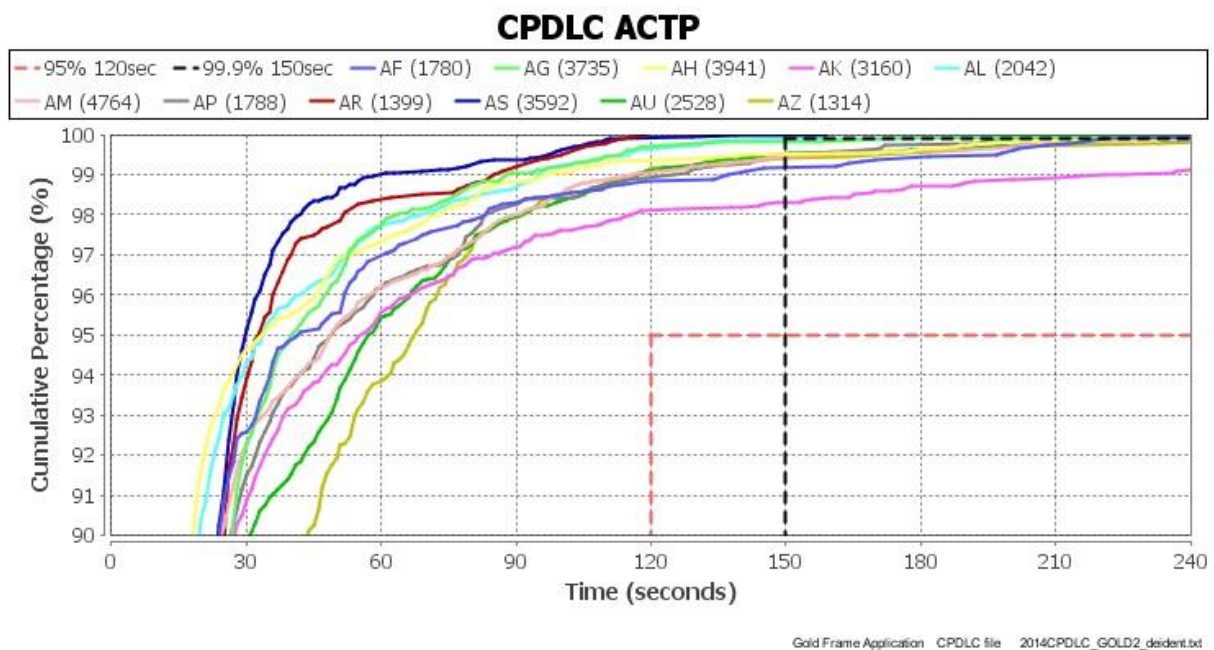
**CPDLC: ACTP by media**



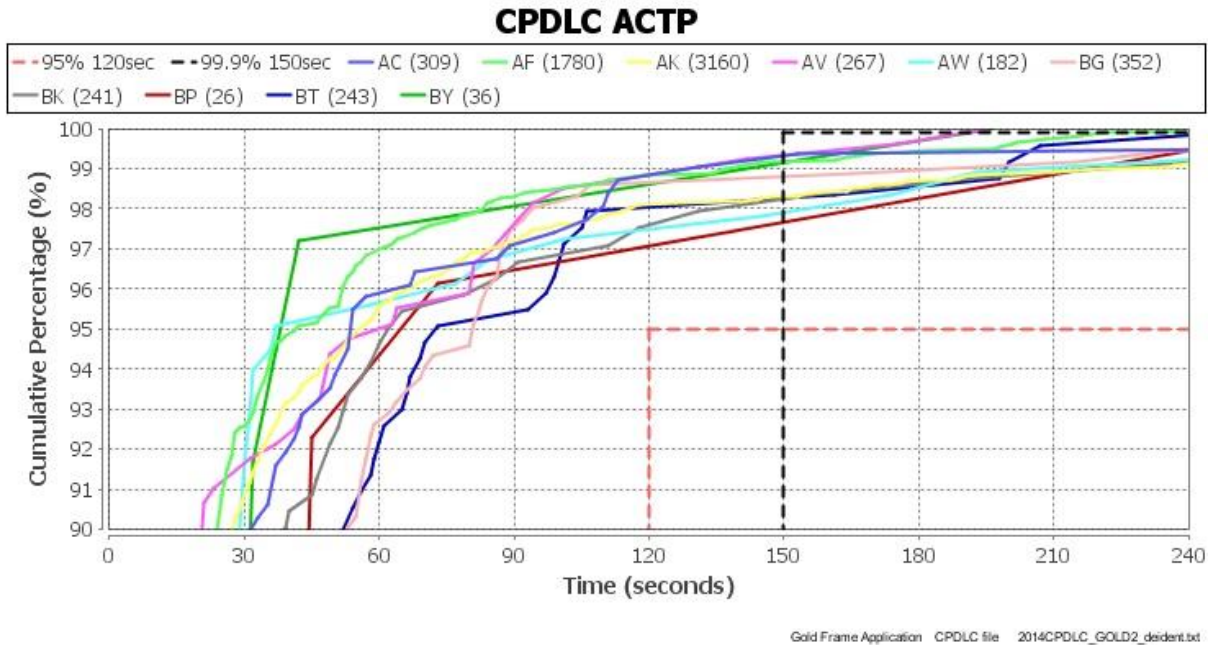
**CPDLC: ACTP for GES with more than 1000 transactions – IG1 lowest curve; POR1 and APK1 low curves.**



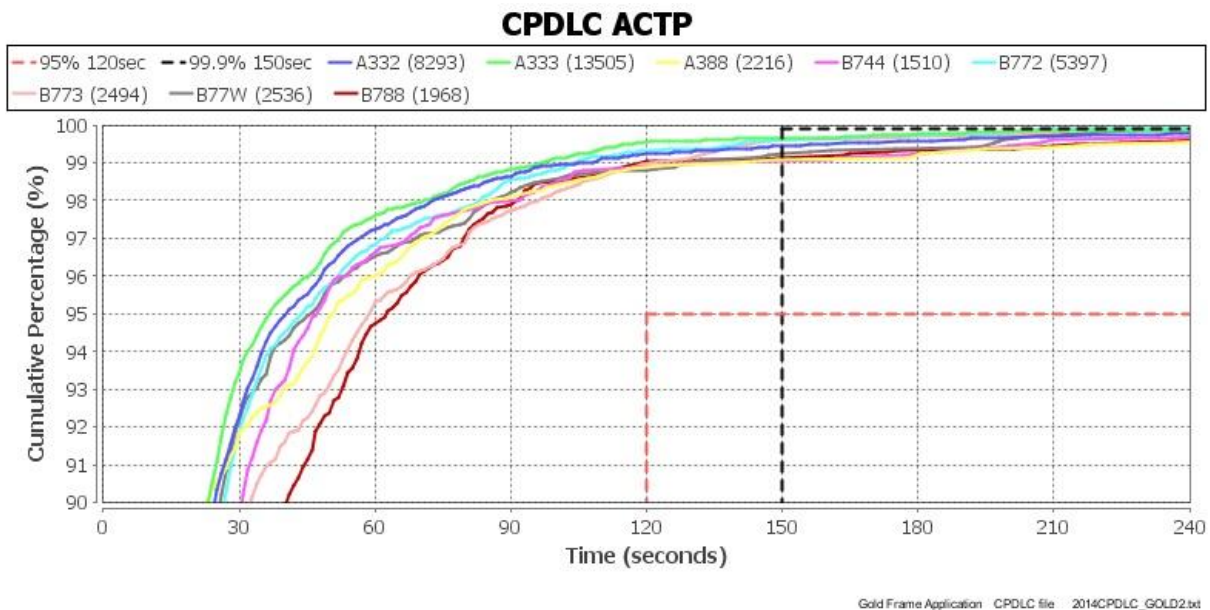
**CPDLC: ACTP by operators with more than 1000 transactions**



**CPDLC: ACTP for worst 10 operators at 120 seconds – AF and AK also in previous plot**

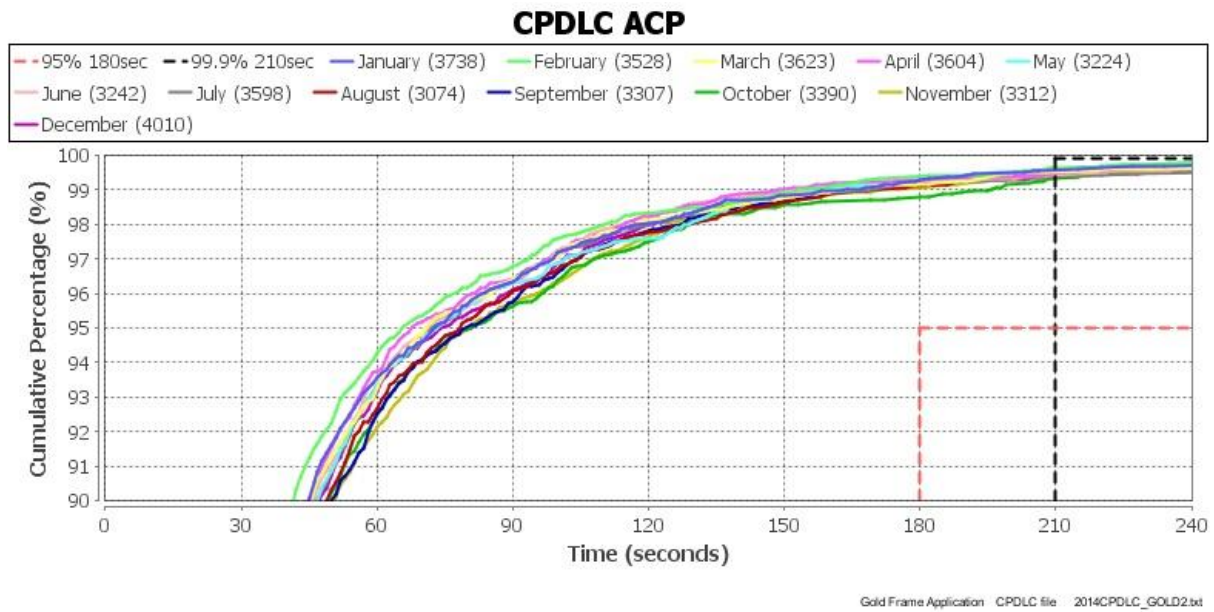


**CPDLC: ACTP for aircraft types with more than 1000 transactions**

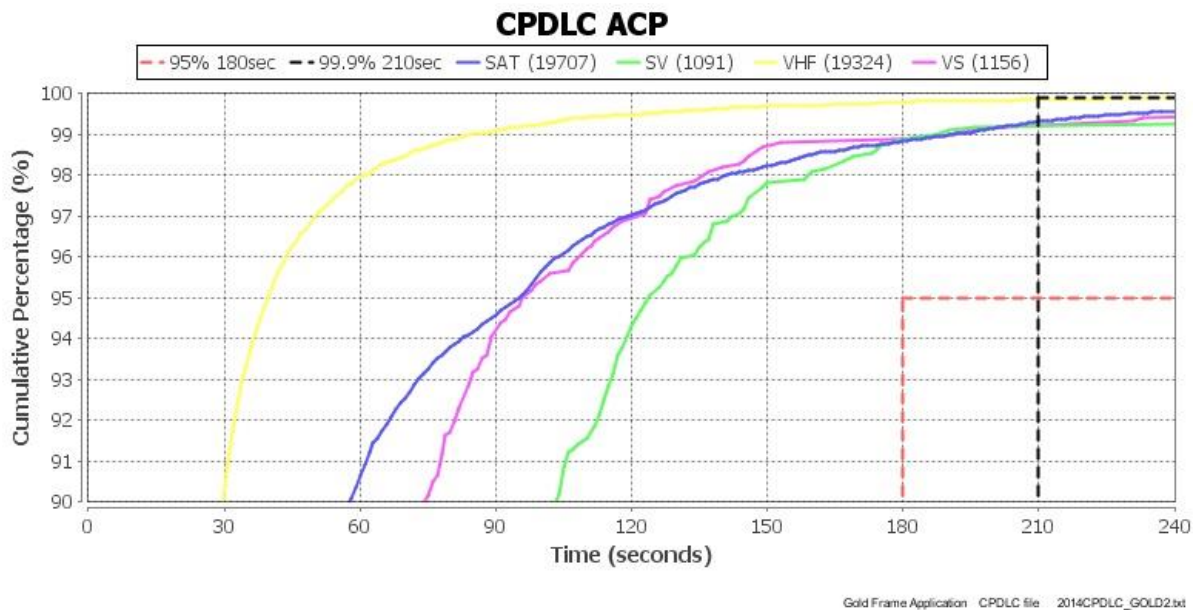




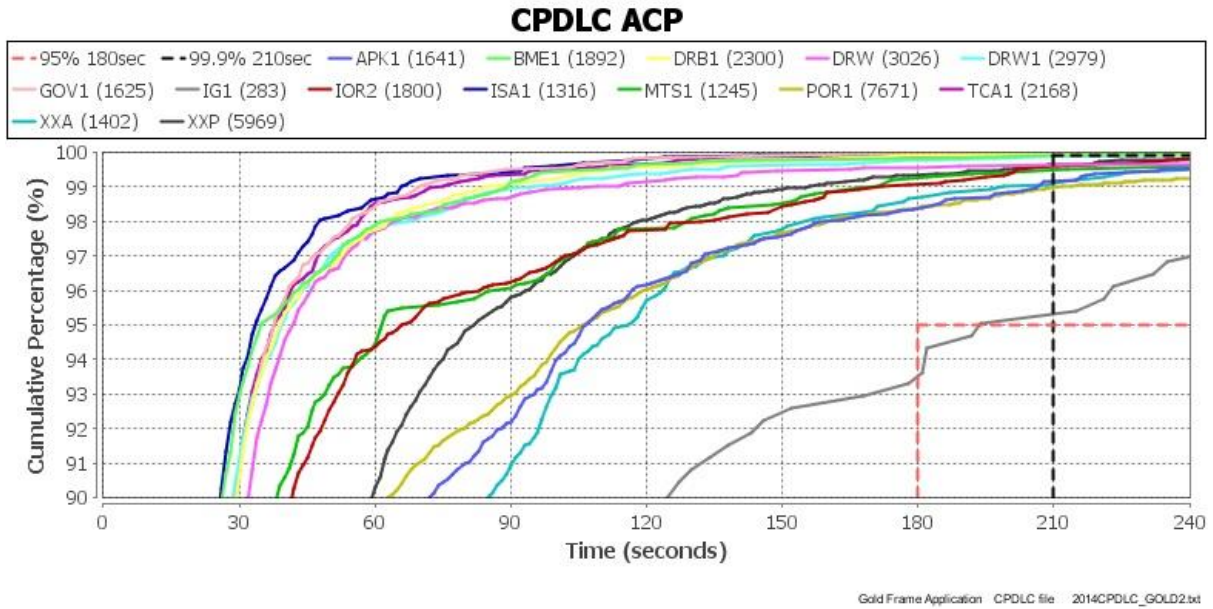
**CPDLC: ACP by month**



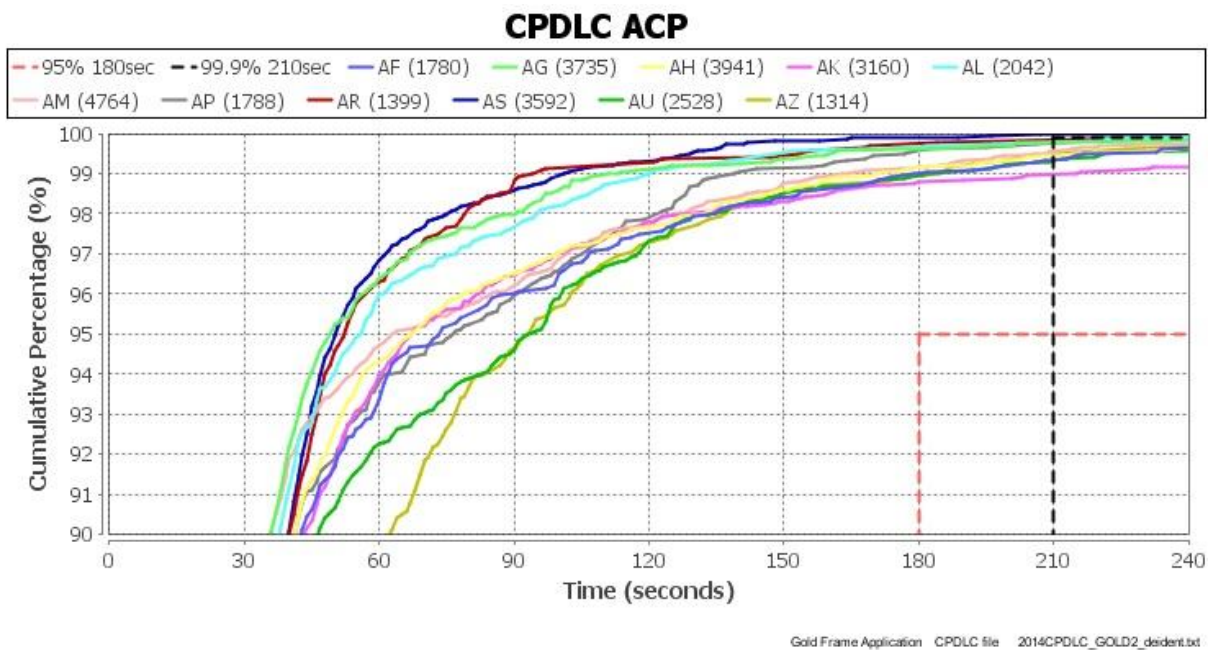
**CPDLC: ACP by media**



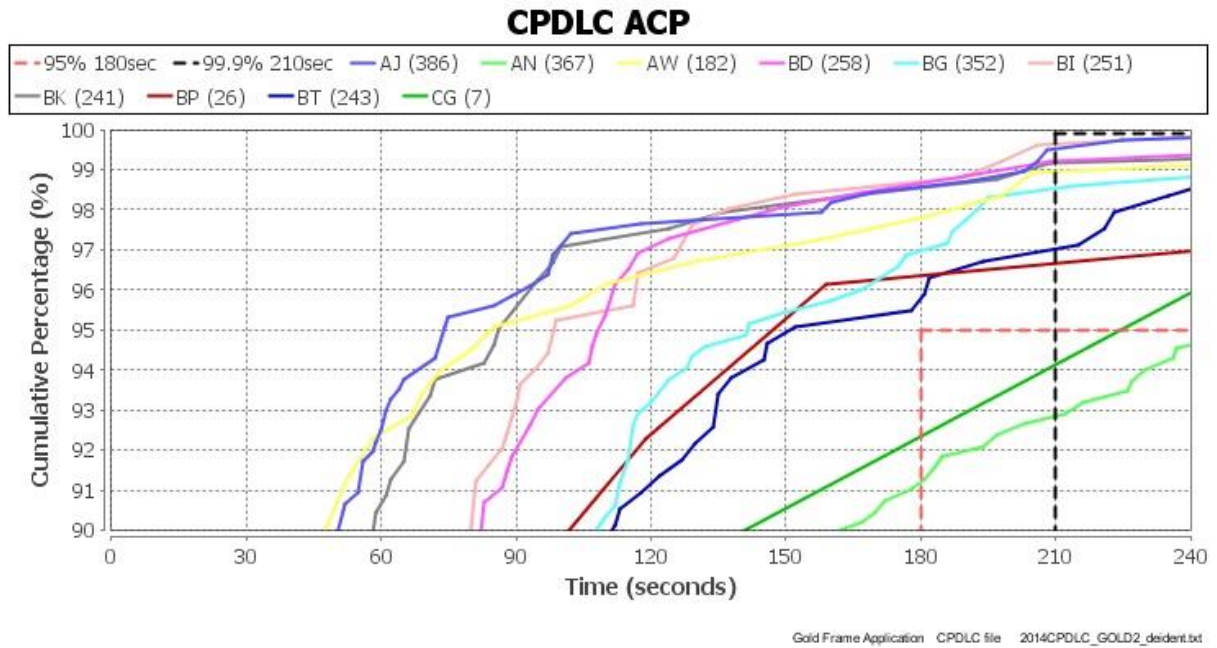
**CPDLC: ACP for GES with more than 1000 transactions and Iridium IG1 – IG1 lowest curve; POR1, XXA and APK1 low curves**



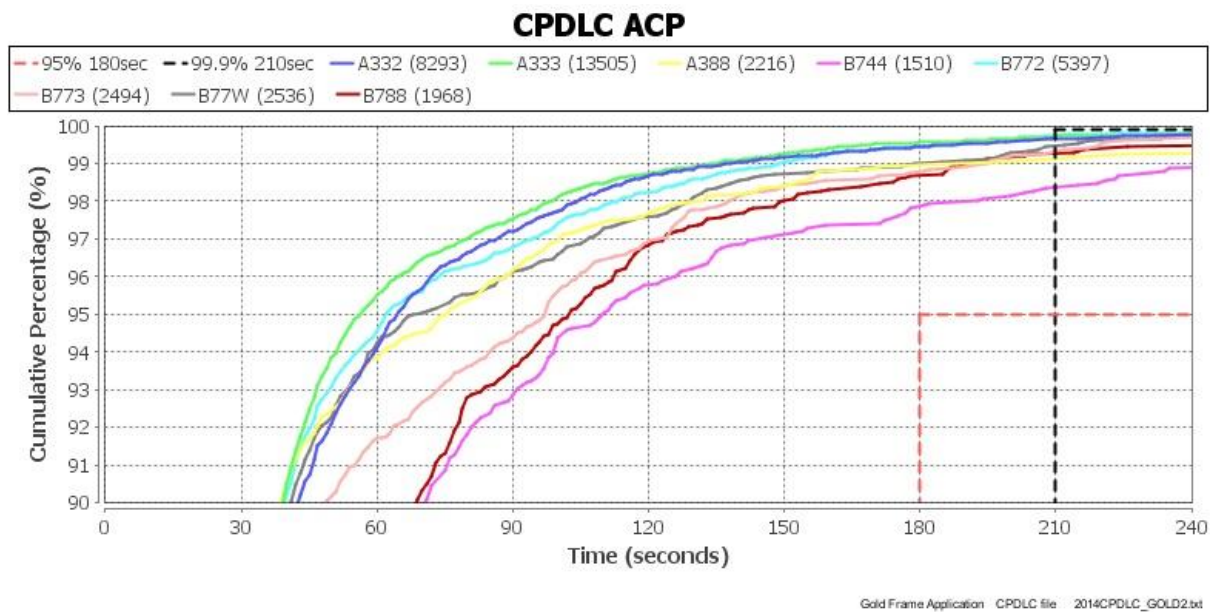
**CPDLC: ACP for operators with more than 1000 transactions**



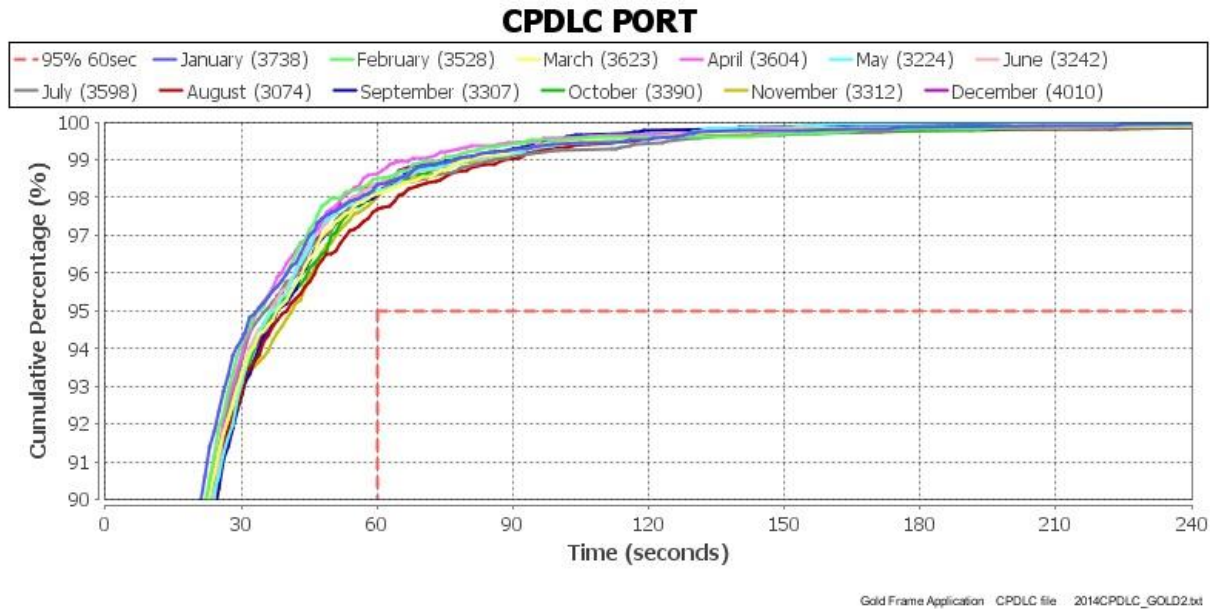
**CPDLC: ACP for worst 10 operators at 180 seconds**



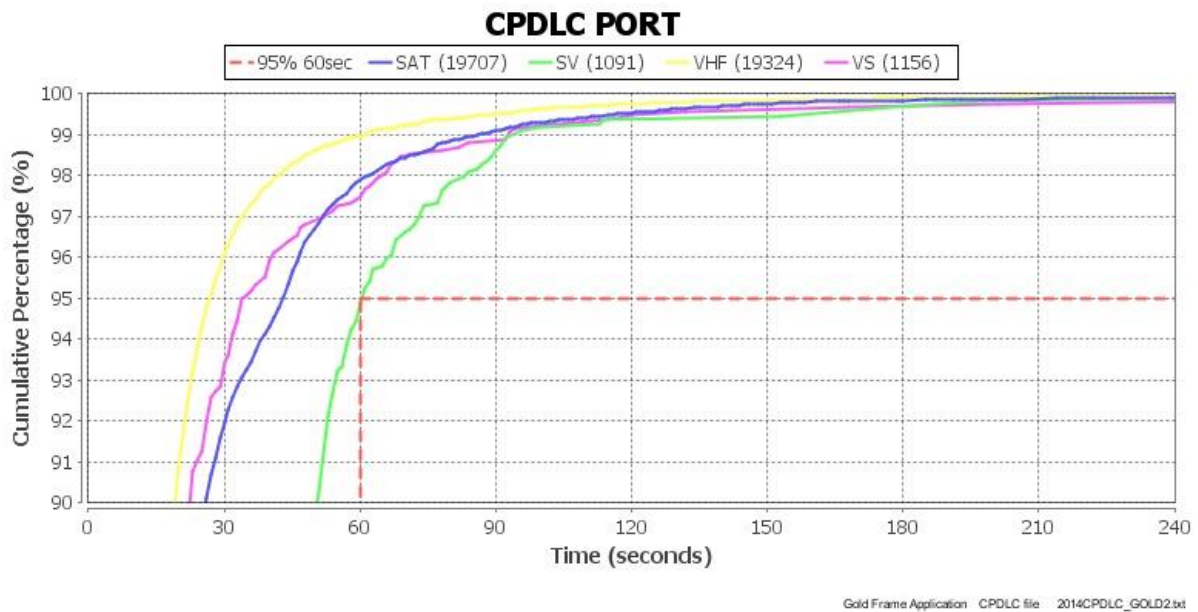
**CPDLC: ACP for aircraft types with over 1000 transactions**



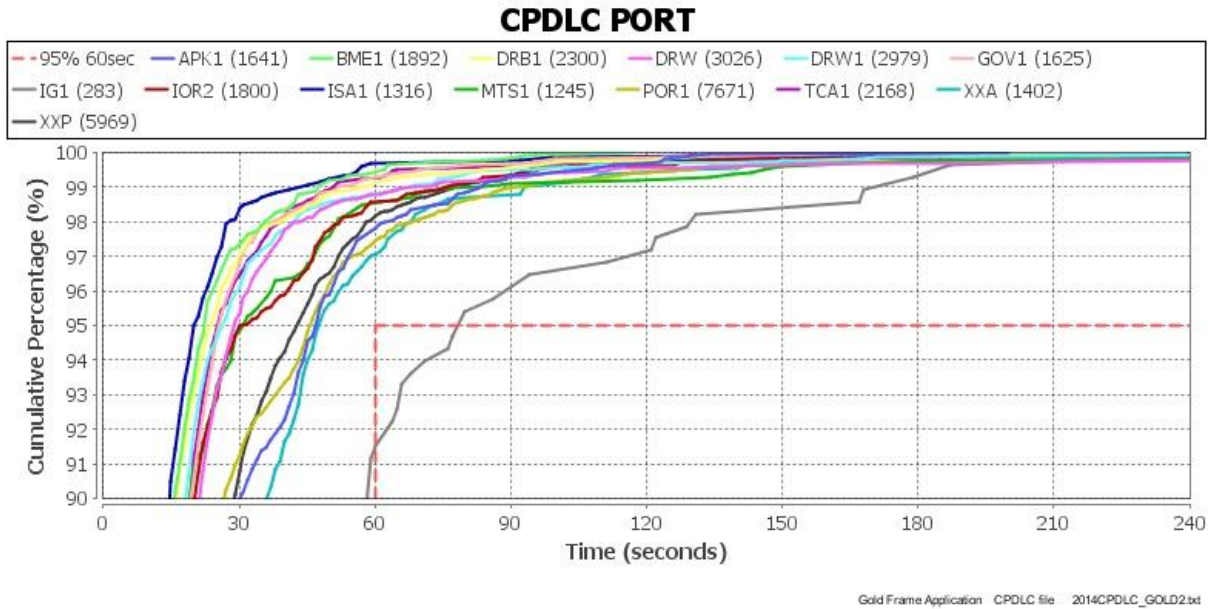
**CPDLC: PORT by month**



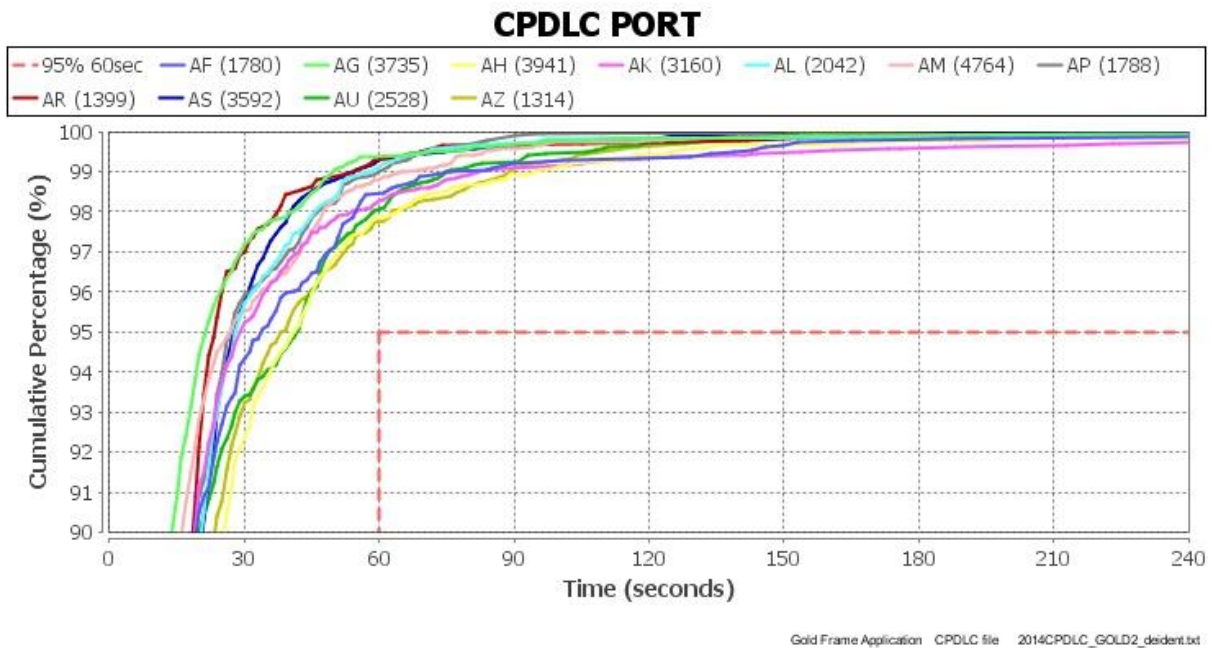
**CPDLC: PORT by media**



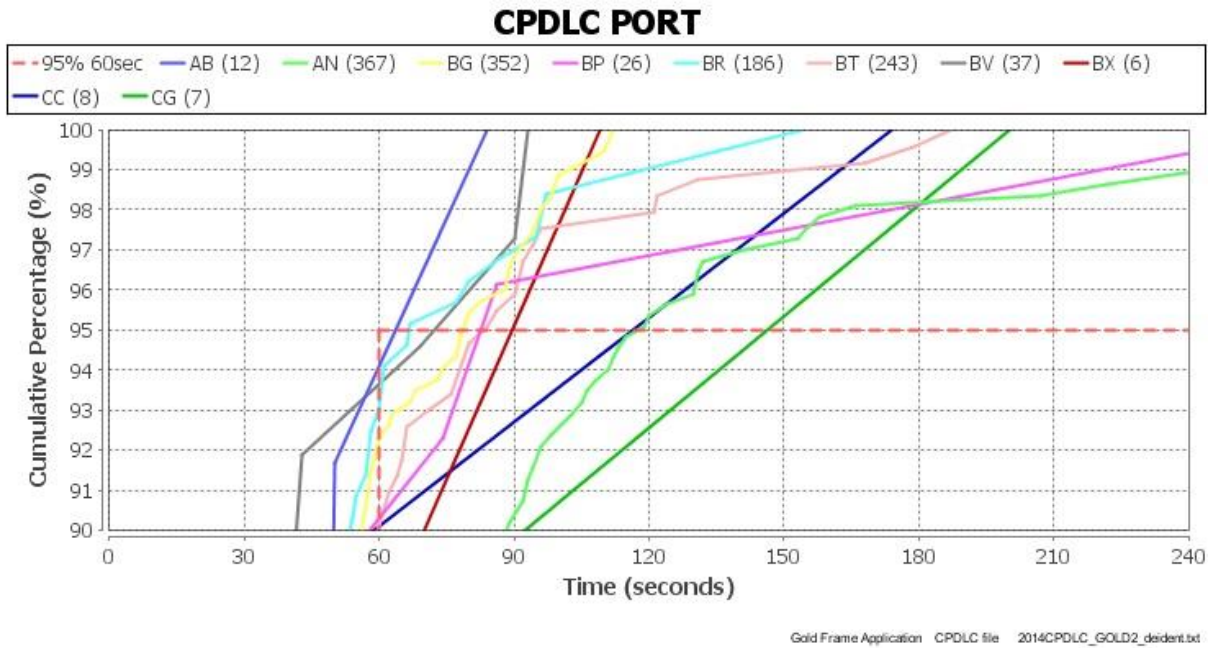
**CPDLC: PORT by GES (above 1000) and Iridium IG1 -- IG1 lowest curve**



**CPDLC: PORT for operators with over 1000 transactions**



**CPDLC: PORT for worst 10 operators at 60 seconds**



**CPDLC: PORT by aircraft type (above 1000) – B744 lowest curve**

