Project Controls Expo
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Project Controls in Counter-Improvised Explosives Device (C-IED)

Speaker Profile

- **David Insley** joined BMT Hi-Q Sigma in Aug 08 having spent over ten years working for the UK Ministry of Defence on a range of defence projects and programmes. David currently provides consultancy in project and programme management, supported by a strong technical base in engineering. This is underpinned by his full membership of the Institution of Mechanical Engineers and the Association for Project Management. He possesses a range of experience across the UK Defence Sector having contributed to the delivery of complex Core Programmes and Urgent Operational Requirements, primarily in the capability areas of Counter Improvised Explosive Device, Royal Navy Destroyers, munitions and soldier systems.

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- Tailored Approach to Project Control.
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- Questions.

INTRODUCTION TO BMT

BMT Group

- BMT is an international design, engineering and risk management consultancy, working principally in the defence, energy and environment and maritime transport sectors.
- BMT invests significantly in research. Its customers are served through a network of **international subsidiary companies**. The group's assets are held in beneficial ownership for its staff.

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"Where will our knowledge take you?"

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Resources

- £142 million turnover.
- 23 companies.
- 40 offices in 15 countries.
- Global client base.
- Knowledge-sharing networks.
- Practice communities.
- Cross-selling.
- Career opportunities.

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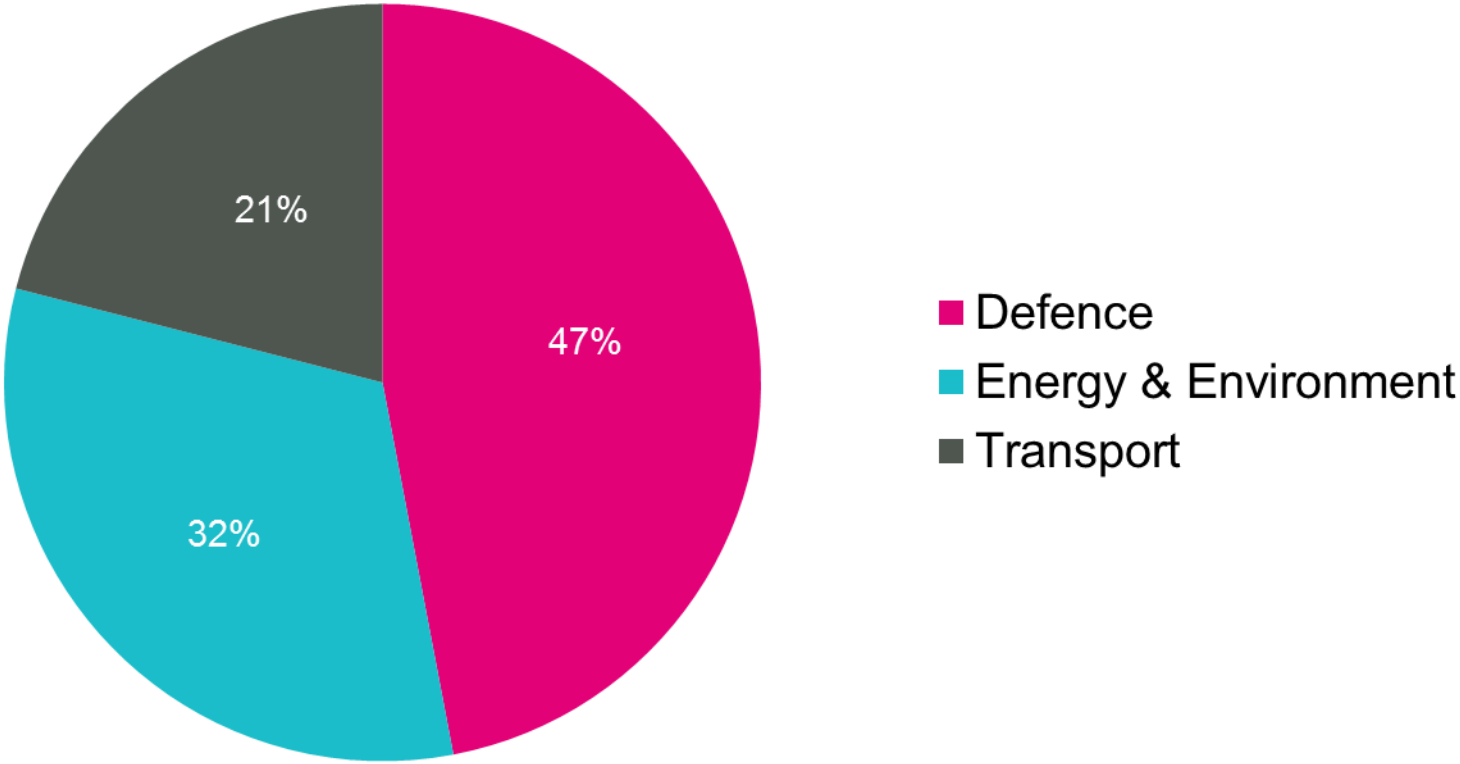
Market Sectors



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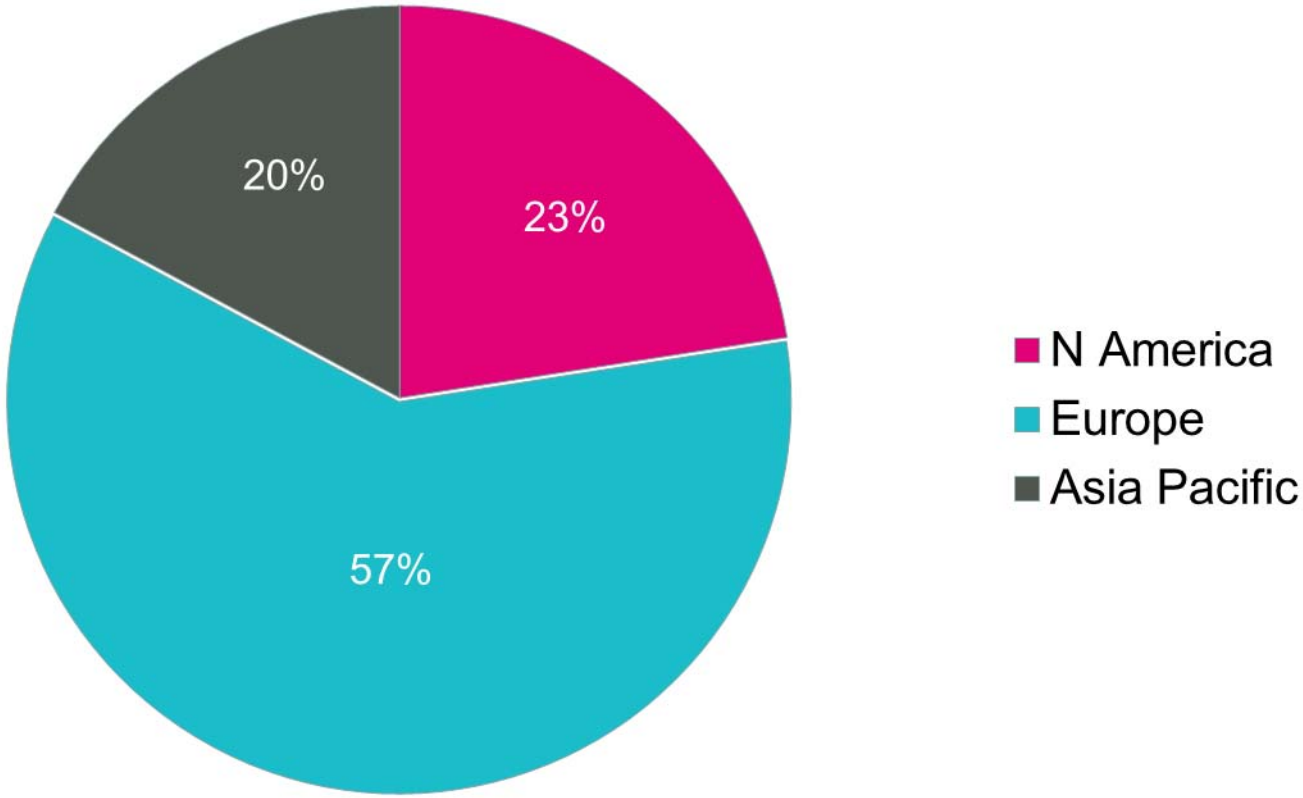
Geographic Sectors



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BMT Hi-Q Sigma Overview

- A professional services company with 100 consultants working across the UK through offices in Bath, Basingstoke and London.
- Operating across the Defence, Energy and Transportation sectors.
- Achieved a turnover in 2011 of ~ £10M.
- As an employee benefit trust with no manufacturing or supply chain interests, we provide truly impartial advice, assistance.
- In the complex world which we know you face every day, our goal is simple and steadfast:

to bring clarity

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"Where will our knowledge take you?"

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BMT Hi-Q Sigma Capabilities

- We help to deliver complex programmes through the integration of programme management and systems engineering.
- We help you achieve clarity through:
  - Strategic guidance to organisations in the establishment and management of programmes
  - Interventions to optimise existing programmes
  - Provision of quality people as interim support

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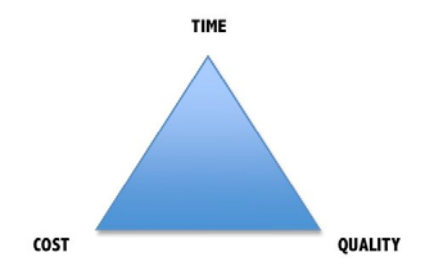
OUR WORK IN C-IED

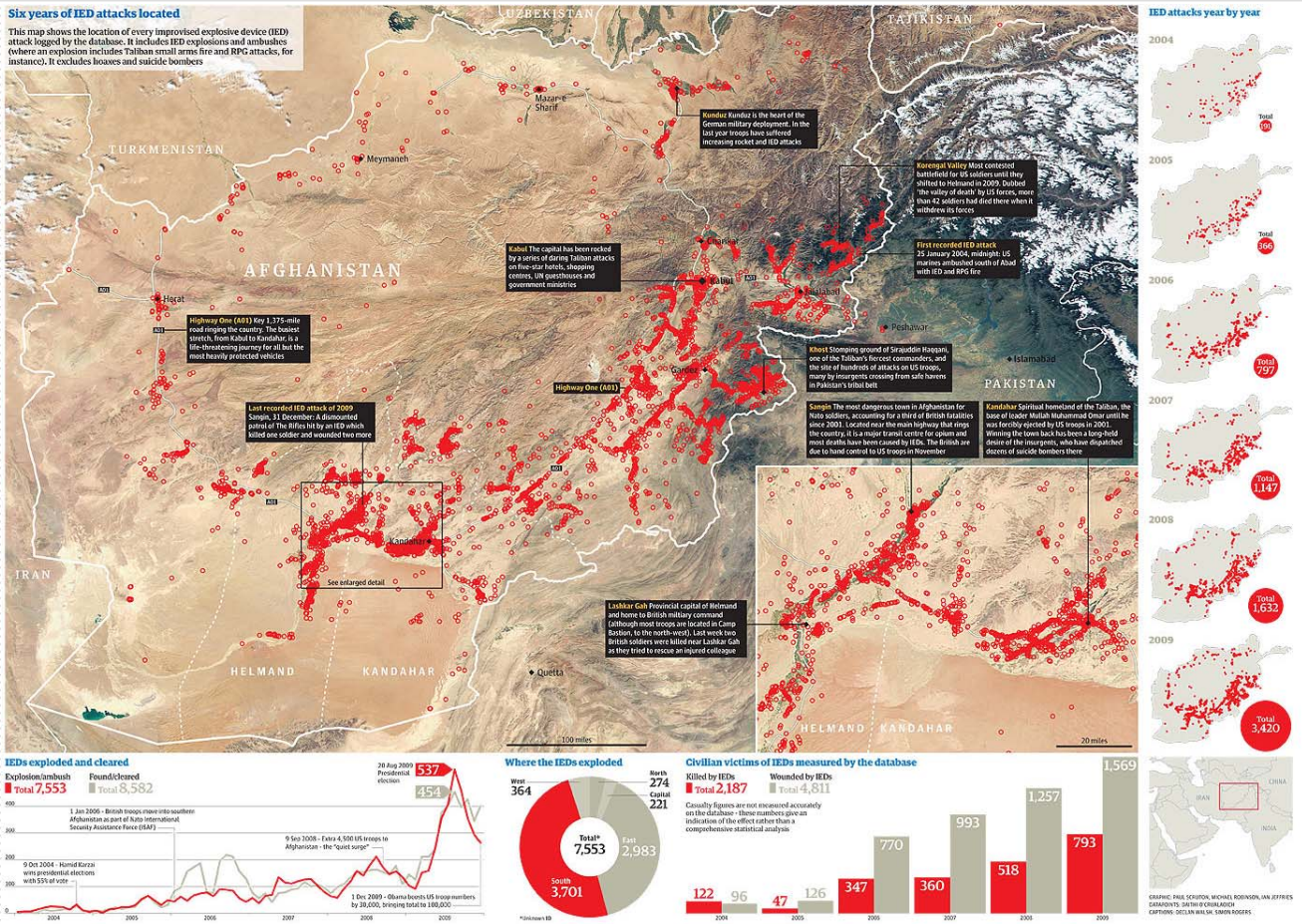
Caveats

- All content is Unclassified and open source.
- Aim is to provide an insight into:
  - BMT Hi-Q Sigma capabilities and their application to C-IED projects.
  - My personal experience, opinions and lessons learnt in implementing project control systems for C-IED projects.
- **The focus will be on the <u>management and control</u> of C-IED projects and not the specific threats or military capabilities involved, which are highly classified.**



Context (1)

Context (2)



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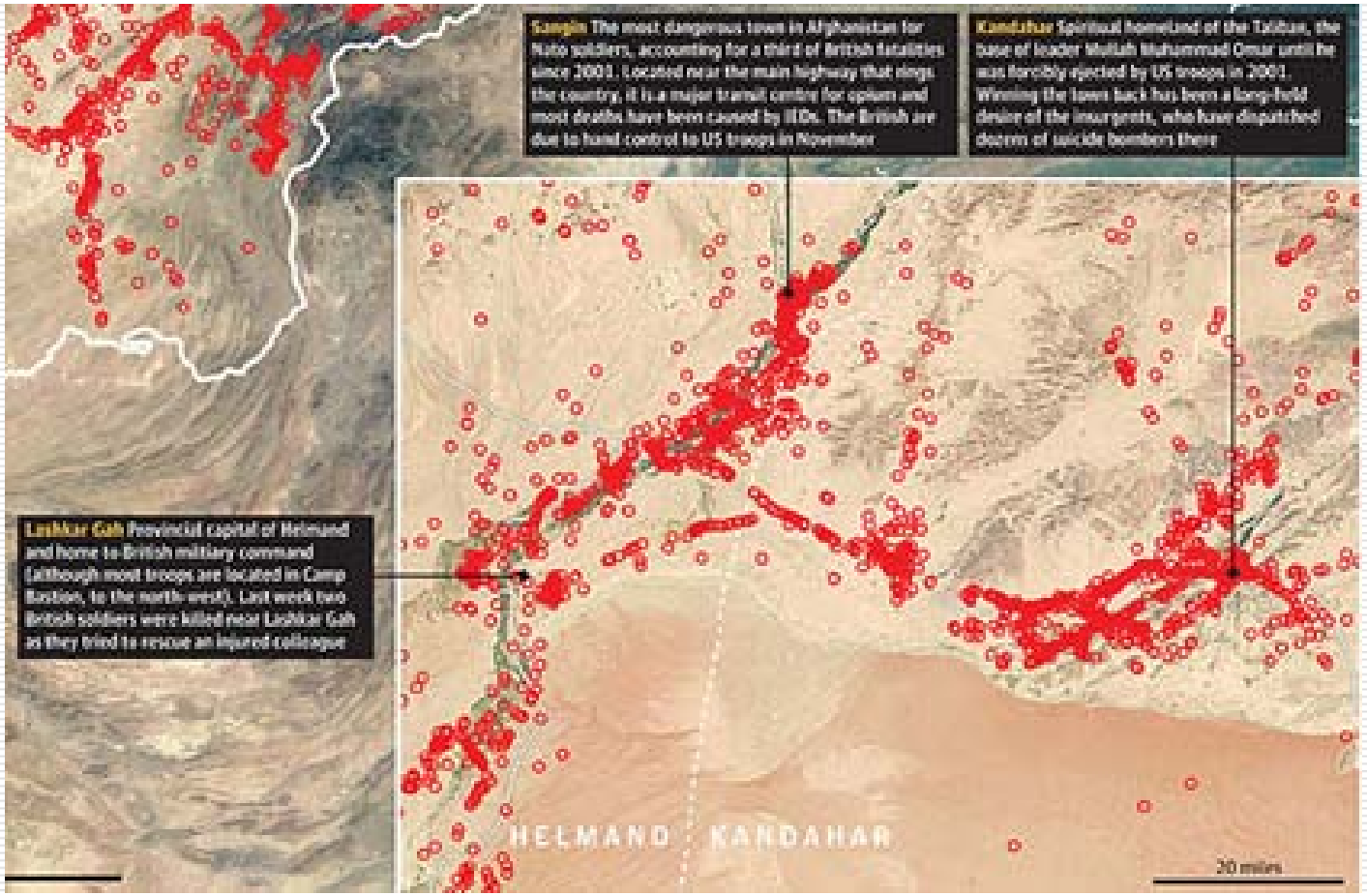
Context (3)



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Context (4)

Consultancy Effort

- BMT Hi-Q Sigma have supported the delivery of projects across **Deter, Detect, Neutralise and Exploit** aspects of C-IED.
- Clients include:
  - Defence Equipment & Support:
    - Force Protection (focus on tri-service All-Arms Military User).
    - Special Projects (focus on Specialist Military User).
  - DSTL Security Sciences Department (focus on research).
- Consulting model:
  - Provision of **project management** and **technical expertise**.
  - Embed with the client as their **independent Customer Friend**.
  - Utilise a **flexible reach-back mechanism** to draw on specialist project control skills as required e.g. cost modelling.

CHALLENGES IN MANAGING C-IED PROJECTS

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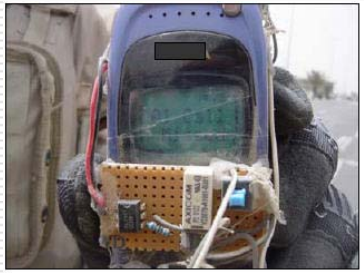
The Nature of C-IED Projects (1)



- Rapid evolution of threat:
  - Decision making cycle.
  - Reaction time is critical!
- Urgent projects are initiated by the Military User in theatre:
  - Identifies and articulates a current or imminent gap.
  - Must be justified i.e. something must have changed.
- Changing role – draw-down and hand-over to ANSF over next 4 years.
- Development route:
  - COTS/MOTS.
  - Development.
- Focus on delivery of equipment – other lines of development (e.g. training and logistics) may have to catch up.

The Nature of C-IED Projects (2)

- Integration:
  - With platforms (e.g. vehicles) and people!
  - Size, Weight and Power envelope.
- Interoperability with equipment used by partner nations.
- Rapid equipment supplier response required.
- What do you do when the operation is over?

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TAILORED APPROACH TO PROJECT CONTROL

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Performance and Scope (1)

- Getting the specification right up front is crucial to controlling the performance and scope of a project.
- For urgent projects concessions are inevitable:
  - The gold-plated solution is unlikely to be possible in the time
  - Must deliver the fundamentals of the capability.
  - Project managers must engage with engineers to prevent ‘over spec’.
  - Impact statement against concessions – what is acceptable?
  - Some key considerations in C-IED are size, weight, power and in some cases noise.

Performance and Scope (2)

- Tailored approach required:
  - Focus testing on what is important utilising evidential read-across where possible.
  - A system meeting a partner nation standard may satisfy a UK standard by default.
- Detailed but appropriately flexible specification is key:
  - Difficult to satisfy everything if COTS e.g. climatic conditions.
  - No concession = no capability!
  - Too much concession = capability not fit for purpose!
  - Progressive assurance.

Time

- Automatic reaction to urgent projects is to go into fire fighting mode – “I don’t have time to plan”.
- Need a sufficiently **robust** schedule that can be delivered effectively:
  - Right level of detail.
  - Captures full scope of work.
  - Clear critical path so critical activities can be focused on.
  - Clear milestones.
  - Includes uncertainty and risk where appropriate.
  - Baselined, resourced and progressed.
  - Coherent with equipment supplier delivery schedule – also needs to be tracked.
  - Regular review and update.

Cost

- Not as critical as time for urgent projects.
- But demonstration of value for money is essential in the current economic climate.
- Pre-business case – need robust cost estimates.
- Post-business case – project funded based on agreed costs and controlled.
- Need a **validated** and **verifiable** cost model:
  - Breakdown structure vs. relevant phases of the project life cycle.
  - Justification through clear assumptions.
  - Includes uncertainty and risk where appropriate.

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Risk (1)

- Need a **simple** but **robust** risk management system.
- Hierarchy to reflect:
  - Programmes and portfolios.
  - Corporate reporting and escalation.
- Stages:
  - Identify – what concerns do key stakeholders have?
  - Analyse – what is the probability and impact on cost, time and performance?
  - Plan – how are we going to mitigate the risks?
  - Manage – implement mitigations, regular review, configuration control, linkage to assumptions.
- **Joint risk management** with equipment suppliers where possible!

Risk (2)

- Tailored approach to risk analysis on:
  - Cost model.
  - Schedule.
- Robust confidence figures for cost and time:
  - Pre-approval to **underpin** business case figures.
  - Post-approval to **control** the boundaries of the project.
- Through-life review – risk analysis should not be a one-off activity!

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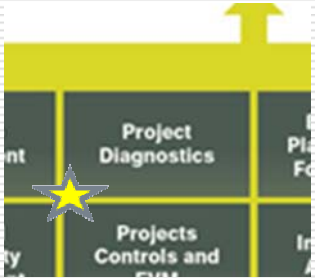
Intervention



- Effective project controls will assist with early warning of threats to achieving cost, time and performance targets.
- BMT Hi-Q Sigma specialise in intervention through independent project reviews:
  - Analysis of client and equipment supplier practices.
  - Identify root cause of problems:
    - Lack of resources.
    - Contractual arrangements.
    - Specification.
    - …
  - Report and recommend corrective action.
  - Evaluation of progress.

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BENEFITS TO THE CLIENT AND THEIR EQUIPMENT SUPPLIERS

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The Client (1)

- Performance and Scope:
  - Application of engineering expertise and judgement.
  - Clear specification that describes the capability the User needs.
  - Focused approach to testing with read-across.
  - The right level of flexibility.
  - Progressive assurance.
- Time:
  - Avoidance of fire fighting.
  - A robust schedule to the right level of detail that can be tracked.

The Client (2)

- Cost:
  - Alignment with the project life cycle.
  - Underpinned by clear assumptions.
- Risk:
  - Simple but robust risk management system.
  - Risk analysis providing robust confidence figures for cost and time.
  - Joint approach.
- Intervention:
  - Analysis of the problem to identify root cause(s).
  - Corrective action planning and evaluation.

The Equipment Supplier (1)

- Performance and Scope:
  - Clear and achievable specification.
  - Test planning to the right level of detail.
  - Informed approach to concessions where/if appropriate.
- Time:
  - Clear and achievable timescales.
  - Sound basis for forward resource planning.
  - Visibility of activities critical to the client.

The Equipment Supplier (2)

- Cost:
  - Realistic budget.
  - Basis for contingency.
- Risk:
  - Joint approach.
  - Understanding of the clients concerns.
  - Risk analysis taking into account uncertainty and risk impact.
- Intervention:
  - Independent audit/scrutiny of practices and processes.
  - Continuous improvement.

QUESTIONS

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BMT Hi-Q Sigma

"Where will our knowledge take you?"

THANK YOU

Dave Insley

BMT Hi-Q Sigma Ltd
5 Riverside Court
Lower Bristol Road
Bath, BA2 3DZ
United Kingdom
david.insley@hiqsigma.com
www.hiqsigma.com
Tel: +44 (0) 1225 820980
Fax: +44 (0) 1225 820981
Mob: +44 (0) 0773 3368956

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