Acquisition Support to the Operational Arena

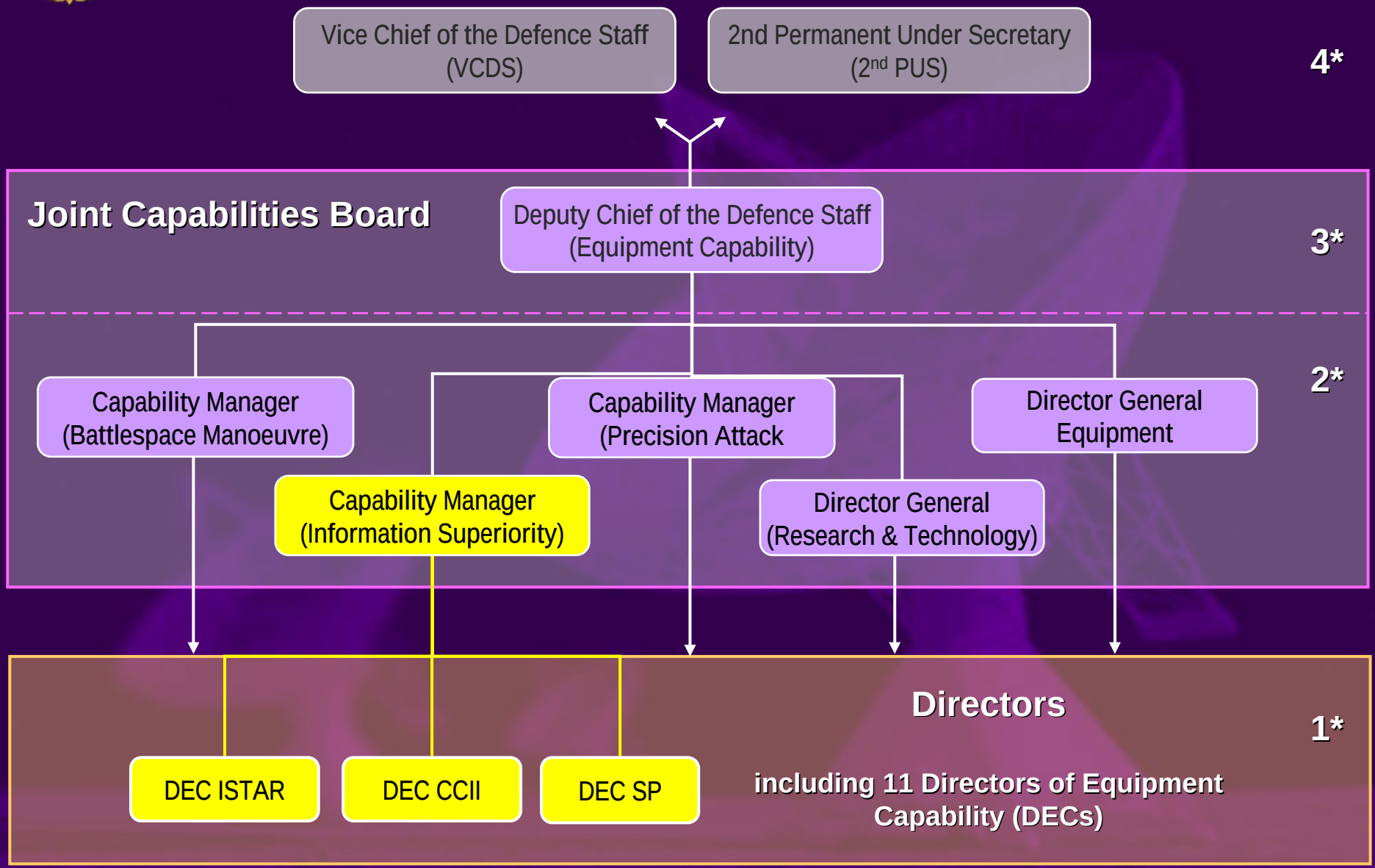
Air Vice-Marshal Stu Butler

Capability Manager (Information Superiority)





Equipment Capability organisation



Scope

1 Technical context
- CM Challenges
- Core Networks
- Information and C2
- Challenges

2 Operational context
- Deployments
- Lessons from Iraq
- Afghanistan – ISAF challenges

3 Organisational context
- Evolving acquisition environment

Parting Thoughts and Questions ?





The NEC Challenge
A *VERY* Personal Perspective!!

- Across all LoDs
- Appropriate Governance
- In Balance with other Defence Needs
- Responsive to Sector Limitations
- Realistic and Measurable

- What does this look like ?
- How much is enough ?
- How do we know when we have got there ?
- How do we measure how far away we are ?

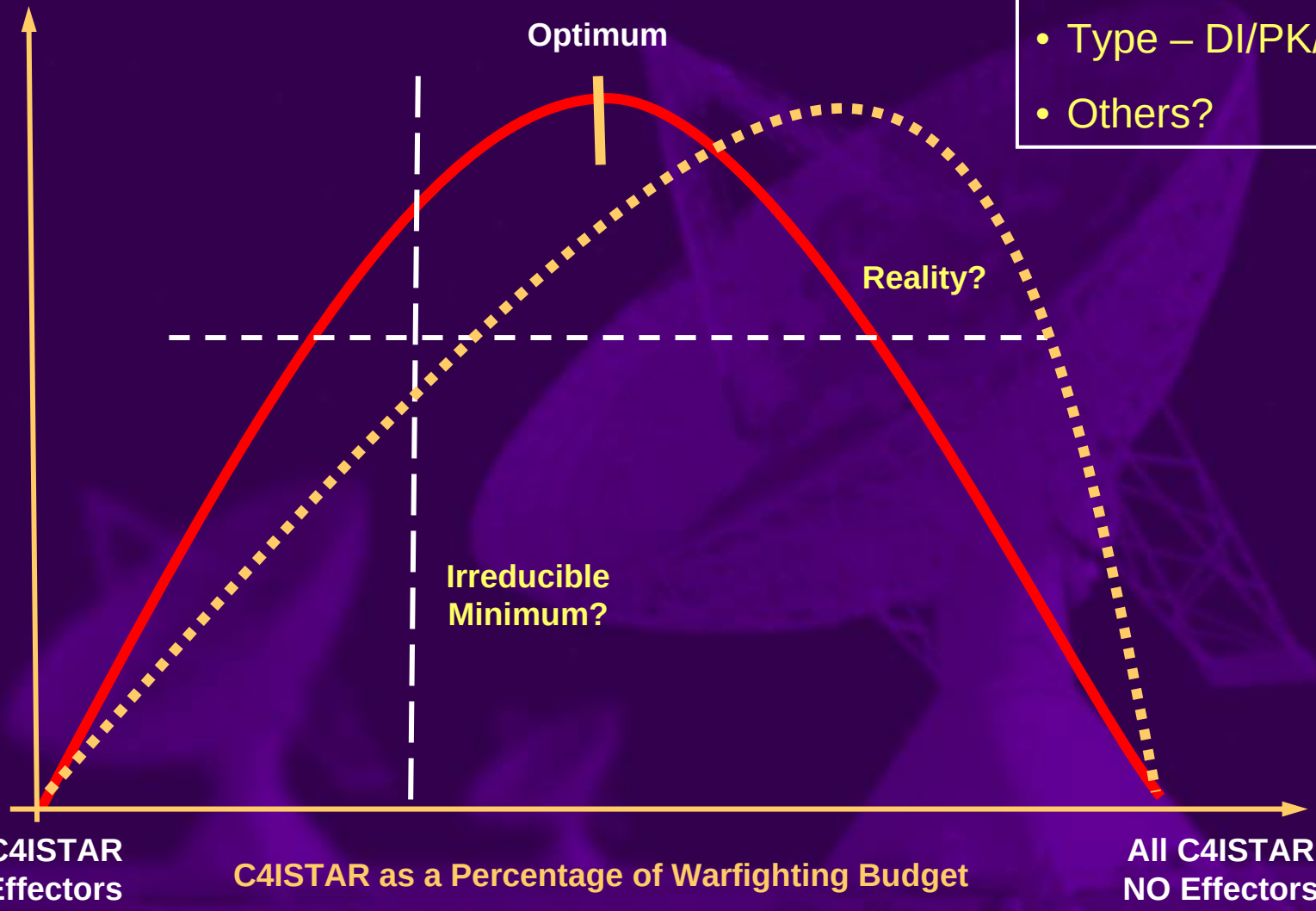
Current Position

Blueprint / Roadmap

Network Enabled Capability

C4ISTAR Balance

- Theatre
- Type – DI/PK/PE etc
- Others?



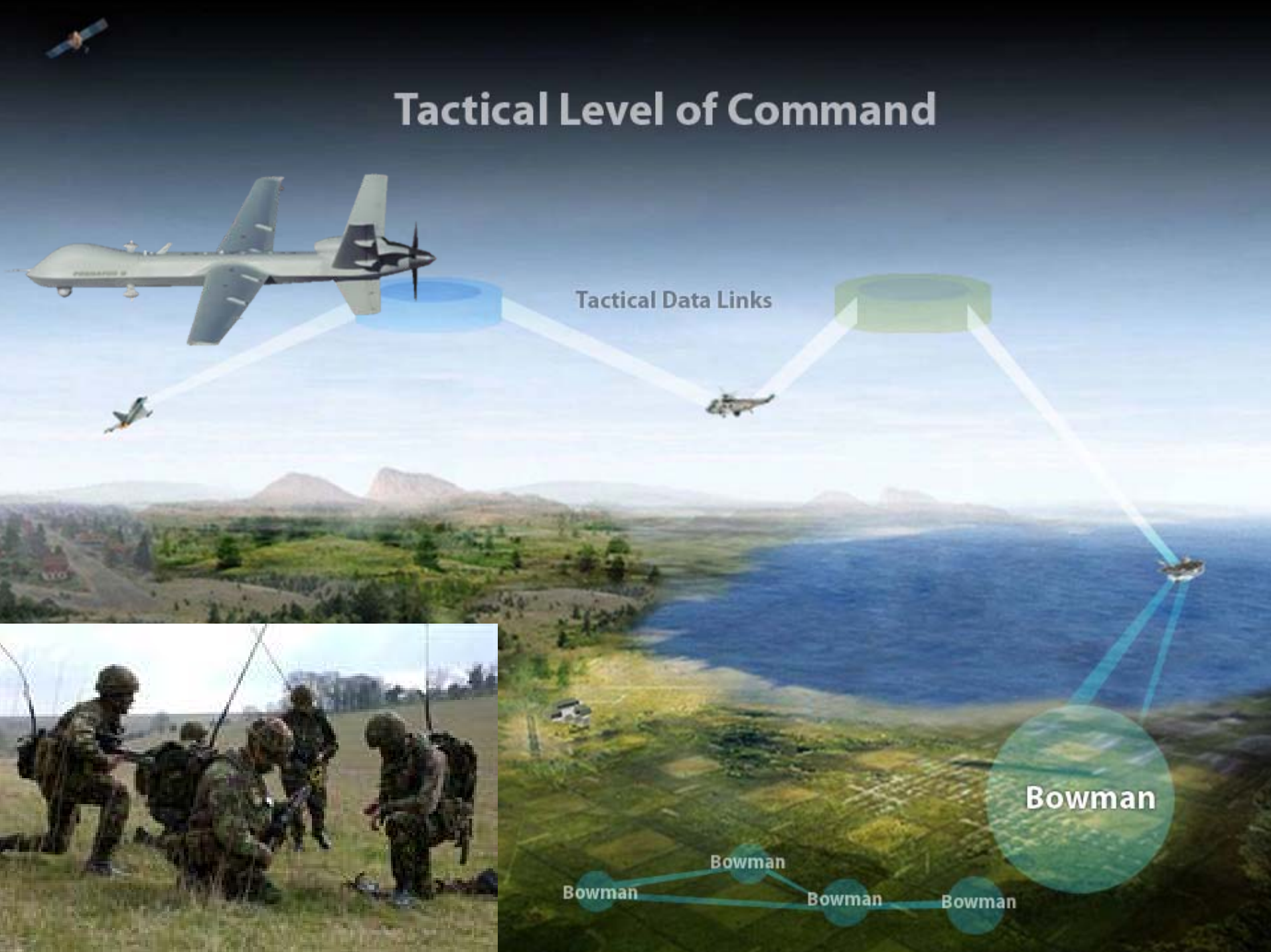
1. Technical Context

Technical | Operational | Organisational | Discussion





Tactical Level of Command



Tactical/ Operational Level of Command

Tactical Data Links

Cormorant
LCC
JF Log CC

Ptarmigan/
RTTS/ DLAN/
FALCON

Bowman

Bowman

Bowman

Bowman

Bowman


Operational/ Strategic Level of Command
SK5
DFTS
Tactical Data Links
Ptarmigan/
RTTS/ DLAN/
FALCON
Cormorant
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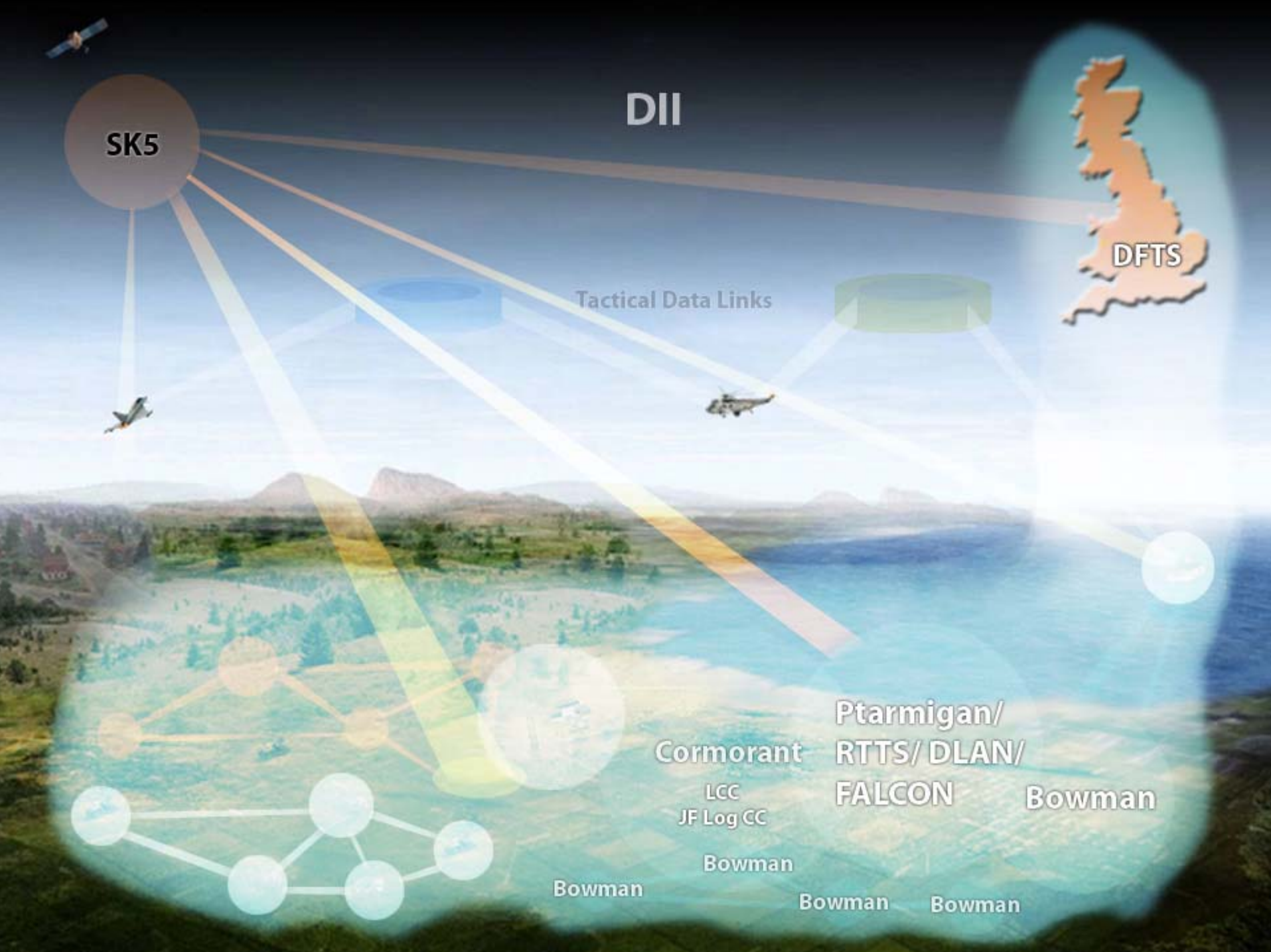
DII
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Bowman
Bowman
Bowman
Bowman
Bowman

Core Networks – post 2012

Requirements:

- Resilience
- Single information domain
- Universal dialling schema
- Interoperability with Allies and Coalitions

- Converge 5 networks over 6 years

Bowman – Cormorant – Falcon - Reacher

DII





Vision

Seamless End-to-End Command Information System

- One general purpose network based on IP
- Single Network Security Architecture
- Single family of Joint CBM applications (JC2SP)
- One managed, globally accessible information domain
  - Move to one Joint Operations Picture (JOP)
  - Service Orientated Architecture
- Open architecture, mandated standards
- Coherent Joint and Coalition interoperability (eg: MNIS)

Design for Integration – not Integration of Designs





Netcentricity – smart approach

- Smarter use of information
  - Collect what's needed….
  - Once….
  - Use info many times
- Information Management:
  - Push to where info is required – not everywhere
  - Avoid "Information Overload"



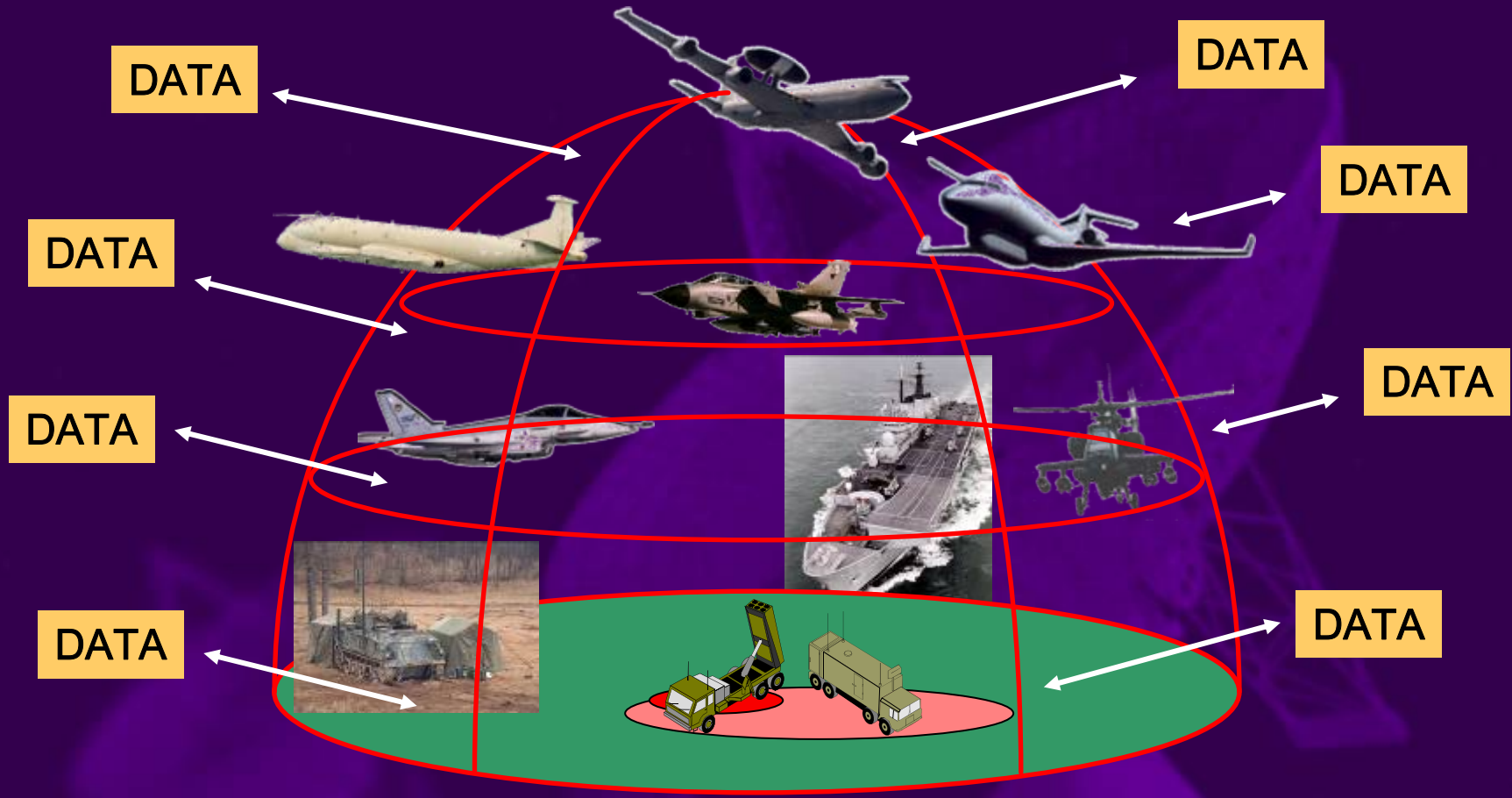


Challenges





Complex Battlespace



Networks – Key Challenges

- Latency
  - What are the requirements
- Affordability
  - What footprint can we afford?
- Infrastructure capacity
- What is the availability/reach of bearer systems
  - REACHER, BOWMAN, FALCON, CORMORANT etc
- Network capacity





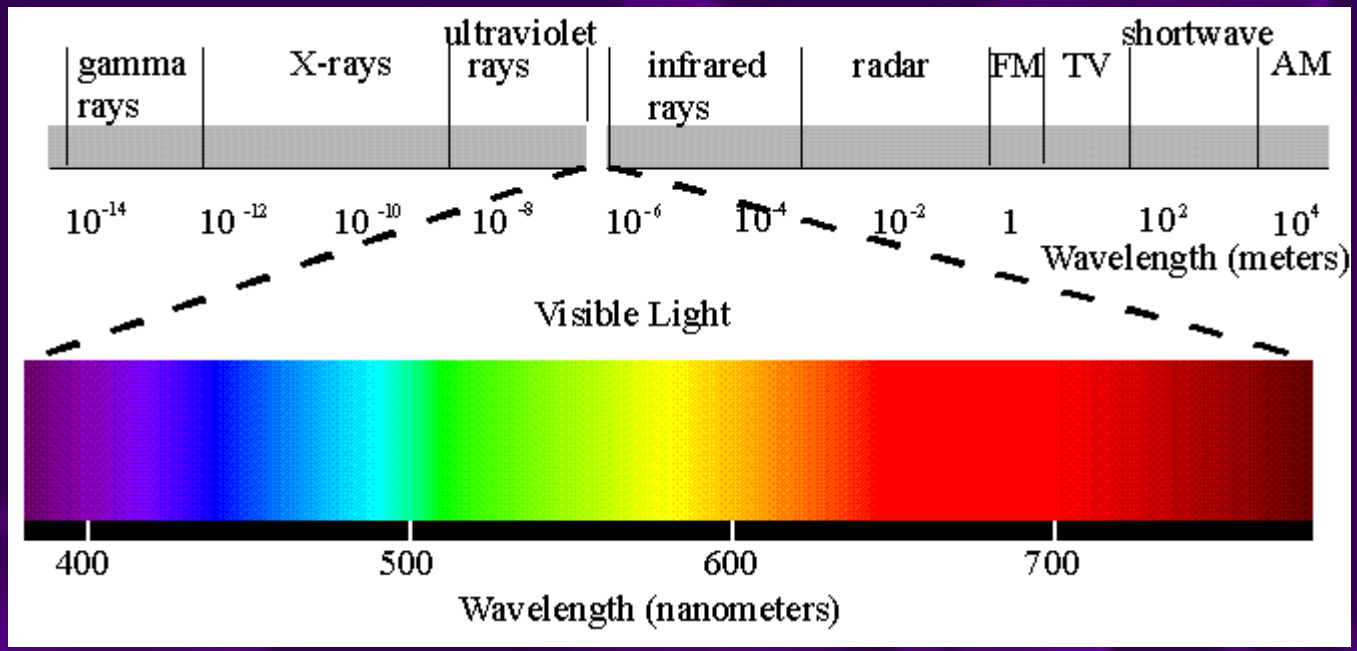
Network Infrastructure

DATA

BANDWIDTH

Network Capacity

- All very well providing additional capacity, but…



E-M Spectrum is also a finite resource

Spectrum Demands - Military

- Military making bigger demands on Spectrum
  - Bowman, HCDR, CDLs, UAVs, CID, IBS, DBS…
  - Wide band waveforms
- Increasing use of commercial solutions:
  - Ku-band VSATs in Middle East and Afghanistan
  - Control and visibility become a problem
  - Landing rights for frequencies
- Battlespace Spectrum Management:
  - Increased challenge
  - Manage nationally and across coalitions
  - Needs to become more dynamic – temporal allocations





Spectrum Demands – Civil

- Spectrum challenge not made any easier by civil community
- Increased pressure on frequency bands
  - Telephony: GSM, GPRS, 3G
  - Media: terrestrial DTV, satellite TV, DAB radio
  - PMR: civil authorities, commercial sector
- UK Govt under pressure to release more spectrum to commercial / civil sector

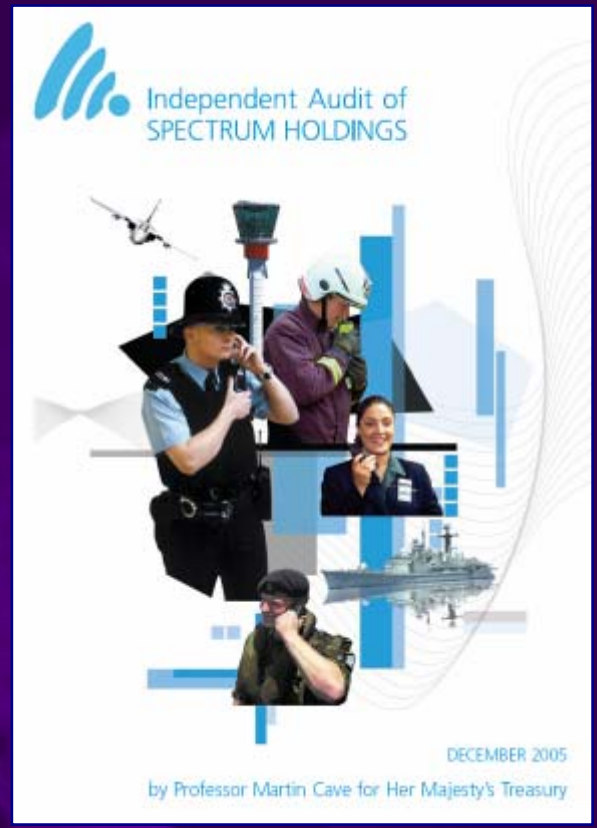




Future MOD Spectrum Use

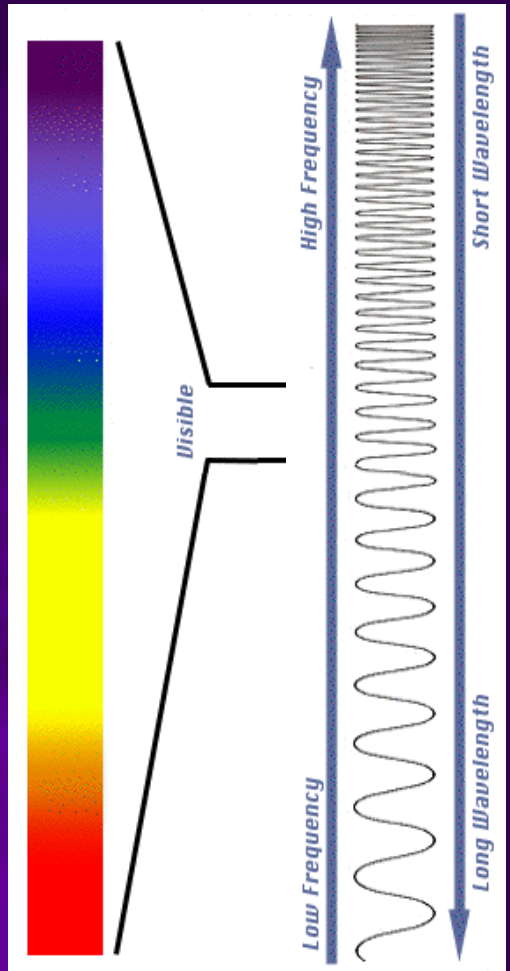
Cave Audit (2005) showed:

- MOD control 33% of total spectrum
- MOD control 75% spectrum below 15 GHz
- MOD pays £55M/yr (2005)
- Demand to exceed supply by 2025



Spectrum Demands - Solutions

- We would like to purchase another E-M Spectrum !
- Need to get smarter:
  - Better use of technology
  - Get better at Information Management



IPv6 - intent

- Decision on transition to IPv6 due Jan 07
- Aim:
  - start IPv6 transition Jan 07
  - complete in 2012-14 timeframe
- Base on an “Evolutionary Approach”
  - a gradual and pragmatic managed change
- MOD intends to Programme Manage IPv6 transition
- Perceived Operational benefits:
  - IP ubiquity
  - Mobility
  - Network operability
  - Ease of Deployment
  - Security
  - Flexibility

2. Operational Context

Technical | **Operational** | Organisational | Discussion





Operational Deployments

1	Iraq	6	Tampa	11	UN - Sudan
2	Bosnia	7	UK MCC Bahrain	12	UN - DRC
3	Kosovo	8	S Atlantic	13	UN - Georgia
4	Afghanistan	9	Diego Garcia	14	UN - Liberia
5	JFACC	10	Cyprus	15	UN - Cyprus

Lessons Identified from Iraq

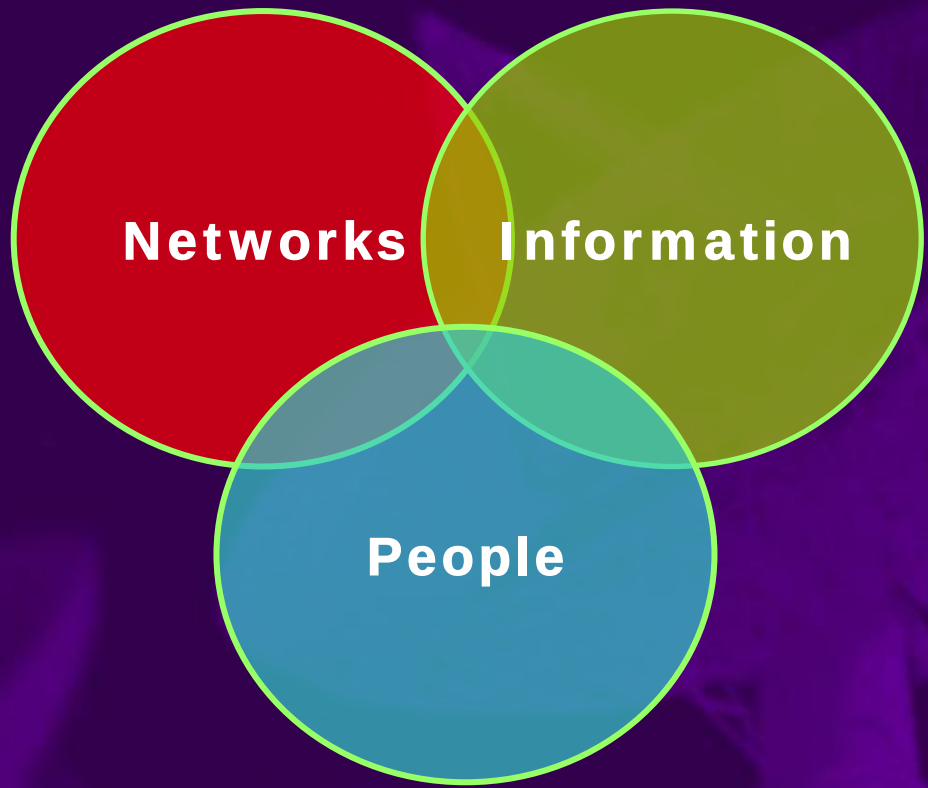
- Necessity for Shared Situational Awareness
- Better exploitation of Intelligence
- Better Information Management
- Provision of Joint Fire CIS
- Improved interoperability and resilience of CIS
- Importance of People and Training

Better C4I through better Net-centricity





Network Enabled Capability



Optimising the ‘kernel’ of NEC for Effects Based Operations

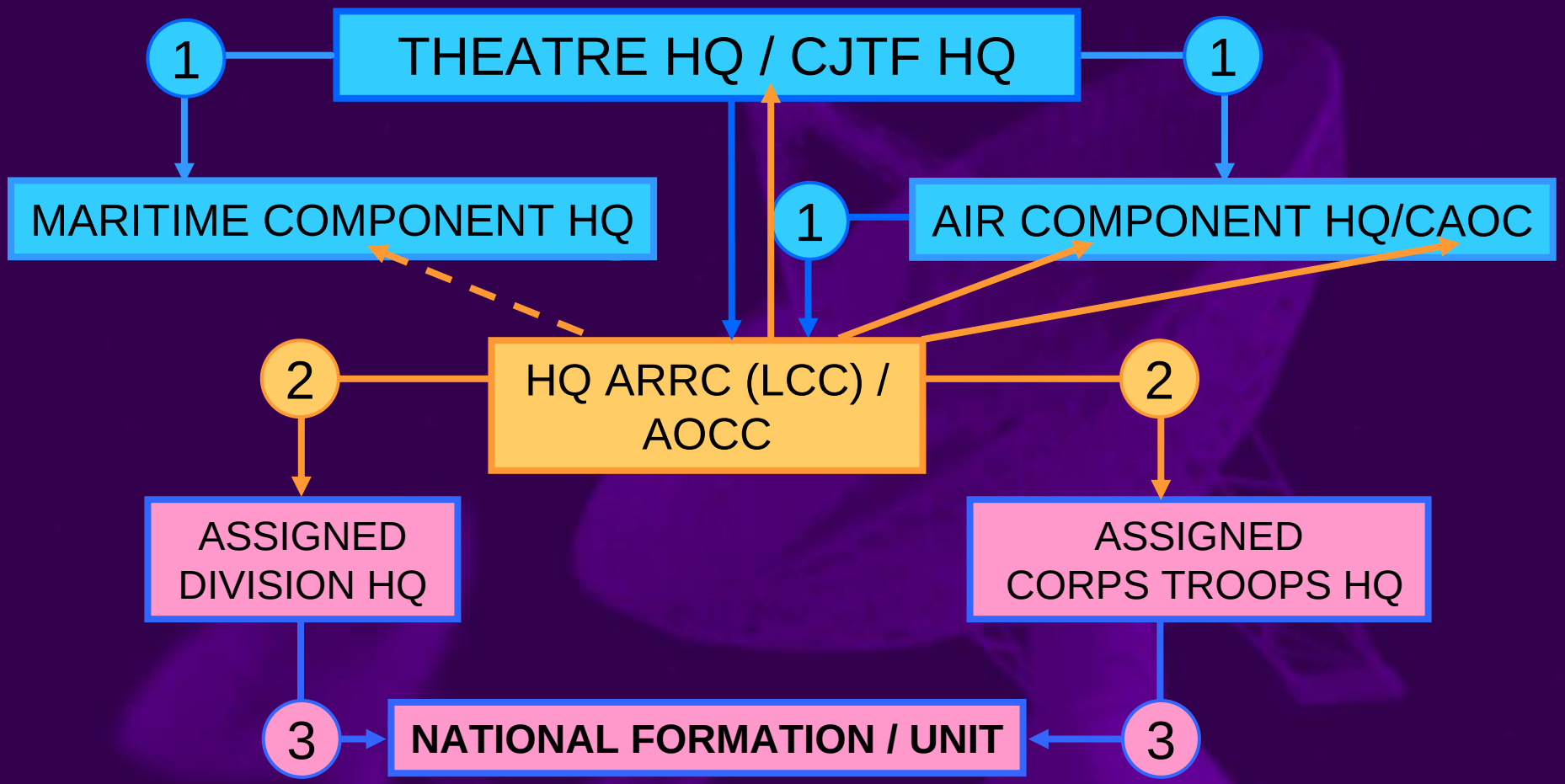
Op HERRICK
Afghanistan

- UK contributing nation to ISAF
- Stabilisation of Afghanistan
- Reconstruction of nation
- Counter narcotic operations

ISAF Challenges

- C2 of NATO led, multinational ISAF operation is a challenge in itself

CIS Responsibilities



Information Management

3. Organisational Context

Technical | Operational | Organisational | Conclusions





Evolving Acquisition Environment

- Defence Industrial Strategy (DIS)
- and now…
- Defence Acquisition Change Programme
  - Enabling Acquisition Change
  - McKane Report

Through Life Capability Management

"An approach to the acquisition and in-service management of military capability in which every aspect of new and existing military capability is planned and managed coherently across all Defence Lines of Development from cradle to grave."





Through Life Capability

- Integration
  - Compliance Assurance – Integration Authority
  - Experimentation
- Incremental Acquisition
  - Affordability
  - Better Integration across other Lines of Development
- Campaign Planning/Programming
  - Roadmap and relationships
  - Joined Up Programmes – STP/EP Coherence
  - Interoperability
  - RDEL/CDEL Flexibility
- Balance between legacy and new and emerging
  - JOCS versus JC2SP
  - DII versus RNCCS

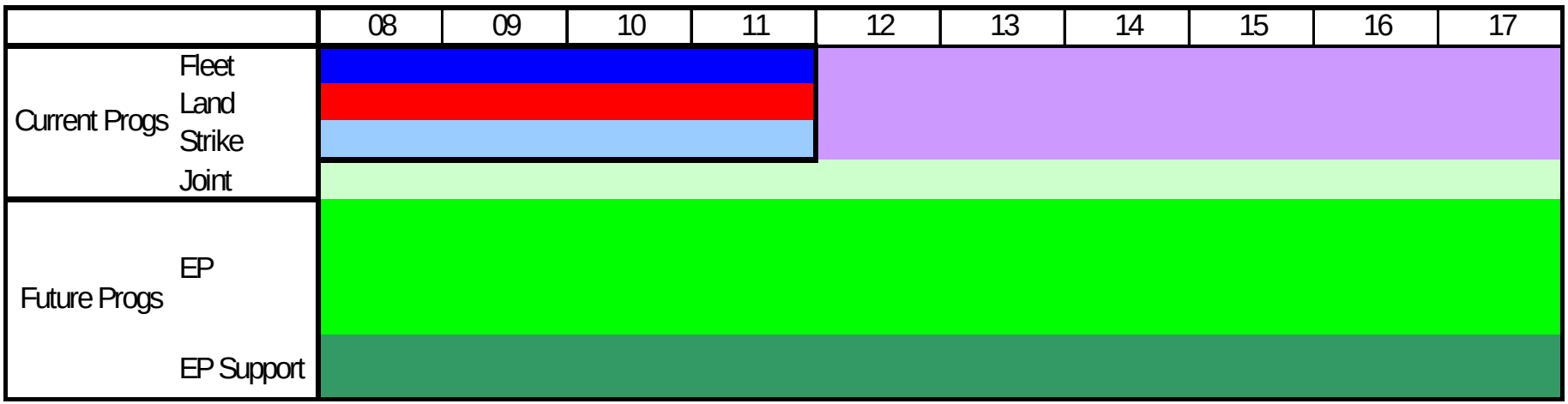




Acquisition Change Programme

DP 08 – The Role of the EC

- DP 08:
  - EP £6Bn + STP £7.5Bn = DP £13.5Bn approx pa
  - Approx £120Bn over 10 years
  - Single biggest budgetary span in MoD



What will be different ?

- We will be able to take a better view of what we can afford, and allow us to plan for new military capability in the round.

- In-service costs will become a greater focus of attention when we decide what to buy. As we plan with industry for its support from the outset, we will be able to provide improved capability for our Armed Forces, and get the best value for money for the tax-payer.

- As we organise ourselves to buy and support our equipment in a more joined-up way, industry too will see advantages in reshaping the way it organises itself to support the national defence effort.





Final Thoughts

Technical → **Operational** → **Organisational** → ?





The Ultimate C4I Goal ?

Questions