

The following presentation was given at:

**SCAF Workshop**  
**“The Impact of Brexit on the Costing Community”**

*Tuesday 7th February 2017*

*The Royal Institution of Naval Architects, London*

Released for distribution by the Author

[www.scaf.org.uk/library](http://www.scaf.org.uk/library)

[dstl]

20 February 2017

© Crown copyright 2016 Dstl



# Strategic Cost Analysis in an Uncertain Future

Dr Stuart Taylor and Andy Nye  
7<sup>th</sup> February 2017



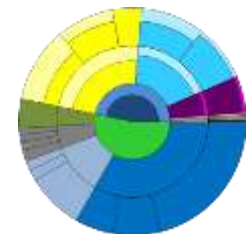
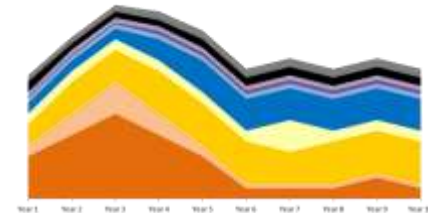
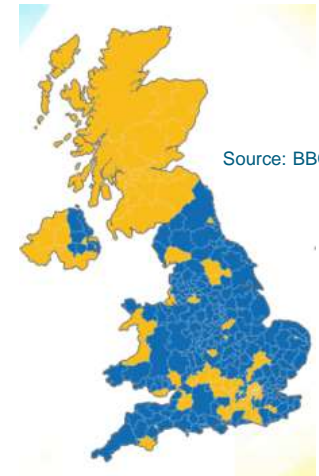
20 February 2017

© Crown copyright 2016 Dstl



# Overview

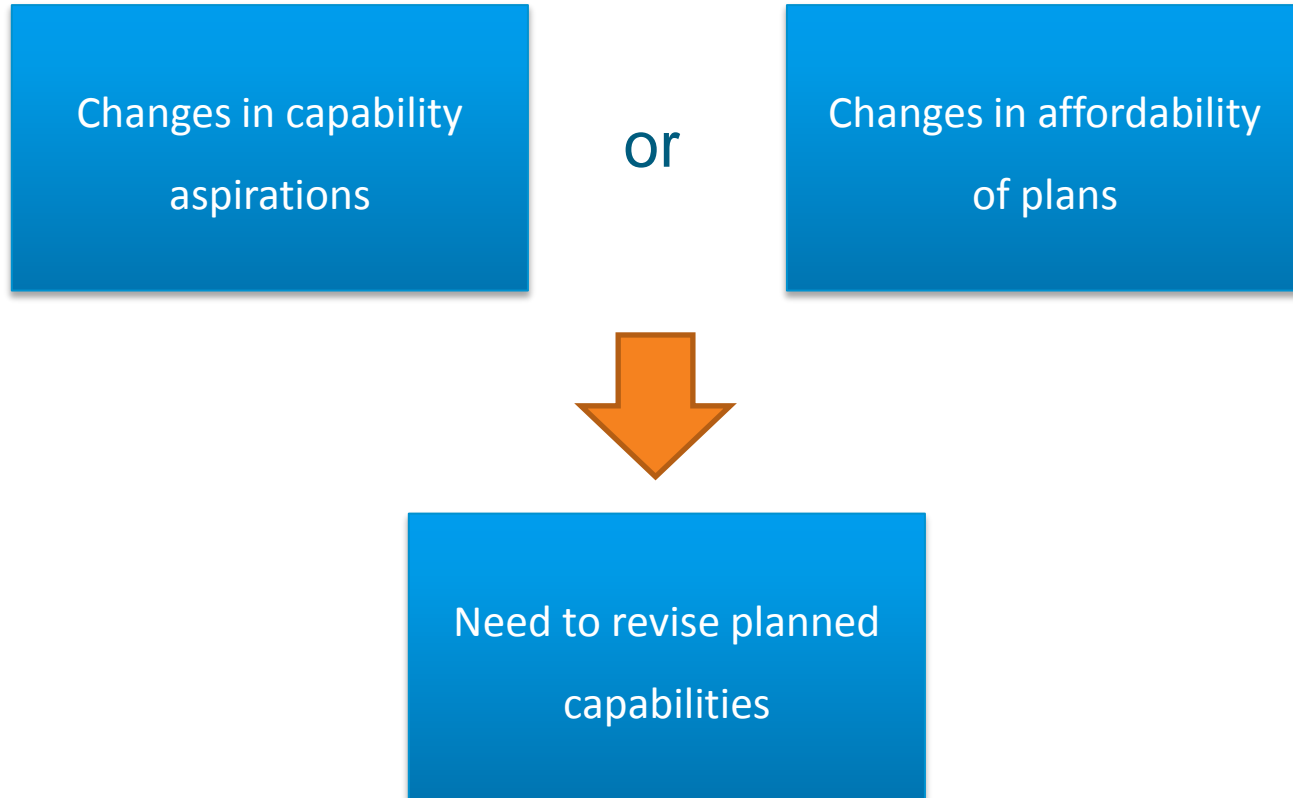
- Uncertainty and Strategic Re-assessment
- Policy and Requirement
- Strategic Cost Models
- Visualising the Cost Base



# Sources of Uncertainty for MOD

- Demand
  - Inherently unpredictable, in contrast to most other government departments
- Policy
  - Governments change quicker than Defence Capabilities
- Budget
  - 5 year spending plans, but there have been more frequent readjustments
- Exchange rates / Import Costs
- National / International Developments
- Costs
  - Significant proportion of Defence cost is from a small number of large and technologically complex projects

# Uncertainty and Strategic Decisions



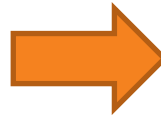
# Linking Defence Policy to Force Structures

- Defence policy options tested using illustrative scenarios
  - Requirements for scenarios explored and tested through campaign modelling and wargaming
- Exploration of Policy Alternatives
  - Different combinations of scenarios
  - Different concurrency assumptions

# Linking Defence Policy to Force Structures

- Concurrency Analysis Tool (CAT)

Scenarios	Tanks	Ships	Planes
1	3	0	1
2	2	2	2
3	0	4	3



Concurrency Cases	Tanks	Ships	Planes
1 & 2	5	2	3
1 & 3	3	4	4
2 & 3	2	6	5

- Strategic Balance of Investment (Strat Bol)
  - Optimise requirement by allowing ‘cost-optimised’ substitutions



# Force Structure Cost Model (FSCM)

- Requirement to support High Level Operational Analysis studies
- Understand costs of 'Force Elements'
  - MOD data needs to be appropriately mapped and apportioned
  - Previously generated ad-hoc
- FSCM created to support numerous studies
  - Includes costs for the whole of MOD
  - Reduces overall time and effort required for cost analysis
  - Costs based on consistent assumptions
- High level model used to support strategic decisions with force structural implications

# Force Structure Cost Model

## Defence Programme



Shared costs allocated to Force Elements for analysis as this allows us to better represent the elements' full costs



## What the FSCM includes

### Non Scalable Costs

Cost of core functions such as headquarters and procurement agencies  
Costs are not allocated to force elements

### Shared (supporting) Costs

Elements that directly support force elements, e.g. Training and barracks

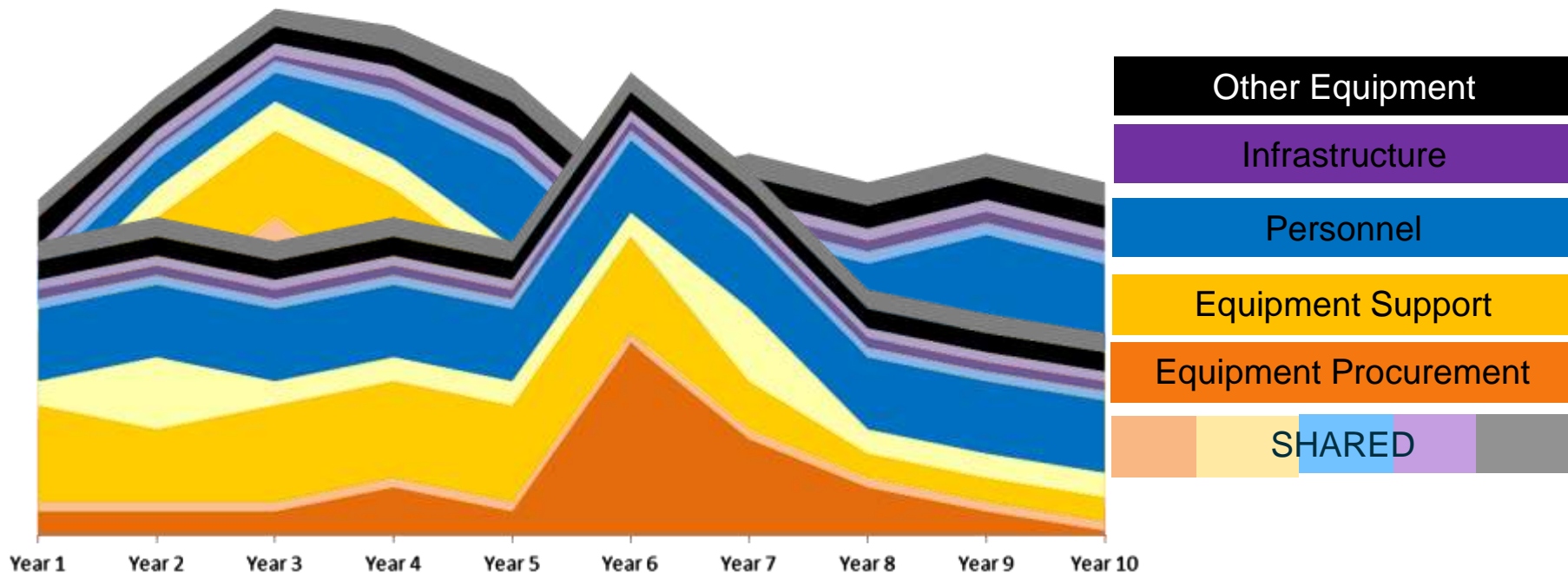
### Force elements

Current and Future (out to 50 years)

Whole Life Cost including:  
Manpower  
Equipment Development and Procurement  
Equipment Support

# FSCM Outputs

- Pan-DLoD Cost Profiles
- Used to generate cost inputs to a variety of studies
- Provides EACs to Bol studies (e.g. Strat Bol)



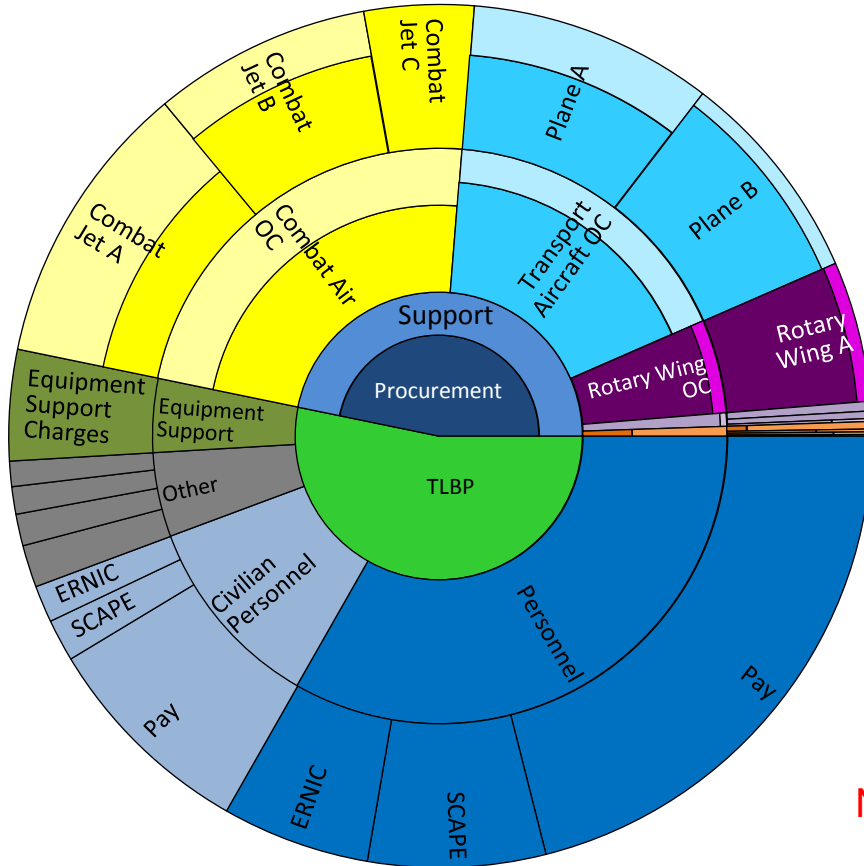
# Costing Alternative Force Structures




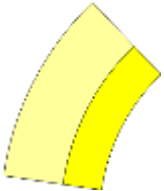


- Affordability Evaluator
  - Alternative Force Structures provided by CAT / Strat Bol
  - Extrapolates planned FSCM costs
  - Buys new platforms
  - Explores different cost pressures
  - Allows comparison with different budget scenarios
- Limitations
  - Economies of scale
  - Industrial base factors
  - Precedes detailed understanding of implementation

# Understanding the Cost Base

- Visualisation techniques increasingly used to articulate output costs and support specific decisions
- Also used to describe other MOD data
  - Help senior decision makers understand cost drivers
  - Support budget holders in identifying opportunities for efficiencies

# Radial Diagrams

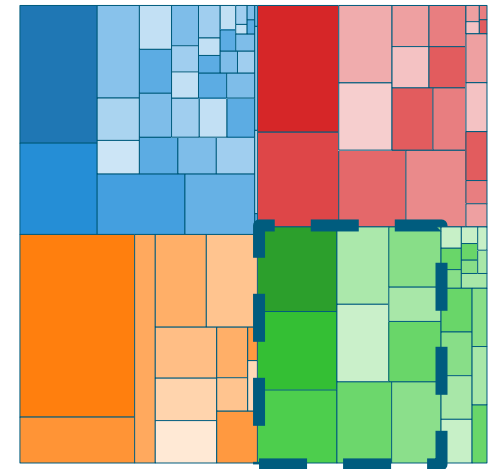
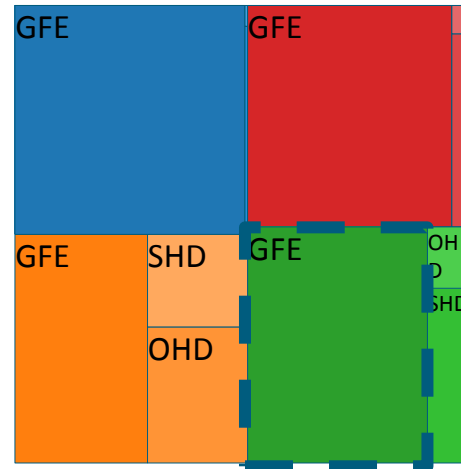
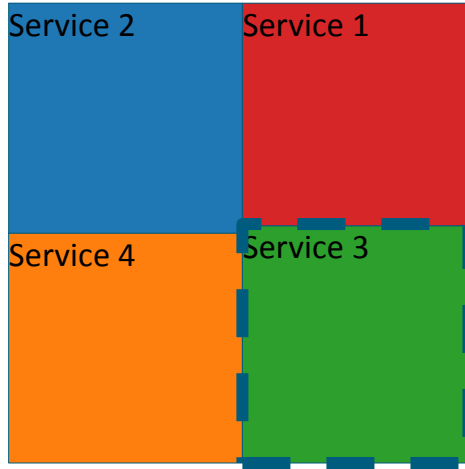


- 
 Multiple levels of breakdown
- 
 Grouped into Operating Centres
- 
 High production
- 
 Low production
- 
 Negatives!
- 
 Receipts -£m

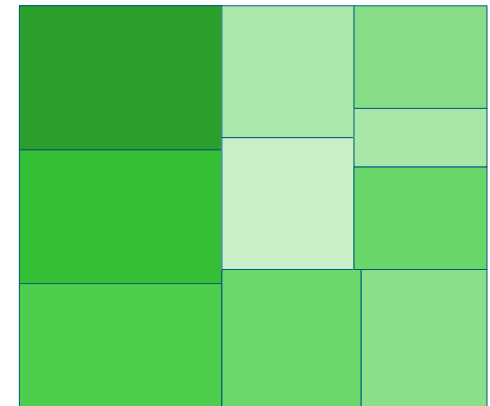
# Cost of Defence Squares

GFE – Generic Force Element  
SHD – Shared Force Element  
OHD – Overhead Force Element

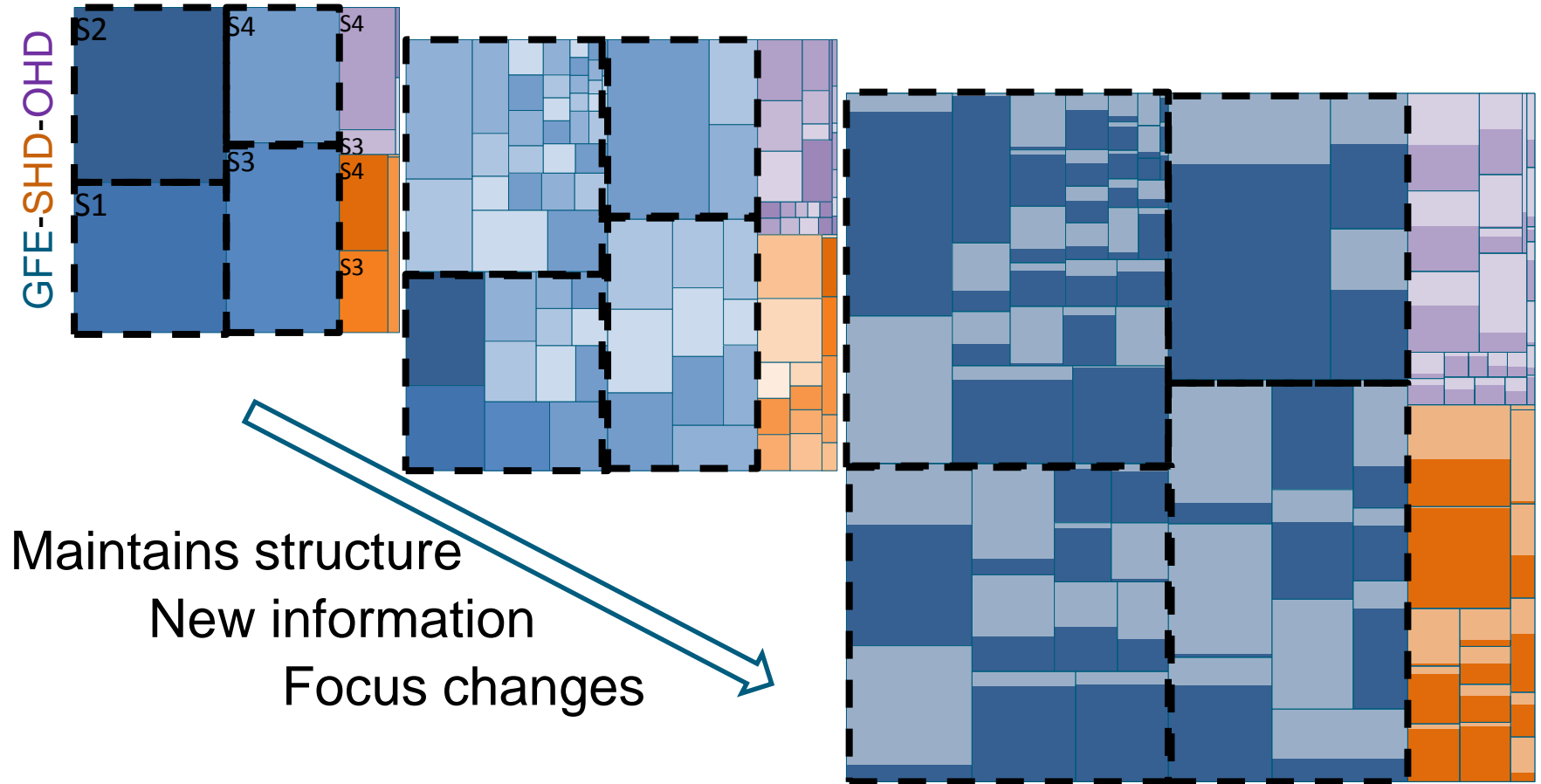
Different Levels of Breakdown



Interactive



# Cost of Defence Squares





# Questions?

Dr Stuart Taylor – Principal Analyst, Dstl

Andy Nye – Senior Analyst, Polaris Consulting Ltd



20 February 2017

© Crown copyright 2015 Dstl



[dstl]

20 February 2017

© Crown copyright 2016 Dstl

