

# Assessing the Affordability of Force Structures

Dr Stuart Taylor

# Overview

- Context
- Current force structure costing capability
  - Strengths
  - Limitations
- Proposed future costing capability
  - MoD research project
  - Emerging ideas

# Context

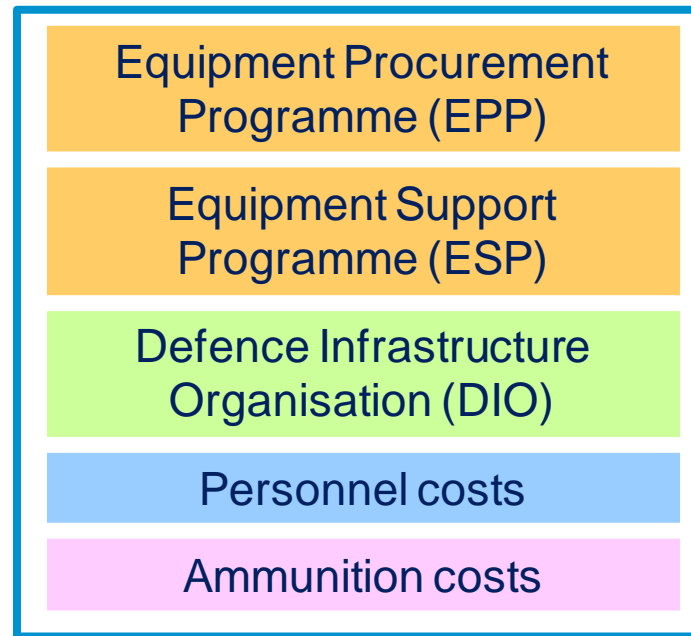
- Extant capability used to support previous Defence Review (Force Structure Cost Model)
- Requirement to develop tools and techniques to support SDSR 15
- Defence policy and capability choices will drive the future force structure requirement
- Need to be able to determine the affordability of the various options

# Force Structure Cost Model (FSCM)

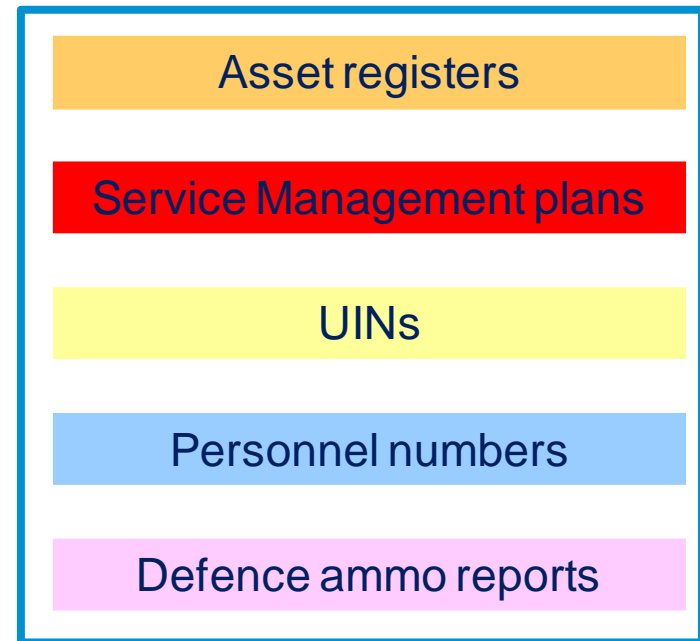
- Requirement to support High Level Operational Analysis (HLOA) studies
  - **Force Elements could not be costed using MOD's systems**
- Designed in 1999. Fully functional 2002.
- It is a high level tool designed to:
  - Map Pan-DLoD costs to Force Elements
  - Support force structures analysis
  - Represent peace time costs
- It is not:
  - A budgeting tool
  - A tool which identifies and costs specific details of alternative force structures

# Major FSCM Inputs

## Cost Data

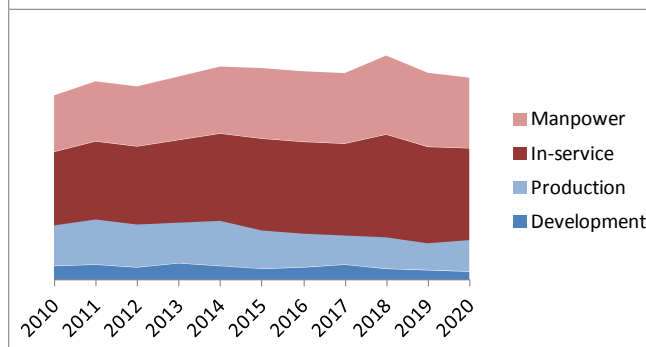
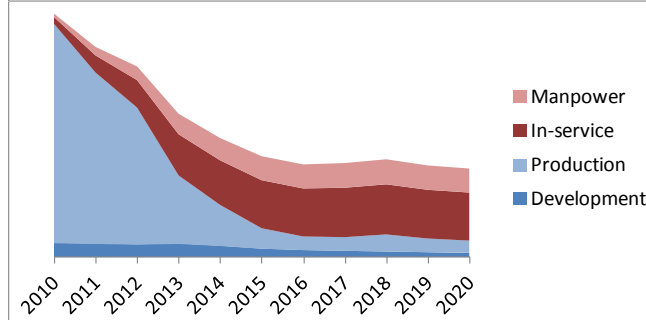
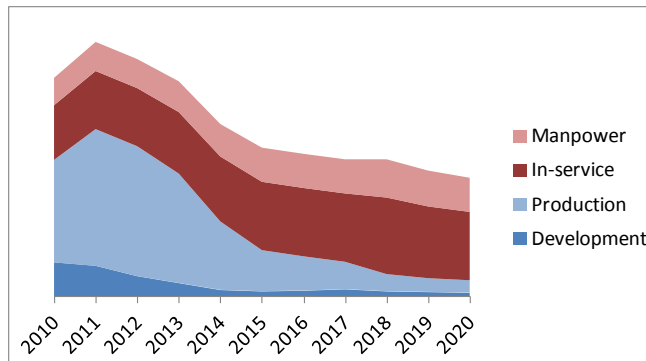


## Force Structure Data

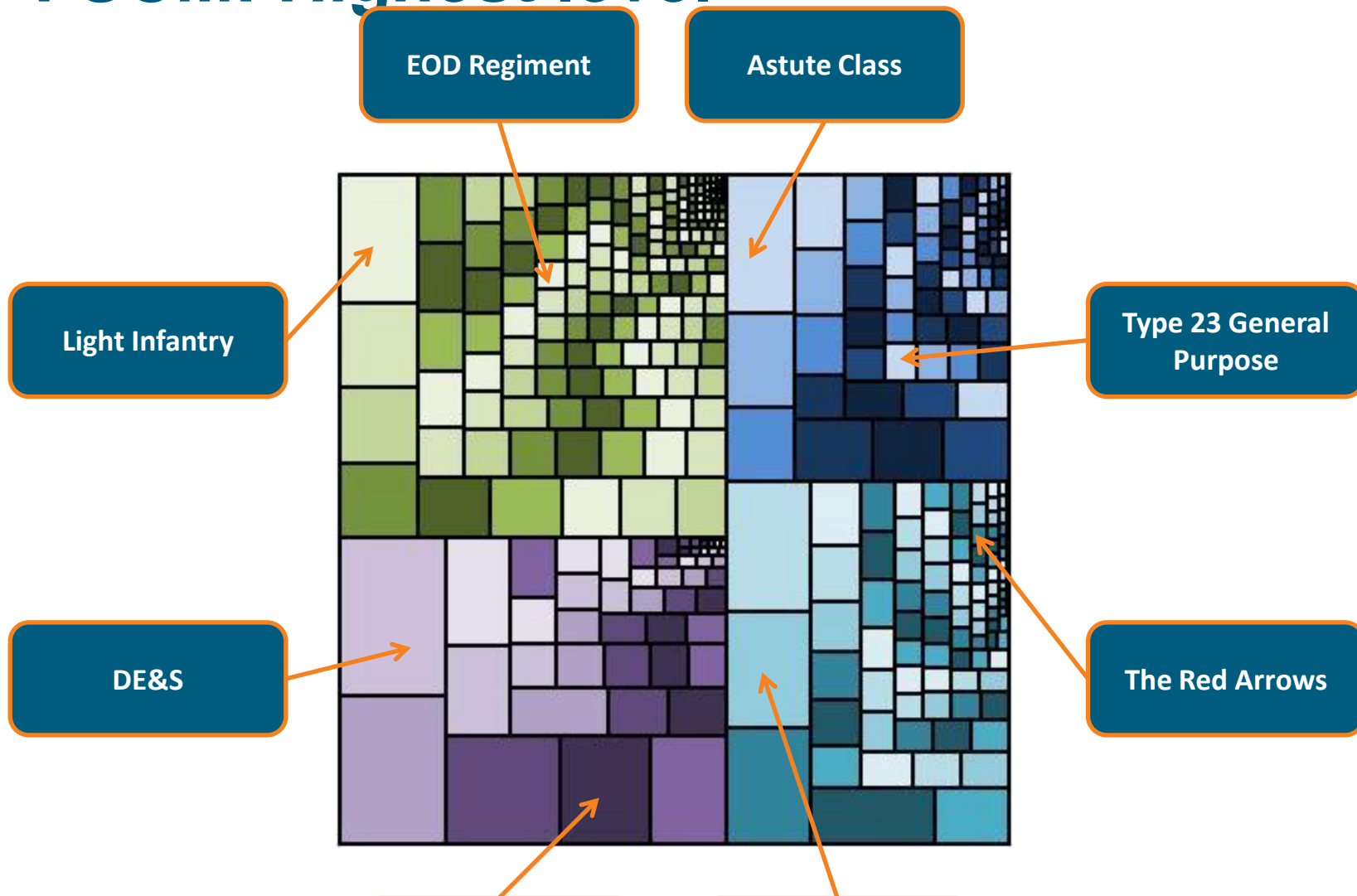


→ FSCM ←

# Illustrative Cost Profiles



# FSCM: Highest level



# Uses of the FSCM

- Provide Pan-DLoD cost profiles for capabilities
- Provide EACs for Balance of Investment studies
- Show interdependencies between P9 lines and Force Elements
- Estimate in-year costs for alternative force structures
- Supported...
  - SDSR 10
  - 3 Month Exercise
  - Other models
  - Numerous studies
- Key model within MoD Cost Management Strategy



# Affordability – Current Capability

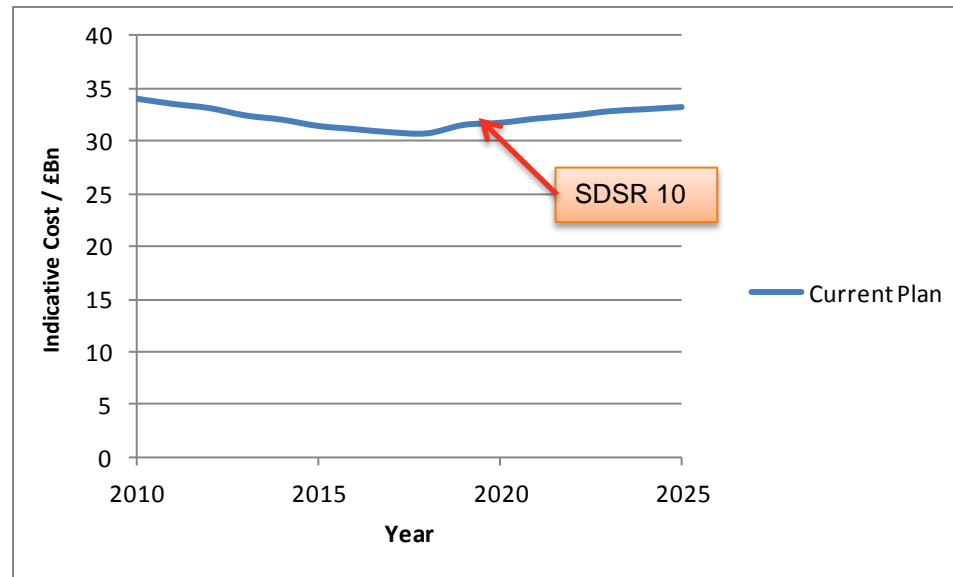
- Alternative force structures treated as an input
- In-year force levels adjusted accordingly
- In-year costs estimated through simple extrapolation
- Comparison with different budget scenarios
- Single in-year cost is insufficient for affordability analysis

# Affordability - Requirements

- A fuller understanding of affordability requires cost profiles over time

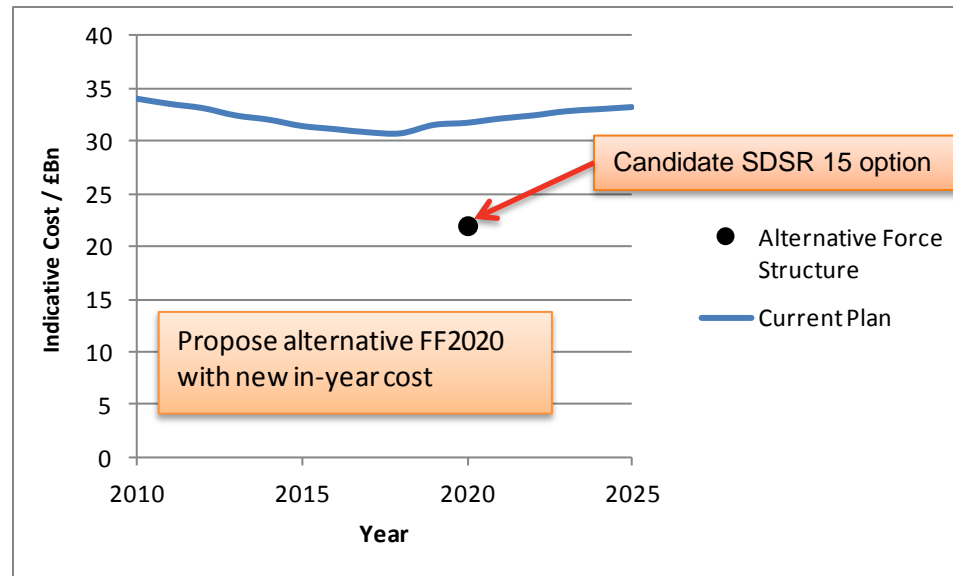
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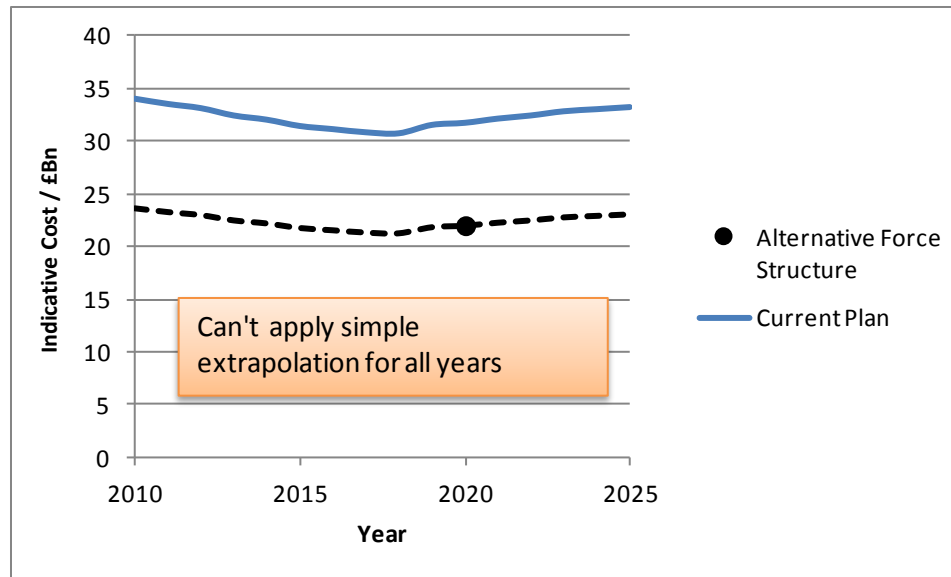
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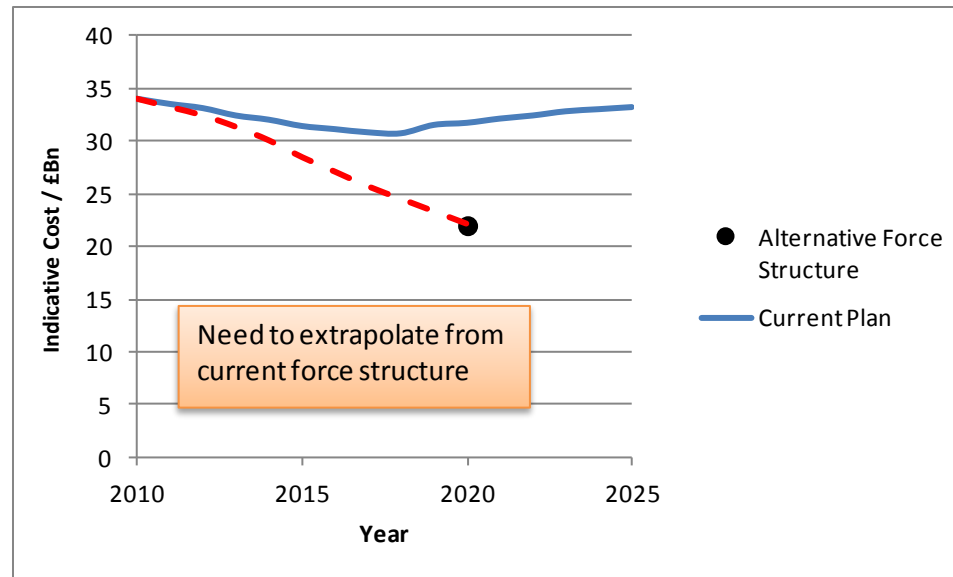
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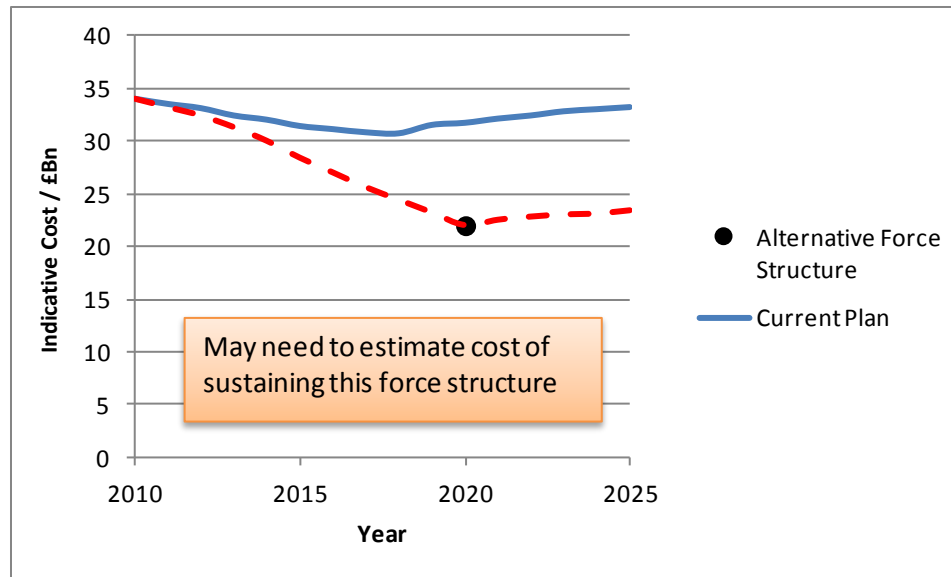
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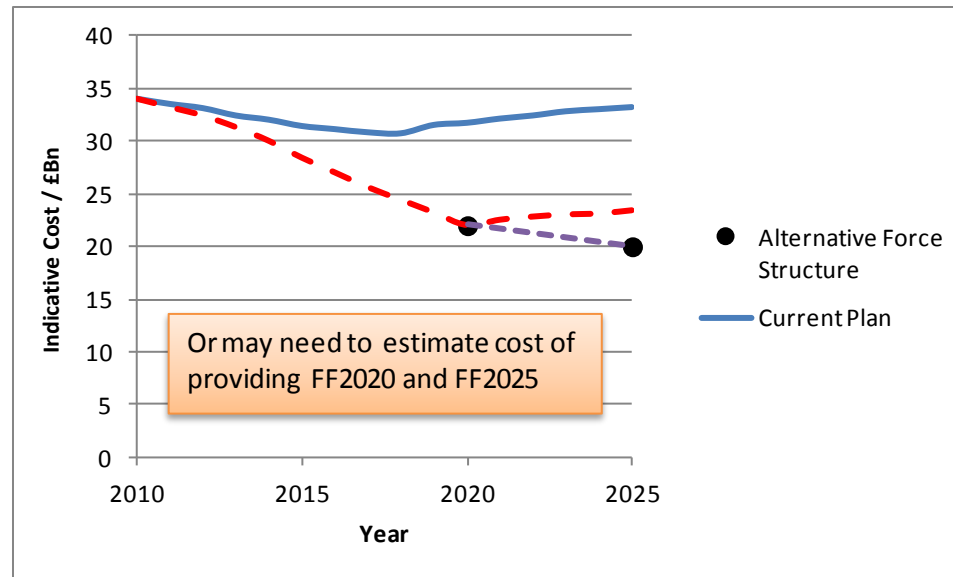
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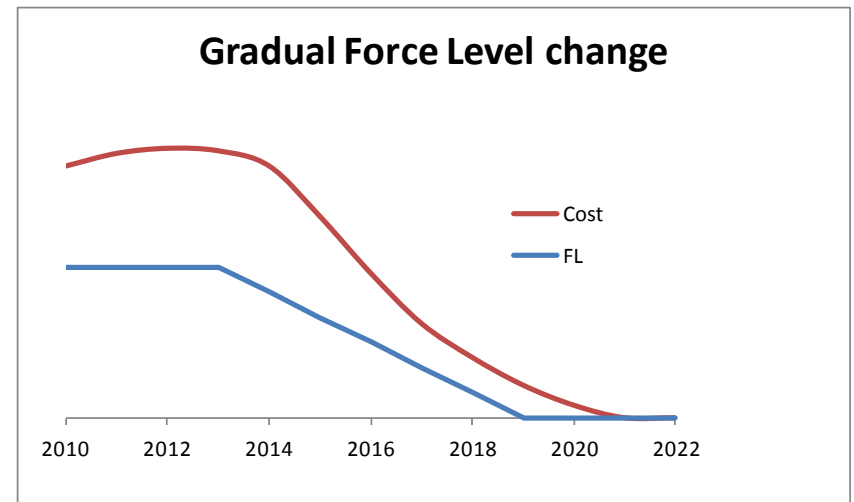
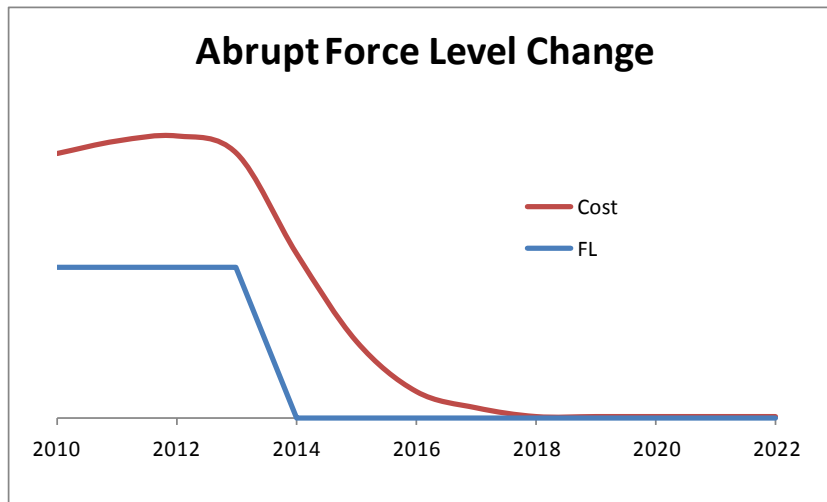
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# Affordability - Requirements

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- Cost profiles will depend on how the force structure evolves.

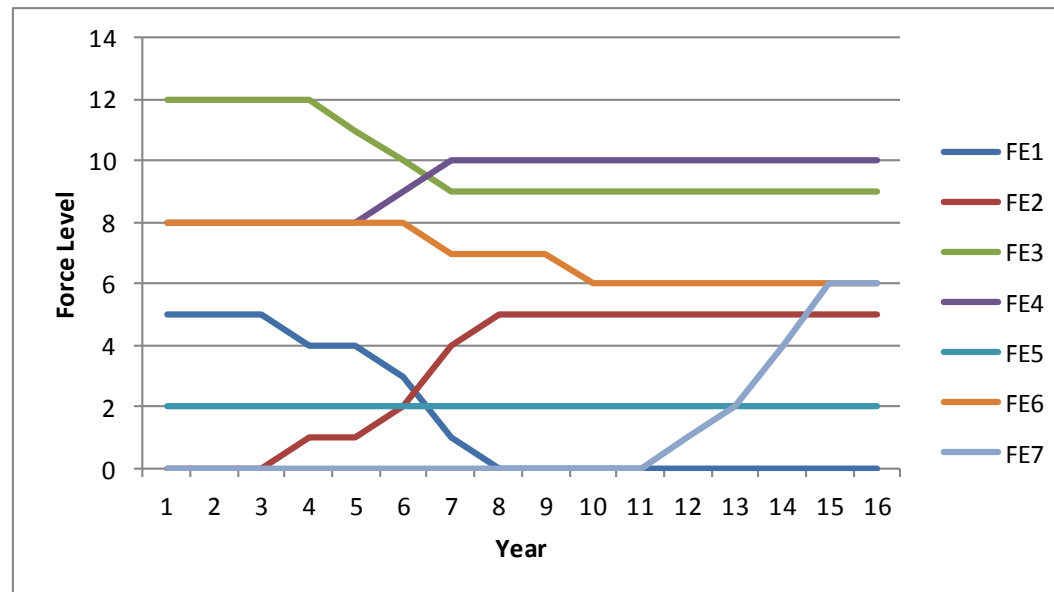


# Affordability - Requirements

- A fuller understanding of affordability requires cost profiles over time
- Cost profiles will depend on how the force structure evolves
- If force levels are increased, then the preceding production costs need to be represented
- Early prototype model now developed to demonstrate cost profile extrapolation

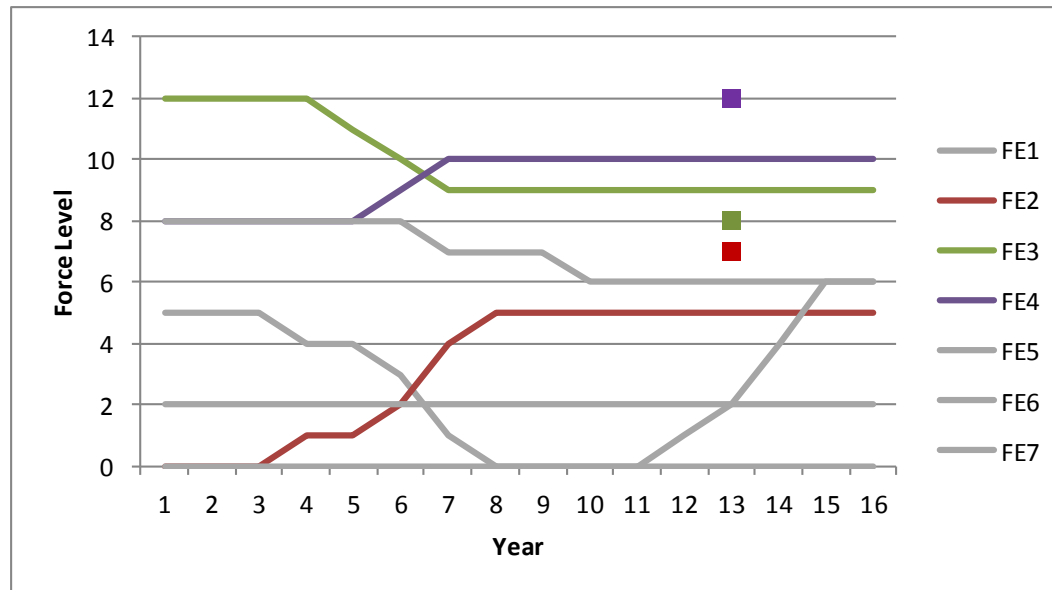
# Force Level Profiles

- Assume 7 Force Elements with planned force level profiles as below



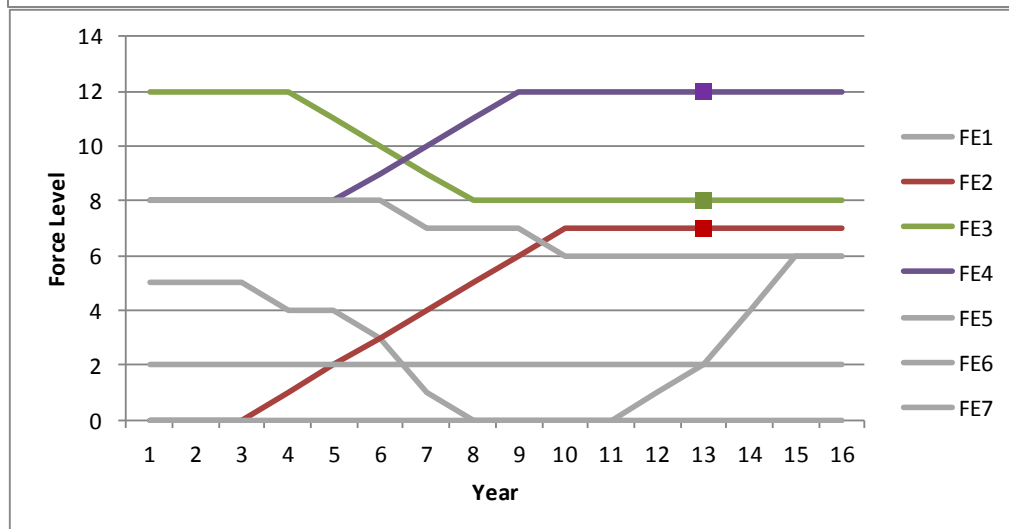
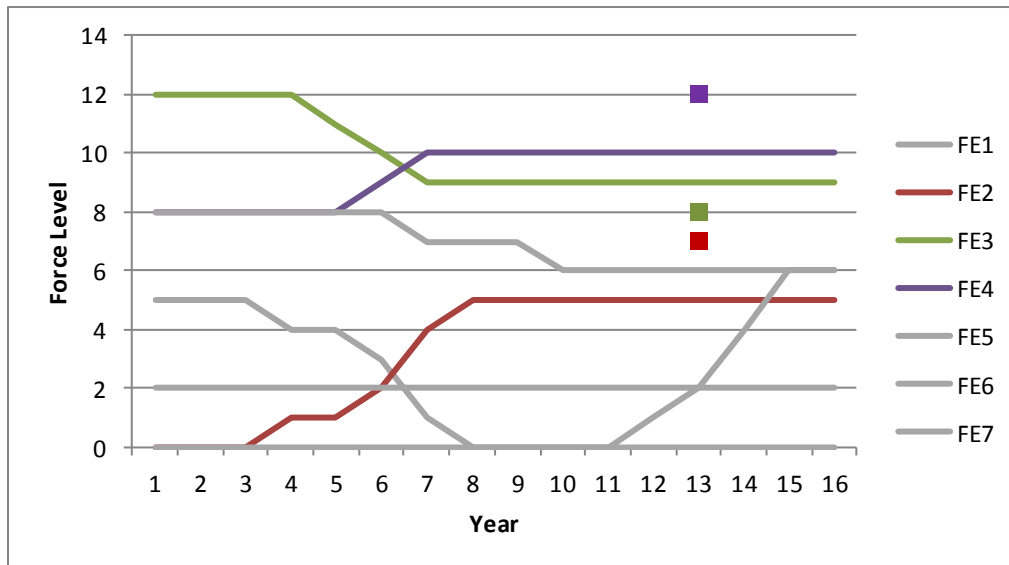
# Force Level Profiles

- Analysis usually produces alternative force structures for specific years
  - Assume 3 changes in Year 13 force levels



# Force Level Profiles

- Need to generate sensible extrapolation
  - Maintain planned rates of change as far as possible
  - Limits on max rate of Force Level increase
  - Assume new force levels maintained beyond year 13?

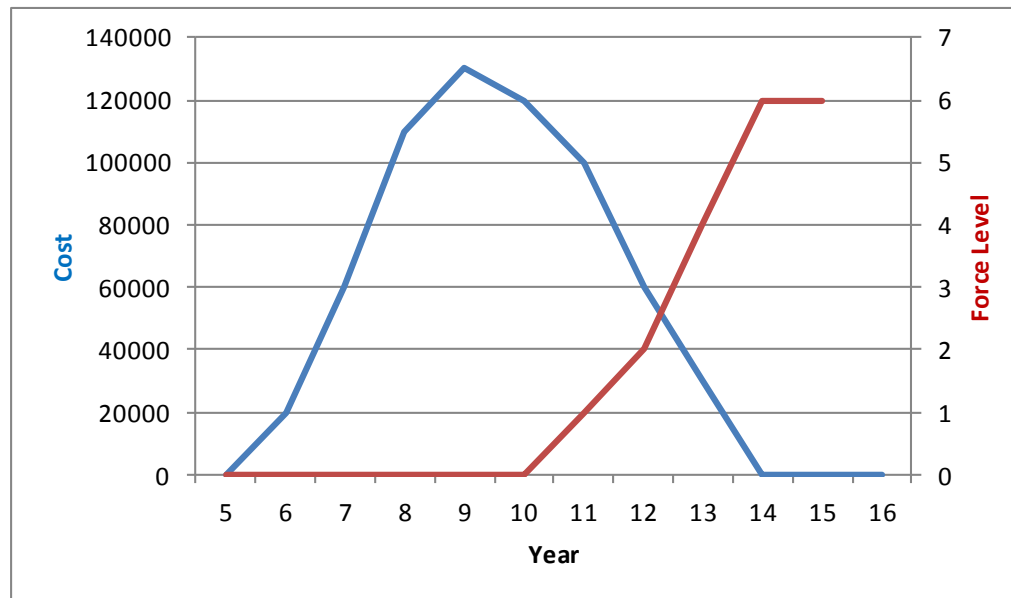


# Cost Profiles

- Development costs
  - Binary function of whether the FE is ever required
- Manpower & In-service costs
  - Assume these scale linearly with in-year force levels
- Production costs
  - More Complicated
  - Change in max force level affects production costs in previous years
  - Need to work out cost profile per individual FE
  - Add or subtract in cost in preceding years

# Production Costs

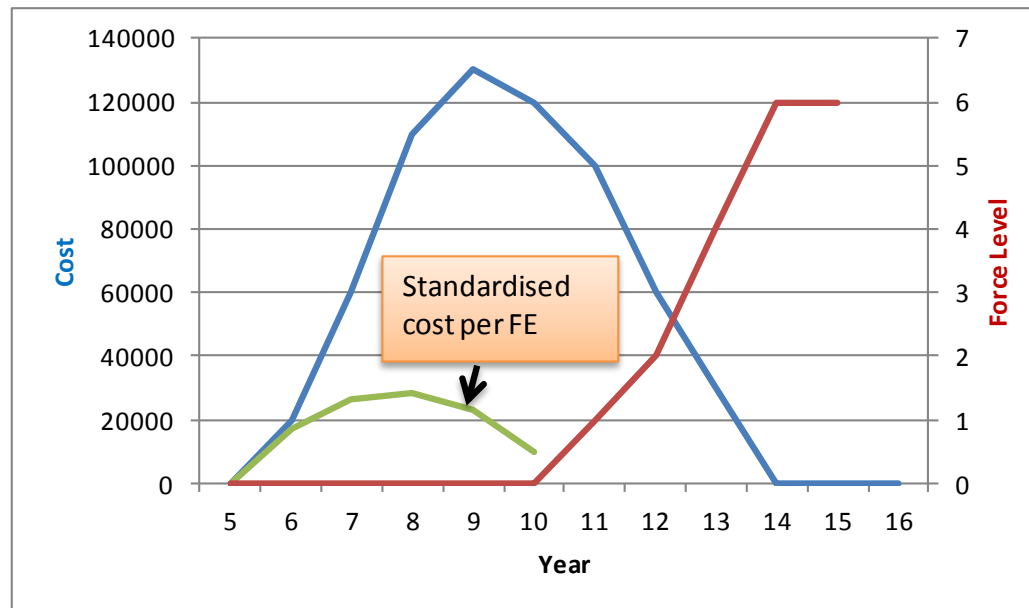
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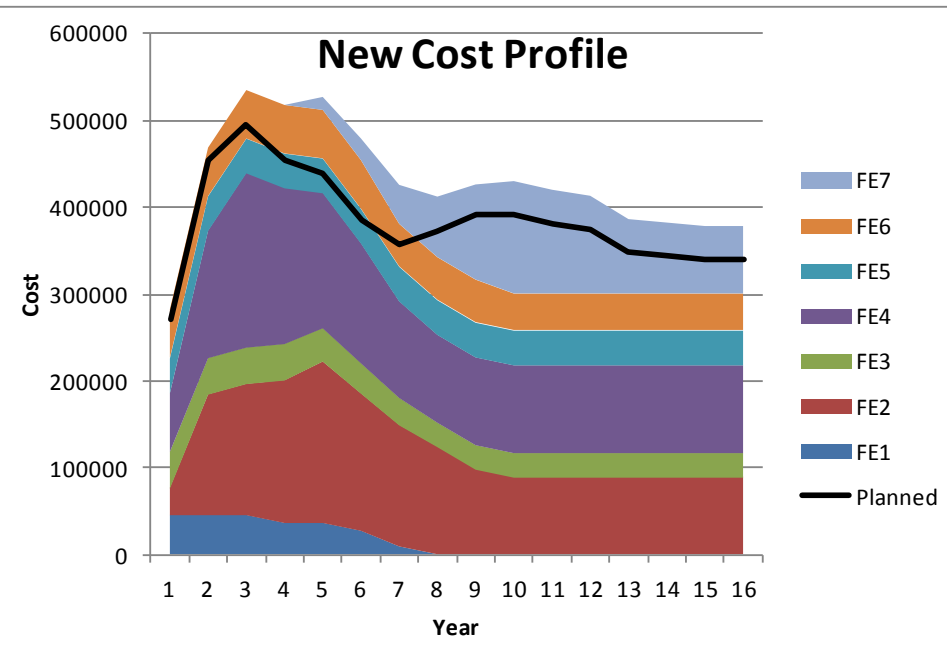
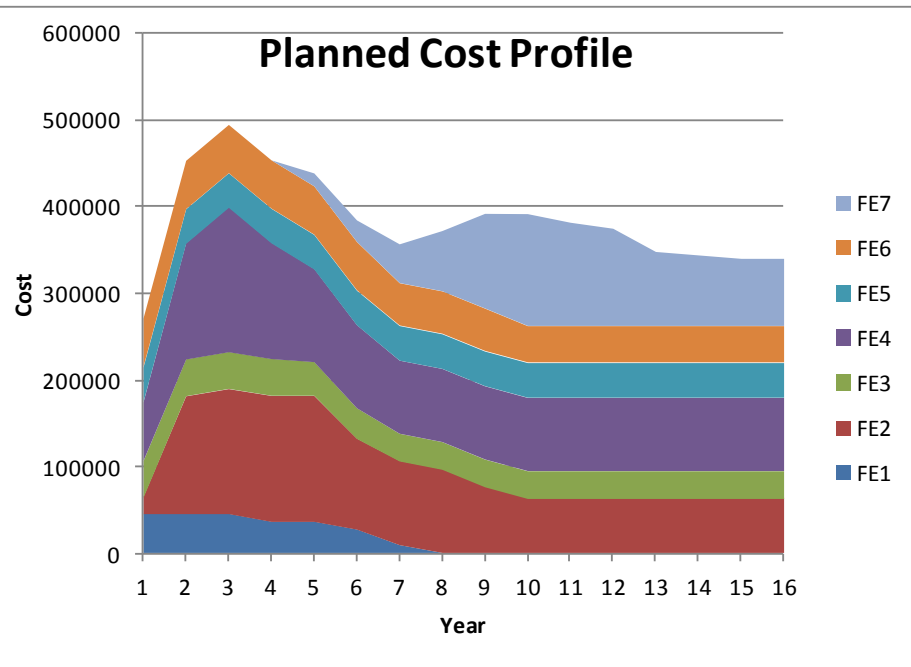


# Production Costs

- Need to work out cost profile per individual FE



# Estimated Cost Profiles



# Summary

- Dstl have an established capability to:
  - Cost Force Elements
  - Support Force Structural BOI
  - Provide indicative costs of alternative force structures
- Required enhancements for support to SDSR 2015 and beyond have been identified
- Prototype cost profiling model developed
- Work in progress
  - Further development and V&V required

# Questions?