

A background graphic of a network diagram with white nodes and lines on a light blue background, transitioning to a darker blue horizontal band.

# **Naval Strike Network:**

## **Ensuring data coherence across systems**

**Lieutenant Colonel Mike Macdonald RM**  
**NSN Programme Director**

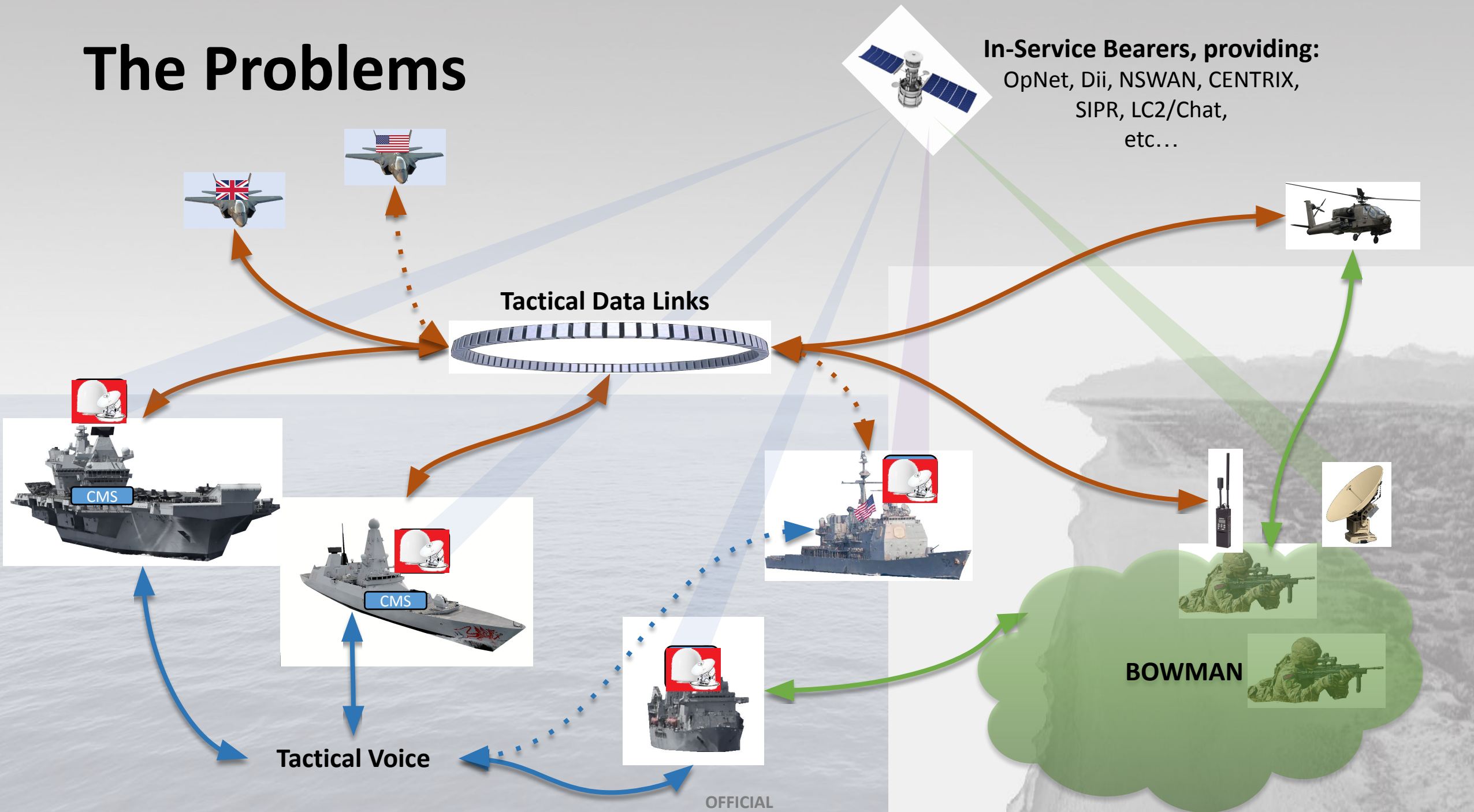
# Key Topics

- **Adapting current systems to ensure coherent requirements:**
  - Current systems – The Problems.
  - Coherent Requirements – The Challenge.
- **‘NSN Ready’ and the importance of a Design Authority:**
  - What is ‘NSN Ready’?
  - How will the NSN Design Authority operate?
- **Delivering Data Architecture Coherence:**
  - Enabling the Systems of Systems Approach.
- **Experimentation opportunities:**
  - The utility of large-scale experimentation events?
  - The need for targeted, flexible experimentation.
  - Utilisation of persistent experimentation facilities.

A complex network diagram with white nodes and lines on a light blue background. The nodes vary in size, with several larger nodes highlighted by a double-circle border. The lines connect the nodes in a web-like structure.

# **Adapting current systems to ensure coherent requirements**

# The Problems



# Combat Management Systems

- Current CMS is a largely closed system.
- Data passed into CMS via DES.
- Shared Infrastructure:
  - Shared Computing Environment: Hosts CMS.
  - Shared Network Infrastructure.
  - Common Consoles.
- In-Service CMS:
  - BAE: T23, T45, QEC, LPD, MCM, OPVB2.
- Future CMS:
  - BAE: T26.
  - Thales: T31.
- Pj RECODE - Combat Systems DA:
  - Evolve to a more open CMS solution.
  - Managed by a Combat Capability Delivery Authority.

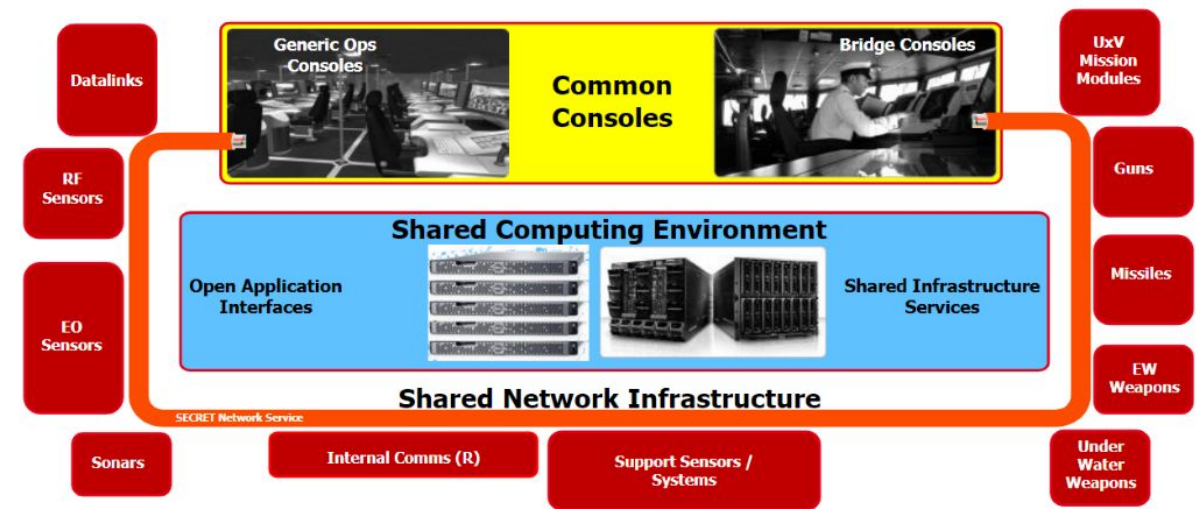


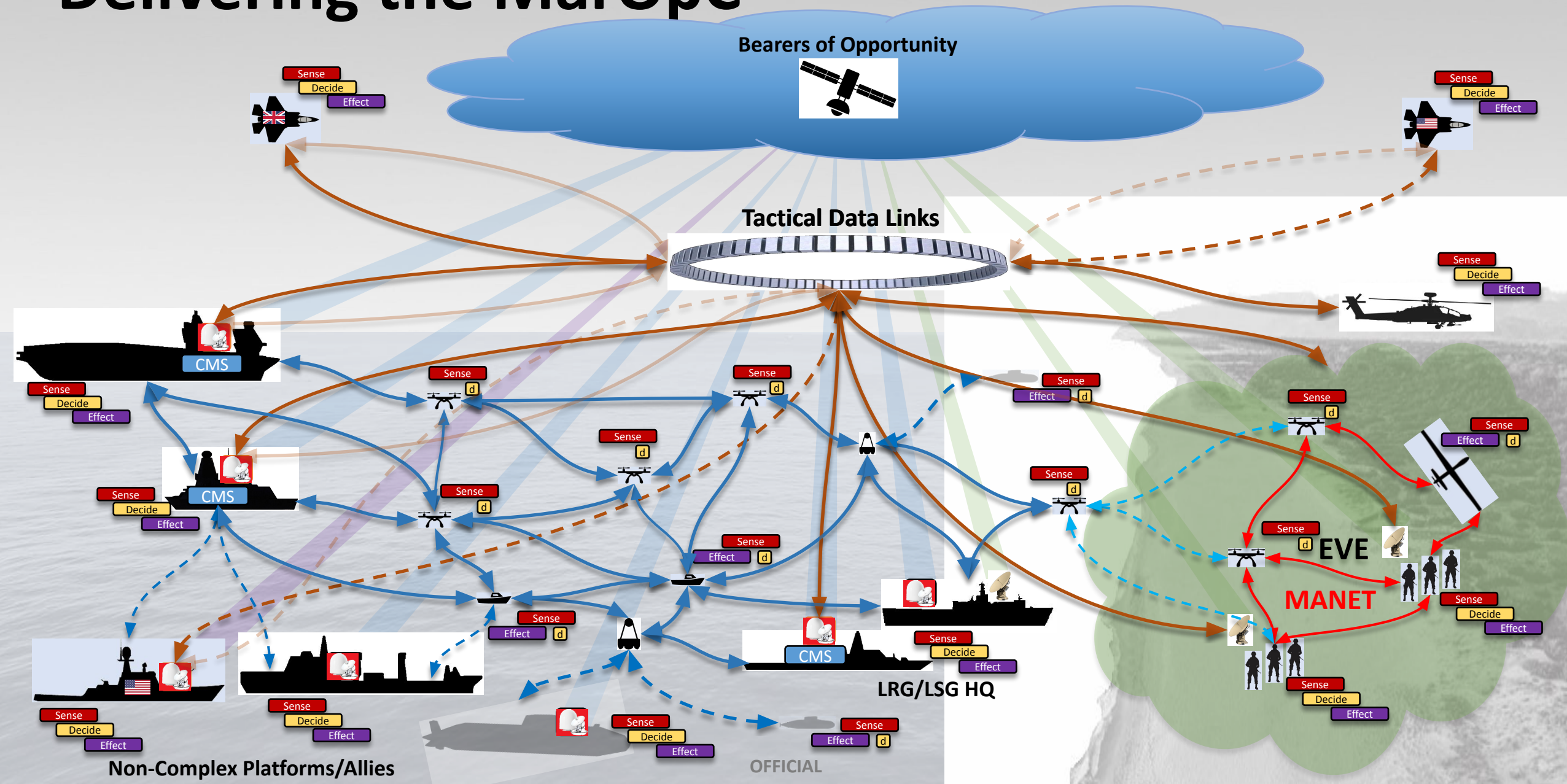
Figure 2: SI Vision

# So What?

- A brown-field mix of stove-piped networks and CMS.
- Operational connectivity primarily voice or TDL.
- Limited Interoperability at lower levels.
- **Rapidly changing Technical context:**
  - Increased demand for C5ISR evolution.
  - Rapid introduction of new technologies.
- **The MarOpC demands a more flexible solution.**
- **Enable the transition to SOSA/Fight Integration...**



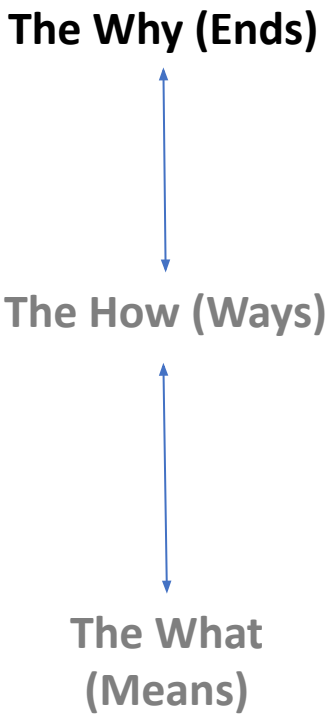
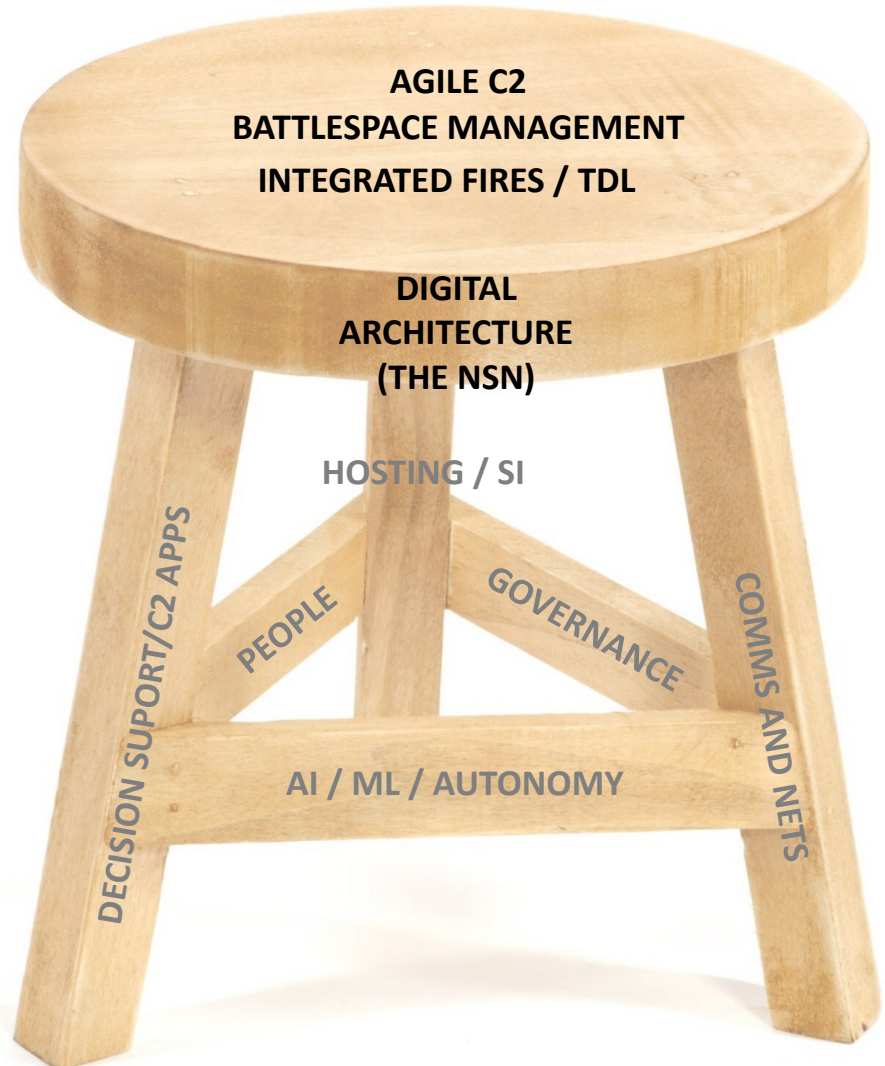
# Delivering the MarOpC







# Delivering a Coherent Strike Net



A complex network diagram composed of numerous white circles of varying sizes connected by thin white lines, set against a light blue background. The diagram is centered horizontally and spans most of the width of the slide.

# **'NSN Ready' and the importance of a Design Authority**

# Building the Concept of 'NSN Ready'

Continuous Iteration and refinement

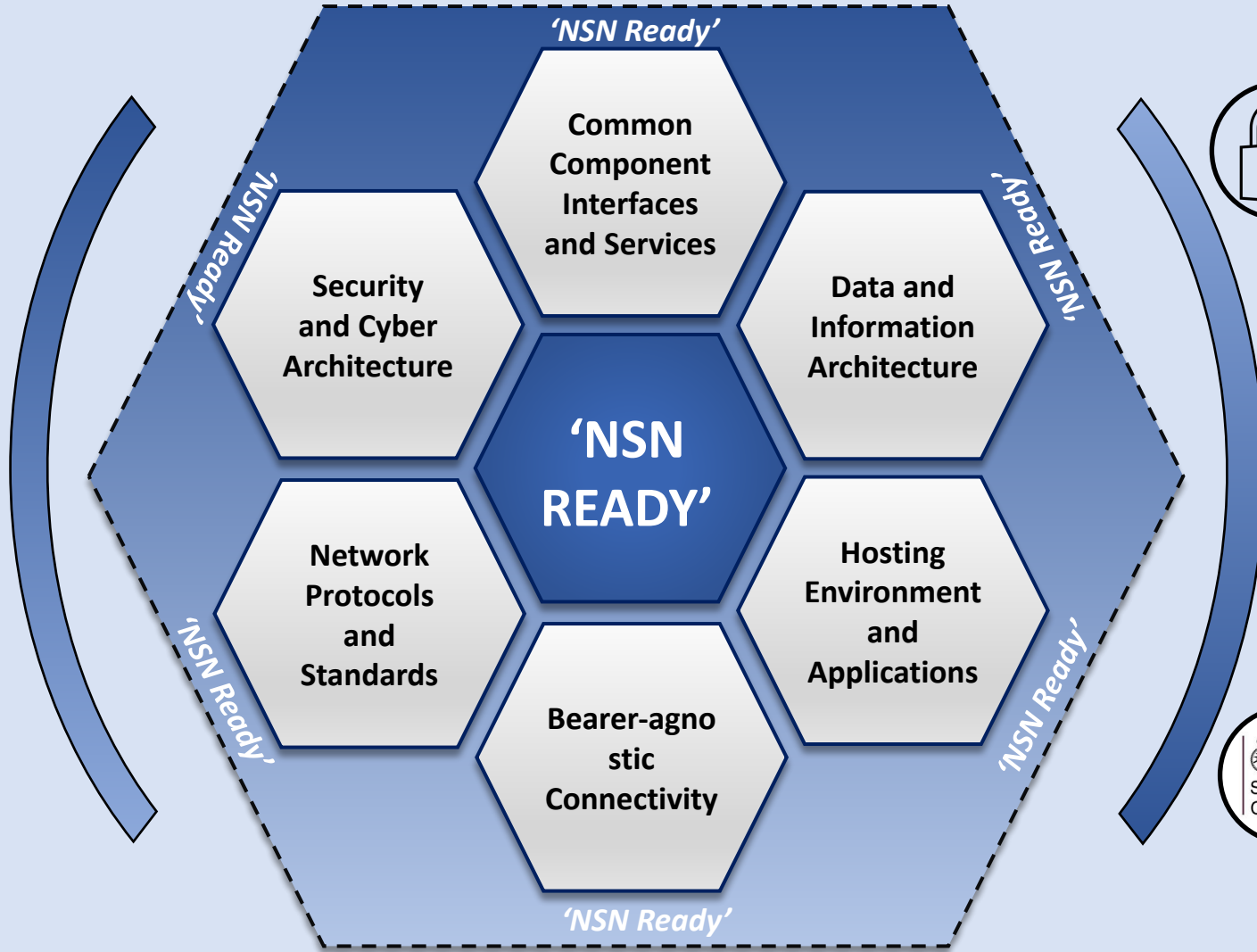
Not a traditional **System** or a **Network**...

An **iterative and scalable Digital Architecture**, with compliance recognised with the '**NSN Ready**' tag.

A **Design Authority**, to manage the iteration of the architecture and enforce the '**NSN Ready**' standard.

Engaging with, and Informing the **Key User Requirements** of, other projects and programmes.

Deliver solutions on a **prioritised Use Case basis** icw wider Programme and Project Teams.



Secure and resilient by design



Interoperable with partners and allies



Agile and modular

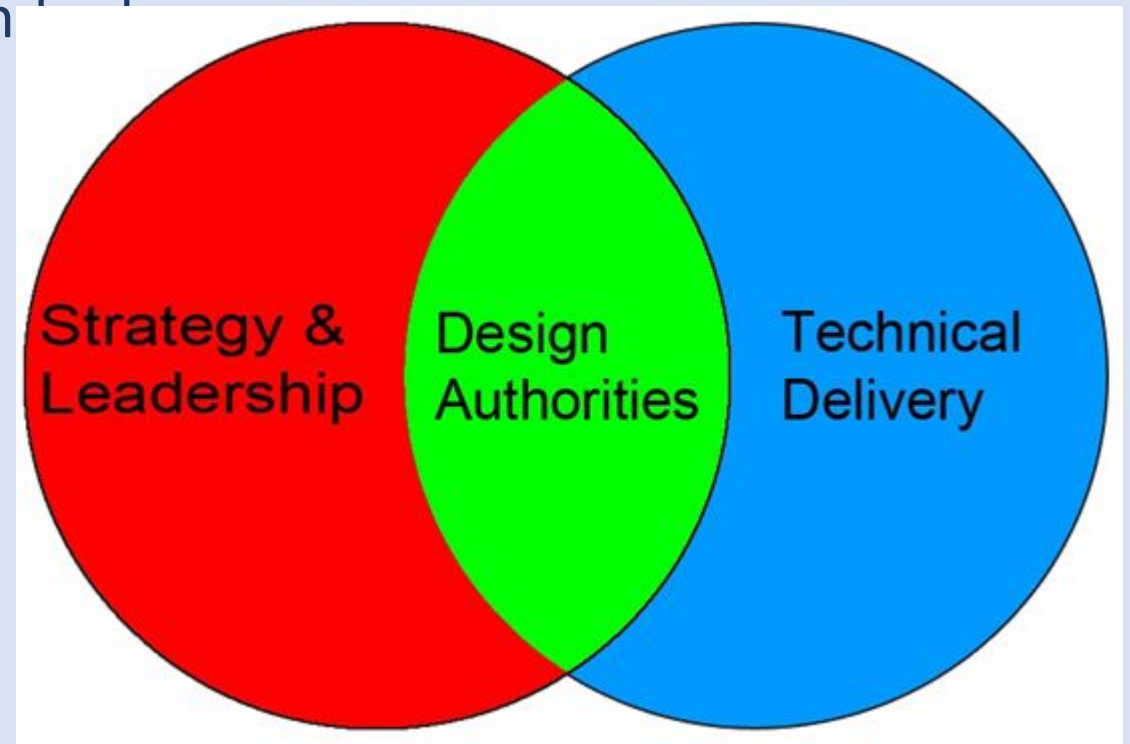


Aligned with Joint thinking

Enabled by experimentation and feedback

# Delivering the Design Authority Function

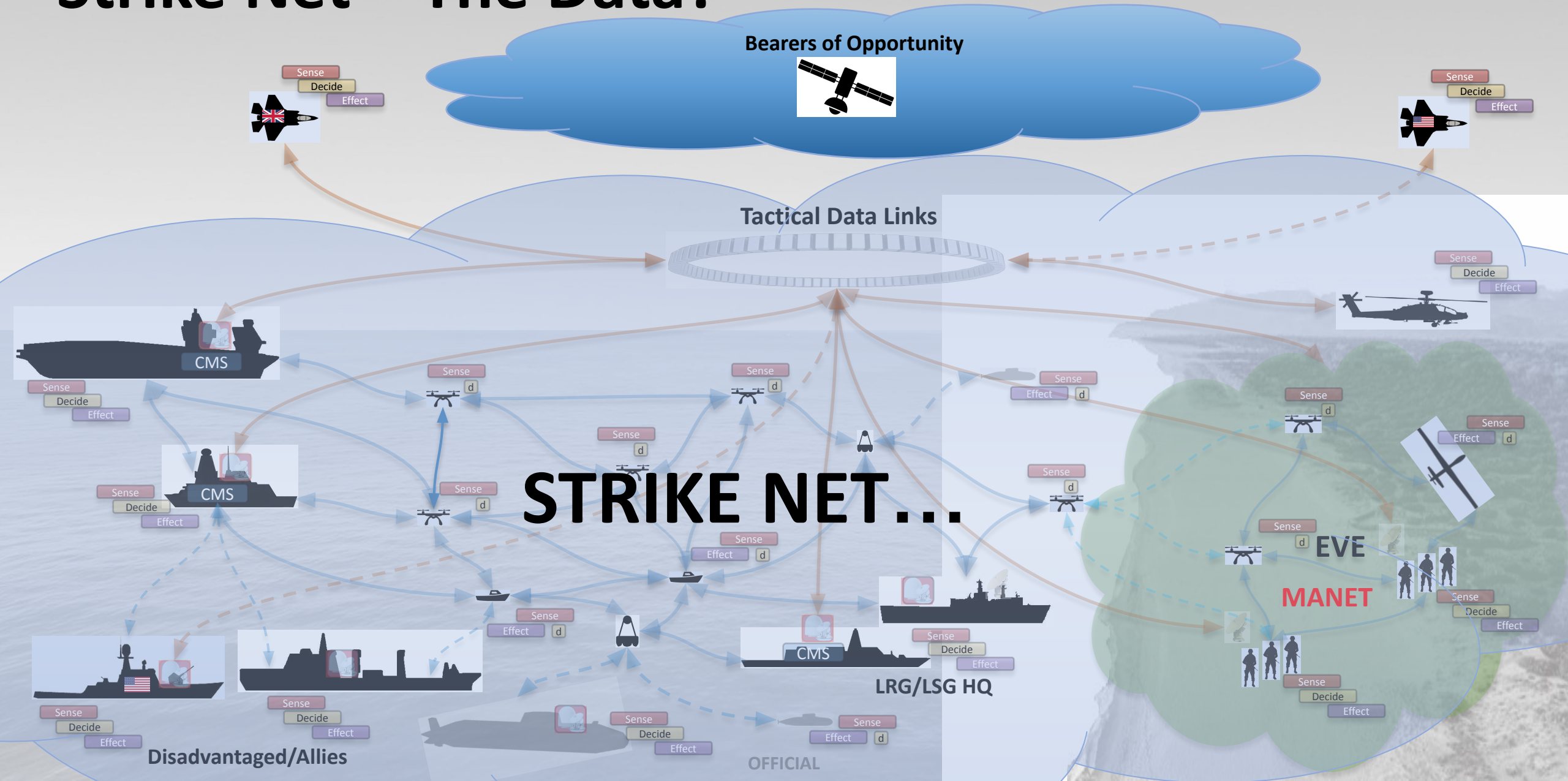
- **Strategy and Leadership:**
  - Fully defined end state and vision.
  - Ability to demand compliance with standards.
- **Technical Delivery:**
  - Engagement from the outset.
  - Establish the degree of 'NSN Ready'.
- **Wider Architectural Coherence:**
  - Maritime Architectural Vision.
  - Combat Systems DA.
  - Joint/StratCom (Integrated DA?).



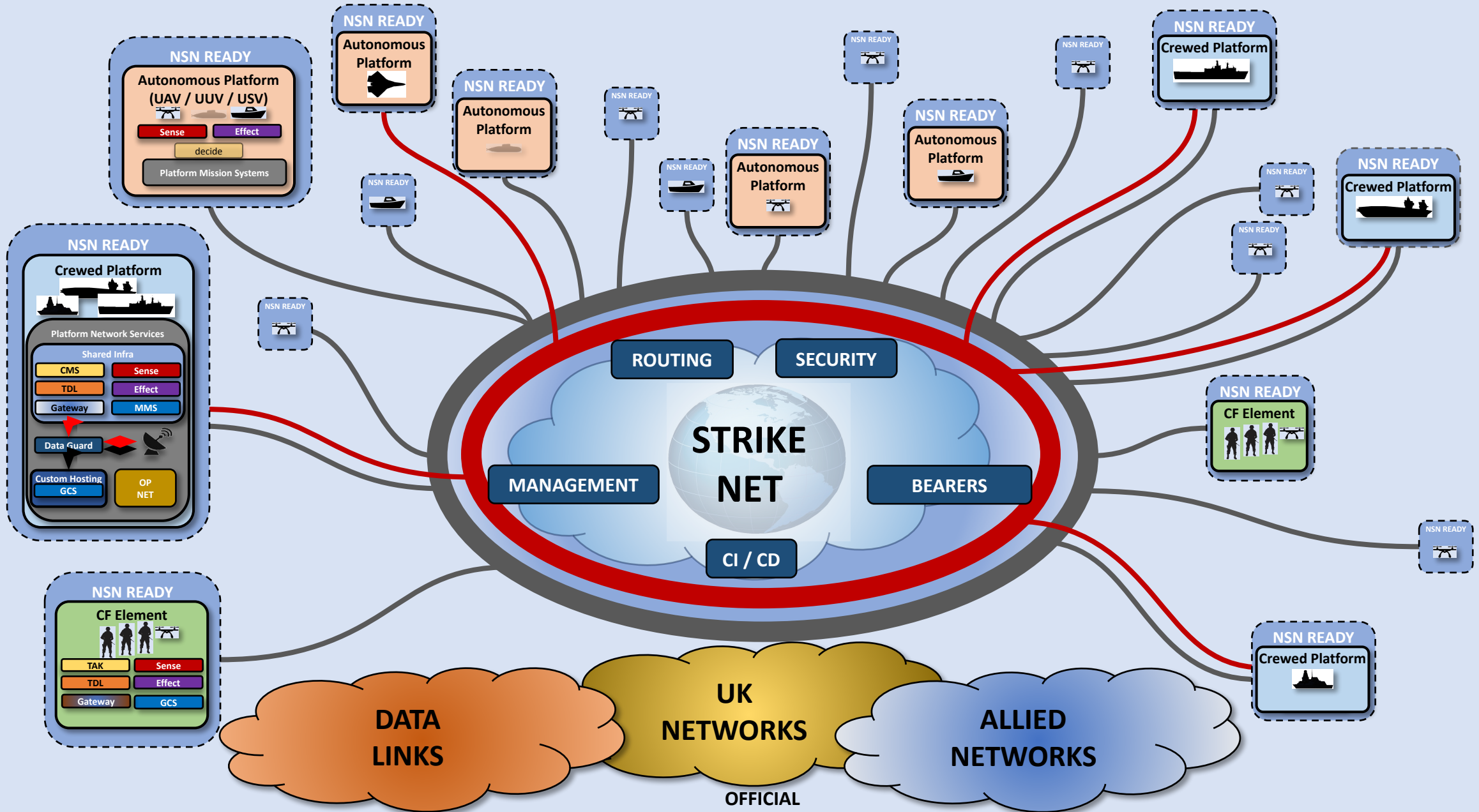
A complex network diagram with white nodes and lines on a light blue background, overlaid with a horizontal blue band. The nodes vary in size and are interconnected by thin white lines, creating a web-like structure.

# Delivering Data Architecture Coherence

# Strike Net – The Data?



# The NSN Enabling Digital Architecture



# Considerations

- **Complex/Non-Complex Platforms – NSN Ready C2 Node In a box?.**
- **Must incorporate/adopt existing standards whenever possible.**
- **Wider coherence X-Domain and with Allies is key.**
- **Technical Considerations:**
  - **DXR** - Data: when, where, what, why...
  - **Decision Support** – Edge and at the point of decision.
  - **Boundaries** – Local/Operational/Business Data?
  - **Classification** – Black-Red-Black data transfer?
  - **Services** – Common MPM / BMA?
  - **Standards** – Backwards/Forwards/Sideways compatibility?
  - **Crypto** – Military vs Civilian Crypto?





# Experimentation Opportunities

# Persistent vs Static Experimentation

- Experimentation traditionally focused on large, complex events:

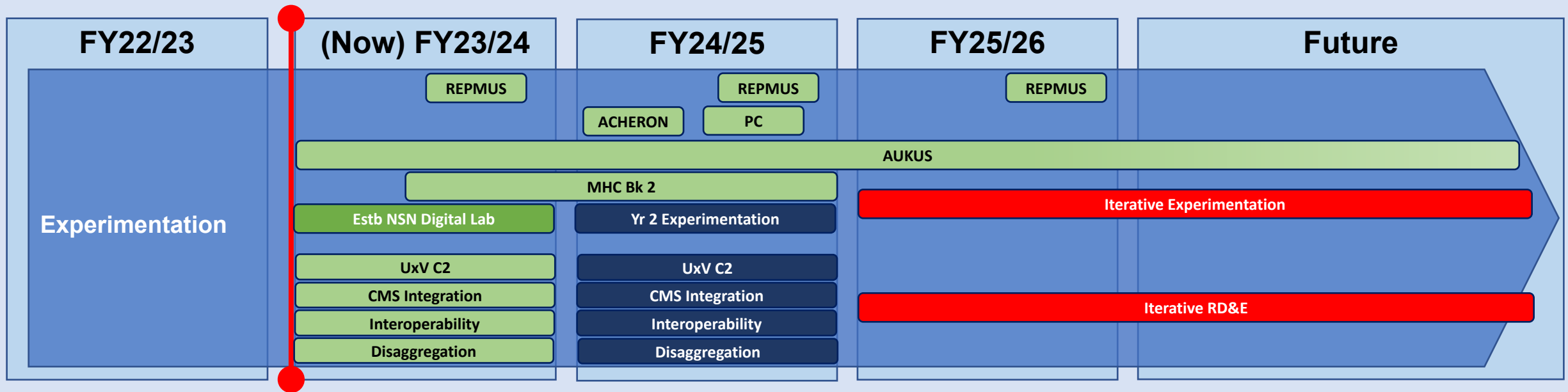
- REPMUS, IMX, PC/OVERMATCH, AWE, ACHERON...

- Iterative ambition for NSN requires a complementary persistent process too:

- Engagement with future Maritime Programmes (MHC Bk 2, FADS, Peregrine, FMAF, Cdo Force).

- Utilisation of existing commercial frameworks and Dstl.

- NSN Digital Lab will lay foundation for a persistent, experimentation pathway.



# Summary

- The pace of technological change is intensifying.
- There is no Digital 'clean-sheet' solution.
- Coherence and integration at the lowest level possible is key.
- Design Authority(s) are key to cohere Strategy and Technical solutions.
- Must have the ability to enforce (authority!).
- Delivery detail will depend on requirements and Use Cases.
- Utilisation of Persistent Experimentation to maximise flexibility.

A complex network diagram composed of numerous white circles of varying sizes connected by thin white lines, set against a light blue background with a horizontal band of a darker blue color. The word "Questions?" is centered over the diagram.

# Questions?