# Enterprise Mapping & Decision Support – Helping MoD Manage its Combat Air Capability

Ed Aubrey      ISMOR, August 2012
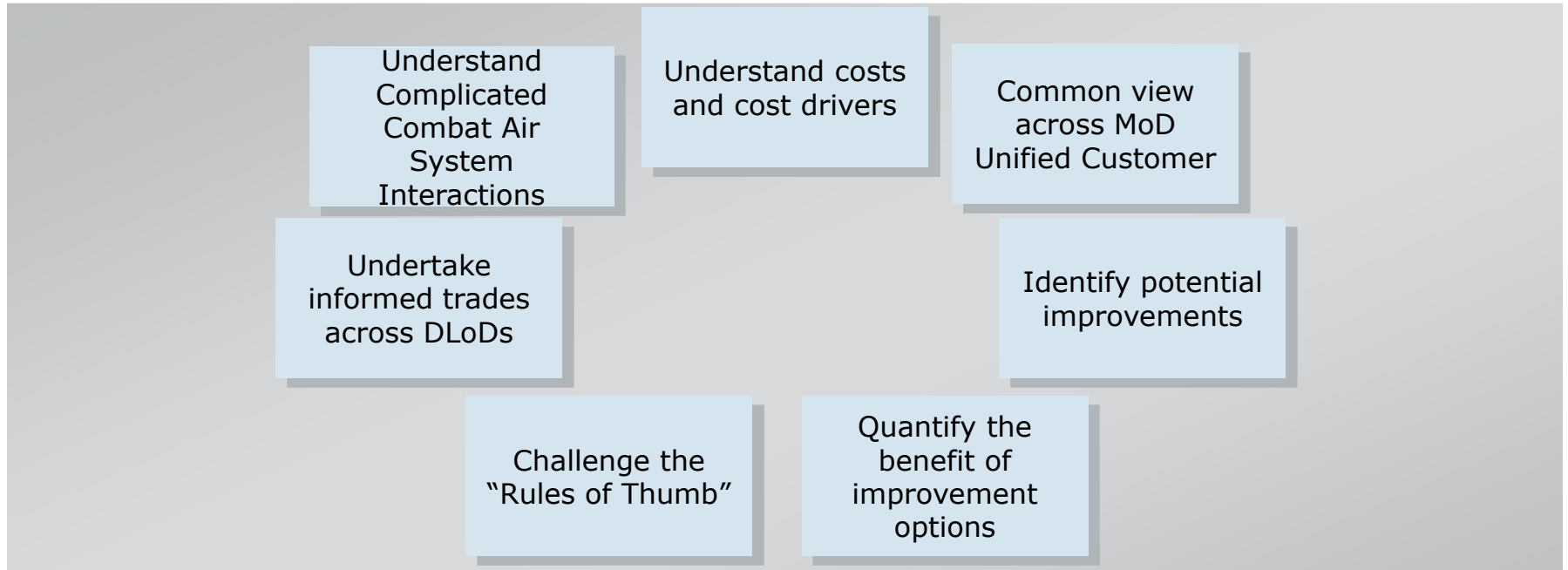
# Contents

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- Enterprise Maps & Activity Cycles

- Cost Cityscape

- What if analysis

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# Need for Combat Air Decision Support

Need to deliver fit for purpose and affordable Combat Air Capability

Understand Complicated Combat Air System Interactions

Understand costs and cost drivers

Common view across MoD Unified Customer

Undertake informed trades across DLoDs

Identify potential improvements

Challenge the "Rules of Thumb"

Quantify the benefit of improvement options

**Combat Air Decision Support**

# Approach

- Combat Air PB asked CORDA, supported by Dstl to develop a decision support approach, and present it at the April Board
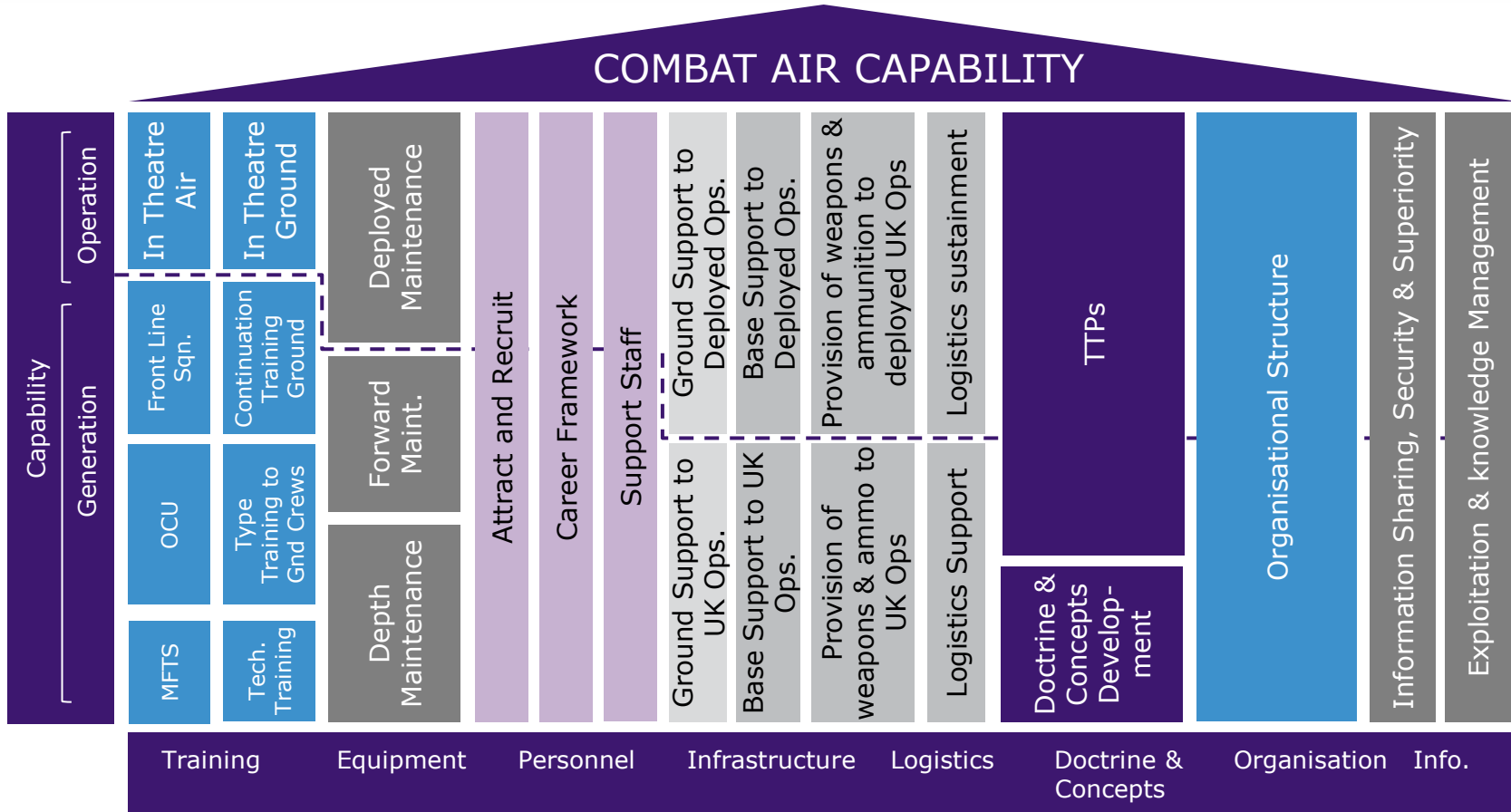
| Understand | Formulate | Evaluate |
|---|---|---|
| **Understand** the cost and value of activities within combat air, and the risks, issues and opportunities | **Formulate** questions for further investigation and "what-if" options for improvement | **Evaluate** the benefit of different options and decide which should be taken forward |

- Combat Air Enterprise Map & "Proof of Concept" Toolset developed

# What is an Enterprise Map?

COMBAT AIR CAPABILITY

| | | | Training | | | | Equipment | | Personnel | | | Infrastructure | | | Logistics | Doctrine & Concepts | Organisation | Info. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Capability — Operation / Generation

- In Theatre Air
- In Theatre Ground
- Front Line Sqn.
- Continuation Training Ground
- OCU
- Type Training to Gnd Crews
- MFTS
- Tech. Training
- Deployed Maintenance
- Forward Maint.
- Depth Maintenance
- Attract and Recruit
- Career Framework
- Support Staff
- Ground Support to Deployed Ops.
- Base Support to Deployed Ops.
- Provision of weapons & ammunition to deployed UK Ops
- Logistics sustainment
- Ground Support to UK Ops.
- Base Support to UK Ops.
- Provision of weapons & ammo to UK Ops
- Logistics Support
- TTPs
- Doctrine & Concepts Development
- Organisational Structure
- Information Sharing, Security & Superiority
- Exploitation & knowledge Management

"An Enterprise Map is a graphical breakdown of the key activities required to support a complex/complicated multi-organisational enterprise achieve its goals"

# Enterprise Mapping – Developing a common understanding
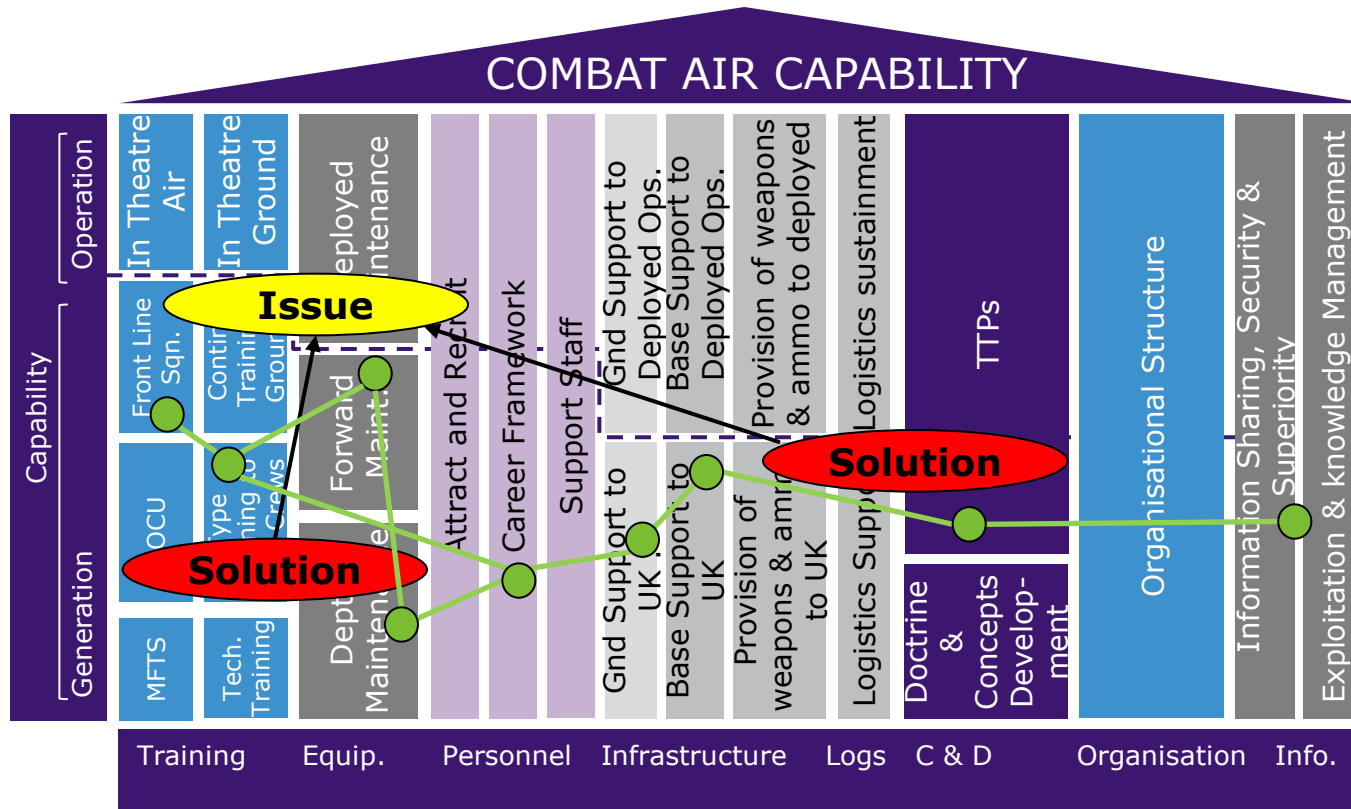


> Considers activities across the stages of TLCM & DLoDs

> What are the main activities and what are they aiming to achieve?

> How do the activities relate to one another?

> What is the balance of cost across activities and the DLoDs?

> What are the risks and how are they mitigated?

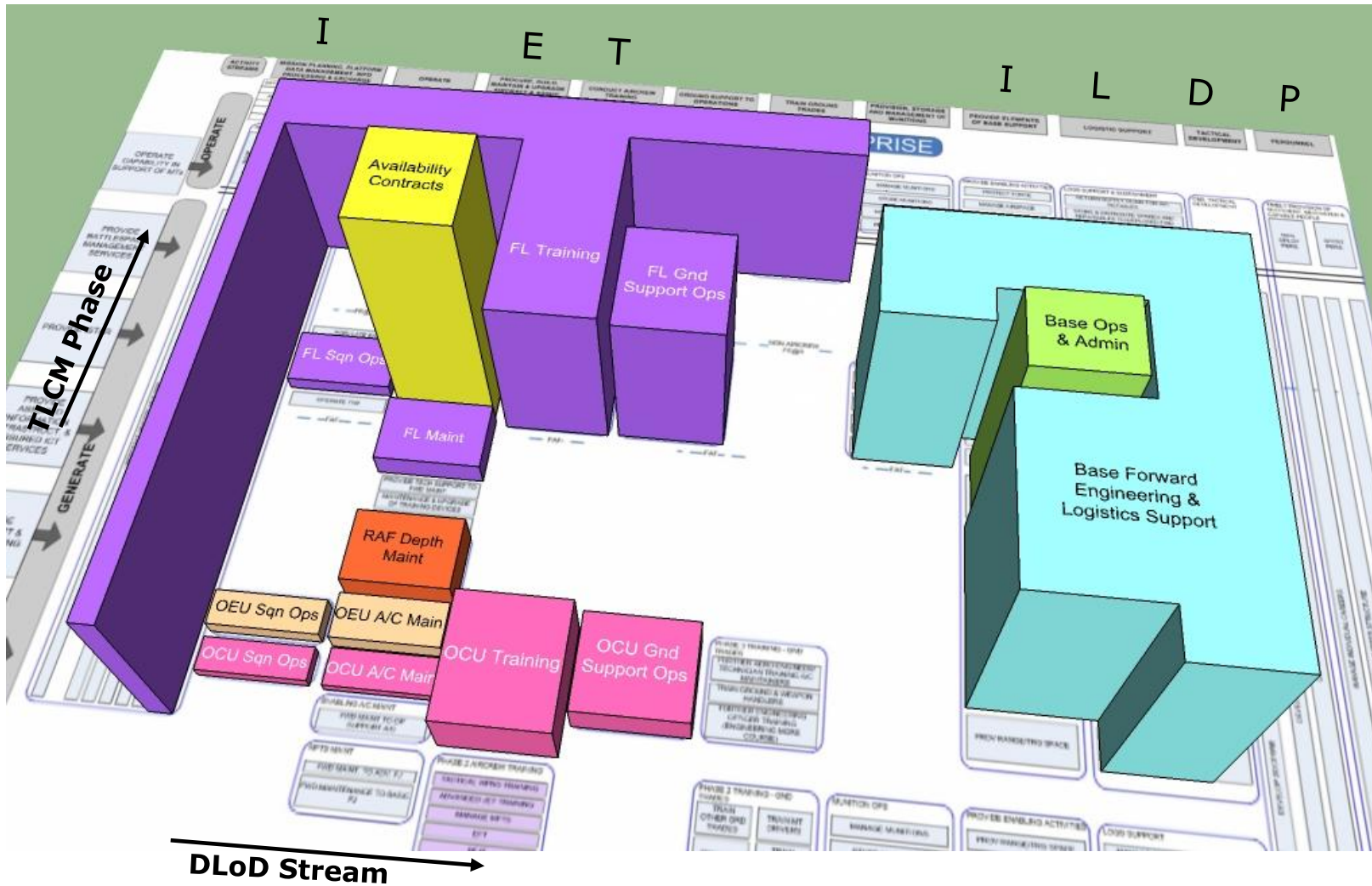> Where are there opportunities to improve the Enterprise?

# Example Activity Cycle
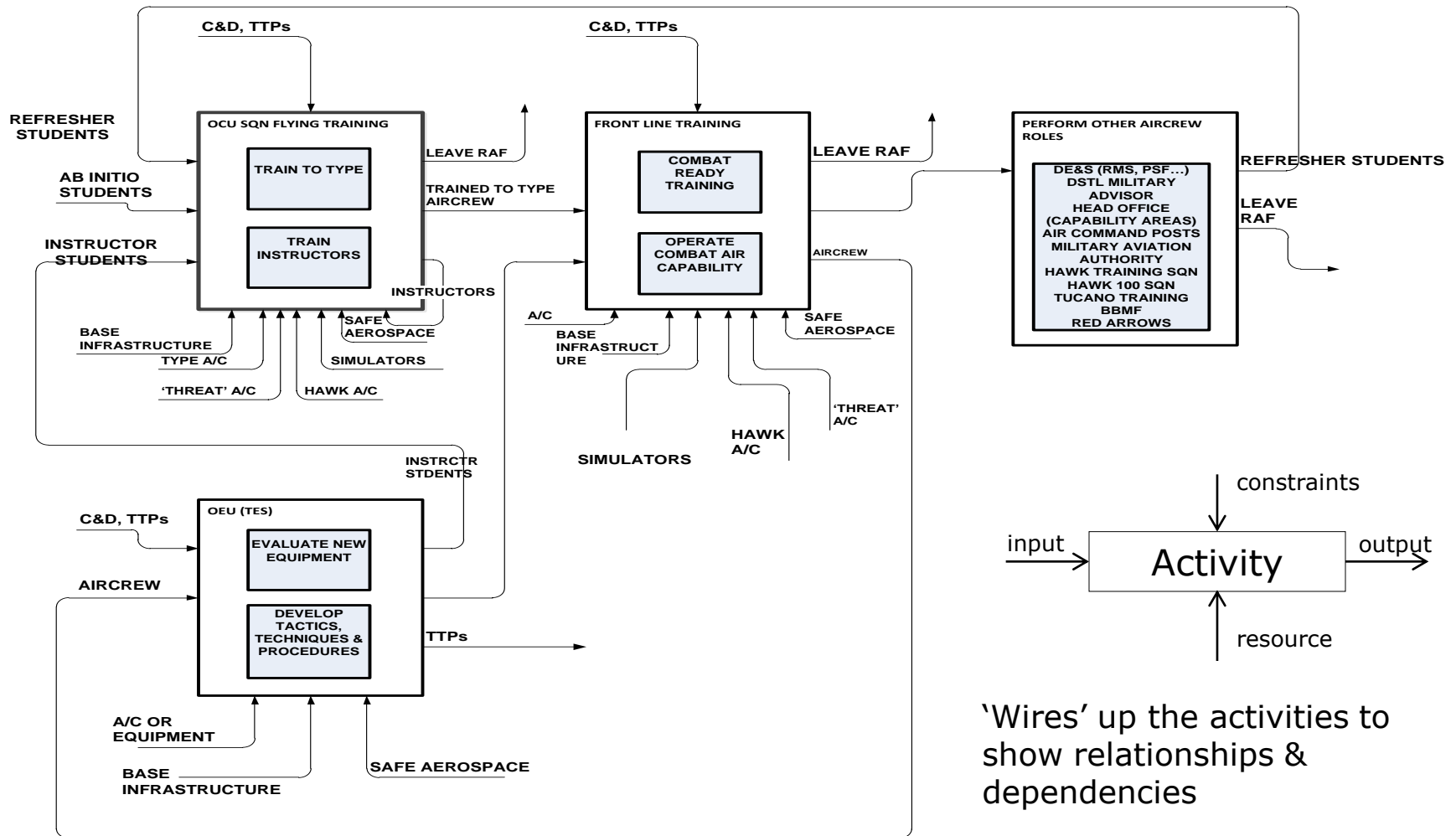


'Wires' up the activities to show relationships & dependencies
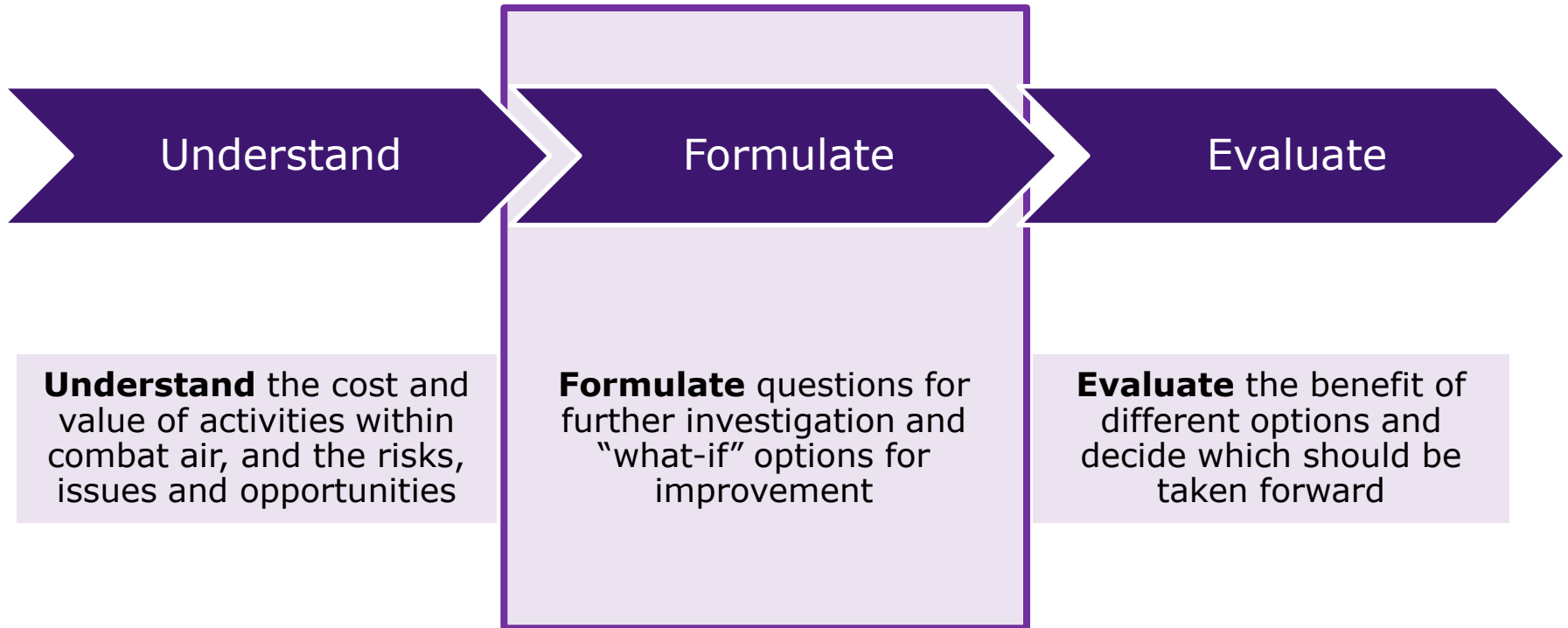
# Understanding Costs - Cityscape
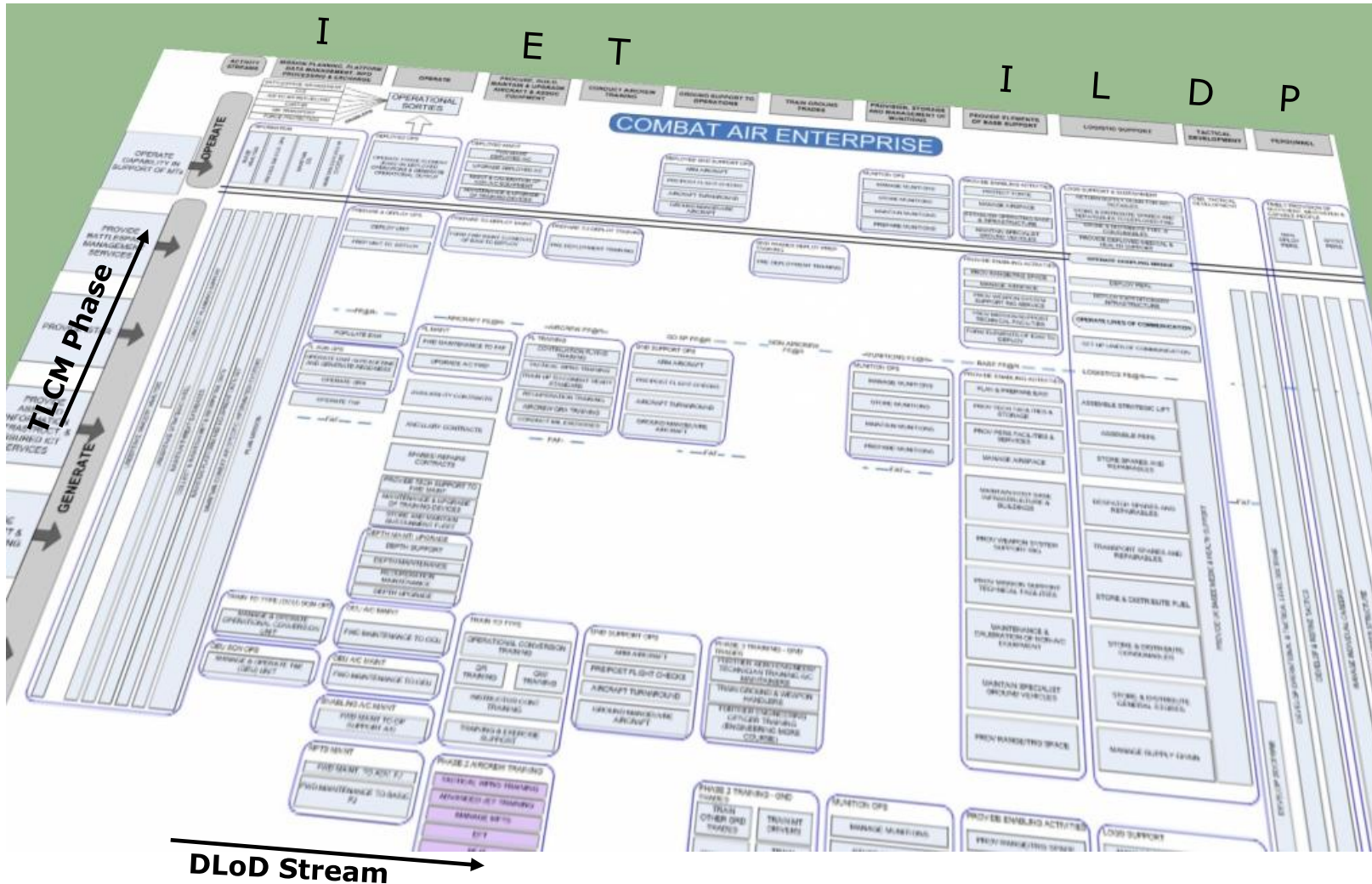
# Understanding Costs - Cityscape

NB. Data is illustrative

# Approach



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# What-if Analysis



Aircrew Training chosen as an example area for analysis

Aircrew training at FL Sqn

Allocation of aircrew to FL Sqn, OCU and other posts

TLCM Phase

DLoD Stream

Aircrew & instructor training at the OCU

COMBAT AIR ENTERPRISE

Three options for what-if analysis:

> Develop Enterprise Map overlays, so that future scenarios can be visualised

> Develop a toolset that models a subset of the activities & relationships within the Enterprise Map

> Direct the use of other models/initiate studies based on Enterprise Map Analysis

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# Approach



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# Model Overview

Model inputs (Excel)



Dynamic Model (Analytica)

Benefits
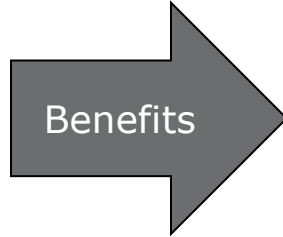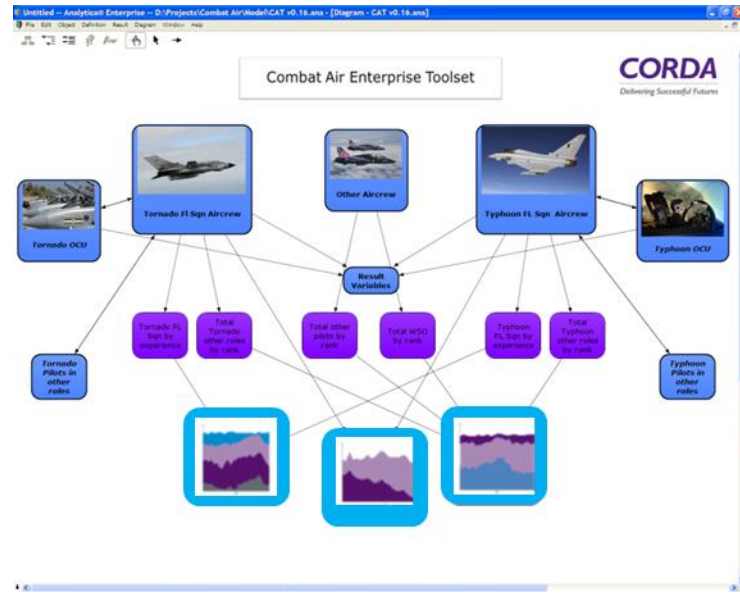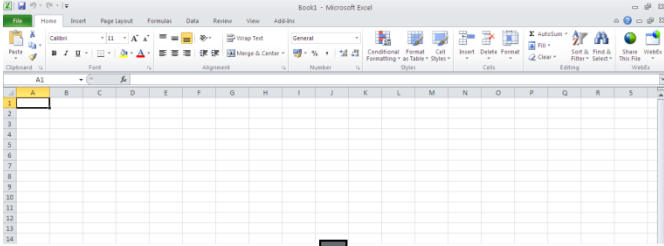
Easily extendable
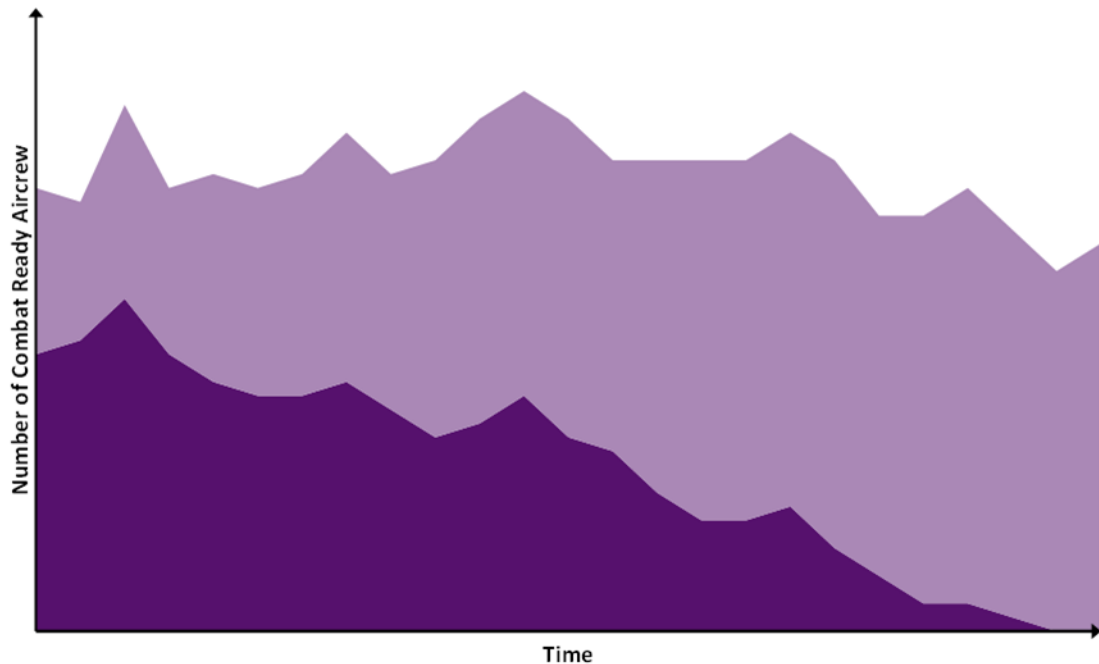
Quick to run

Represents uncertainty

Time-based input/output

# Example Output



- Combat ready aircrew profile
- Experience profile
- Predicted Flying Hours profile

'What-if' options:

| Changing tour lengths | Changing the live/synthetic blend | Changing aircrew return on service |

NB. Data is illustrative

# Summary

- Approach provides qualitative & quantitative insights and readily communicates key ideas/issues to key stakeholders

- Good feedback – The board can see the benefit of the approach

- Other examples of the approach include
    - UAS Cost Drivers
    - Cross-DLoD Analytical Framework