

Getting mORe from Defence OR



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Challenges.....

....and Opportunities

- Changing nature of conflict
- Tight budgets
- Customer must pay
- OR institutionalised
- New questions
- Decisions need OR
- Customer engaged
- Novel techniques
- A new generation of leaders

Our response

- Focusing on our customers
- Delivering in collaboration
 - Co-location with customers and partners
 - A broader supply chain 
 - Collaborating with social researchers, statisticians and economists
- Adopting novel techniques
 - Data Science, Wargaming, Novel Simulation, Behavioural Analytics
 - Scrums rather than long term studies
- Continuous development

Focusing on our customers

Changing the language

We are here to:

- Ensure that **National Security decisions** are underpinned by strategic thinking and evidence
- Transform **Defence and Security people and capabilities** to meet the challenges of tomorrow
- Shape **Defence and Security systems** to be most effective in the hands of the user
- Shape the **next generation** of Defence S&T



Our wargames are shaping UK strategic thinking



Cabinet Office



**METROPOLITAN
POLICE**



Department
of Health



Government
Office for Science



Foreign &
Commonwealth
Office



Home Office



National
Defence



Défense
nationale



07 August 2018

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Wargaming

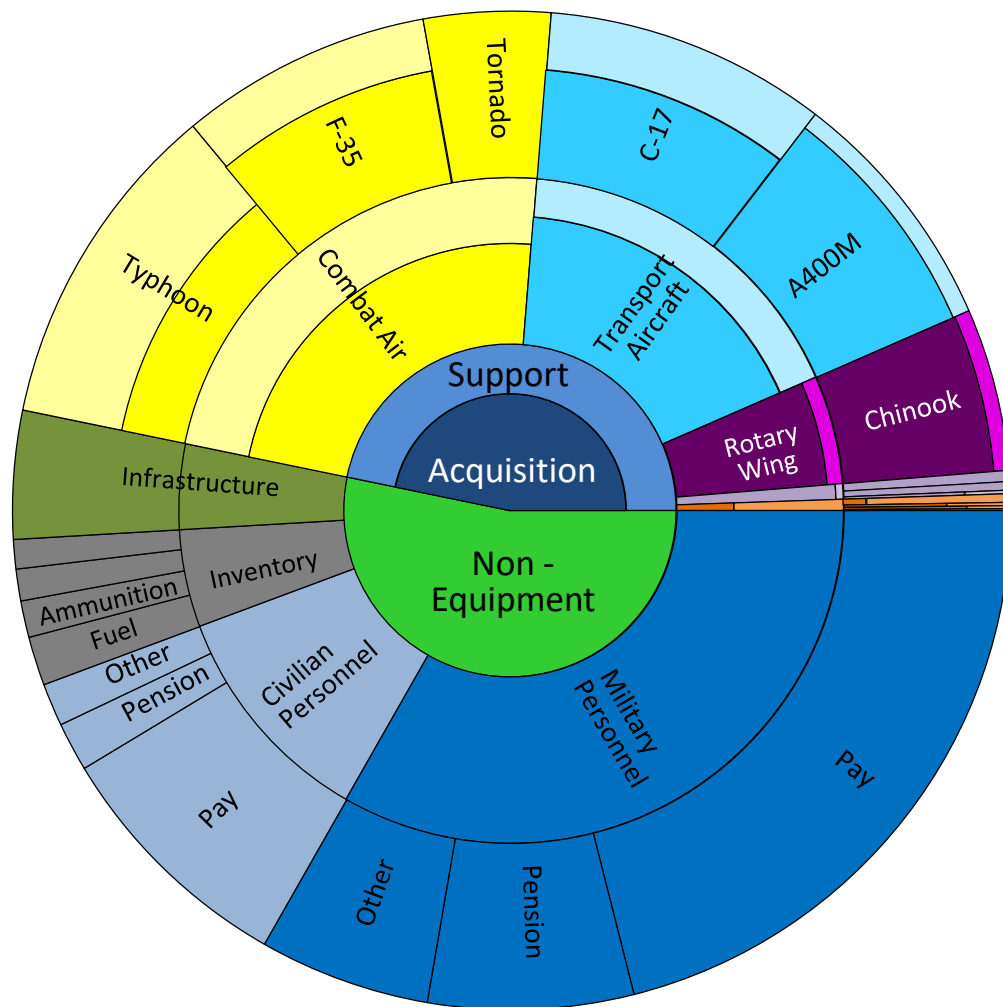


Ministry
of Defence

....and helping to shape the future of the RAF



Our visualisations are helping MOD to understand its costs



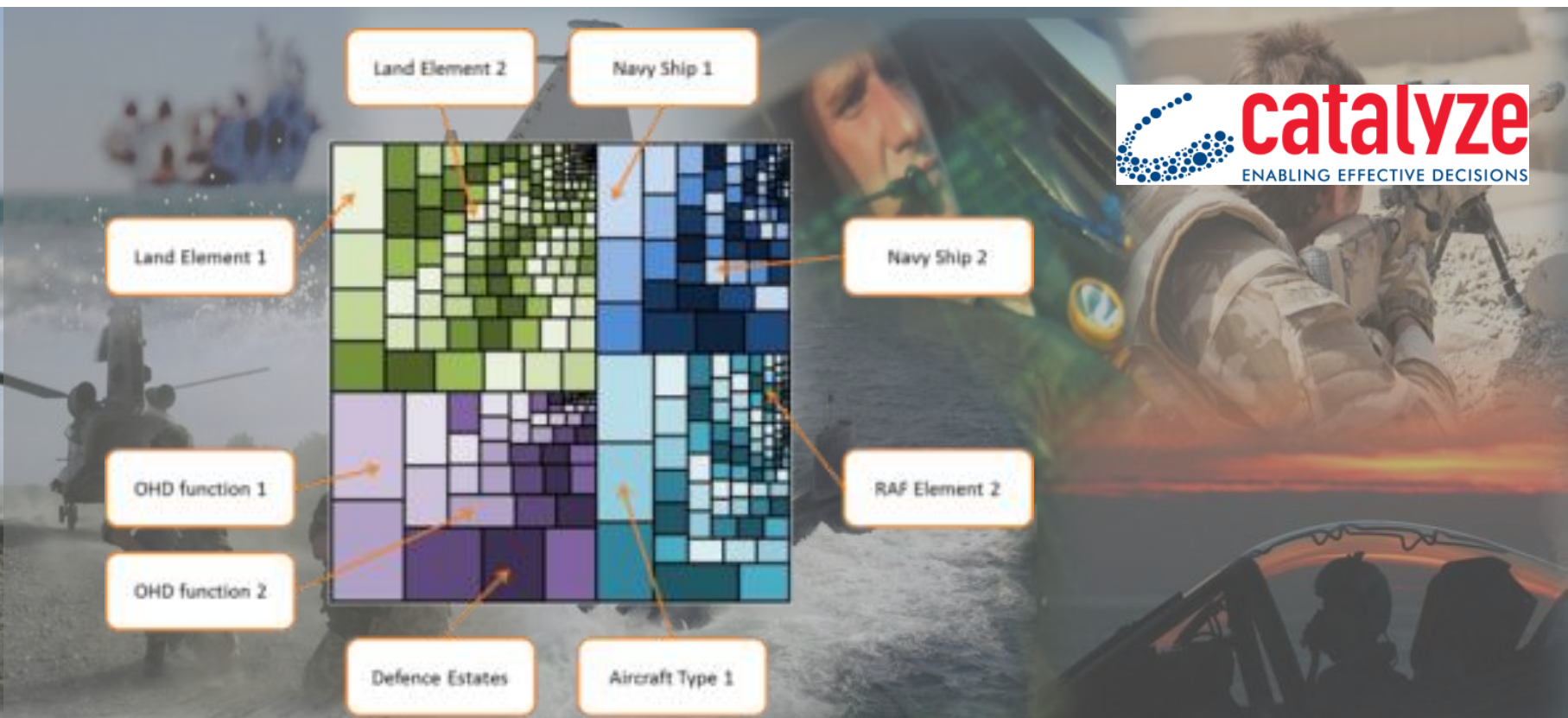
Multiple levels of breakdown

Grouped into
Platform types

Low Acquisition spend

High Acquisition spend

....and to make difficult Balance of Investment decisions



We are helping to design a new frigate for the Royal Navy *cheaper, faster and better*



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**Making every
penny count**



Behavioural science and analysis is helping the MOD to reduce fossil fuel usage and save millions of pounds



BAE SYSTEMS



TRIMETIS



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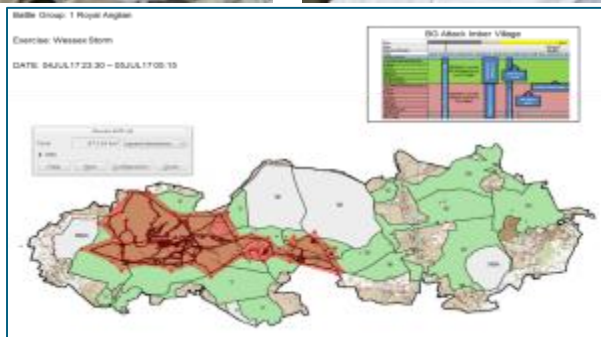
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**Making every
penny count**



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We are driving forward the use of data analytics in the Army



We provided the evidence for Defence Secretary's policy change allowing women in close combat



Defence Human Capability
Science & Technology Centre



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**Modelling for
military operations**



Our analysis will improve the survivability of the future infantry soldier



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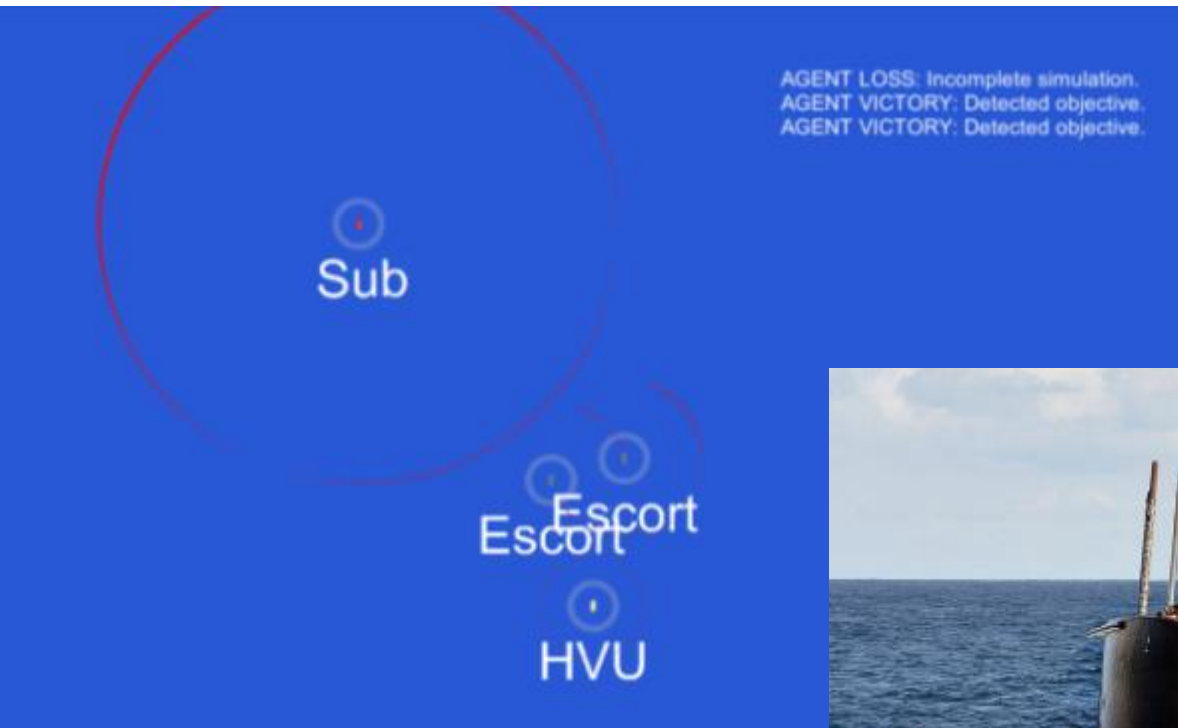
Modelling for
military operations



Developing models ~70% cheaper and facilitate inclusion of AI algorithms



Using artificial intelligence to test anti-submarine doctrine



Summary

- OR is back at the heart of MOD
- And is having some surprising benefits
- Conventional OR is still strongly in demand
- But investment in novel techniques is paying off
- And offers some exciting new opportunities
- We expect to see considerable benefits from collaborative analysis and scrums

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