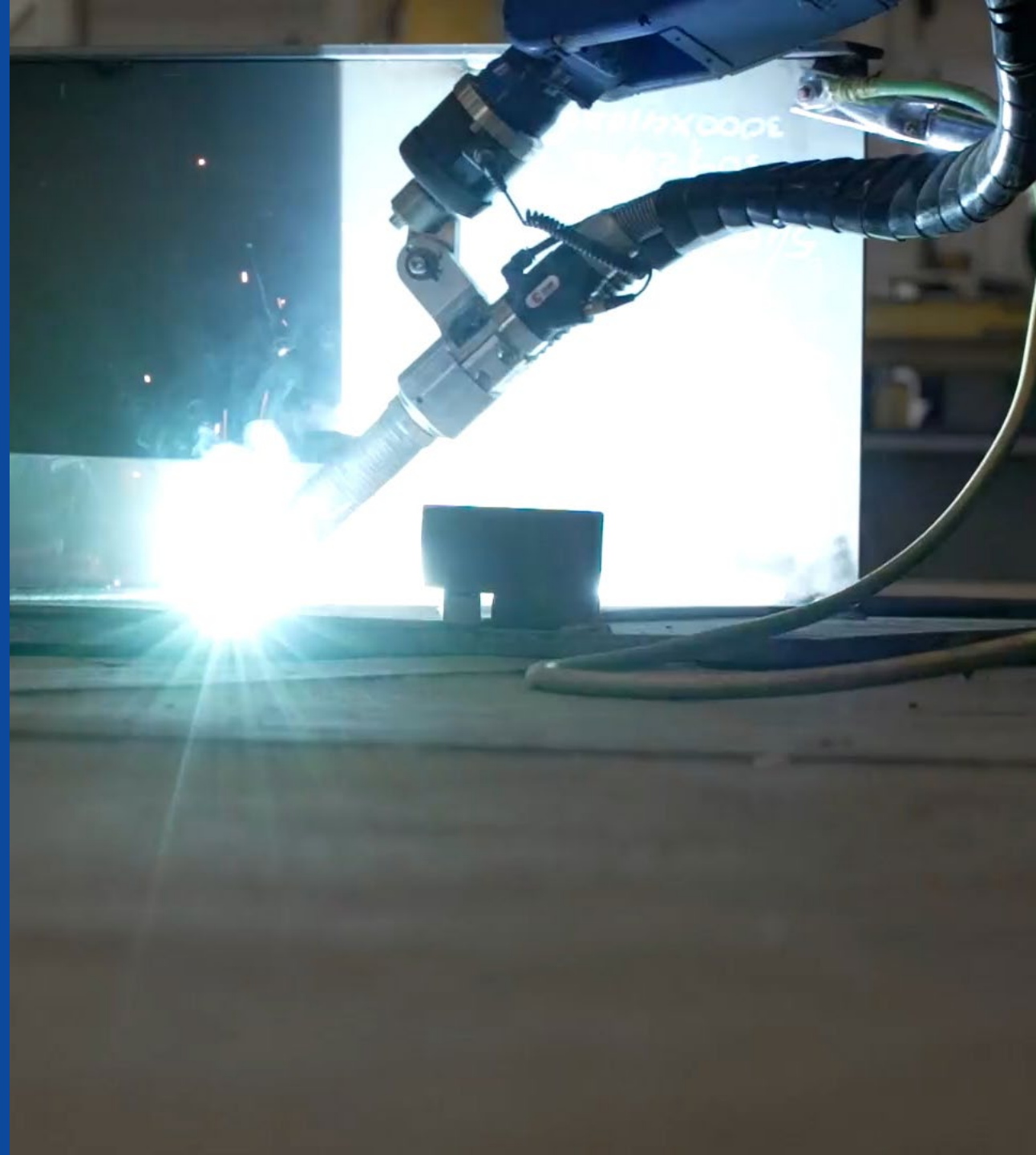# Engineering and technology

Brad Yelland,
Chief Engineering and Technology Officer
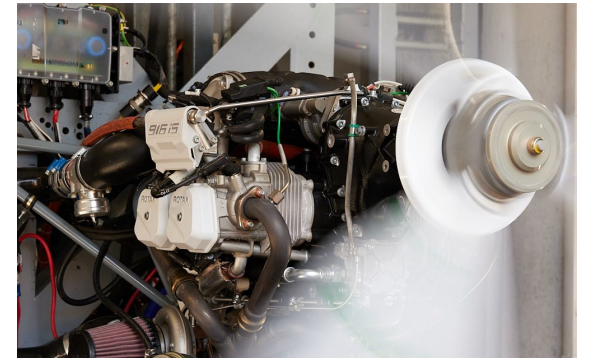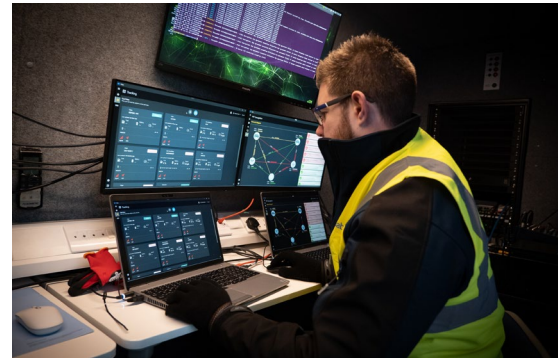
Engineering and technology

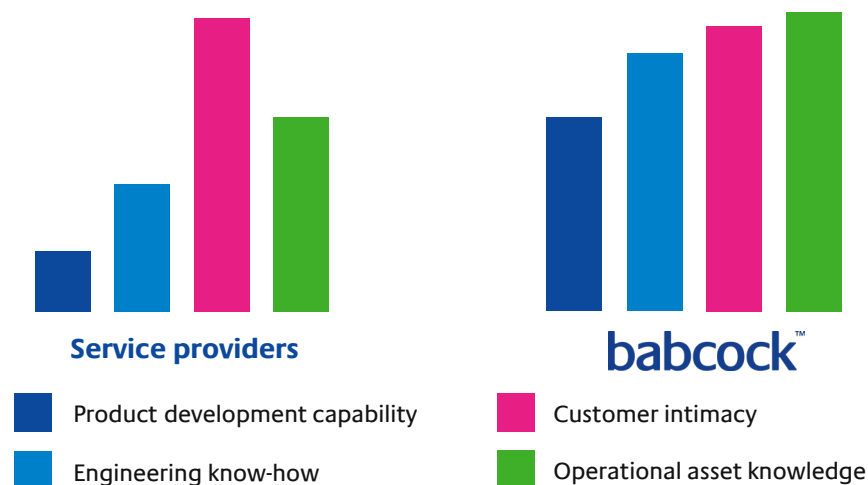**Babcock is an engineering-led defence, aerospace and security company with a growing technology capability**

› Our engineering and technology capability has been built up through decades of supporting complex, advanced technology systems and platforms for our customers

The diversity of these systems and platforms across the spectrum of operational domains has created a broad capability, and opportunities to develop our engineers

› From satellites to nuclear submarines and surface warships to land vehicles

› From nuclear power to complex electronic and software-based mission systems

Being an engineering and technology company

Service providers

babcock™

- ■ Product development capability
- ■ Customer intimacy
- ■ Engineering know-how
- ■ Operational asset knowledge

Supporting and upgrading complex systems and platforms has;

› Increased our engineering and technology know-how

› Increased knowledge of the customer and their operational requirements

› Increased the customer's confidence in our engineering capability

As a result, Babcock is increasingly securing prime roles as a capability partner on engineering development and systems integration programmes
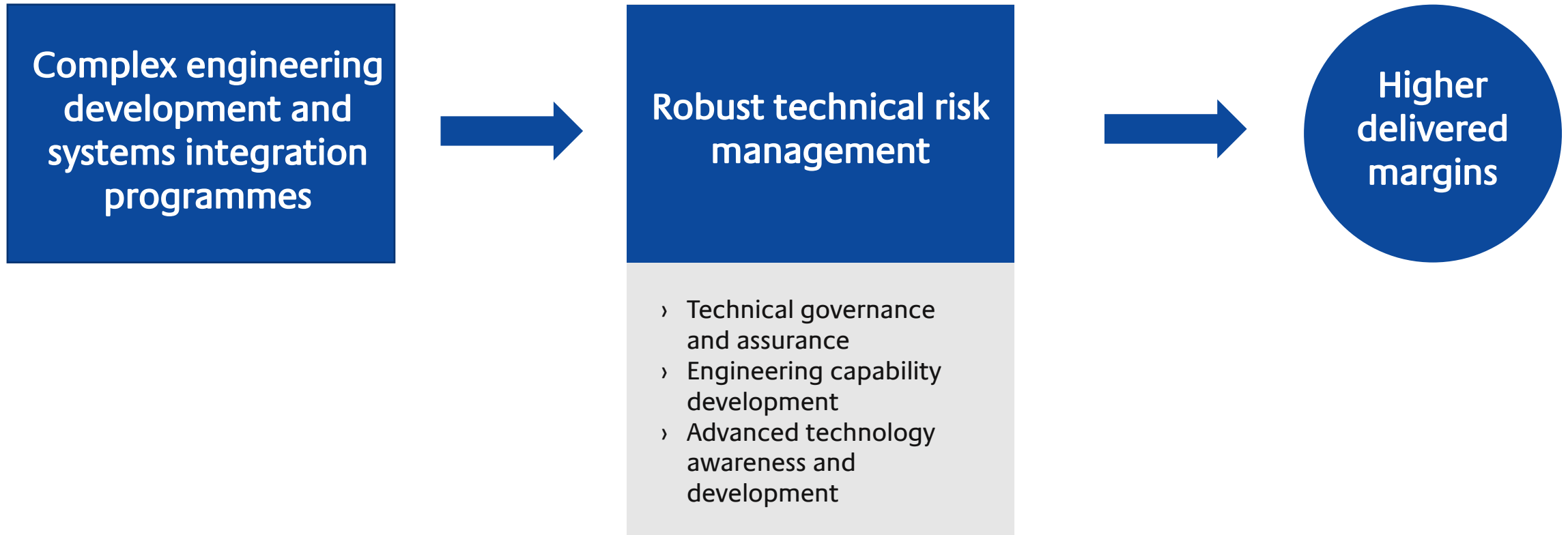
Defence High Frequency Communications Systems

Arrowhead 140 general purpose frigate

Capturing learning experience to deliver higher margins

Complex engineering development and systems integration programmes

→

Robust technical risk management

› Technical governance and assurance
› Engineering capability development
› Advanced technology awareness and development

→

Higher delivered margins

End to end technical governance framework
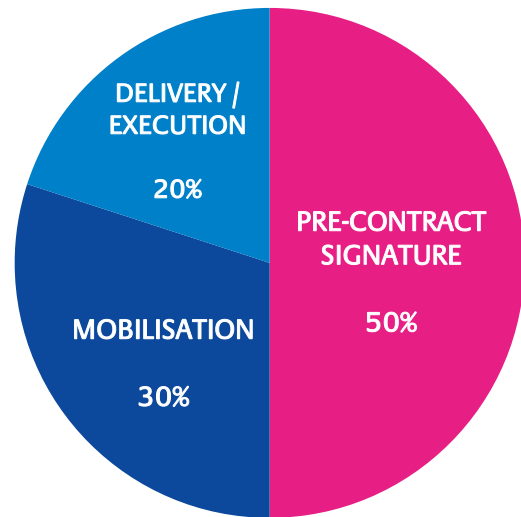
CONTRACT RISK PHASING

Pie chart showing:
- PRE-CONTRACT SIGNATURE 50%
- MOBILISATION 30%
- DELIVERY / EXECUTION 20%

Pre contract signature

1. Is the proposed technical solution **compliant** (customer and regulatory requirements)?

2. Is the technical solution **achievable** (technical, workforce, cost, schedule)?

3. Do we have a known, acceptable and manageable **risk profile?**

Ensures we can deliver the technical solution to which we are about to commit

Mobilisation

Ensure we have:

1. Defined and planned engineering work scope
2. Alignment with customer on requirements
3. Appropriate resource mobilisation
4. Access to tools and facilities
5. Technical risk management plan

Ensures everything is in place before we start delivering the solution

Delivery

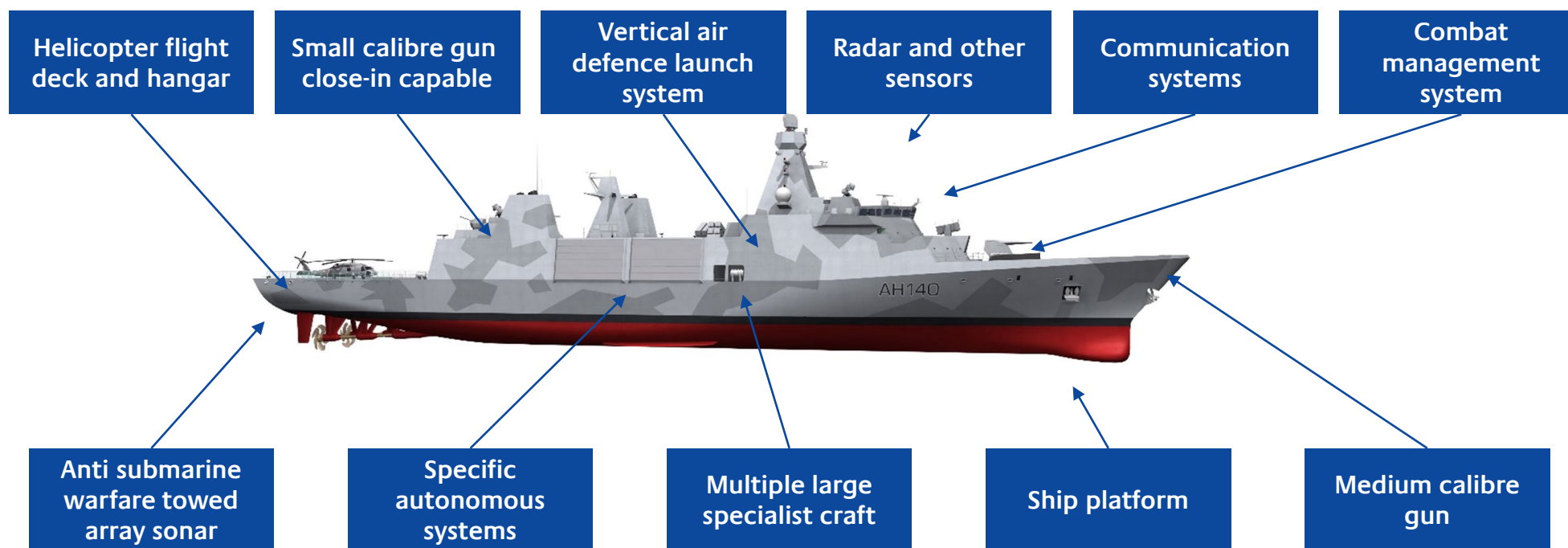Technical reviews aligned with engineering life-cycle transition points to test:

1. Progress against requirements

2. Cost and schedule

3. Managing risks

Ensures the delivered technical solution is compliant, on time and within cost

Life-cycle technical framework with independent governance and risk management
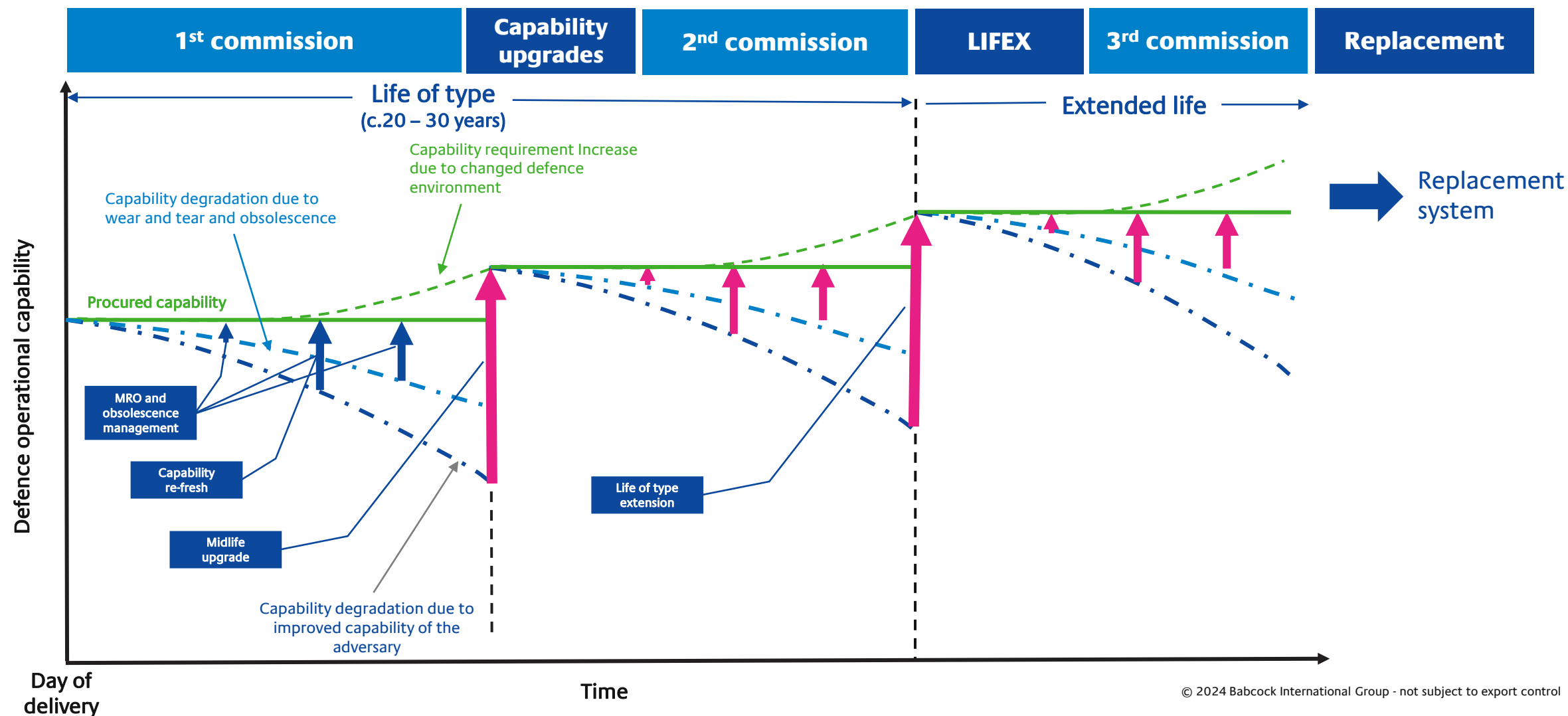
Today's defence assets are complex integrated systems

Helicopter flight deck and hangar

Small calibre gun close-in capable

Vertical air defence launch system

Radar and other sensors

Communication systems

Combat management system

Anti submarine warfare towed array sonar

Specific autonomous systems

Multiple large specialist craft

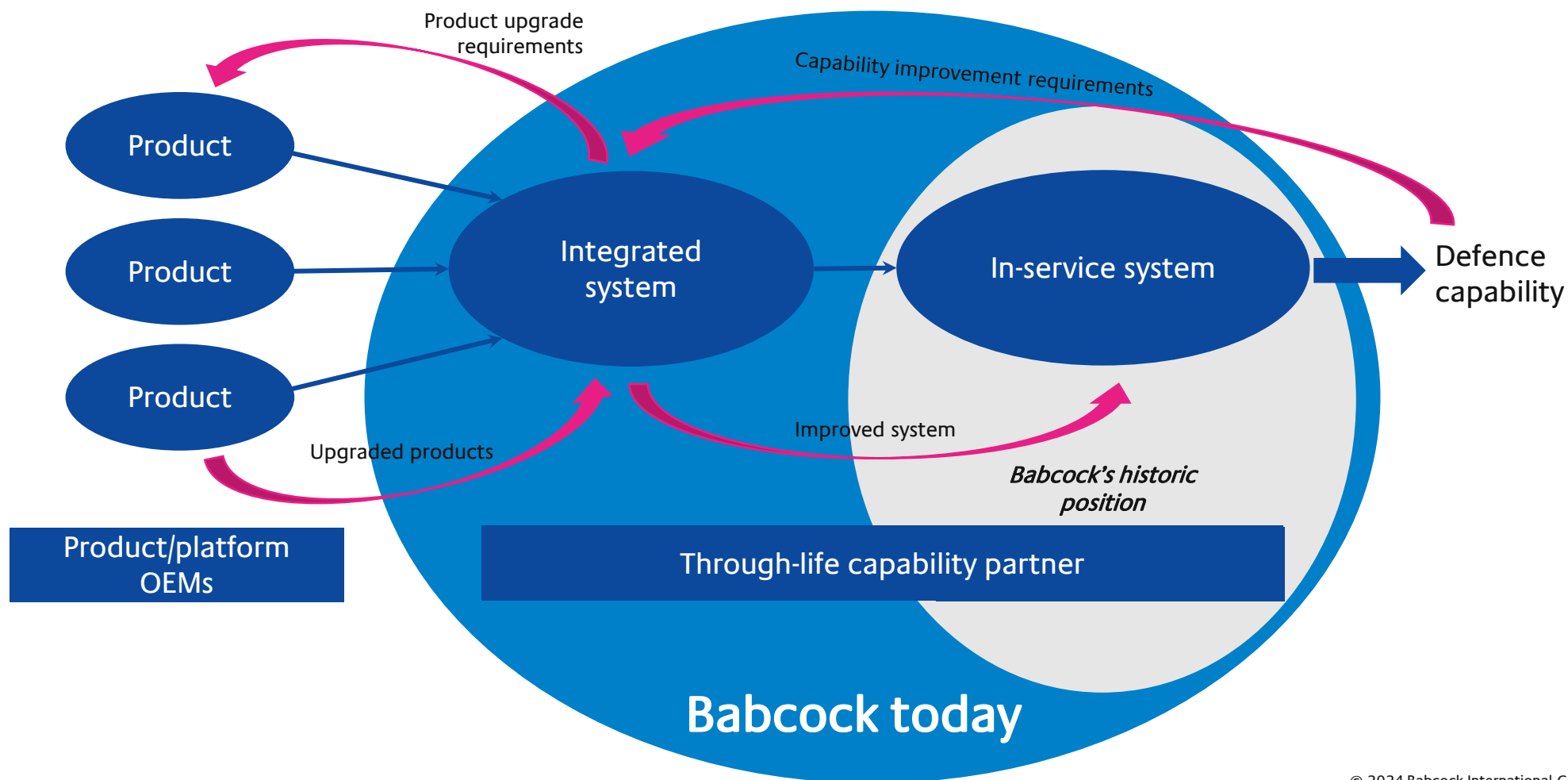Ship platform

Medium calibre gun

Increasing complexity drives the need for value-add integration capabilities through-life

Supporting complex systems through-life

# Leveraging our position to drive profitable growth

Product upgrade requirements

Capability improvement requirements

Product

Product

Product

Integrated system

In-service system

Defence capability

Upgraded products

Improved system

Babcock's historic position

Product/platform OEMs

Through-life capability partner

Babcock today

Developing as a capability partner

Strengthening our through-life support provider position

› Maturing asset management
› Prognostic health management
› Data sciences
› Digitally enabled engineering
› Digital twins for business processes
› Advanced manufacturing for obsolescence treatment
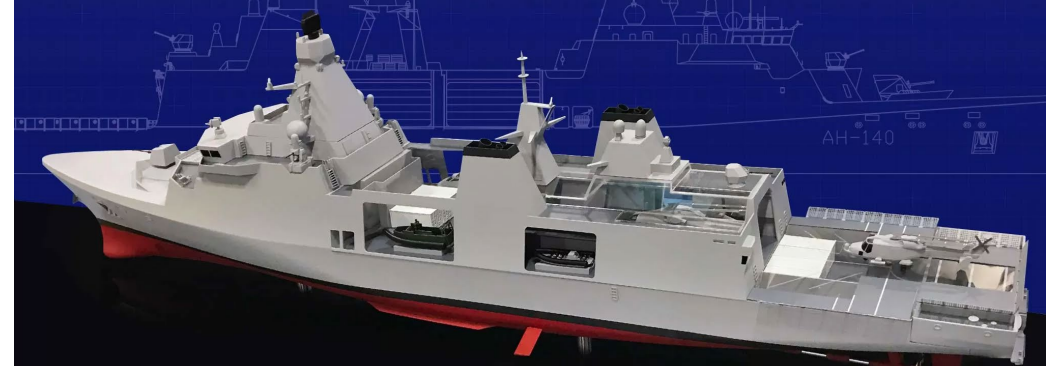
Cementing systems engineering and integrator role

› Systems engineering and integration
› System modelling and operational analysis
› Autonomous technologies
› Data sciences and digital design
› Software development
› Product cyber resilience

Strengthening technical governance and assurance underpins guidance

Engineering and technology summary

› Strengthening our technical risk management

› Leveraging our knowledge of our customer and their operational requirements to support capability enhancements

› Building our knowledge and access to advanced technologies that underpin defence systems

› Growing our capability to strengthen our position as a support provider and grow our opportunities in the systems and engineering integration areas