Classic Aero Safety Services over the repositioned I4 satellites

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- (Update on Alphasat and Cockpit Services)

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Three New Ocean Regions for Classic Aero

- Requirement for a single aircraft antenna to access multiple services.

- Inmarsat plans to make Classic available on the I4s ("7+1" operations)

- Inmarsat consulted with the Aero community and determined the appropriate service mix on the I3s and I4s as

	I3	I4
Classic	√	√
Swift64	√	
SBB		√

- Putting Classic on the I4s
  - Allows a single antenna on an aircraft to access SBB & Classic
  - Provides improved redundancy for Classic services
  - Underlines Inmarsat's long term commitment to aero safety service
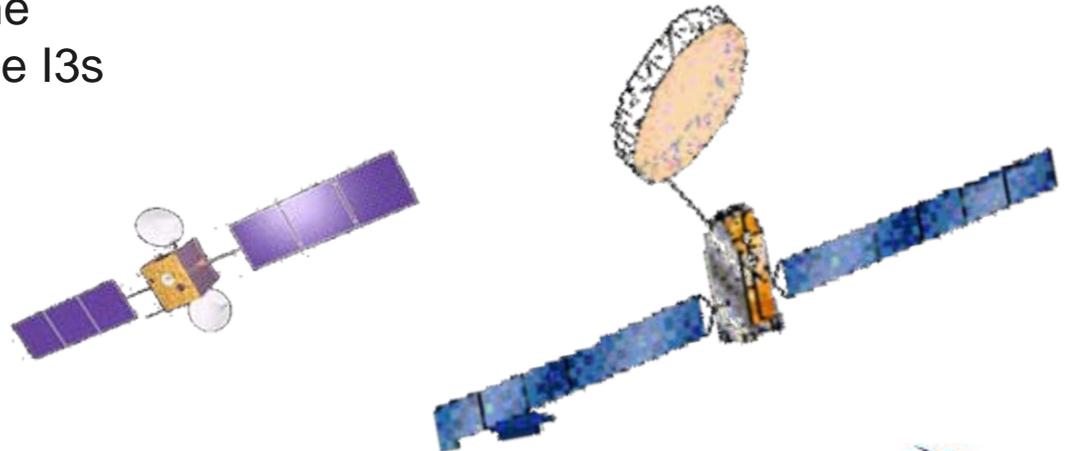
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Proposed Classic Aero Inmarsat I3 and I4 network (after I4 repositioning)
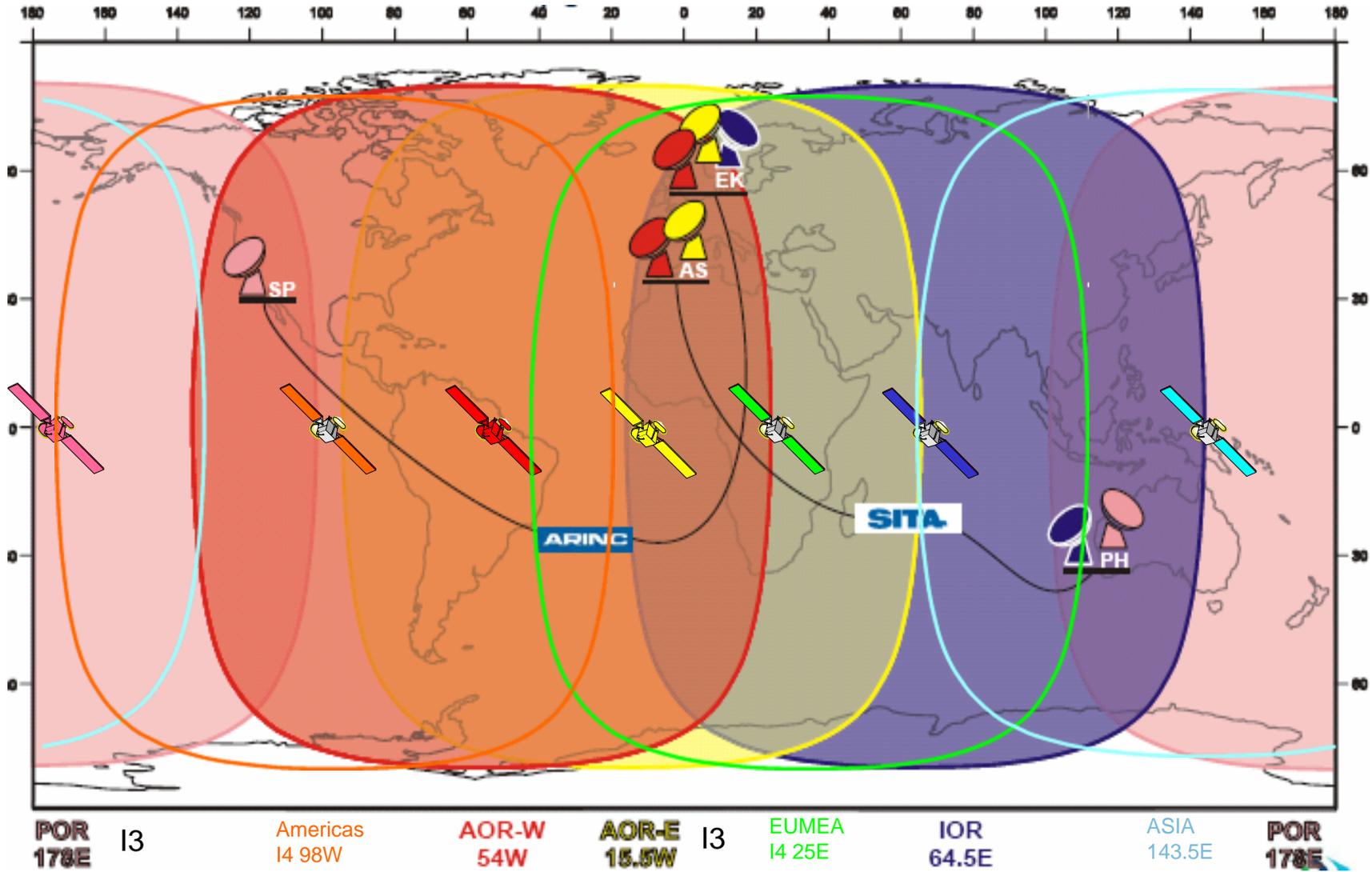
Inmarsat classic aero coverage pending the successful launch, test, deployment of I4F3 and repositioning of fleet

Programme Status

- Inmarsat requested proposals for global solution for Classic over the I4s from Aero LESOs, and simultaneously from GES manufacturers to determine optimum way of providing classic on I4s

- Options
  - LESO operates through their existing sites
  - Inmarsat operate using GES at I4 SAS sites
  - A combination

- LESOs did not offer a global solution therefore putting more reliance on Inmarsat providing its own solution post April 09

- Inmarsat accelerated evaluation of GES supplier solutions

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Programme Status

- To provide high reliability safety services over the repositioned Inmarsat 4 satellites, Inmarsat will own and operate GES from BGAN SAS sites post April 09:
  - Hawaii Dual Ocean Region (98W, 143.5E)
  - Fucino (25E)

- SED has been selected as preferred GES supplier
  - Squarepeg Communications International (SPCI) is SED's principal subcontractor
  - Contract signed Feb 08, (SED supporting ICD meetings from 1st Jan)
    http://www.inmarsat.com/About/Newsroom/00023766.aspx
    http://mae.pennnet.com/display_article/321052/32/NEWS/none/none/1/Calian's-SED-Division-to-supply-Ground-Earth-Stations-to-Inmarsat/
    http://www.foxbusiness.com/markets/industries/finance/article/calians-sed-division-signs-8-million-contract-inmarsat_492805_9.html

- Implemented GES will include the FANS improvements as recommended by FANS Satcom Improvement Team

- Platform is sustainable for many years providing a flexible architecture for expansion

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FANS Improvements Included

Improved monitoring of system especially at service level	Y
Improved testing at factory especially for loaded conditions	Y
Improved data gathering to determine problem AES	Y
CP96 - Change to log on process to allow faster 'system recovery time' after a GES failure - Explicit marking of T-Channel superframe - Provision of terminal manufacturer and software build info in Log On Signal Unit - Increase the AES 'loss of P-Channel timer' from 10 to 30(tbc) seconds	Y
Ability to hand over (and recover) spectrum from one GES to another	Partial

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I4 GES Capability & Service Baseline

	GES Capability	Expected Initial Service Offering
P/R/T 600/1200/10K5	Y	Y
C8400	Y	Y
C21000	Y	N
L	Y	Y
H	Y	N
H+	Y	Y (but only C8400)
I	Y	Market demand for this is being assessed
Data 2	Y	Y
Data 3	Y	Y
C8400 Fax	N[1]	N
C8400 PC data	N[1]	N
C21000 Fax	N[1]	N
C21000 PC Data	N[1]	N
C21000 CN11 (secure voice)	N[1]	N
GES Data Broadcast	N[1]	N

[1]GES design could be upgraded to add these services, following business case and provision of funding

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Hawaii SAS /GES site

Paumalu

O'ahu
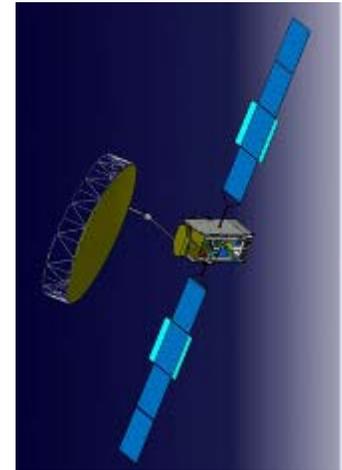
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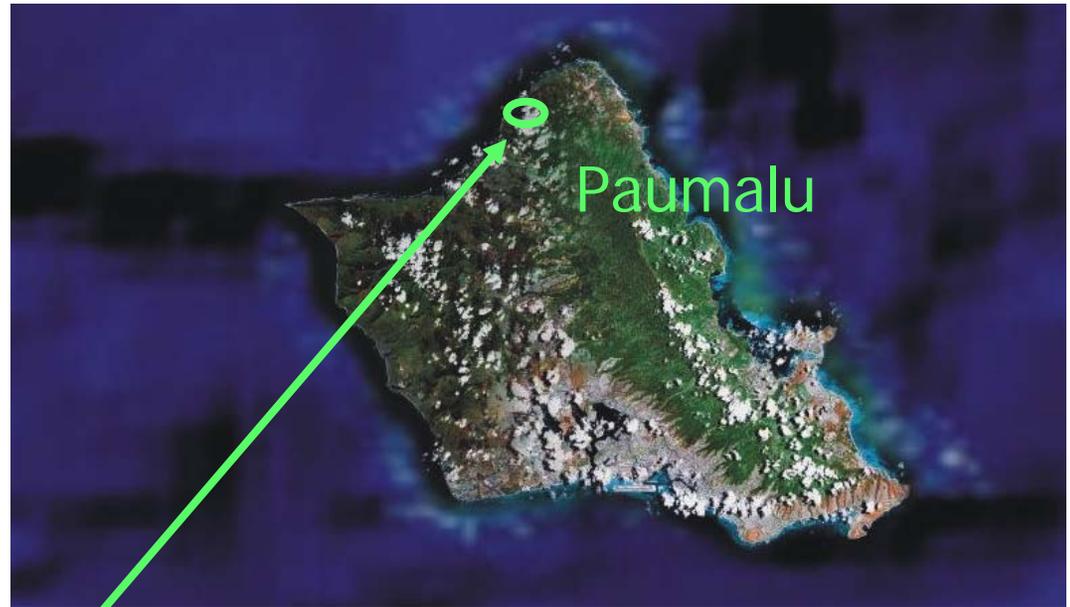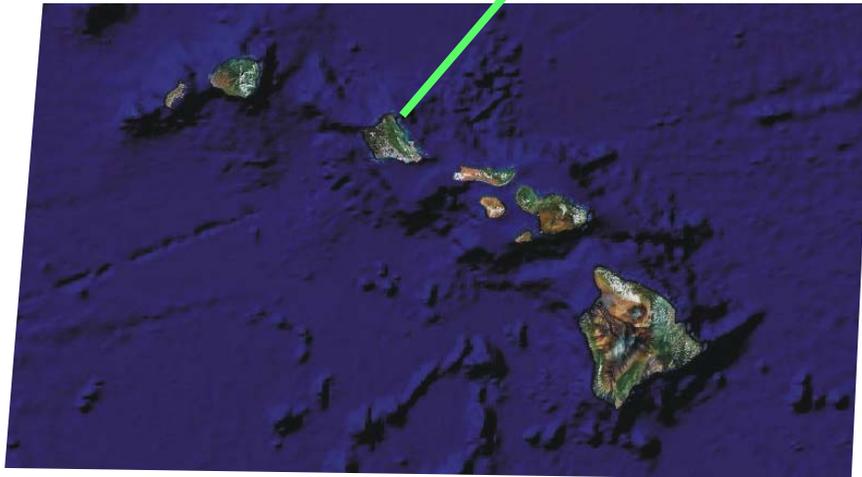
16m dish building works as at 19th Dec 07

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Current planning timescales

1	Kickoff	1 Jan 2008
2	SAT (site acceptance test) Burum/Fucino	1 April 2009
3	SAT Hawaii	1 May 2009
4	Airline Operational Service (ACARS plus voice) 3 Ocean Regions, C8400 voice, D2 & D3	1 July 2009
5	CP96 functionality	Nov 2009

From SAT, Integration &Test with aircraft and ground end systems is required leading to safety service qualification and operational approval

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Alphasat

Alphasat artist's impression

- Inmarsat has signed a major contract with Astrium to build the payload for a satellite to supplement the existing I4s –
        "Alphasat I-XL"
   - one of the largest commercial spacecraft of its kind

- Part of a European Space Agency (ESA) initiative to develop a new spacecraft platform capable of carrying a large communications payload

- Scheduled for completion in early 2012, design lifetime 15 years

- Will supplement the existing Inmarsat-4 satellites and provide augmented Broadband Global Area Network (BGAN) services over Europe, the Middle East and Africa

- Satellite will have access to a new allocation of L-Band radio spectrum across these regions

- http://www.inmarsat.com/About/Newsroom/00023439.aspx

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Inmarsat Cockpit Services

- Presented preliminary roadmap ideas for Safety Services over SwiftBroadband at the July DLUF 07

- Announcement of Alphasat programme is significant enabler for Safety Services over SwiftBroadband

- ANASTASIA study work continues through 08/ESA 'Iris' programme studying communications protocol and satellite system for ATM

- Will provide a report on developments to next ISPACG/FIT

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Comments and questions

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