ALNAIR aerospace FZC

Presents

a New Retrofit Solution (STC):

SwiftBroadBand Satcom by Alnair

''Stay Online Anywhere''

ALNAIR
aerospace

**Push Mail
(WIFI)**

**Personal Cell
Phone Calls/eMails
(WIFI)**

**Personal Cell Phone
Instant Messaging (WIFI)**

WIFI Connexion

**On Board Cisco
VoIP Phone**

Outlook

Internet

Google

Video streaming

Printer, Fax

**Security via On Board
Or Personal VPN**

Alnair Aerospace offers new STC for SwiftBroadBand Communications on Business & Commercial Aircraft.

‣ State of art technology (highest data rate on market)
‣ The lowest weight impact (limited number of LRUs)
‣ Easy to install
‣ Easy to operate
‣ Easy to maintain

Certified by STC EASA on Airbus A320 Family

SwiftBroadband functionalities

SwiftBroadband (SBB) is designed to meet the broadband data communications needs of passengers, cabin crew and pilots.
Delivered via Inmarsat, the world's most sophisticated commercial communications satellites, SwiftBroadband will provide affordable broadband services, including:
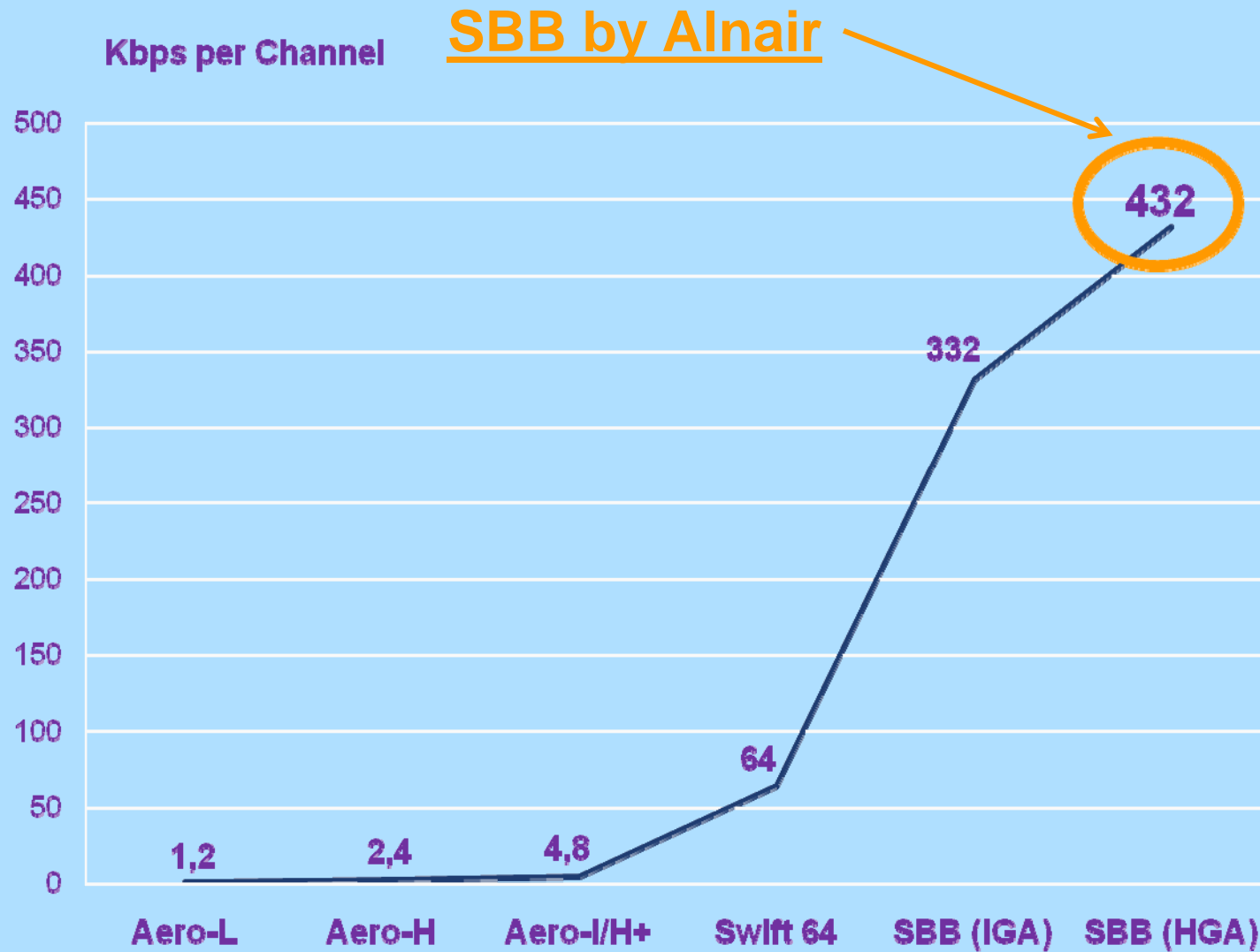
- IP-based data up to 432 kbps per channel,
- Cockpit Crew Safety Services,
- Simultaneous voice and high-speed data,
- Text Modes (Internet & Email & News),
- Place calls via Pre-configured VoIP Phone,
- Send and Receive push email via wireless LAN,
- Use instant messaging such as Skype and MSN,
- Support for compatible Wireless LAN enabled devices,
- Support Laptop VPN software,
- Videoconferencing,
- Electronic Flight Bag (EFB Class II),
- Visual control of internet status via web page.

Inmarsat I-4 satellites SwiftBroadBand coverage
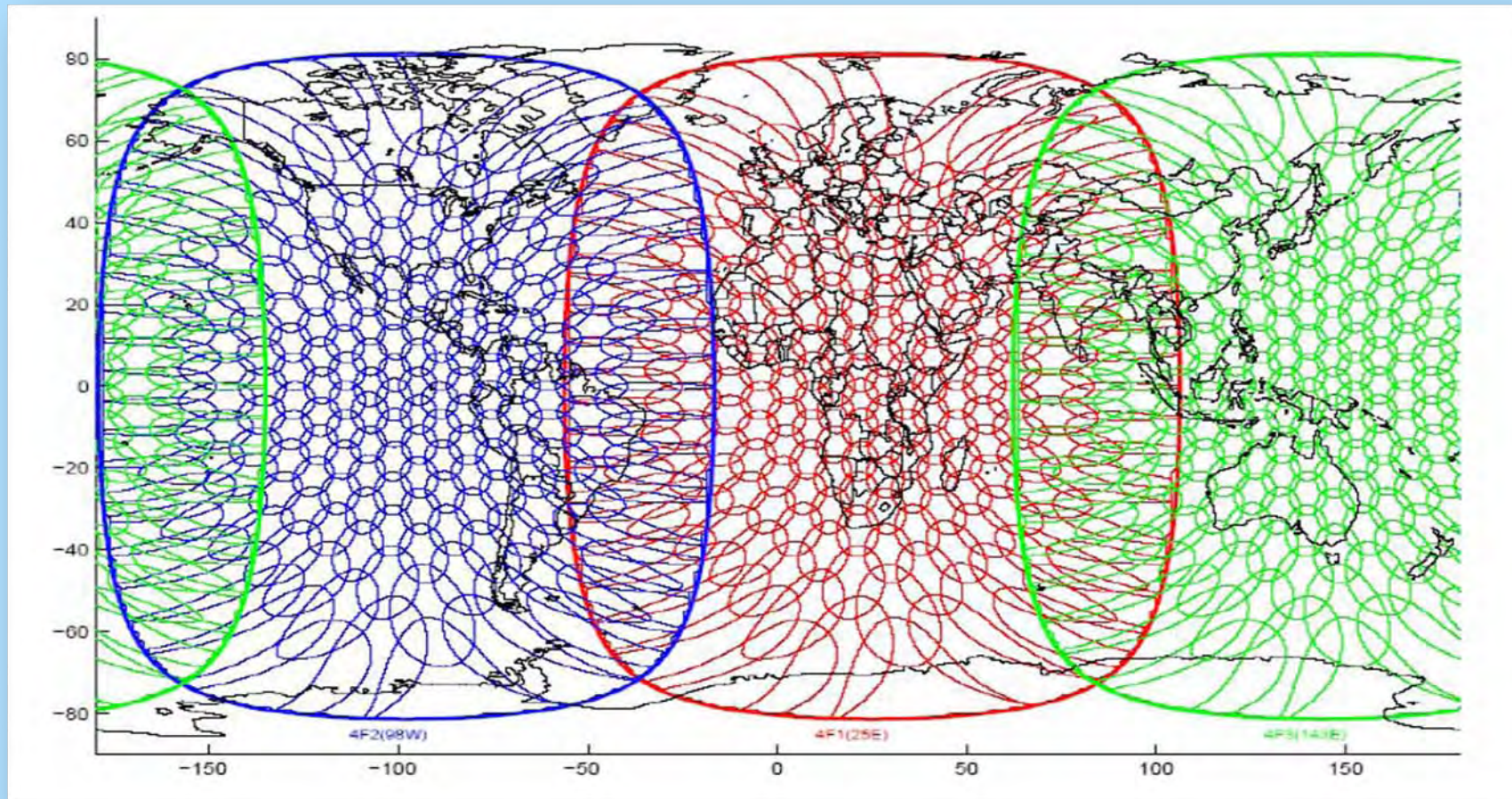
Confidential Inmarsat: The map depicts Inmarsat's expectations of coverage, but does not represent a guarantee of service. The availability of service at the edge of coverage fluctuates depending on various conditions
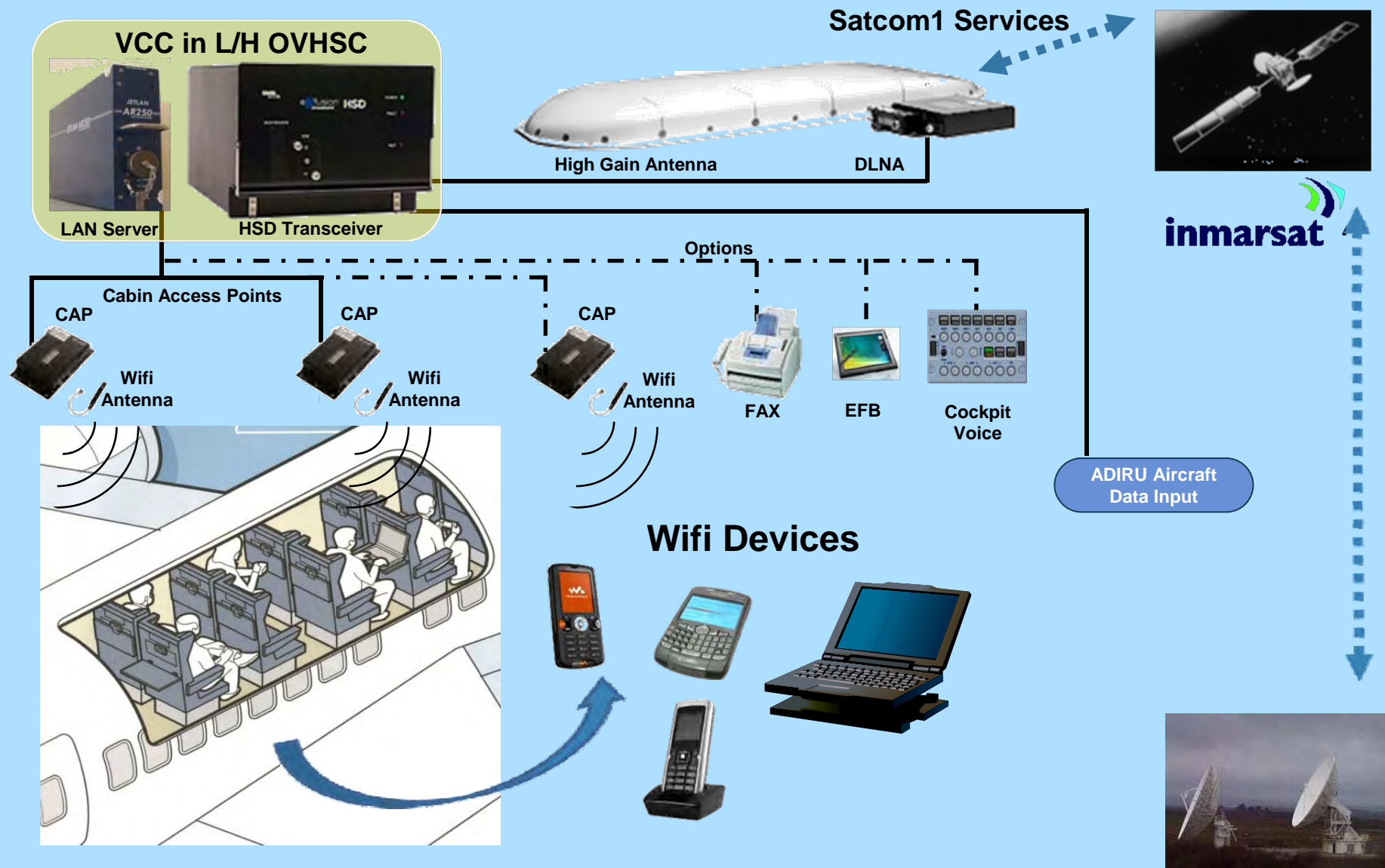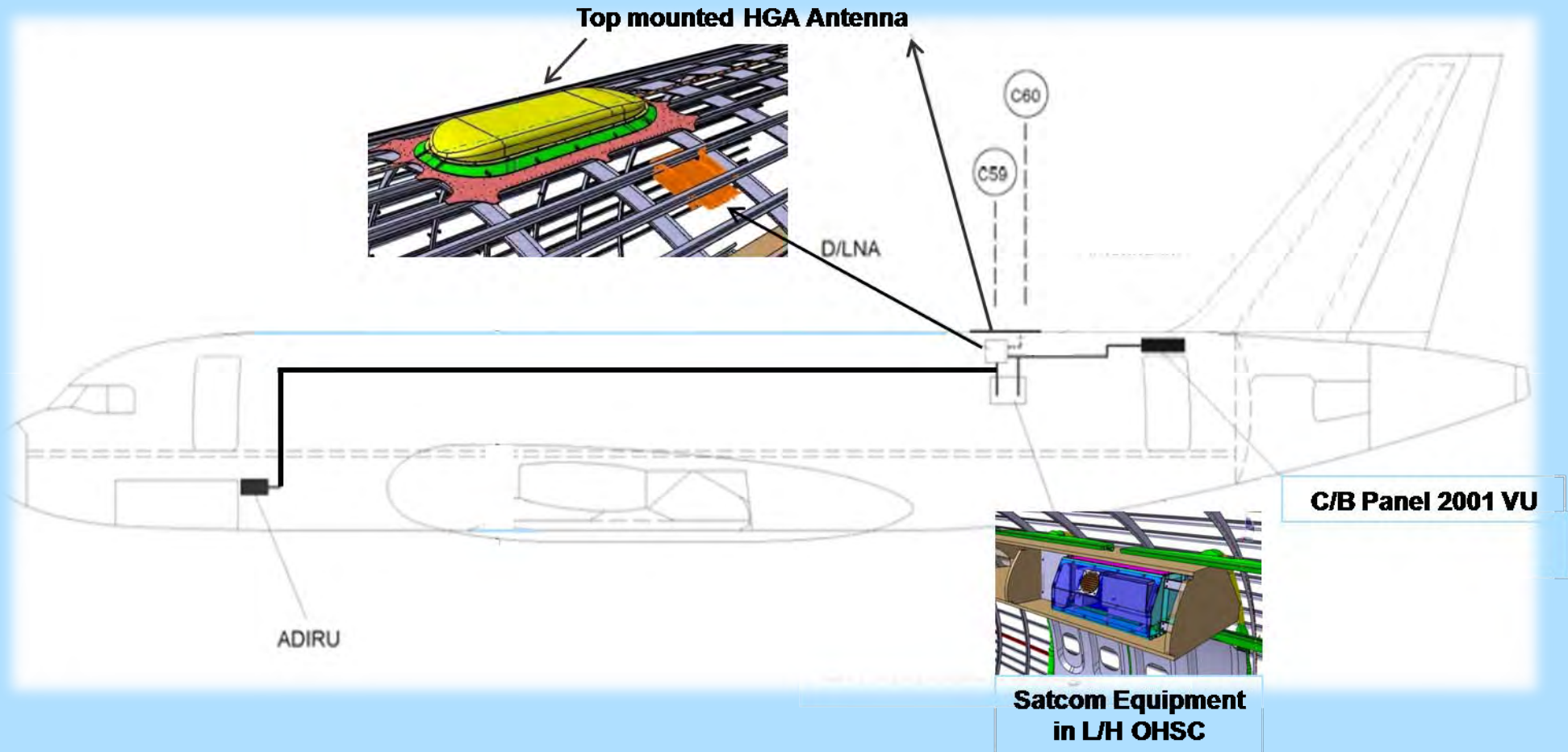
Satcom Systems Bandwidth Comparison

SBB by Alnair

Kbps per Channel

Aero-L	Aero-H	Aero-I/H+	Swift 64	SBB (IGA)	SBB (HGA)
1,2	2,4	4,8	64	332	432

SBB by Alnair vs. other systems

Network	SMS	Voice Calls	Smart Phones	Portable PC
SwiftBroadband By Alnair Class 6 Up to 432kbps	Unlimited	Unlimited Voice over IP	WIFI/UMA Technology - Email with attachments - MMS - Internet access - VPN access	- Instant messaging (Chat) - MMS - Internet Access - VPN access
SwiftBroadband Up to 224kbps (128kbps)	Unlimited	Limited to 24	GPRS Technology - Email with attachments -MMS - Internet access - VPN access	- Instant messaging (Chat) - MMS - Internet Access - VPN access
Aero+/Swift64	Unlimited	Limited to 5	Limited to email text	No
Classic Aero	Unlimited	Limited to 5	Limited to email text	No

SBB by Alnair: System architecture

VCC in L/H OVHSC

LAN Server   HSD Transceiver

Satcom1 Services

High Gain Antenna   DLNA

inmarsat

Options

Cabin Access Points

CAP   CAP   CAP   FAX   EFB   Cockpit Voice

Wifi Antenna   Wifi Antenna   Wifi Antenna

ADIRU Aircraft Data Input

Wifi Devices

Top mounted HGA Antenna

D/LNA

C60

C59

C/B Panel 2001 VU

Satcom Equipment in L/H OHSC

ADIRU

SBB by Alnair: High Gain Antenna

The AMT-3800 is a High-Gain compact fuselage mounted Antenna (HGA) designed to meet Inmarsat requirements for Aeronautical Mobile Satellite Systems (AMSS) that provides full Inmarsat hemispherical coverage.

The AMT-3800 is consistent with ARINC 741 & 781, the new Mark 3 Aviation Satellite Communications System. It enables airborne satellite communications, including multi-channel Aero H/H+, Swift 64, and SwiftBroadband (when available).

The AMT-3800 HGA consists of two LRU's: the HGA & the Diplexer/Low Noise Amplifier (DLNA).

EMS SATCOM

- +28 Vdc or 115 Vac (wide frequency) models
- Minimal height/Low drag co-efficient
- Antenna compliant to RTCA/DO-160E
- Hardware compliant to RTCA/DO-254 Level D
- Software compliant to RTCA/DO-178B Level D
- Certified to TSO132
- Air Transport reliability/durability
- Electronically-steered: no moving parts

SBB by Alnair: High Speed Data Unit

The HSDs 400, 440 is a line of Inmarsat-based Voice & High-Speed Data Terminals. These compact units enable functions like broadband Internet, voice and safety-services on a wide variety of aircraft. HSDs provides symmetrical, high-speed transfer rates for both cockpit communication (Aero H+, EFB, Safety services, ACARS data) and cabin communication (voice, Internet, Ethernet, high speed fax) systems.
The HSD-440 is the latest evolution, it is optimized to work with both Swift64 and Swiftbroadband services.

HSD 440 Features:
- ACARS/ATSU Data
- Aero H+ voice for cockpit
- SwiftBroadband ready for data rate up to 432 Kbps
- Electronic Flight Bag (EFB) enabler
- Internal channel bonding for ISDN BRI Interface
- Symmetrical transfer rates
- Standard Euro-ISDN, RS-232 and 10 baseT Interfaces
- High-speed fax capability (14.4k)
- 28 VDC/115 VAC dual power supply
- STE compatible
- Helo operation

SBB by Alnair: JetLAN Router/Server

- Advanced Airborne Computer
- Laptop software for on-board applications
- Satcom Traffic Billing database
- Internet Traffic acceleration: AvioIP eXpress
- Fax enhancer
- Aero Router Software: AvioIP by Satcom1

FEATURES:
- Dual Processor Intel Pentium M 1.4 GHz / Power PC
- Large Capacity, Ruggedized Hard Drives
- Rugged, Certified DO-160E Design
- 2 MCU Form Factor
- ARINC 429, 717, MIL-1553 I/O (Optional)
- Internal Expansion Slots
- Internal 12 Port Ethernet Switch
- Internal Wireless -802.11b/g (Optional)
- Supports Swift64, MPDS, ISDN & Ethernet (PPPoE)
- Ready for Swift Broadband

SBB by Alnair: Wifi Cabin Access Point

Access Point allows clients to connect to aircraft LAN via intelligent bridging that restricts client traffic to only flow to and from the access controller.

FEATURES:
- Dual band (2.4 & 5 GHz) cabin antenna
- ARINC 763 (Network Server System)
- Global radio certification obtained for legal operation of MAP on aircraft
- End to end network security with latest 802.1x authentication, WPA2, WPA, & WEP
- Works with any IEEE 802.11a/b/g compliant client device (e.g. laptop computer or personal digital assistant)
- Configurable QOS and security policies per VSC
- SSL protected WEB-based authentication
- Proven wireless multicast of streaming multimedia
- Proven reliability, No maintenance required
- Continuous RF security scan and full performance client access services in same unit

SBB by Alnair: Satcom1 (*) Software (User Welcome page)

(*): Satcom1 is an approved Inmarsat Service Provider

Satcom1 (*) has developped unique End User Billing Software (Direct billing to passengers) with following Possibilities :

- Credit Card Charging

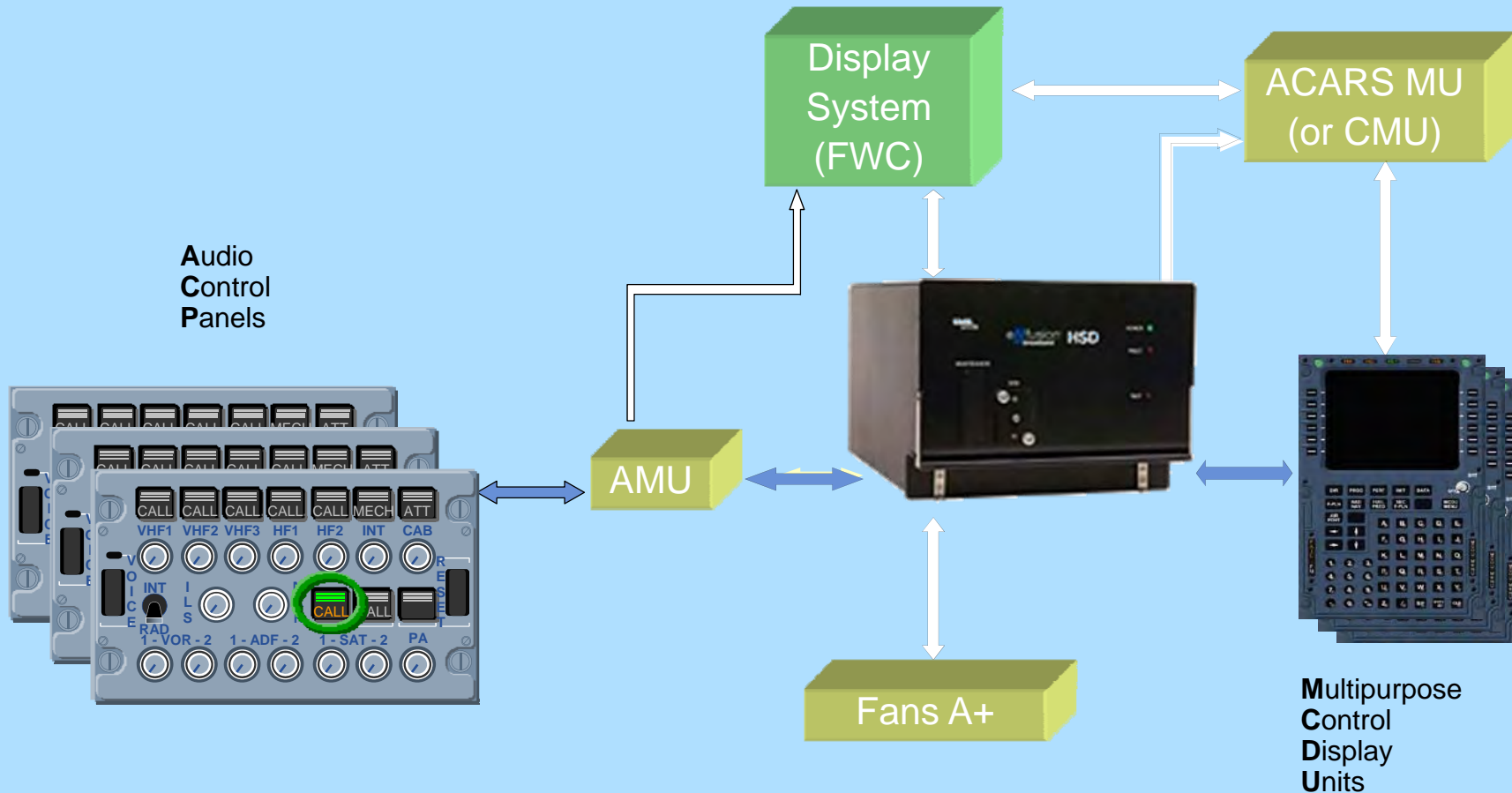Passenger enters his Credit card details via secured banking connection

- Voucher

Passenger receives a scratch card containing a PIN,

(*): Satcom1 is an approved Inmarsat Service Provider

Possibility to add Cockpit Voice Services functionality through HSD440.

Audio
Control
Panels

Display
System
(FWC)

ACARS MU
(or CMU)

AMU

Fans A+

Multipurpose
Control
Display
Units

SBB by Alnair - Option 2: Cockpit Safety Services

Possibility to add cockpit safety services functionality through HSD440.

Multipurpose
Control
Display
Units

ACARS/ATSU

EMS SATCOM High Gain Antenna Arinc 781   DLNA

Audio
Control
Panels

ADIRU Aircraft Data Input

EMS SATCOM HSD Transceiver

High Speed Data, Voice & Cockpit Safety Services Terminal

LAN Server

SSB by Alnair - Option 3: Electronic Flight Bag Class II

Possibility to connect Alnair EFB Class II to HSD for weather updates, NOTAM, flight plan…
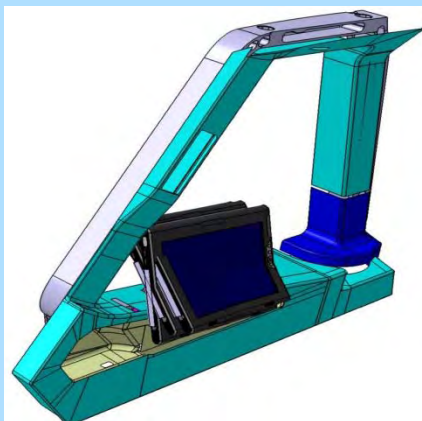
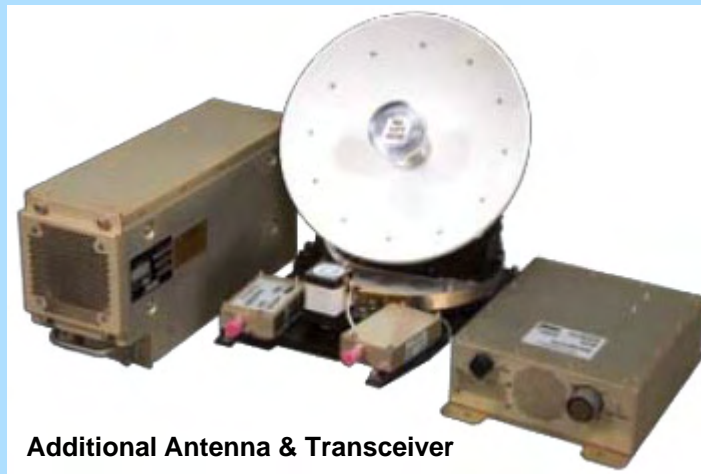EMS SATCOM High Gain Antenna Arinc 781   DLNA
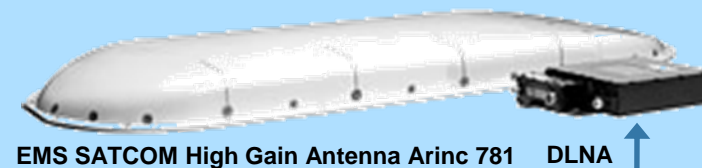
ADIRU Aircraft Data Input

EMS SATCOM HSD Transceiver
High Speed Data, Voice & Cockpit Safety Services Terminal

EFB Class II

SBB by Alnair - Option 4: Ku Band - Architecture

Possibility to add Ku Band Capability (30Mbit/s to the aircraft and 1024 kbit/s from the aircraft) through Lan Server with lightest, smallest-footprint Ku-band Broadband satcom terminal (available in 2010)

EMS SATCOM High Gain Antenna Arinc 781   **DLNA**

ADIRU Aircraft Data Input

EMS SATCOM HSD Transceiver
High Speed Data, Voice & Cockpit Safety Services Terminal

Additional Antenna & Transceiver

LAN Server

- **Kit** for SBB Alnair installation:
  - ▸ structural parts, brackets, mounts, clamps, racks
  - ▸ electrical power cables, connectors, breakers
  - ▸ 1 **AMT-3800 High Gain Antenna** with DLNA and adaptor plate,
  - ▸ 1 **HSD 440 or HSD 400** (depending on order)
  - ▸ 1 **AR250 (Network Server)**
  - ▸ 2 **CAP** (or more depending on aircraft type)
- **Technical Data**
  - ▸ Service Bulletin for installation,
  - ▸ Associated drawings,
  - ▸ Ground Test Procedures
  - ▸ Supplemental Manuals (WDM, MPD)
  - ▸ Installation description (for satcom operation)
- **Certification**
  - ▸ EASA STC
  - ▸ EASA Form 1 for kits

SBB by Alnair: General Conditions

- <u>Delivery :</u>

  5 months after PO & Aircraft data availability

- <u>Assistance for retrofit installation on aircraft :</u>

  on request

- <u>Warranty :</u>

  one year from delivery

- <u>Spares & Support :</u>

  on request

- <u>Sales :</u>

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