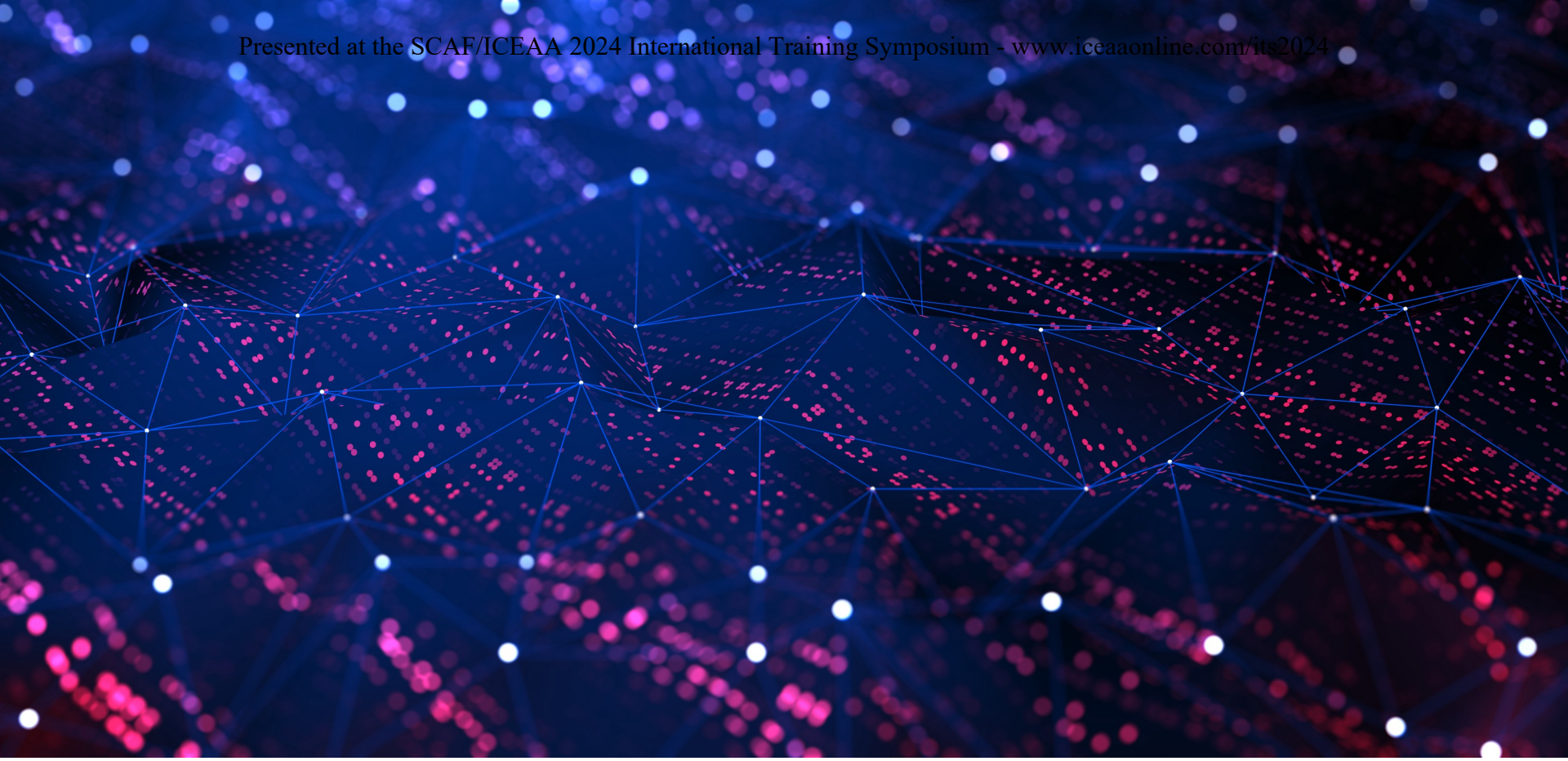
Presented at the SCAF/ICEAA 2024 International Training Symposium - www.iceaaonline.com/its2024



unison

Navigating Pitfalls in Estimating Complex Defence & Aerospace Projects

Colin Harper, Government Consultant, Unison Cost Engineering

Pitfalls:

A hidden or unexpected danger or difficulty

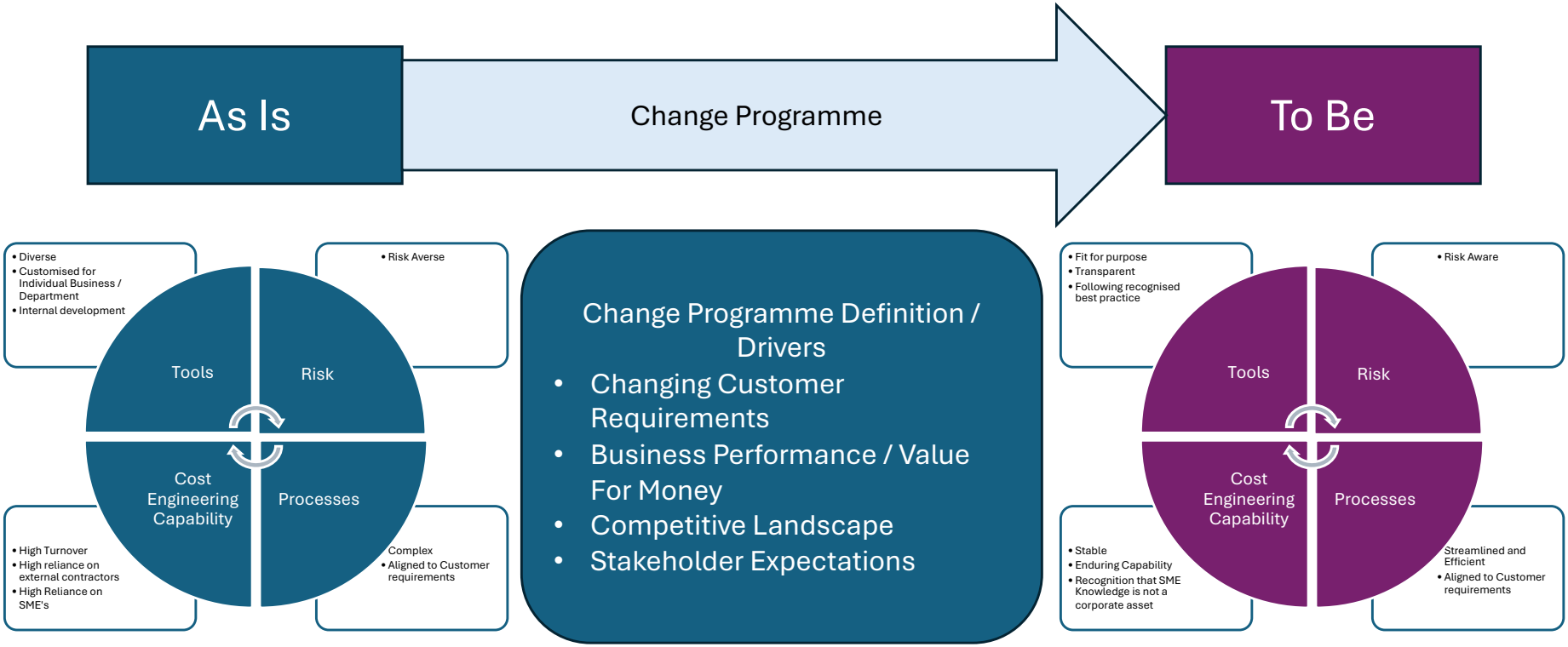
Contents

- Introduction
- The Pitfalls in Context
- A Key Component of the Solution

Introduction

- In the realm of complex defence and aerospace project management, robust and transparent cost estimation is paramount for project success.
- This presentation will address and propose solutions for the following challenges:
  - Lack of Consistency and Standardisation which leads to a lack of applicable benchmarks
  - Inefficiency due to Failure to Learn from Experience and a lack of systemic, measurable improvement in estimation outcomes
  - The need to increase reliability using uncertainty to reduce risk
  - Lack of; Repeatability, Transparency and Accountability
  - Imperfect data encouraging the implementation of strategies which reconcile seemingly conflicting data, driving strategic decision making
  - An inability to unlock the rewards of Knowledge Sharing and Reuse (KSR) and how this can be entrenched in an organisation's DNA.

The Pitfalls in Context



The Pitfalls in Context 2

In the case of complex projects in the defence and aerospace arena, requirements often dictate an extension to the state of the art and an associated need for research programmes to develop solutions which can bridge the gap to the new requirement level.

Using SME knowledge or methods such as 'reference based forecasting', while both useful data points, take a simplistic view where:

Previous project + delta to cover change in performance requirements + risk = Estimate for new capability.

The Pitfalls in Context 3

The issues that this approach exposes are:

- SME Knowledge is not a corporate asset.
- The Non-recurring elements of the programme (research activity) are very difficult to estimate based on historic programmes.
- The extent to which previous project developments, especially in software elements, can be re-used is often overlooked.

A key Component of the Solution

Commercially proven off-the-shelf (COTS) parametric estimating tools are a credible component of the solution to these challenges, providing an objective, data-driven approach to cost estimation.

These tools use pre-defined mathematical models to capture the relationships between project characteristics and costs, allowing for consistent and standardised estimation across projects.

This also enables organisations to learn from past projects and continuously improve their estimation capabilities.

A Key Component of the Solution

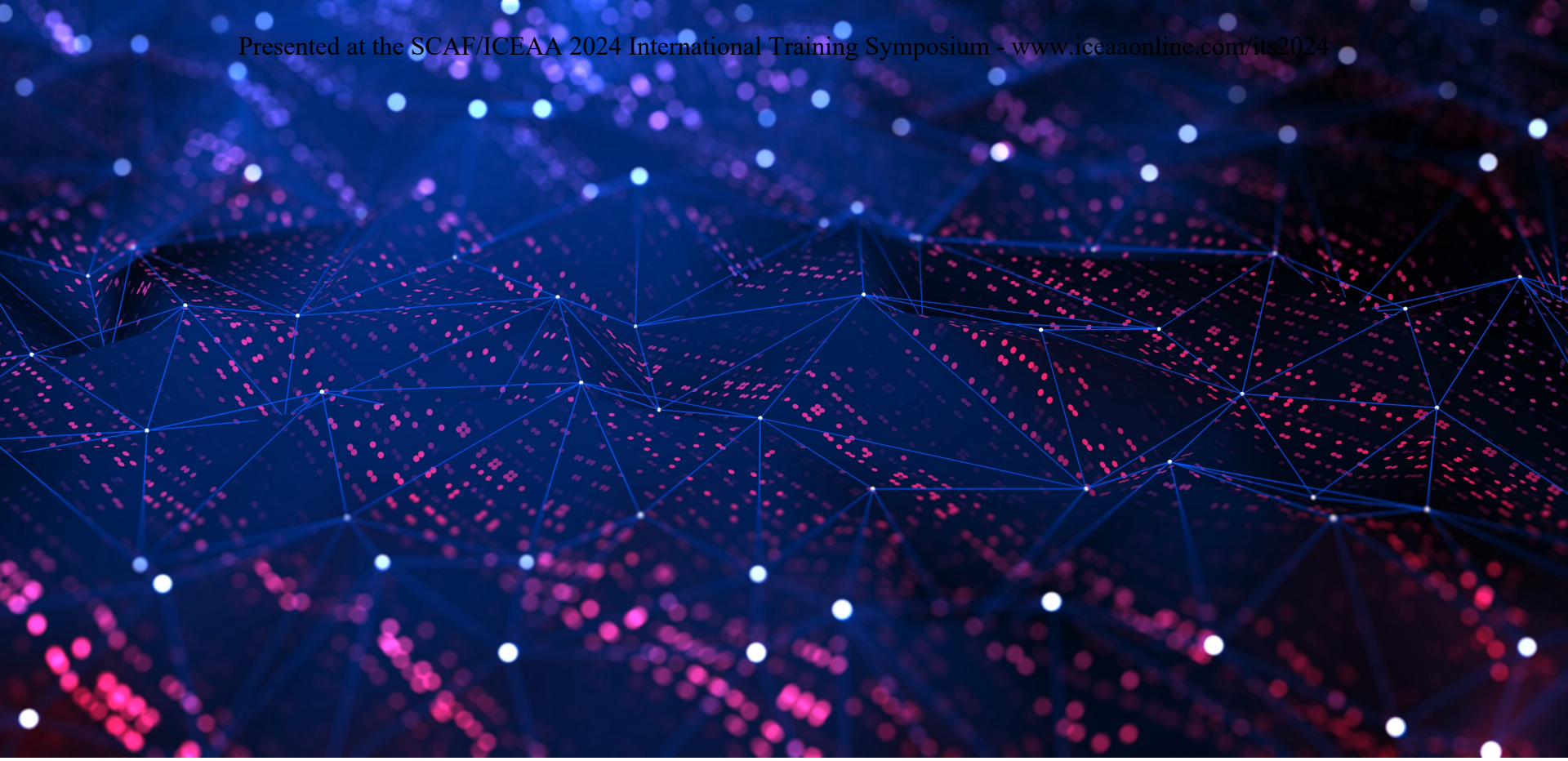
We are currently witnessing a trend in government procurement organisations in the UK challenging perceived best practice and moving towards processes.

This creates an enduring requirement to use external contractors to provide credible estimates rather than creating an enduring internal capability with a foundation of demonstrably independent, parametric COTS tools.

A Key Component of the Solution

In conclusion, incorporating commercially proven off-the-shelf parametric estimating tools into project planning and management is crucial for the success of complex defence and aerospace projects.

These tools offer a data-driven, objective approach to cost estimation, addressing the challenges associated with traditional methods. By leveraging these tools, organizations can increase the reliability and accuracy of their estimates, promote transparency and accountability, and continuously improve their estimation capabilities.



unison

Estimate with Confidence.

For more information please contact:

Colin Harper, colin.harper@unisonglobal.com, +44 (0) 7821 917657