

**Welcome to:**

**South East England  
Development Agency**

**Annual Open Public  
Meeting 2009**

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# Chris McLaughlin

## VP External Affairs Inmarsat

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# **SEEDA, Inmarsat and Alphasat – an effective partnership**

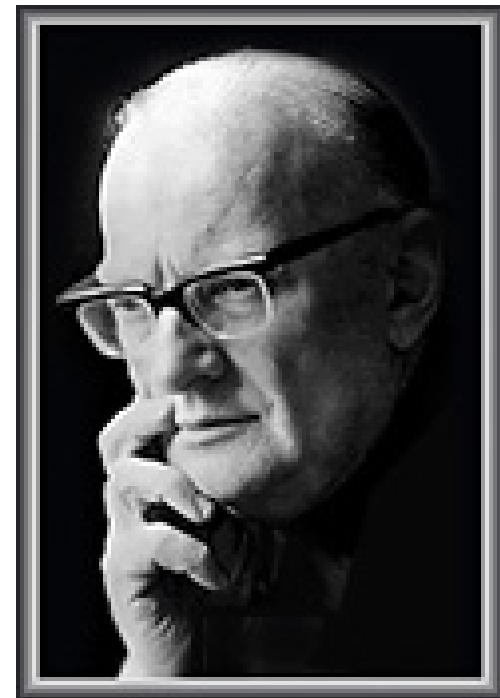
**5<sup>th</sup> November, 2009**

**Chris McLaughlin**

Vice President, Inmarsat plc

# Satellite Communication for the 21<sup>st</sup> Century

- ➔ Thank you Arthur C Clarke...
- ➔ LEOs, MEOs & GEOs
- ➔ A resilient, terror secure, weather resistant means to communicate
- ➔ Voice, visual and data from where ever you are on the planet
- ➔ Proven in countless scenarios: Aid, disasters, military and commercial
- ➔ The Clark Orbit , The Clark Belt



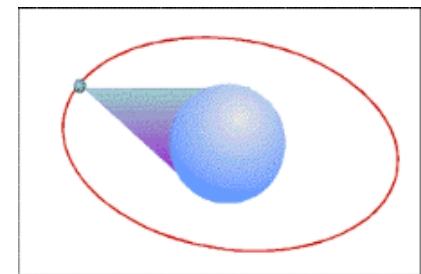
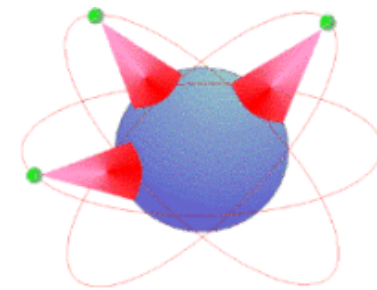
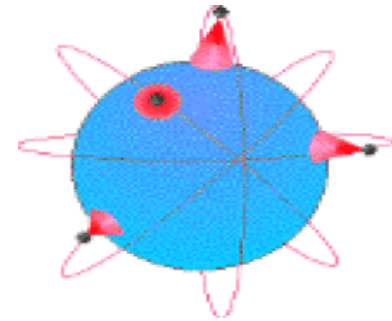
# Satellites – very modern since 1957

- ➔ The first satellite and Inmarsat's latest satellite share a common launch pad – Baikonaur, Kazakhstan
- ➔ In 1957, Sputnik, weighed 83kg and lasted for 22 days transmission time
- ➔ In August, 2008 Inmarsat completed its global constellation launching 1-4 F3 weighing-in at six tonnes and will operate for at least 15 years
- ➔ And the SEEDA-backed Alphasat satellite will follow this with even greater performance



# LEOs, MEOs and GEOs

- ➔ LEOs – around 400 to 1600 miles above Earth, these include Iridium and Globalstar satellite phone companies. They require around 66 satellites in flight and regular additions as gravity takes effect
- ➔ MEOs – Best known for GPS services can also be used to provide wi-fi to the ground, from 1,500 to 6,500 miles above earth, for example, ICO
- ➔ GEOs at 22,300 miles above Earth, appear fixed so simple to locate. Operators include Inmarsat, Intelsat, PanAm Sat and Thuraya
- ➔ There are also HEOs – but nobody cares...



# The Inmarsat-4 satellites

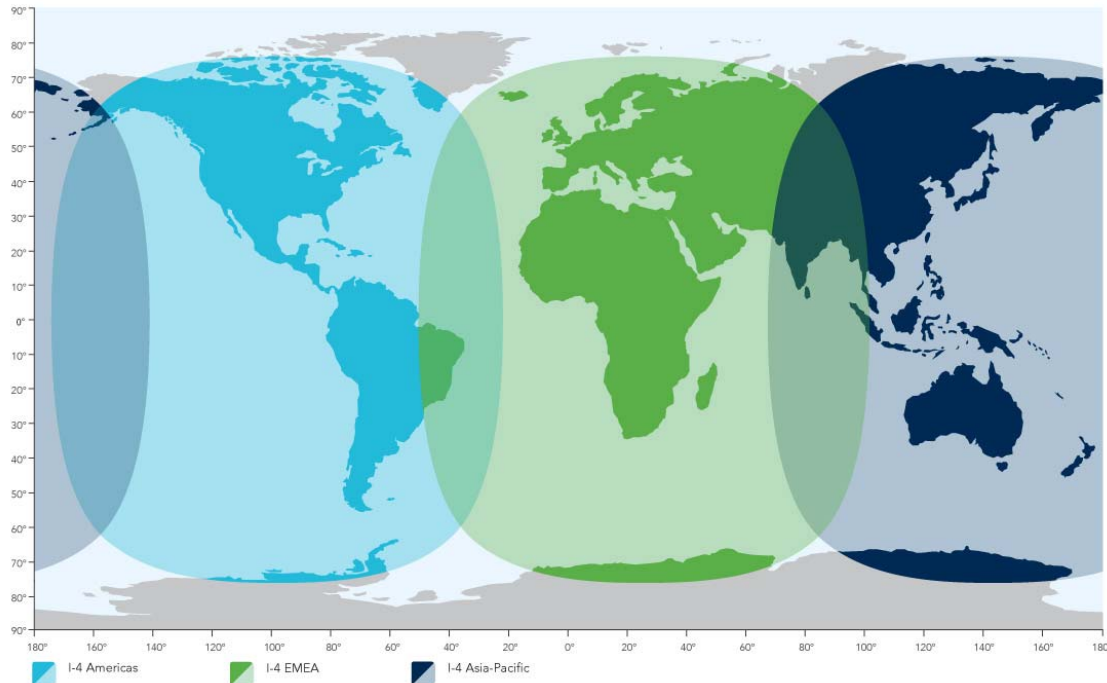


Courtesy ILS & Lockheed Martin Corporation

- ➔ Most advanced commercial communications satellites ever launched
- ➔ \$1.5 billion investment
- ➔ Support latest generation mobile broadband services
- ➔ One I-4 satellite is 60 times more powerful than an I-3 satellite
- ➔ Commercial life into the 2020's
- ➔ Part of a total constellation of 11 satellites in geostationary orbit

# I-4 coverage

- Launched the 3rd and final I-4 in August 2008
- Delivers global mobile broadband coverage
- Repositioning of I-4 satellites underway for optimal coverage



# We are market leader

## Mobile satellite services

- ➔ A UK company, FTSE100
- ➔ Most versatile, reliable satellite network in the world
- ➔ Global coverage
- ➔ Most comprehensive portfolio of voice and data services
- ➔ On land, at sea and in the air



# We offer Broadband for a mobile planet™

## BGAN



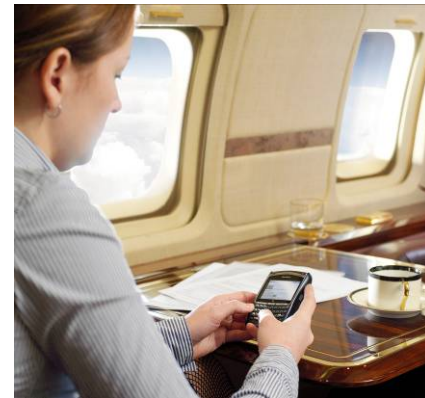
- ➔ Broadband data up to 492kbps
- ➔ Plus simultaneous voice
- ➔ Guaranteed data rates up to 256kbps
- ➔ Accessible through a single compact device

## FleetBroadband



- ➔ Broadband data up to 432kbps
- ➔ Plus simultaneous voice
- ➔ Guaranteed data rates up to 256kbps
- ➔ Accessible through a compact antenna

## SwiftBroadband

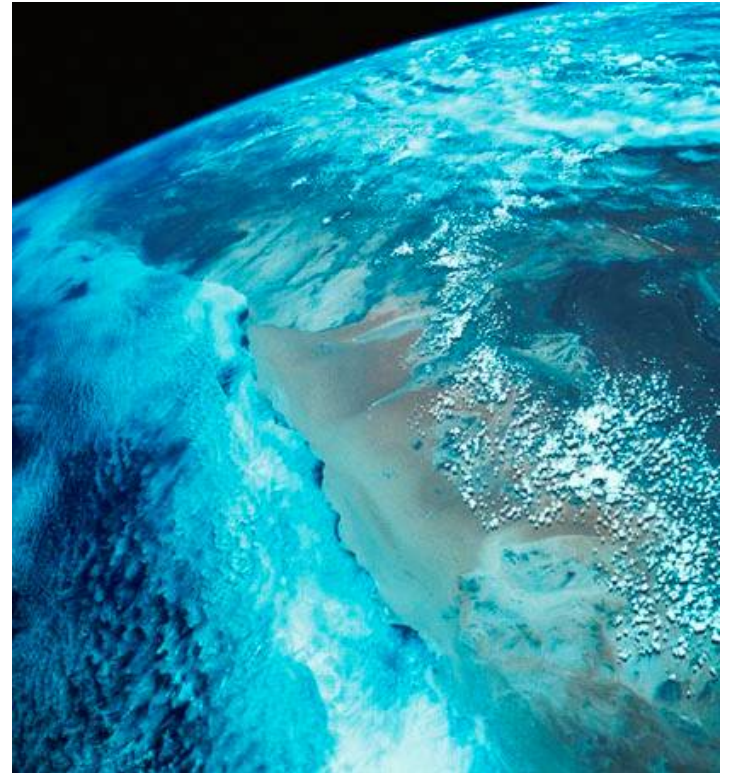


- ➔ Broadband data up to 432kbps per channel
- ➔ Plus simultaneous voice
- ➔ Guaranteed data rates up to 128kbps
- ➔ GPRS and UMTS compatible

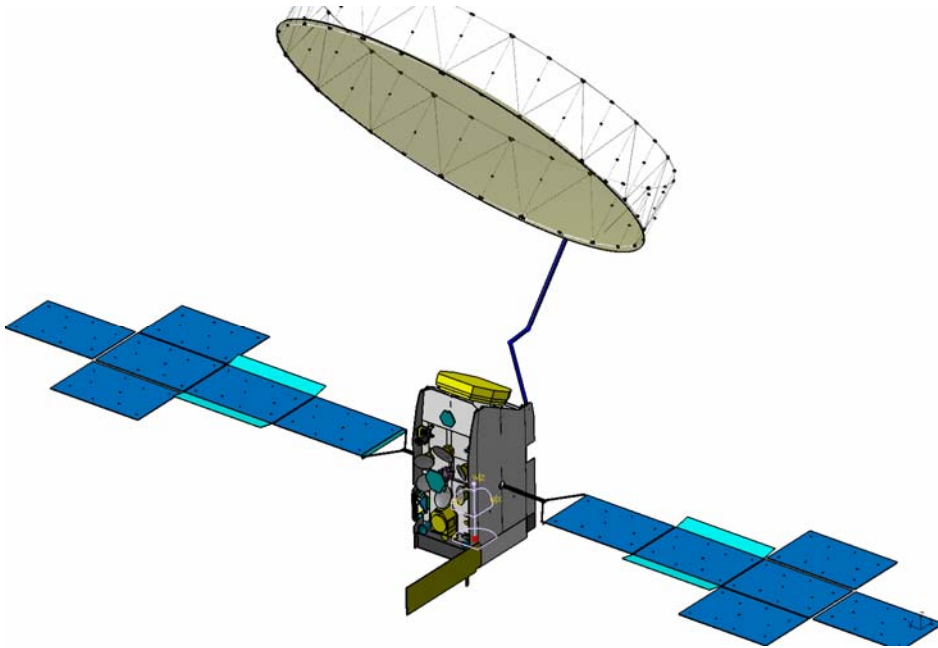
# Future satellite developments

## Alphasat

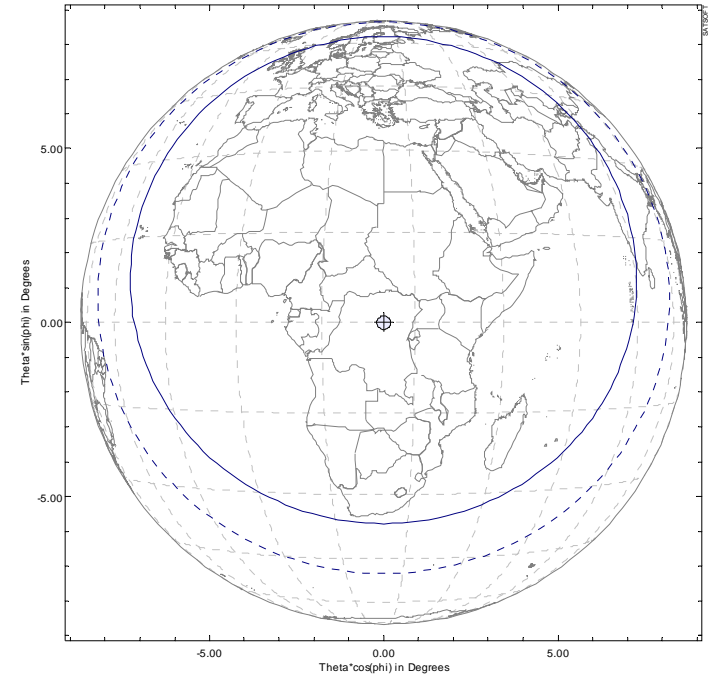
- ➔ European Space Agency project
- ➔ Critical support from SEEDA, EEDA and LDA
- ➔ A Major win for UK plc
- ➔ Inmarsat selected as the commercial operator
- ➔ Advanced L-band satellite to supplement the Inmarsat-4s
- ➔ Access to additional spectrum over Europe, Africa and Middle-East
- ➔ Launch estimated for late 2012



# Alphasat



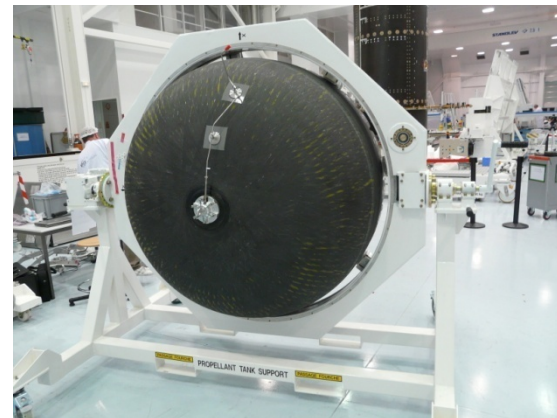
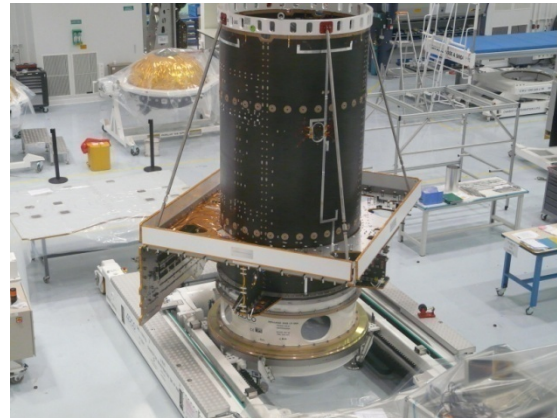
- ➔ Alphasat will be the most advanced mobile satellite ever built and will exploit Astrium's next generation of digital processor technology
- ➔ Uses the new L band spectrum (2 x 7 MHz) allocations made at the WRC 03



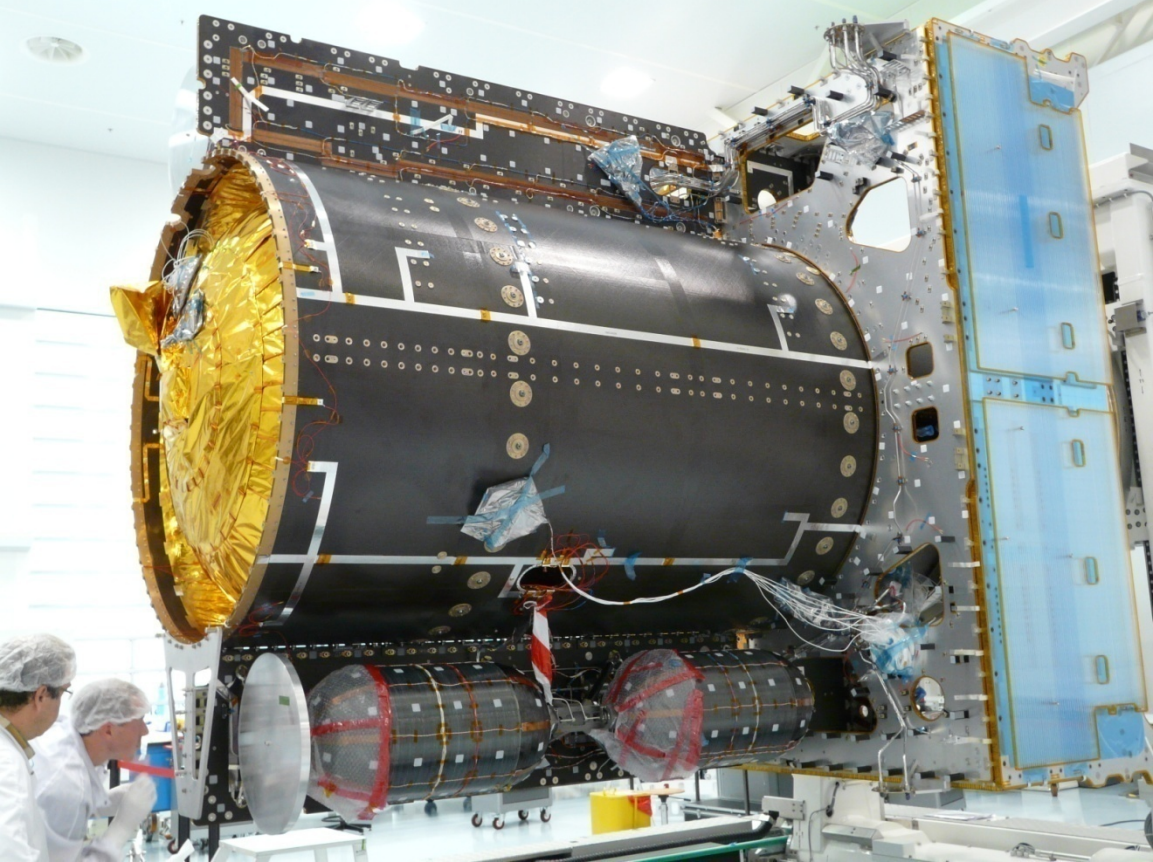
- ➔ The coverage for Alphasat mission is concentrated on an area including Europe, Africa, Middle East and part of Asia providing substantial export opportunities

# Alphabus Status Summary

- ➔ Service Module Structure
  - In advanced integration at TAS-Cannes: Delivery to Toulouse planned in December 2009
- ➔ Chemical Propulsion System (CPS)
  - All flight elements available and being integrated in the Service Module except LAE (in test) and thrusters (in build)
- ➔ Xenon Propulsion System (XPS)
  - All flight units in advanced manufacturing state
  - Xe tanks delivered and integrated



# On schedule and world-leading



# New mobile satellite services

- ➔ The additional power/flexibility of Alphasat, combined with additional spectrum, enables Inmarsat to pursue two new markets
  - Handheld voice
    - Clear benefit for handheld services over Europe, Middle East, Africa, part of Asia by using advanced user terminals
  - Mobile broadcast
    - ATC-like opportunity in Europe to address mobile TV and/or satellite radio
    - Key long-term requirements met by Alphasat, i.e. additional spectrum and more powerful and flexible satellite
    - Discussions with potential commercial partners ongoing, mainly mobile operators and media players
- ➔ Leads to substantial revenue generation over the 15 year satellite lifetime



# The figures

- ➔ UK public funds (RDAs) invested €50M in a world class spectrum processor for Alphasat.
- ➔ Other ESA countries invested >€60M in Alphasat
- ➔ Inmarsat will invest €310M in Alphasat
- ➔ Giving UK plc benefits of:-
  - Astrium ( Portsmouth & Stevenage) €230M of funded development in the UK
  - High Potential for Alphasat 2 order from Inmarsat
  - A total multiplier effect of €1.5 bn to UK plc by winning this ESA project
  - A UK win from Europe

# Without SEEDA...

- ➔ There would be no Alphasat
- ➔ No Government funding available
- ➔ No support from Ministries
- ➔ Would have been lost to Eutelsat, France
- ➔ Saved by timely intervention...
- ➔ SEEDA's leadership won the UK Alphasat

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# Questions?

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