

Aims and Objectives

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23 April 2013

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Purpose

- The purpose of this workshop is to provide a **training session** in cost estimating conducted by professional estimating teams from academia, industry, tool vendors and consulting with the added benefit of **top-level critique** by senior government and industry executives.
- This program will be **instructive, entertaining, and suitable for a wide interest audience** (estimators as well as managers).

Workshop ethos

The workshop ethos will be;

- Presentations will be conducted in a **non-hostile atmosphere**.
- All observations will be **focused on the methodology and approach**, rather than the absolute cost accuracy.
- This is a **learning exercise** for the Teams and the audience.
- Team should seek ways to **demonstrate its innovation, experience, and presentation** skills.
- It is SCAF's preference that **younger members** of staff are used for the exercise, rather than 'veterans' of cost estimating, to provide a valuable opportunity for 'the next generation' to gain experience.

Background

- With the current period of **austerity** foremost in the minds of the defence community, making the **correct decision** between capability options has become even more important. Defence chiefs are requiring **more evidence** to enable them to make a selection between different procurement strategies and equipments.
- For this reason the role of the **economic analysis (EA)** has become important in supporting the selection process. An investment appraisal (IA) **assists and supports the decision** making process and aides the MOD to select the 'best value for money' option that will satisfy HM Treasury.

The Challenge (Problem)

- You are a Cost Engineer at the start of your career with a mortgage on a 2 bedroom house and a stable salary. Your partner tells you the good news that you are going to have **twin babies**. You quickly realise that the property that you have will not be large enough and **you have a financial decision to make** in the near future.
- There is sufficient land around your current property to **build an extension** which will accommodate another bedroom or you could **move to a three bedroom house?**
- Having recently conducted an economic analysis at work for the ministry of defence you realise that you should conduct an investment appraisal to ensure that you **make the correct decision for your new family**.
- The objective is to prepare a cost estimate for these options and then conduct an economic analysis:
 1. Build an extension to your current house, or
 2. Move house to a larger building.
 3. Any alternative viable option.

The Challenge (Problem)

- The study output **should cover**:
 - approaches to data gathering
 - data normalisation
 - data analysis
 - presentation of any cost model
 - the effects of uncertainty in the data on the cost model
 - sensitivity analysis of the results
- The objective is not so much to prepare accurate and realistic estimates, but to **describe the approach to this task and how the task has been conducted**. It is reminded that the Team members should not disclose proprietary information.
- They may use and display public domain models or even invent some models for the purpose of the exercise. If so, the Team will indicate it in order to avoid the audience from being misled.
- There is **no pass or fail and certainly no “right answer”**. We strive to keep the estimating spirit alive and to present a good cross-section demonstration of how world-class estimators approach the issue of analyzing data and producing parametric models.

General Estimating Assumptions

1. **Whole life costs (WLC)** should be considered including; Acquisition, Maintenance and Operating costs.
2. The base estimates should be at **2012 economics**.
3. **Uncertainty and risk** distributions should be considered
4. The teams will **not be limited to data provided by SCAF** (see annex) and may supply their own insight into future technologies and price projections.
5. The team should offer a **recommendation**, with an explanation of their reasoning.
6. The team should make **assumptions** about cost and performance relationships.
7. Technology forecasting, augmenting assumptions, and **innovative estimating are encouraged**

Current house details:

Location	Bristol, near Abbey Wood
Size	70 m ² total (1 st and ground floors)
Original cost	£ 215,000
Current mortgage	5% fixed for 5 years
Mortgage duration	3 years paid of 25 years
Built	1895 stone built end terraced cottage
Central heating	Gas

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