Iridium Satellite Update

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Iridium Satellite – Efficient and Safe in the Air, Anywhere

Iridium is the only pole-to-pole, cross-link satellite operator.

66 orbiting LEO satellites (485miles orbit) that provide seamless coverage to all aircraft. 14 spare satellites in orbit.

Iridium has been offering AMS(R)S services since 2010 and our partners have equipped thousands of aircraft in the global airspace.

Iridium is committed to aviation and to AMS(R)S cockpit safety.

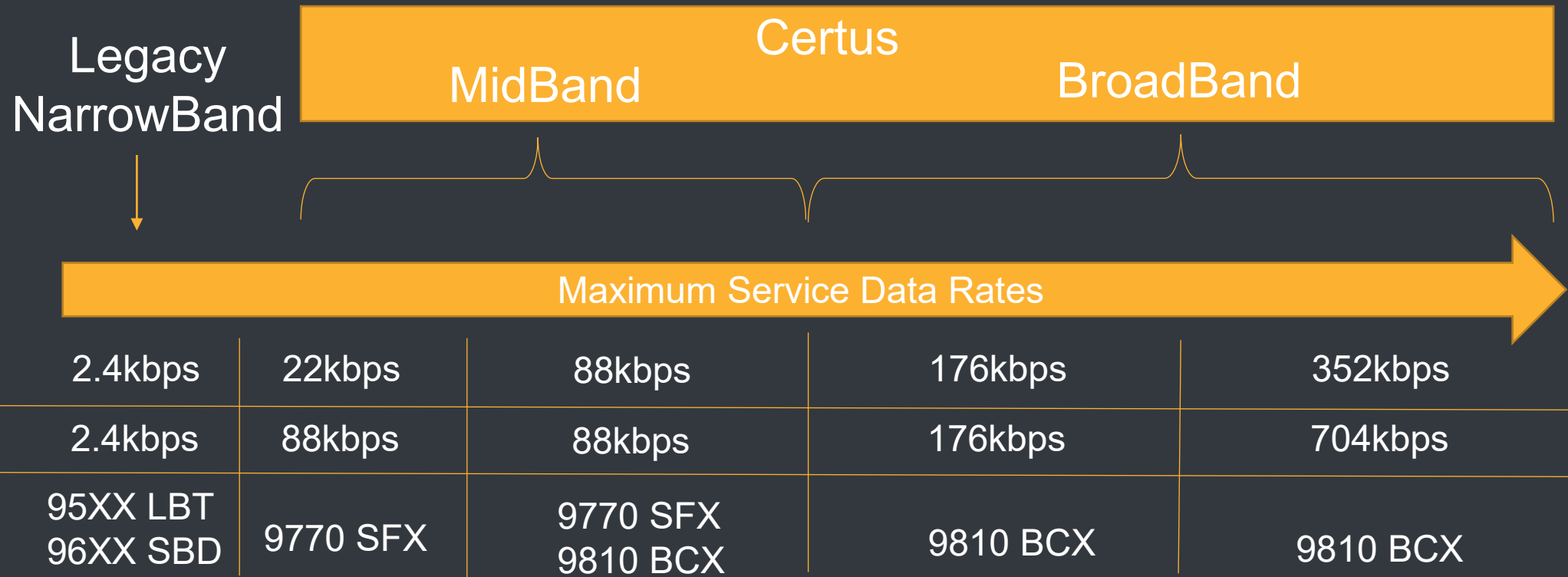iridium®

Iridium Certus – status and launch?

- Iridium partners have launched Certus products to maritime, land mobile, and IOT. Several thousand in operation today.
    - Performance is steady and stable.
    - Iridium continues to fine-tune operations with over 4 years of expertise now.
    - Training on-going now for Certus AMS(R)S service monitoring to prepare for FAA Evaluation.

- Aviation products launch status:

  - Collins IRT NX SATCOM, SkyTrac DLS-100 and BlueSky SkyLink 7100 – launched, others as well

  - Honeywell and Thales (and others) - launching near future

  - Additional products and AMS(R)S Certus in late 2024

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Iridium Service Evolution

Iridium has developed three categories of service offering categories to help position the Iridium products for the maritime, land and aviation markets. Specific transceivers have been developed which cater to these categories. Not all service classes shown

Legacy NarrowBand

Certus

MidBand

BroadBand

Maximum Service Data Rates

	Legacy NarrowBand	MidBand			BroadBand
Transmit	2.4kbps	22kbps	88kbps	176kbps	352kbps
Receive	2.4kbps	88kbps	88kbps	176kbps	704kbps
Transceiver	95XX LBT 96XX SBD	9770 SFX	9770 SFX 9810 BCX	9810 BCX	9810 BCX

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Iridium AMS(R)S Planning

While developing the new IP capabilities, all legacy narrowband services (voice and data) are still supported including AMS(R)S cockpit terminals.
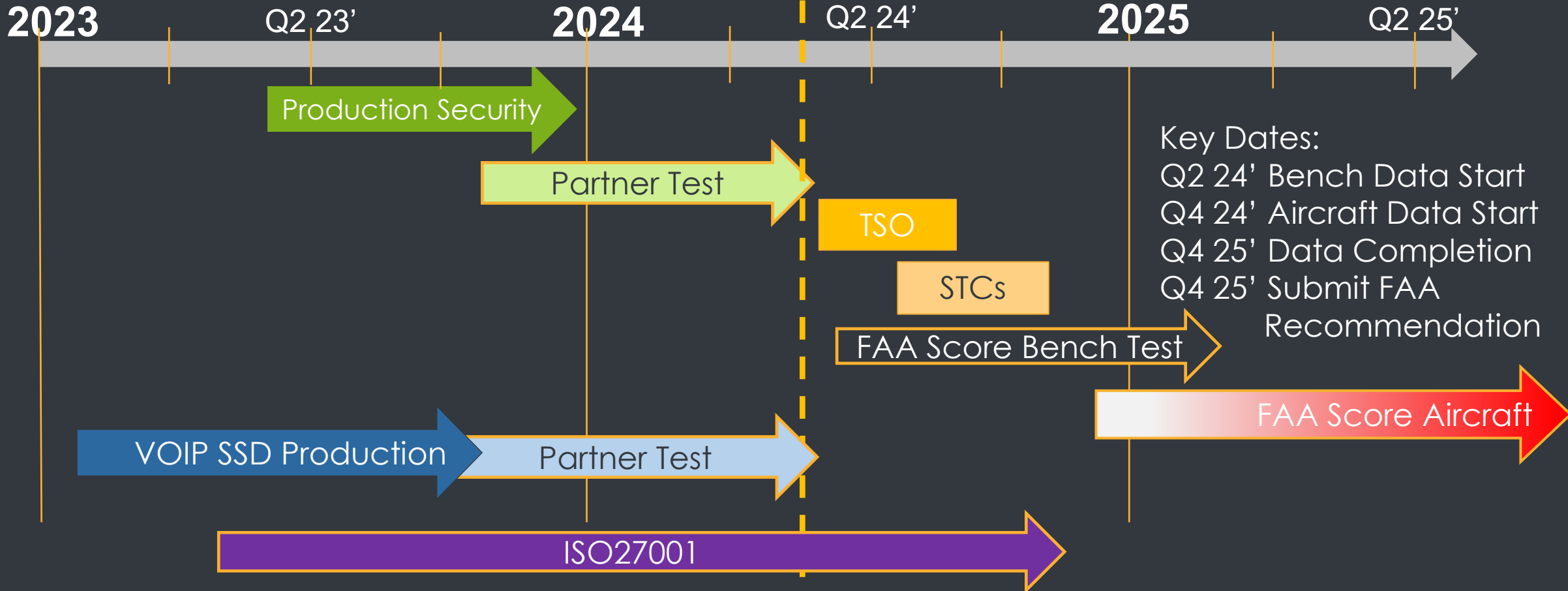
Iridium is finally towards the end of a multi-phase program to bring Iridium Certus AMS(R)S to the global aviation markets.

- Certus Phase 1: Initial plans for RCP240/RSP180 services and RCP400V voice
  - Iridium Security and Single Stage Dialing
  - FAA Evaluation
- Certus Phase 2: Future plans for RCP130/RSP160 performance & ATN OSI/IPS
  - Iridium Network Updates
  - FAA/EASA Evaluation
  - 2025/2026 timing (Not covered in this presentation)

FAA PARC CWG Certus Evaluation and Technical Performance
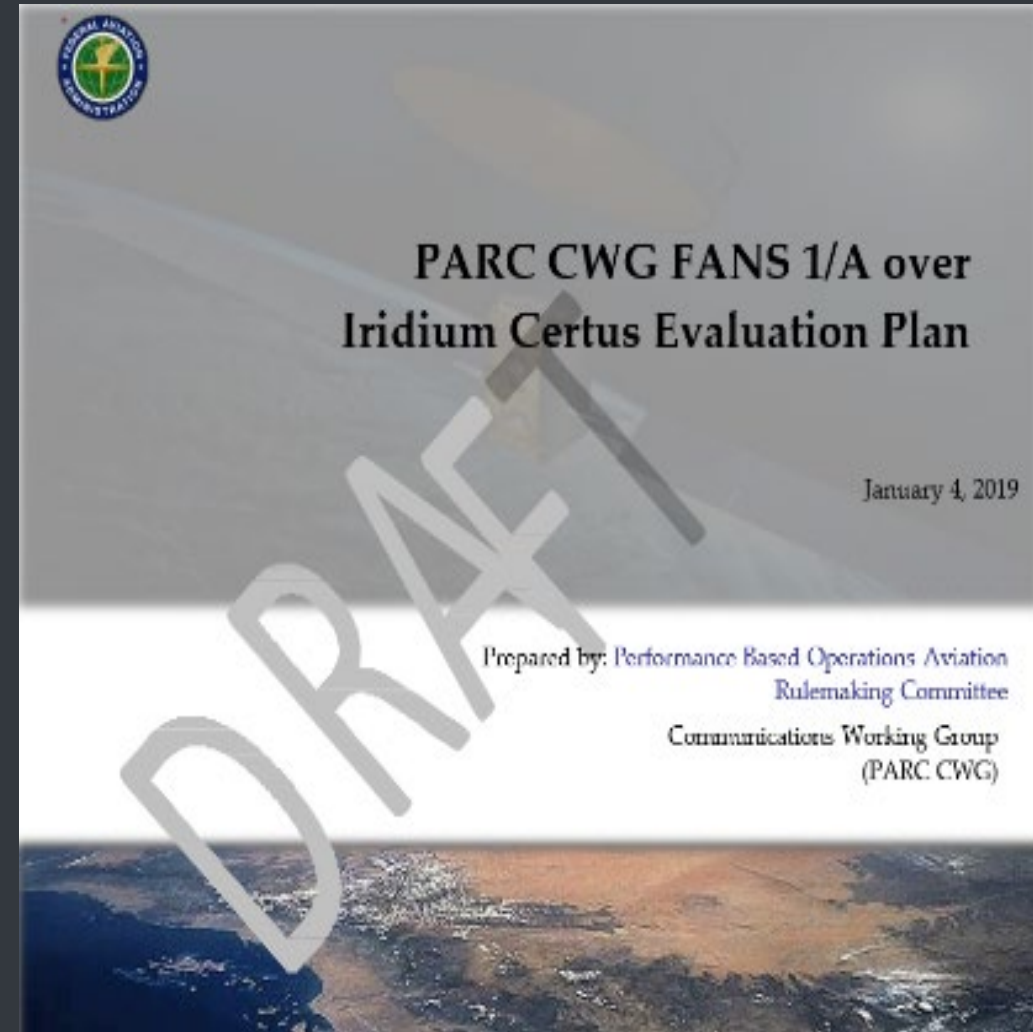
IRIDIUM BUSINESS INFORMATION

FAA Iridium Certus Evaluation Plan - DRAFT

Iridium created draft FAA Evaluation Workbook

- Plan Approved w/Tom Kraft @PARC CWG/35 (Feb 2016)

Requirements very similar to the recent FAA Evaluations for Inmarsat and prior Iridium.

- Agreement from Boeing to support AOC message bench test data capture as per prior SBB FAA PARC Evaluation.

- Simultaneous voice and data service usage will be used to demonstrate PBCS performance.

- Iridium is one network globally so different airspace testing, while planned, is not vital.

PARC CWG FANS 1/A over
Iridium Certus Evaluation Plan

January 4, 2019

Prepared by: Performance Based Operations Aviation
Rulemaking Committee

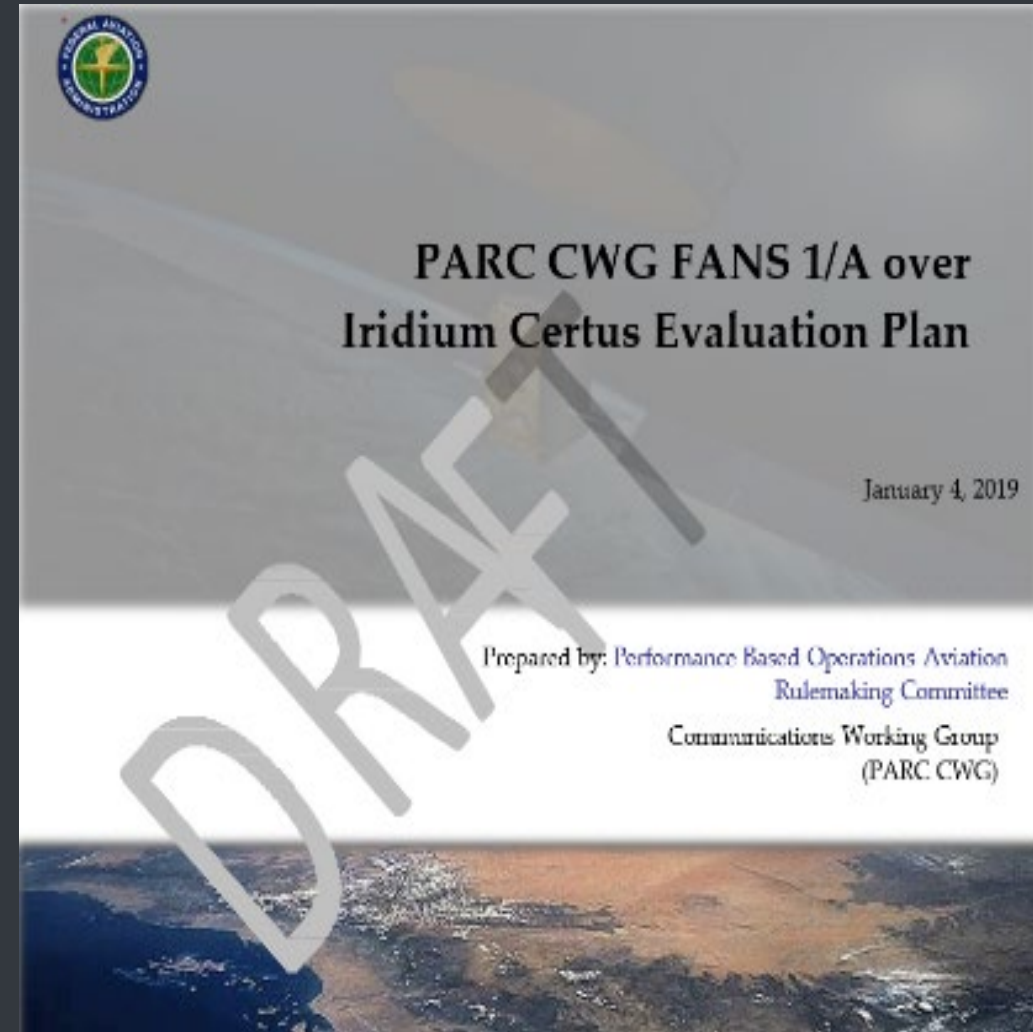Communications Working Group
(PARC CWG)

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FAA Iridium Certus Evaluation Plan - DRAFT

The evaluation shall be conducted against Required Surveillance Performance (RSP) 180 and Required Communication Performance (RCP) 240
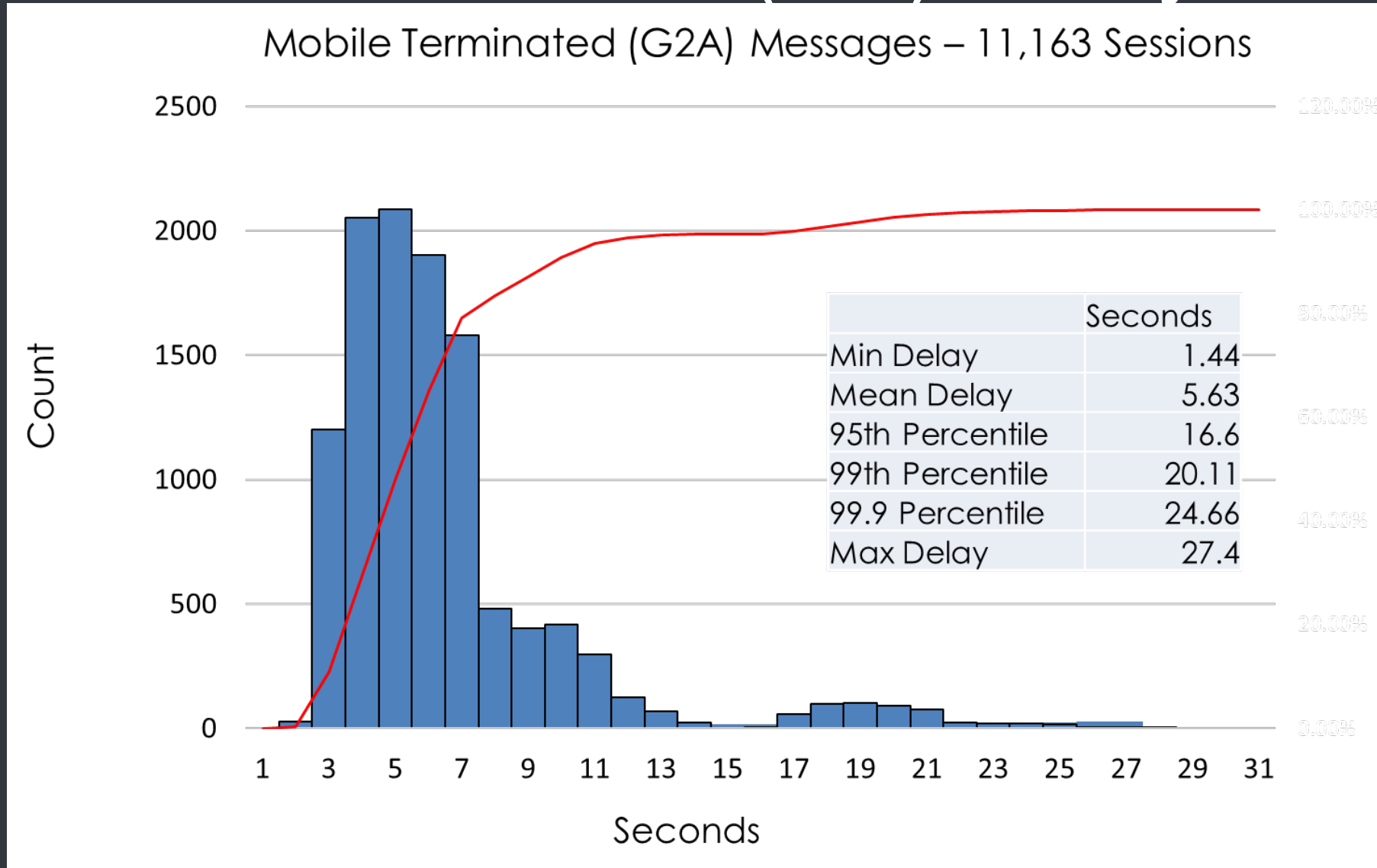
- Quantity: 75,000 messages (min)

In addition, ATS Safety Voice shall
be evaluated against RCP 400V requirements
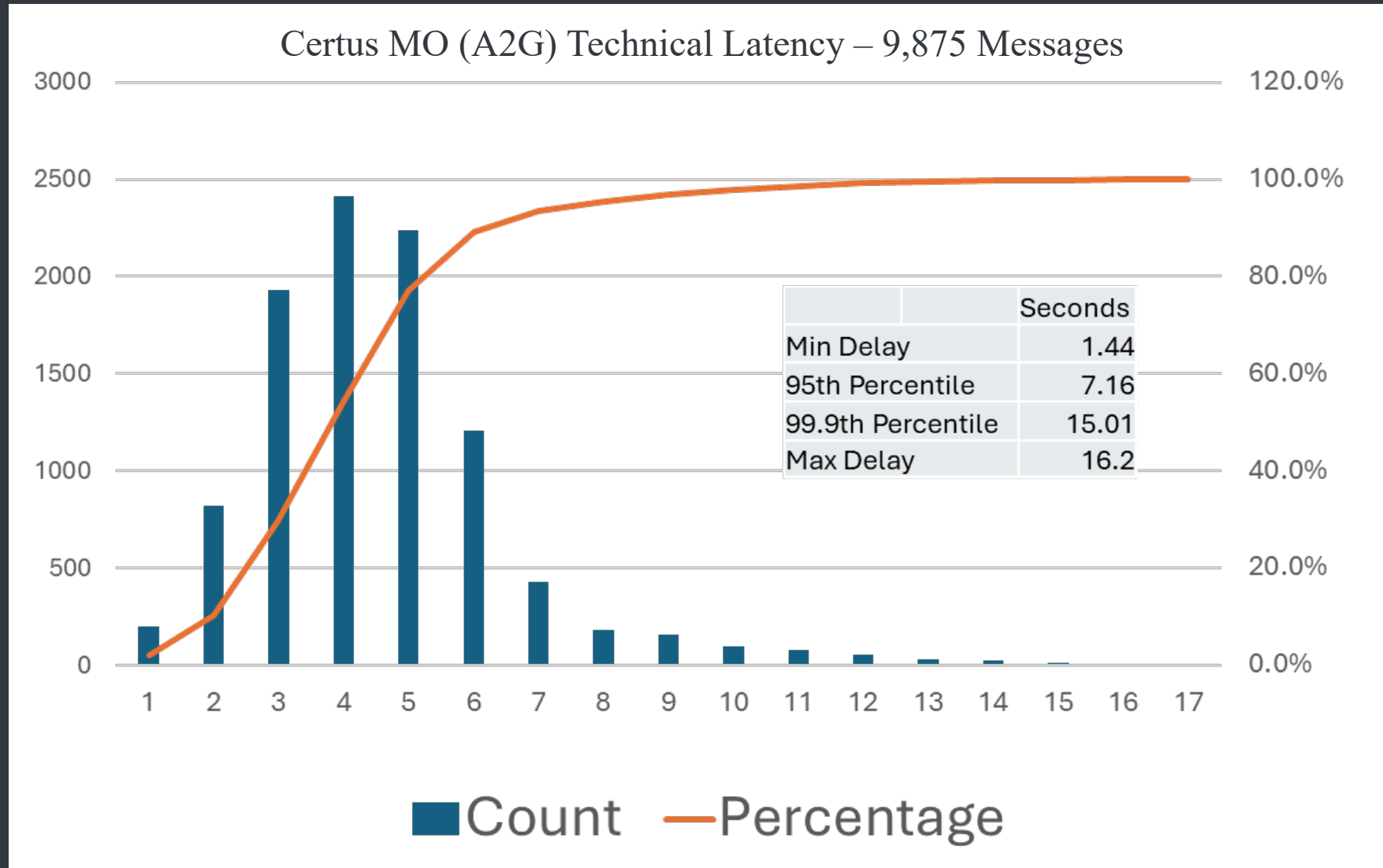
- Quantity: 1,000 voice calls (min)

PARC CWG FANS 1/A over
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(PARC CWG)

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Certus - Mobile Terminated (G2A) Latency

Mobile Terminated (G2A) Messages – 11,163 Sessions

	Seconds
Min Delay	1.44
Mean Delay	5.63
95th Percentile	16.6
99th Percentile	20.11
99.9 Percentile	24.66
Max Delay	27.4

Certus– Mobile Originated (A2G) Latency

Certus MO (A2G) Technical Latency – 9,875 Messages

	Seconds
Min Delay	1.44
95th Percentile	7.16
99.9th Percentile	15.01
Max Delay	16.2

Count — Percentage

Certus WP Discussion

Iridium has submitted a WP for discussion in ISPAGC/FIT regarding the support requested for FAA Certus Evaluation.

Discussion on WP will be on Wednesday, June 5, 2024