NATO BLOS Visit
NCS Forest Moor - 5th Sep 2012

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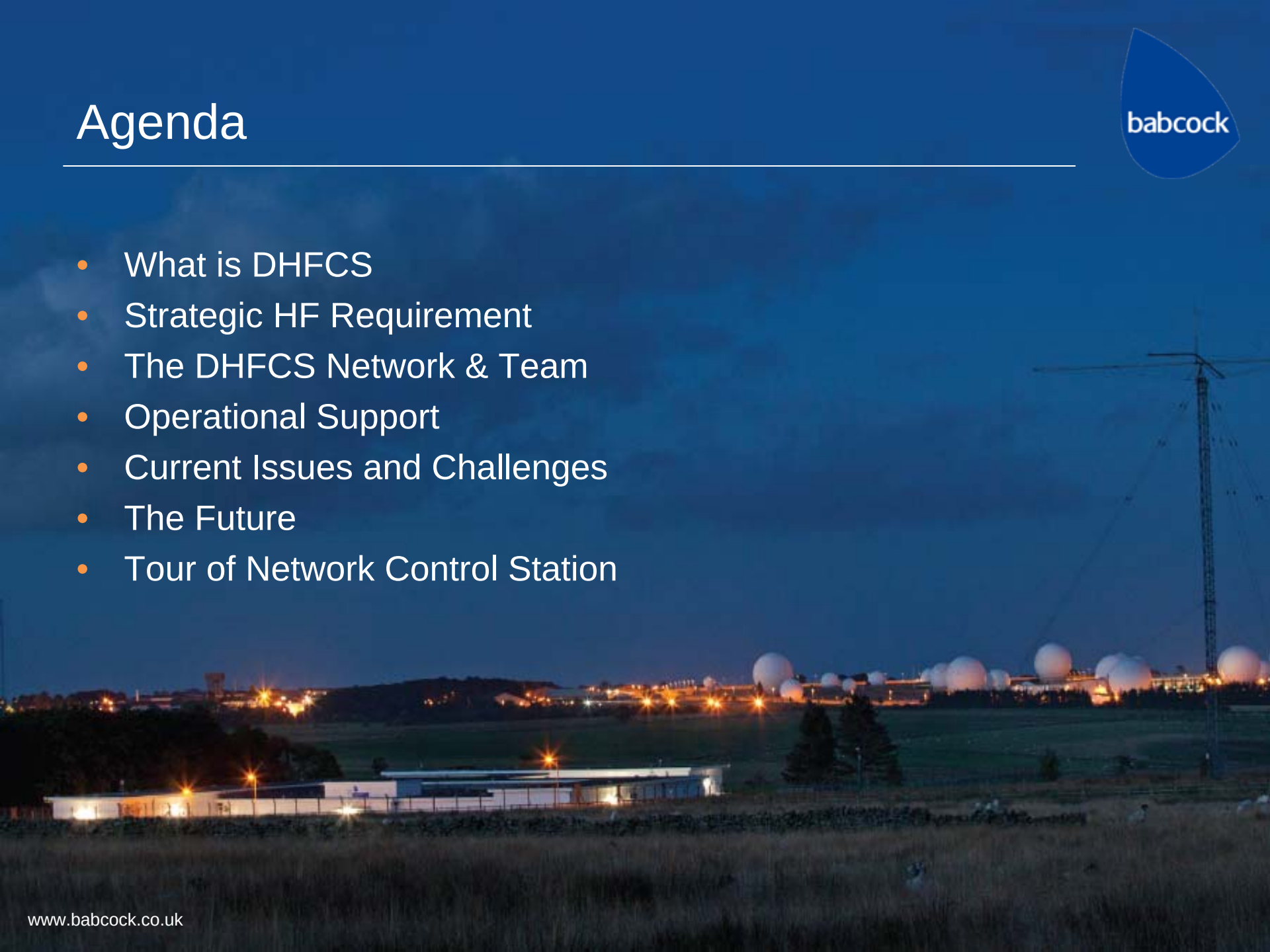
Defence High Frequency Communications Service

Agenda

- What is DHFCS
- Strategic HF Requirement
- The DHFCS Network & Team
- Operational Support
- Current Issues and Challenges
- The Future
- Tour of Network Control Station



What is DHFCS?

- 15 year Service based Public Private Partnership (2003-2018)
  Value £228M

Delivering Real Time

Strategic HF Radio Services to MoD, NATO, OGD & PfP

- 5 Year initial Phased Capability Enhancement Program (2003-2008)
  - Technology Refresh (Primarily ALE/ARQ)
  - Common Control System (Integrated Voice & Data)
  - Centralised Operation

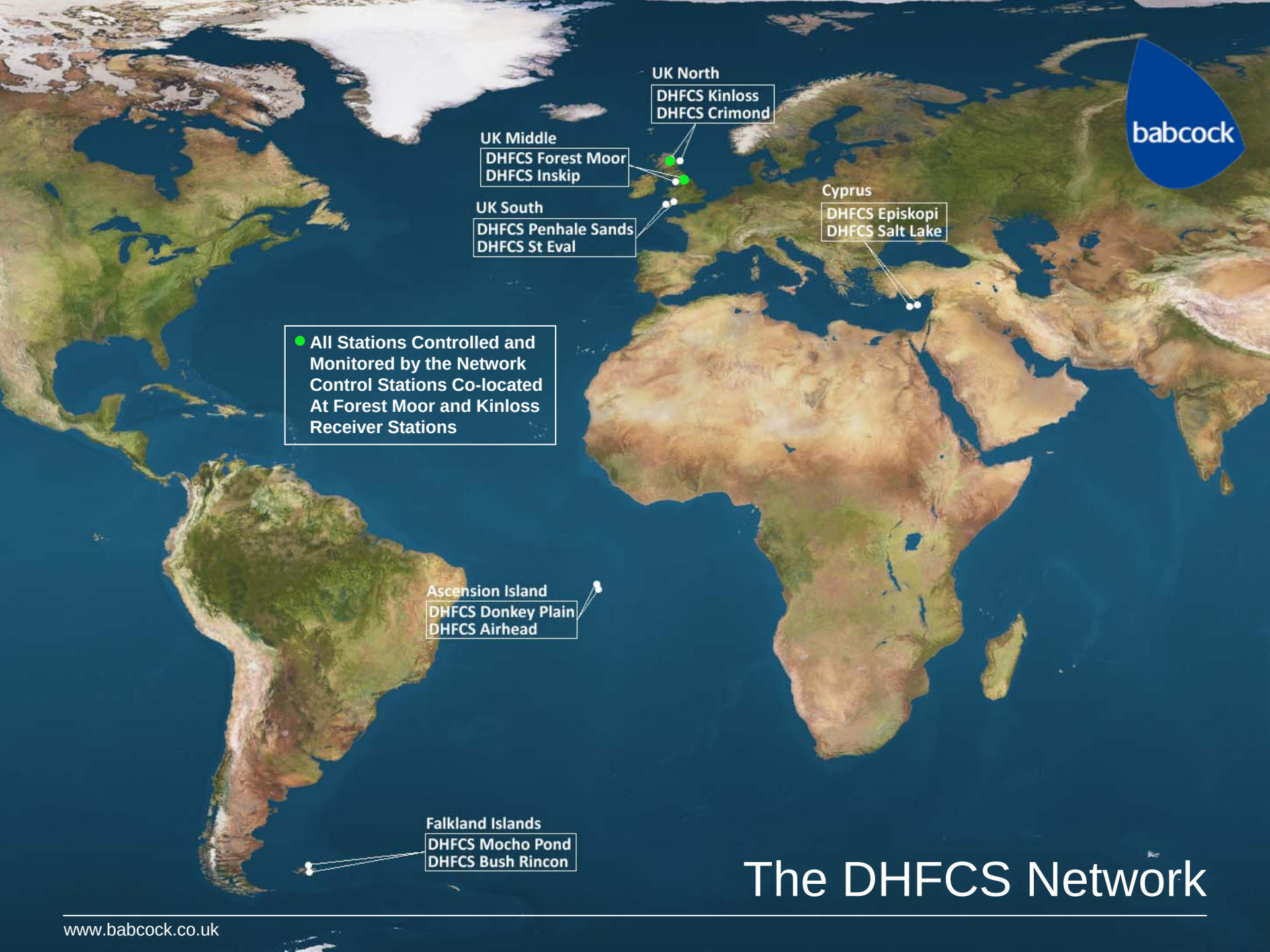
  All enhancements done whilst delivering Services in parallel.

- Service Delivery Based Contract
  - All risk for delivery with Babcock (tied to “pay/performance mechanism”)

UK MoD DHFCS Strategic HF Requirement

- Provide compliance with NATO BRASS Program
- Centralised Control, Operation & Delivery of all High Frequency Audio / Voice / Data Services in the UK and OVRS.
  - Operation & Maintenance of LF Service
- Amalgamation / Upgrading of Legacy RN & RAF Infrastructure & Control Systems / Technology Refresh
- To meet UK SDR for a normal Peacetime Day plus 6 small scale deployments based upon IER's as agreed by HQ Land, Air, Navy Command, PJHQ and NATO
- Provide a suitable vehicle to enable UK Defence to exploit advances in HF technologies and waveforms now and in the future

The DHFCS Network & Team

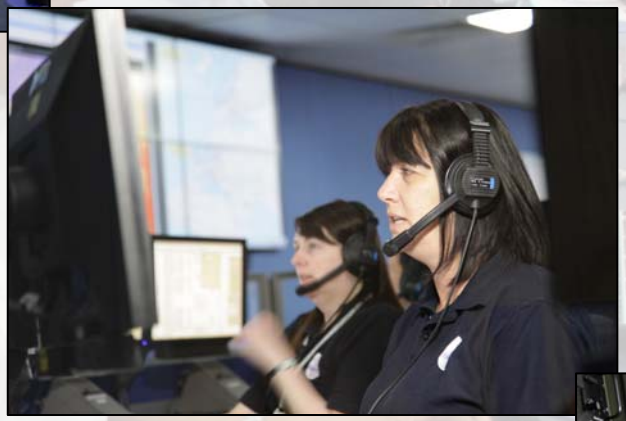


The DHFCS Network

DHFCS – The Team

Operations:

- Head of Operations
- Senior Service Delivery Manager
- GOSCC Liaison Manager



- Project Officers x 2
- Shift Leaders x 5
- Deputy Shift Leaders x 5
- Shift Operators x 24

Engineering / Logistics:

- Head of Engineering
- Dep Hd Engineering
- Station Managers x 7

- Deputy Station Manager x 7
- Engineers / Riggers / Electrical
- Administrative
- General Support Staff

70

Operational Support - Users & Services

The Users

Submarines:
Vanguard Class Sub x4
Astute Class Sub x5
Trafalgar Class Sub x6

Ships:
Assault Ships x4
Type 45 Destroyers x6
Type 42 Destroyers x2
Type 23 Frigates x13
Hunt Class MCMV x8
Sandown Class MCMV x7
Ice Patrol / Survey x6
River Class x4

Royal Fleet Auxilliary:
RFA Tankers x5
RFA Stores x3
RFA Landing Platform x3
RFA Casualty Ship x1
RFA Forward Repair x1

Helicopters:
Lynx
Merlin
Sea King ASAC
Sea King Mk4
Sea King Mk5
Wildcat

Future Ships:
Aircraft Carrier x2
Type 26

Aircraft:
E3-D Sentry AEW1
Sentinel R1
C17A Globemaster
Hercules C1/C3 (K)
Hercules C4/C5 (J)
Tristar
VC10
Airtankers
Civilian Trooping Flights
NATO MPA (Orions etc)

Helicopters:
Chinook
Merlin
Sea King
Puma

Helicopters:
Chinook
Lynx
Wildcat

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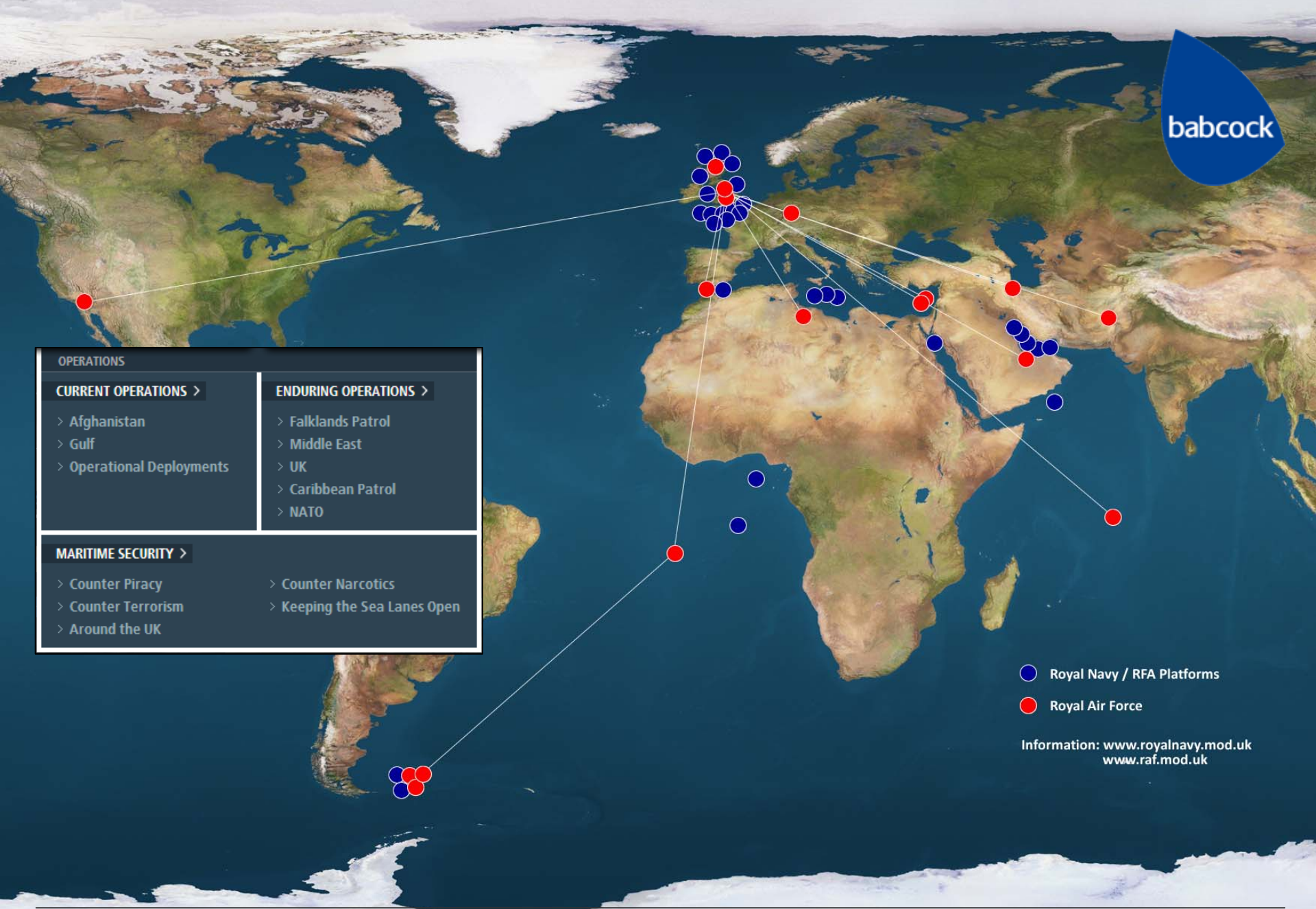
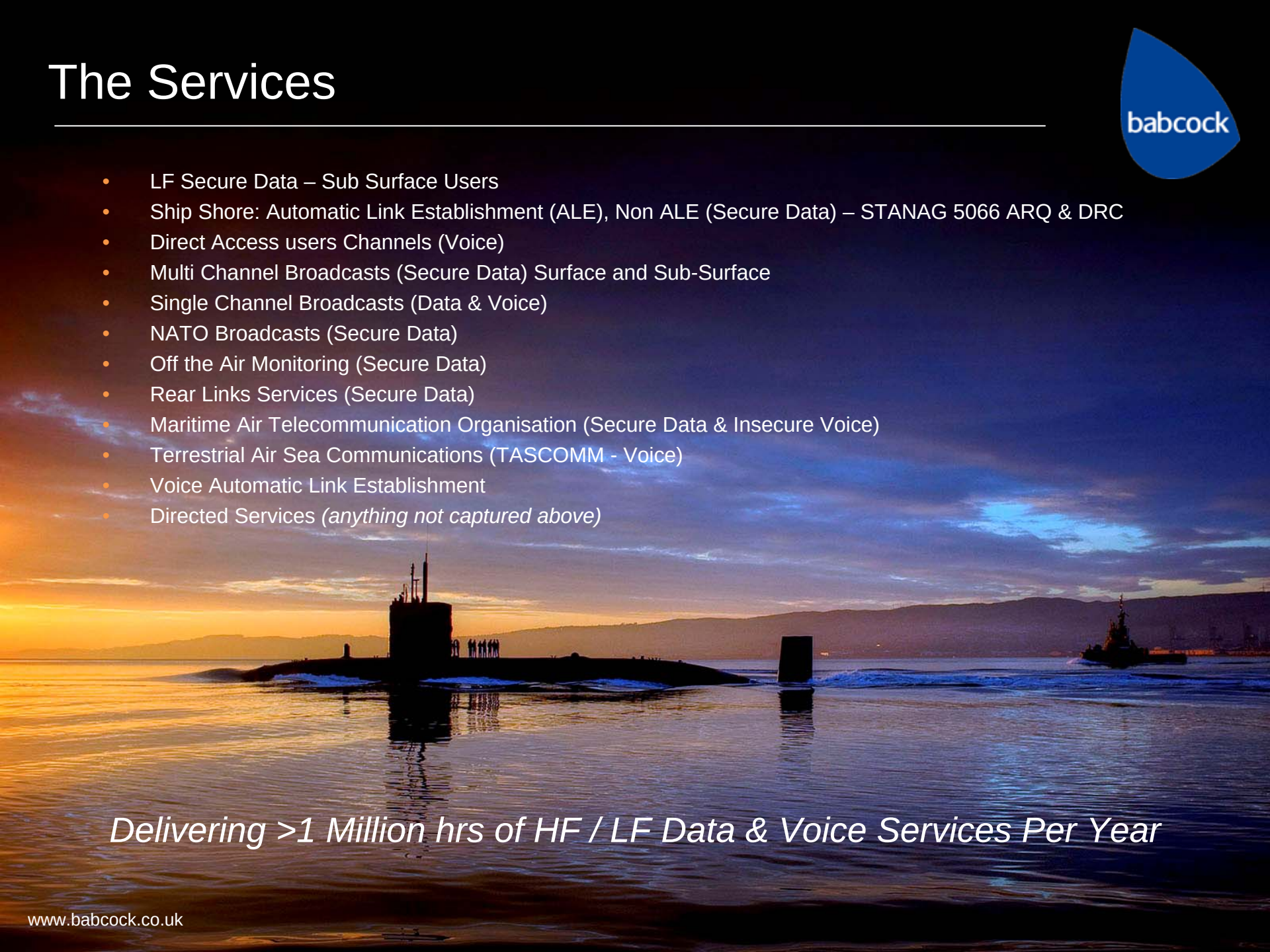


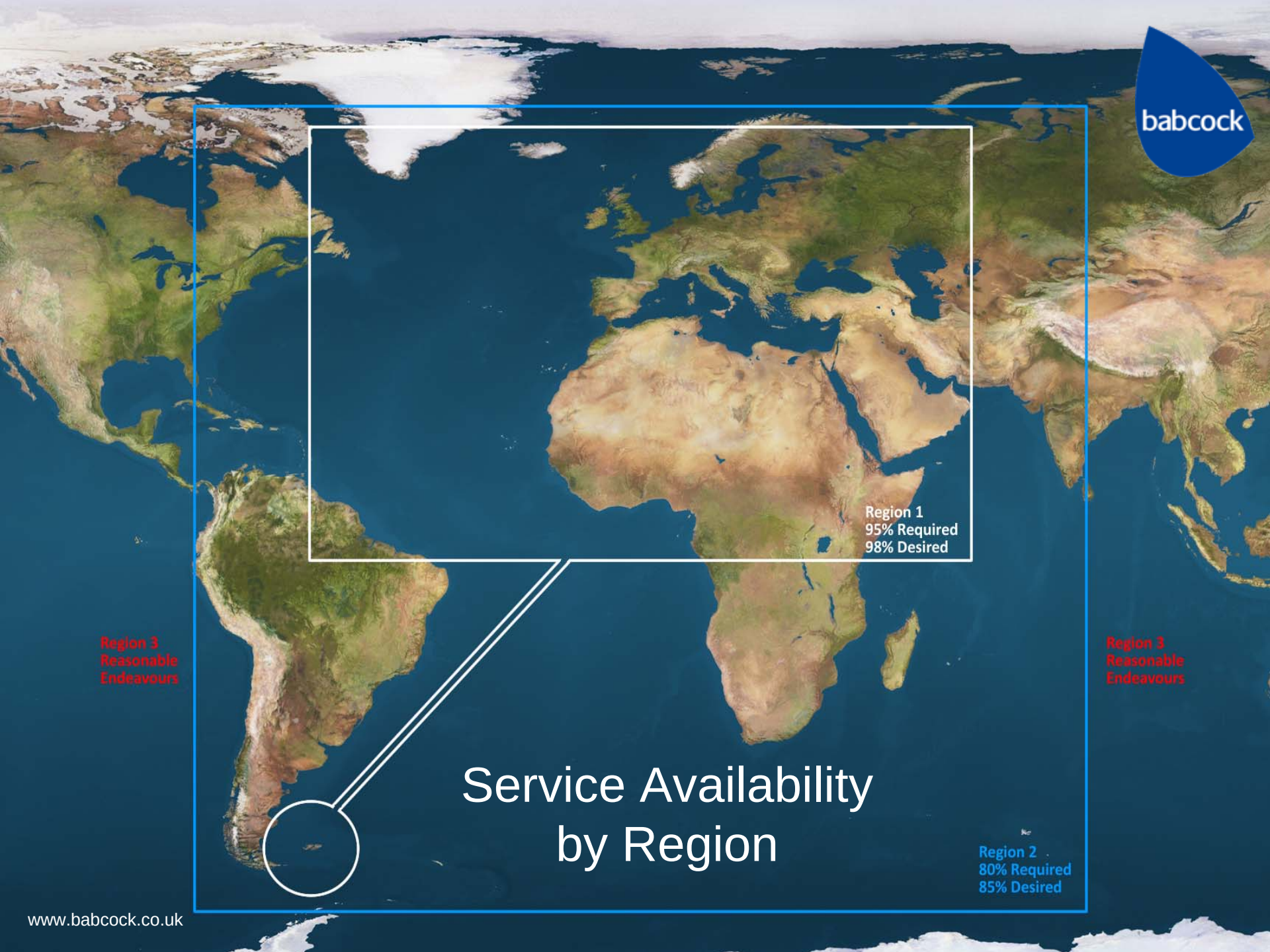
DHFCS Support - 31st August 12

The Services

- LF Secure Data – Sub Surface Users
- Ship Shore: Automatic Link Establishment (ALE), Non ALE (Secure Data) – STANAG 5066 ARQ & DRC
- Direct Access users Channels (Voice)
- Multi Channel Broadcasts (Secure Data) Surface and Sub-Surface
- Single Channel Broadcasts (Data & Voice)
- NATO Broadcasts (Secure Data)
- Off the Air Monitoring (Secure Data)
- Rear Links Services (Secure Data)
- Maritime Air Telecommunication Organisation (Secure Data & Insecure Voice)
- Terrestrial Air Sea Communications (TASCOMM - Voice)
- Voice Automatic Link Establishment
- Directed Services *(anything not captured above)*



Delivering >1 Million hrs of HF / LF Data & Voice Services Per Year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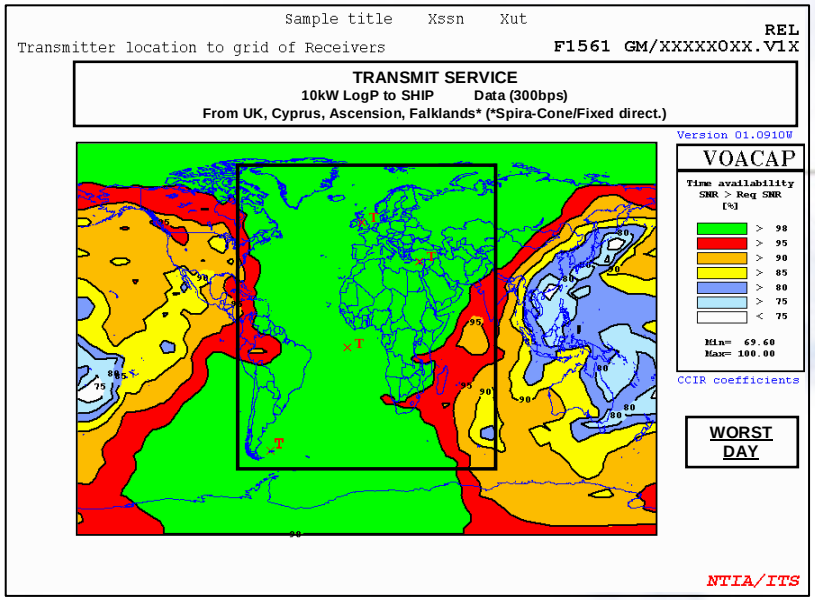
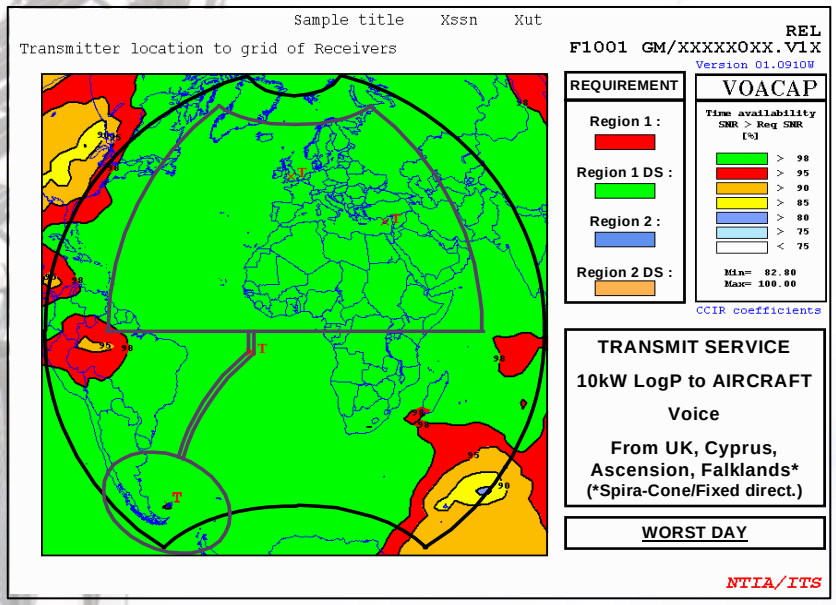
Region 1
95% Required
98% Desired
Region 3
Reasonable
Endeavours
Region 3
Reasonable
Endeavours
Region 2
80% Required
85% Desired
Service Availability
by Region
www.babcock.co.uk

DHFCS Availability – Data & Voice (Worst Day)





Region 3 Coverage & MOU

DHFCS - Current Work

System & Security Mid-Life Upgrade

System Security & Accreditation

- "Fireguard" hashing password algorithm currently in use
  - CESG - Obsolete & End of Life - Jan 2013
  - Rollout and Replacement with the "Logfire" algorithm
    - Completion for DHFCS 22nd Oct 2012

Operating System

- DHFCS Currently Operating on Windows 2000
  - MS Support ended July 2010 – DHFCS exposed to vulnerabilities
  - 3rd Party Software support could be discontinued

- Faster CPU's / increased memory on later OS (Windows 7 etc)
  - Need to address / upgrade hardware

System & Security Mid-Life Upgrade Cont'd

Options:

- **Hardware & Software Upgrade**
  - Upgrade to Windows 7
  - Upgrade PC's (Higher performace / better memory)
    - Not all 3rd Party Software Win 7 compliant
    - Possible issues with additional bandwidth
- **Virtualisation and Emulation**
  - Upgrade to Windows 7 (emulation of Win2000)
  - Upgrade PC's
  - Virtualisation where possible
    - Issues to be identified in study

Support to Italy (NATO)

NATO through MoD - requested Babcock to provide:

- X3 Broadcasts
- X3 OTAMS (Off the Air Monitoring Service)
  - Period of Support - 18 Months
  - Mediterranean / Black Sea / East of Suez
- DHFCS Sizing and Propagation Analysis Completed
- Babcock proposal with NATO

HF Advanced Diploma

- **BTEC Advanced Diploma in Telecommunications**

Qualification designed and delivered by Babcock Defence Communications, Accredited by BTEC.

- "HF" Orientated Curriculum:
  - Operators Diploma
    - » 1 Yr of Study
  - Engineers Diploma (Engineering Biased)
    - » 1 Yr of Study

Message Handling Systems

- **Replacement of Compucat (Ratheon) CMX MMHS**

- Rationalisation & Replacement Investigation ongoing:

  - 4406 Compliant System
  - Broader range of Service Offerings

    - X.400 Gateway
    - Strategic E-Mail
    - IP Gateway
    - Military Messaging (Annex E)
    - Maintain ability to provide ACP127

UK – US Memoranda of Understanding

- Implement the UK (MoD) / USA (DoD) Data Information Agreement (IA)
  - Improved Reach into DHFCS “Region 3”
  - Requirement now formally stated by US DoD
  - UK MoD formalising Business Case
    - 2 Data Services UK to US
    - 2 Data Services US to UK
      - Gateway into US HFGCS via USAF Croughton (Oxford, UK)

The Future

The Future

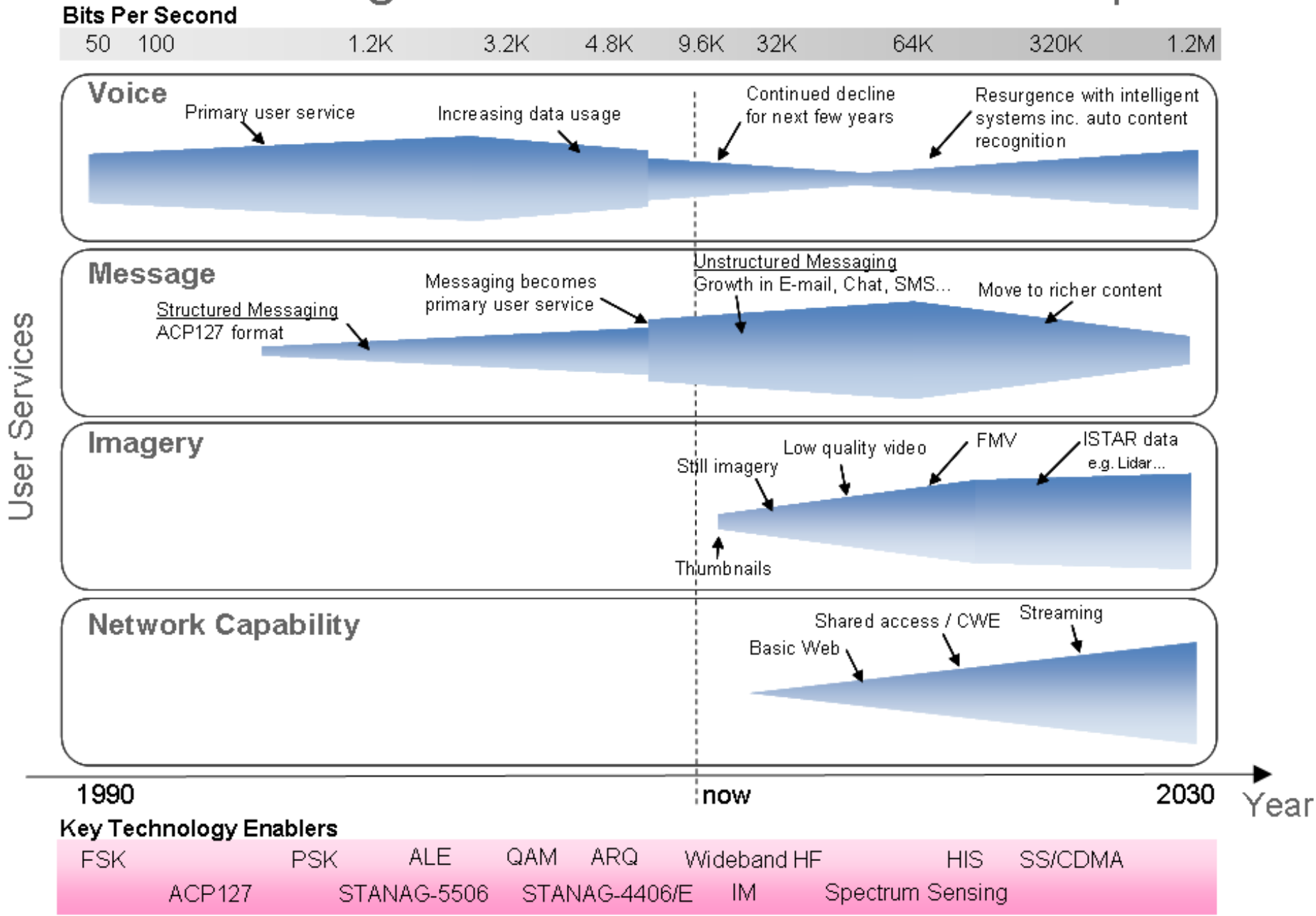
- Continued Resurgence of HF due to:
  - Integral part of C^2 Operations
  - Concern over operating in SAT denied environments
    - Complimentary to existing SAT Services
  - Financial Constraints: HF increasingly attractive.
  - Improving Technology – HF increasingly viable as a Strategic Bearer

- Wideband HF
  - Increased throughput / capacity
  - Balance of **User Requirement v's Cost**
    - Do the same with less infrastructure (Cost Driven)
      - Existing Services delivered
    - Do more with the same infrastructure (User/Technology Driven)
      - B/W hungry applications / technologies / services
      - I/P over HF increasingly attractive (NetCentric Ops)

DHFCS – Future

- Public Private Partnership (PPP) Model – Flexibility
  - Changes to contract are possible:
    - Addition / Reduction of Services
    - Extension to Contract Length
    - Optimisation of Services
    - New Services
  - Mutual Agreement
- Babcock & MoD working together to ensure that DHFCS is fit for the future.

HF in the Long Term: User Services Roadmap

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Questions ?