Iridium Aviation Solutions

ISPACG/35

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iridium®

Iridium Satellite – Efficient and Safe in the Air, Anywhere

Iridium is the only pole-to-pole satellite operator.

66 orbiting satellites that provide seamless coverage to all aircraft.

Iridium has been offering AMS(R)S services since 2010 and has grown to support thousands of aircraft in the global airspace.

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

Iridium is in the middle of a multi-phase program in support of AMS(R)S

Iridium Development Phases: Phase 1

Phase 1: (Completed)

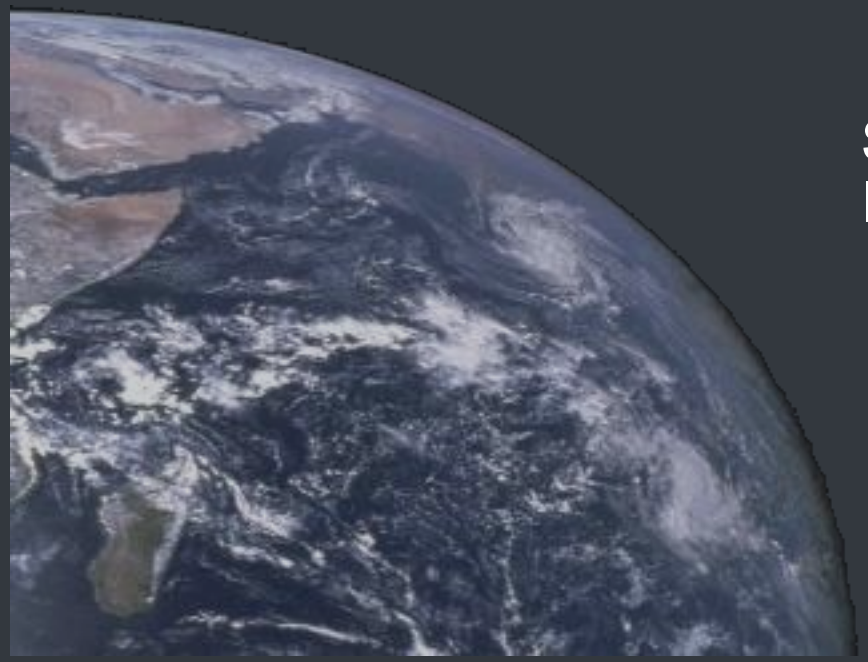
Iridium satellite network completely replaced in 2019:

- Full 66 satellite (plus 4 spares)
- LEO orbit of 6 rings (11 satellites per ring)
- Orbital speed ~17,000 mph (27,350kmph)
- 485mi altitude (780km)

Demonstrated improvement for all current narrowband users (SBD and voice).

Launched Iridium Certus to maritime, land and IoT markets.

Iridium Certus: IP Broadband Services

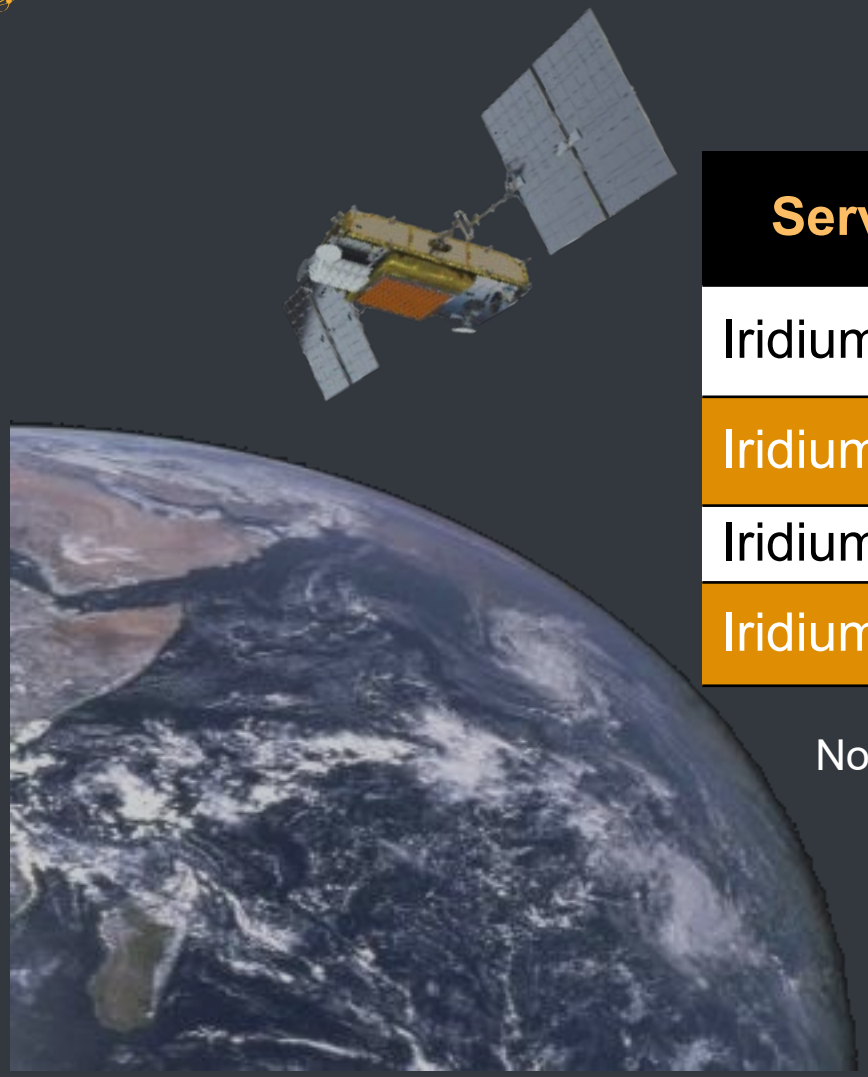


All Iridium Certus devices are multi-service terminals up to maximum Tx/Rx of the system:

- Background IP data
- VLAN Segmented IP data
- Voice x 3 independent lines
- AMS(R)S (voice and data)

Simultaneous service use up to maximum data rates of the Iridium Certus service class.

Iridium Certus – Broadband Service Classes

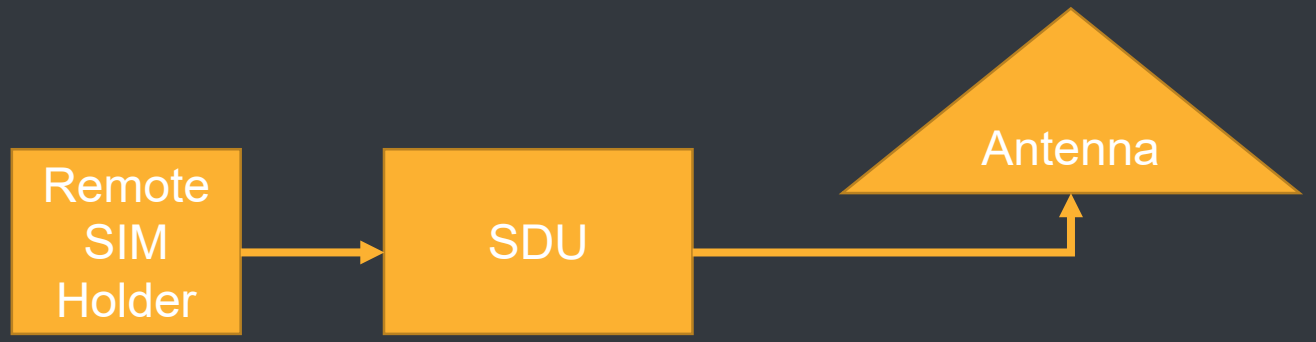


Service Class	Max TX Speed	Max RX Speed	Min Antenna Type
Iridium Certus 100	88Kbps	88Kbps	Active Low Gain
Iridium Certus 200	176Kbps	176Kbps	Active Low Gain
Iridium Certus 350	352Kbps	352Kbps	High Gain
Iridium Certus 700	352Kbps	704Kbps	High Gain

Notes: Not all configurations shown in table – only Max Tx and Max Rx shown

Iridium Certus – “Light Satcom” Solution

- All Iridium AMS(R)S SDU will be 2MCU form factor size.
- All Iridium AMS(R)S will be comprised of 3 elements only



- High Gain and Low Gain antenna can share the same antenna bolt pattern
- Common SDU design from Iridium partners will enable different antenna to be combined.
- Simple architecture to meet any and all aircraft types

Iridium Development Phases: Phase 2

Phase 2: (Current to 2022)

Iridium program contents:

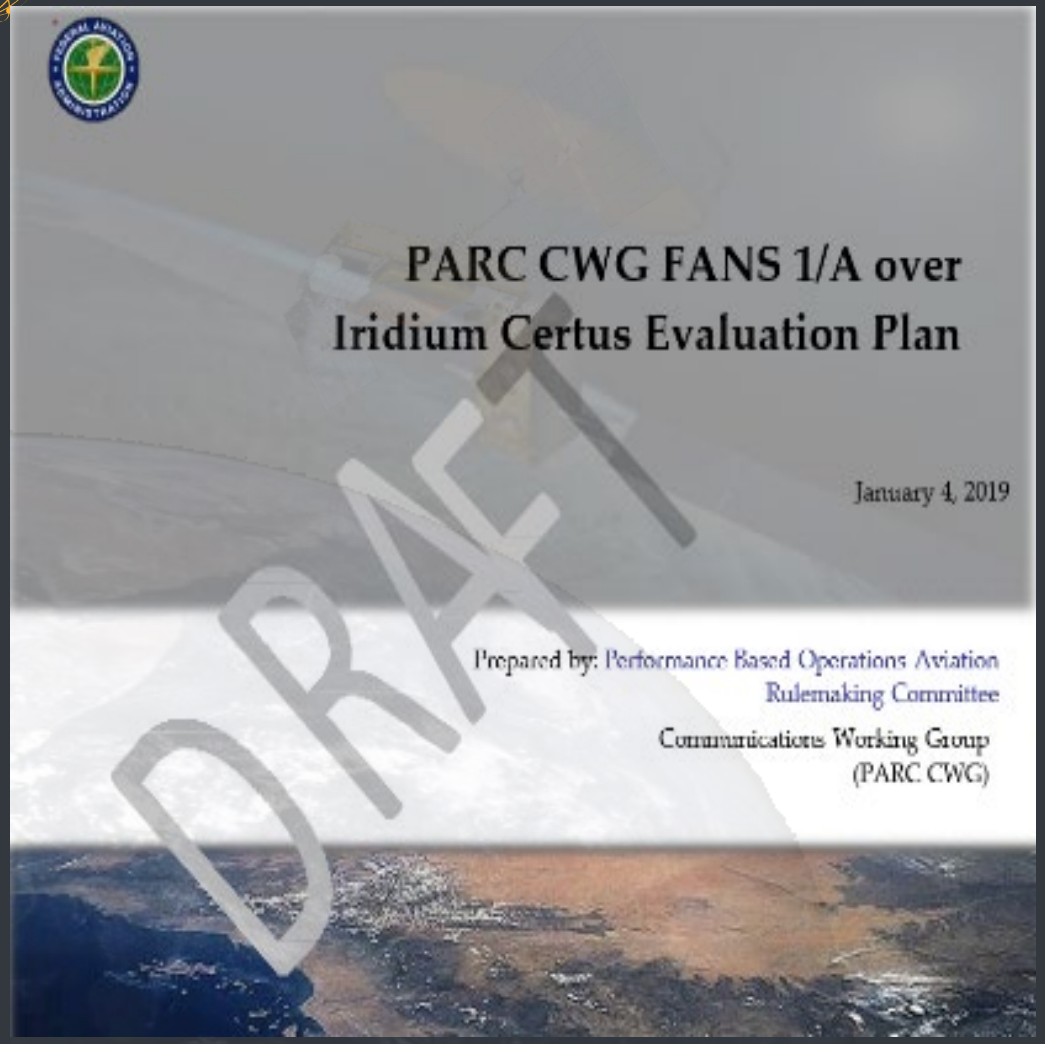
- ARINC 771 Certus: COMPLETED
- MASPS/MOPS Certus: COMPLETED
- TSO-159 Certus: In Progress
- Security VPN w/PKI Certificate In Progress
- Single Stage Dialing In Progress
- Redundant Gateway In Development

Security Solution - IPSec VPN w/ PKI

- Iridium has drafted the Certificate Policy (CP)
- Iridium has drafted the Certificate Signing Practice (CSP)
- Iridium is finalizing a System Design Review of the security enclave
- Iridium is actively working this program with several vendors.
- Initial testing planned to start in late Q4 2021 and move to production by Q2 2022.

Security hosted in the Iridium gateway and matched in the AES with PKI management as per ATA42

FAA Iridium Certus Evaluation Plan - DRAFT



Iridium created a draft FAA Evaluation Plan in support of the FAA PARC

- Talks on-going with new FAA PARC chair – Ron Renck (United)
- The evaluation shall be conducted against Required Surveillance Performance (RSP) 180 and Required Communication Performance (RCP) 240 for 75,000 messages
- In addition, ATS Safety Voice shall be evaluated against RCP 400V requirements for 1,000 calls
- Estimated start in late 2022 with bench tests and later aircraft tests

Iridium Development Phases: Phase 3

Phase 3: (Future 2022 - 2025)

Iridium ground/satellite updates:

- Enhancements to ground/network (control channel/ring management)
- Enhancements to Iridium core transceiver
- “Always-On” capability in support of AMS(R)S services

Specific enhancements required for aviation AMS(R)S for RCP130/RSP160.

Iridium is committed to aviation and these investments specific to AMS(R)S are testament.

Thank You!

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