

**[dstl]**

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Ministry  
of Defence



# From Operational Analysis to Operational Planning

## *Shaping the ISAF Campaign Plan in Afghanistan*

Topic 3: 'The fuzzy edges of wargaming'. Exploring non-kinetic conflict dynamics

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# Introduction

- World-leading Dstl capability:
  - Peace Support Operations Model (PSOM)
- Support UK Defence Main Effort
- Direct support to senior US, UK, NATO and Afghan decision makers
  - NATO Ex ARRCAD FUSION 2009
  - Deployed Wargames
    - March 2011
    - November 2011
  - US Joint Staff ISAF '2014' Wargame

# Introduction



- **Shape the conduct of a real war (in a dining hall!) in a war zone...**

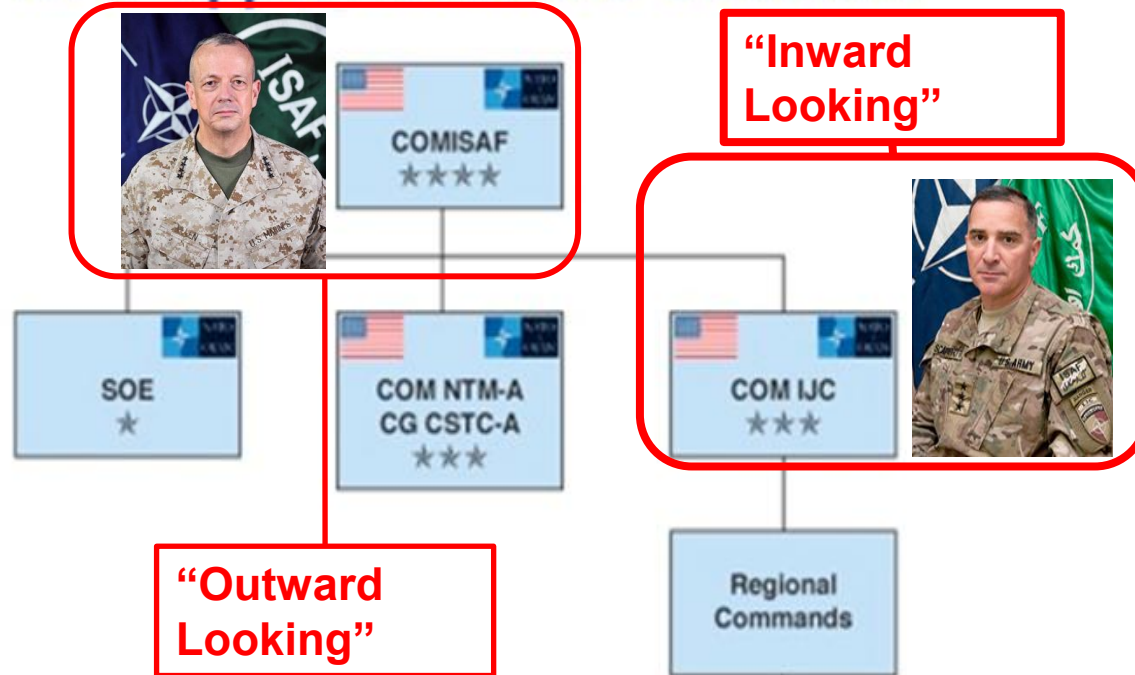


# Afghanistan: The Problem



# The Customer: ISAF Joint Command

## ISAF Upper Command Structure



- IJC is the Operational HQ responsible for ensuring COMISAF Strategic Intent is executed by the ISAF Regional Commands in a synchronised, coordinated manner across Afghanistan



# Why us?



A group of seven British Army soldiers are standing in a village with small, simple houses. They are wearing combat uniforms and carrying gear. The image is in grayscale and serves as a background for the text.

# ***“Test the conspiracy of optimism”***

Colonel Gary Deakin (British Army), ISAF Joint Command



# How could we help?

- ‘PSOM’ – The Peace Support Operations Model
  - A unique modelling capability built to assess complex ‘wars amongst the people’
  - Proven in Ministry of Defence force development and military training applications

The screenshot displays the 'Client Mode' interface for the PSOM. The title bar reads 'Client Mode'. The main header shows 'Client Mode: Turn 0 (D -30)' and 'Faction - Coalition'. Below the header is a menu bar with options: Load/Save, High Level Game, Map, Graphs, Intelligence, Headlines, and Campaign Progress.

On the left, a panel titled 'Units in Cell (11, 11)' lists 'Coalition Units: MND(CS) 2nd Bn Mech Inf: C' and 'Script Units:'. Below this is a table with columns: Faction, Type, Current, and Change. The table lists 'Iraqi Governing Council' with 'Education' and 'Healthcare' types, showing 'Current' values of 18.94 and 0.5 respectively, and 'Change' as 'n/a'.

On the right, a table lists units with columns: ID, Unit Name, X, Y, and Stance. The units include 'Div HQ /1 CAV', '1 Armd/1/1 CAV', '2 Armd/1/1 CAV', '3 Mech/1/1 CAV', 'Fd Arty/1/1 CAV', 'Fd Eng/1/1 CAV', 'Spt Bn/1/1 CAV', 'Avn (Atk) Bn/1 CAV', 'Avn (Spt) Bn/1 CAV', '1 Armd/2/1 CAV', '1 Mech/2/1 CAV', and 'Fd Arty/2/1 CAV'. The 'Stance' column shows values like 'Logistics/HQ', 'Control/Stabilise', and 'Other'.

Below the unit table is the 'Unit Options' section, which includes 'Stance' (Logistics/HQ), 'Activity' (HQ Function), 'Footprint Size (km)' (50 (1 squares)), 'RoE' (Tight), 'Force Protection' (High), and 'Unit Constituents' (1 Divisional HQ, 1 Signals Regt).

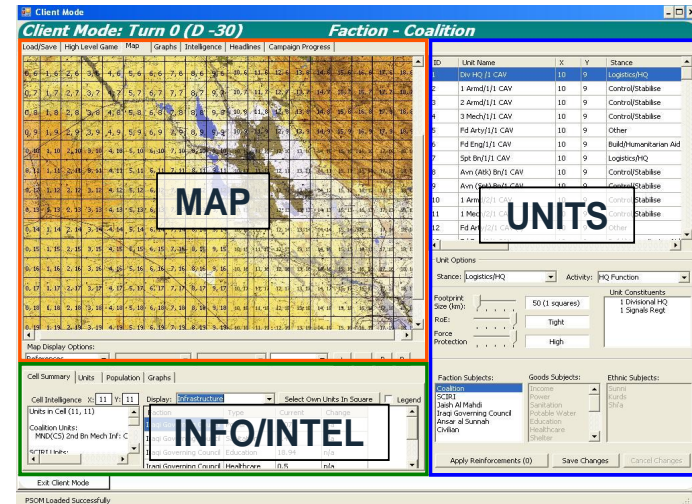
At the bottom right, there are sections for 'Faction Subjects' (Coalition, SCIRI, Jaish Al Mahdi, Iraqi Governing Council, Ansar al Sunnah, Civilian), 'Goods Subjects' (Income, Power, Sanitation, Potable Water, Education, Healthcare, Shelter), and 'Ethnic Subjects' (Sunni, Kurds, Shi'a).

Buttons at the bottom include 'Apply Reinforcements (0)', 'Save Changes', and 'Cancel Changes'.

At the bottom of the window, a status bar shows 'PSOM Loaded Successfully' and 'UNCLASSIFIED'.

# PSOM: Peace Support Operations Model

- 2004, Dstl Stabilisation study initiated development of PSOM to fill a gap in defence modelling capability:
  - *Understand and analyse 'wars amongst the people'*
- Computer-assisted human-in-the-loop wargame
- Represents strategic to higher tactical level effects of COIN / Stabilisation
- A population-centric representation
- Considers all actors and metrics
  - Security Forces
  - Spoilers
  - NGOs
  - Consent, Security, socio-economic conditions



# PSOM Core Concepts

- Exploiting social science
- 4 main metrics

**STATE  
FUNCTIONALITY**  
(of Host Nation)

**STATE FUNCTIONALITY** – simple representation of socio-economic conditions

**CONSENT**  
(of Population  
for Faction)

**CONSENT** – population perception towards playable Factions (Government, Insurgents, NGOs etc)

**SECURITY**  
(as a public good)

**SECURITY** – population perception towards violent activity and its outcomes

**THREAT**  
(Population perception  
of a Faction)

**THREAT** – population perception of the factions within the model environment



# PSOM Core Concepts

- Exploiting social science
- 4 main metrics

**STATE  
FUNCTIONALITY**  
(of Host Nation)

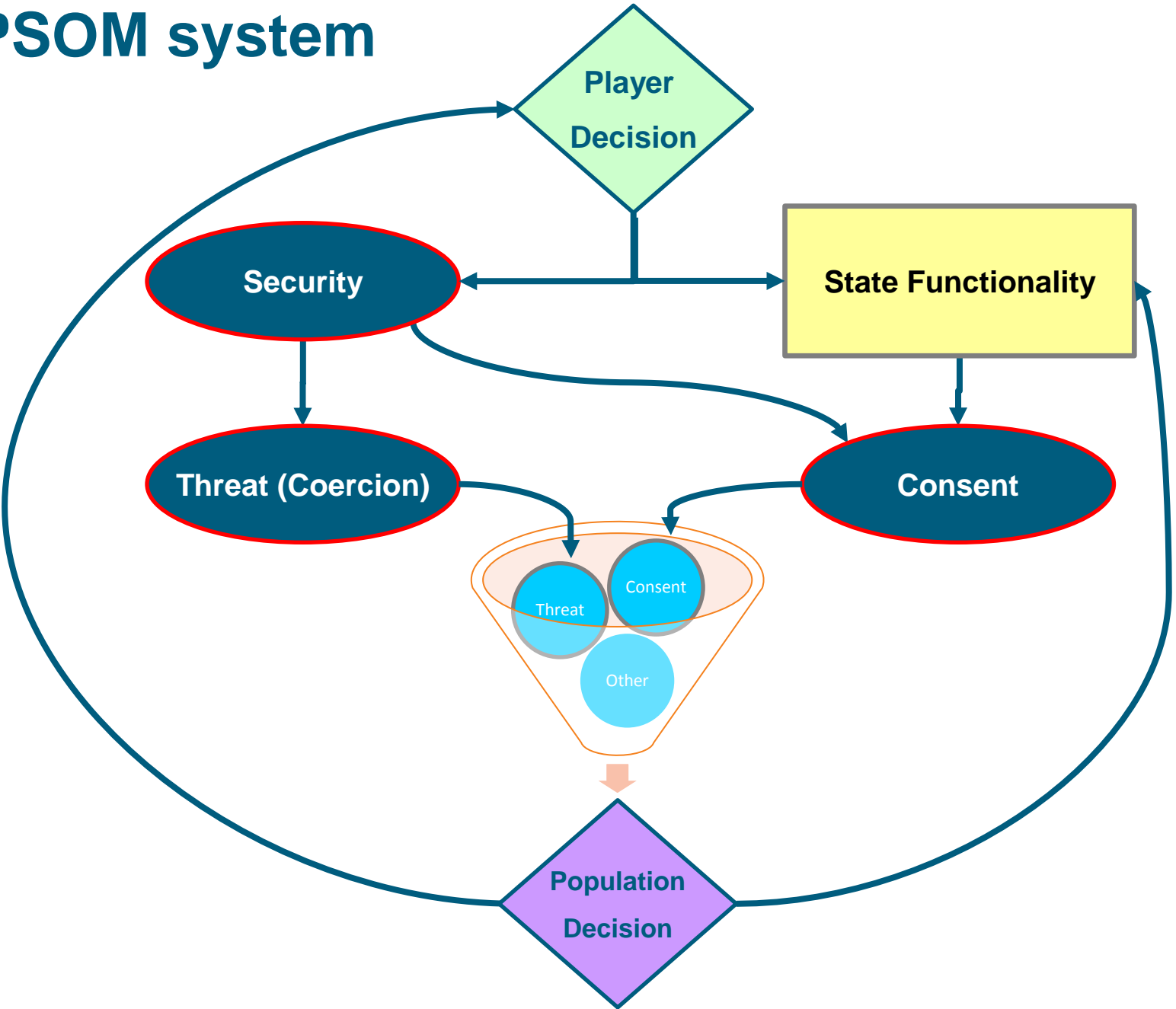
**STATE FUNCTIONALITY** – simple representation of socio-economic conditions

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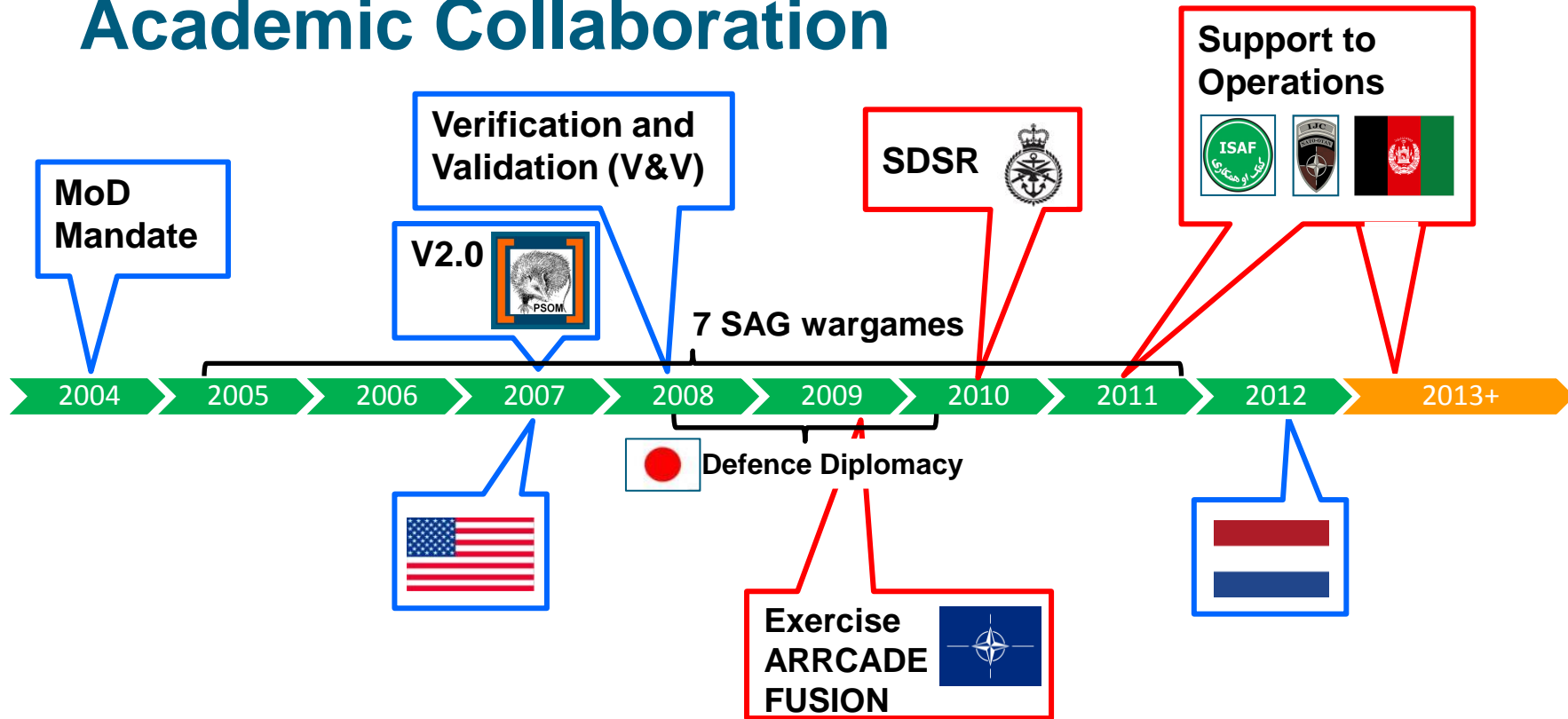
**CONSENT** – population perception towards playable Factions (Government, Insurgents, NGOs etc)

- **‘Operationalised’ Social Science**
- **Demonstrates strategic and operational ‘so whats’ from the impact of tactical activity on the civilian population**

# PSOM system



# Dstl Capability: International and Academic Collaboration



- Multi-disciplinary Project Team

- International Collaboration:

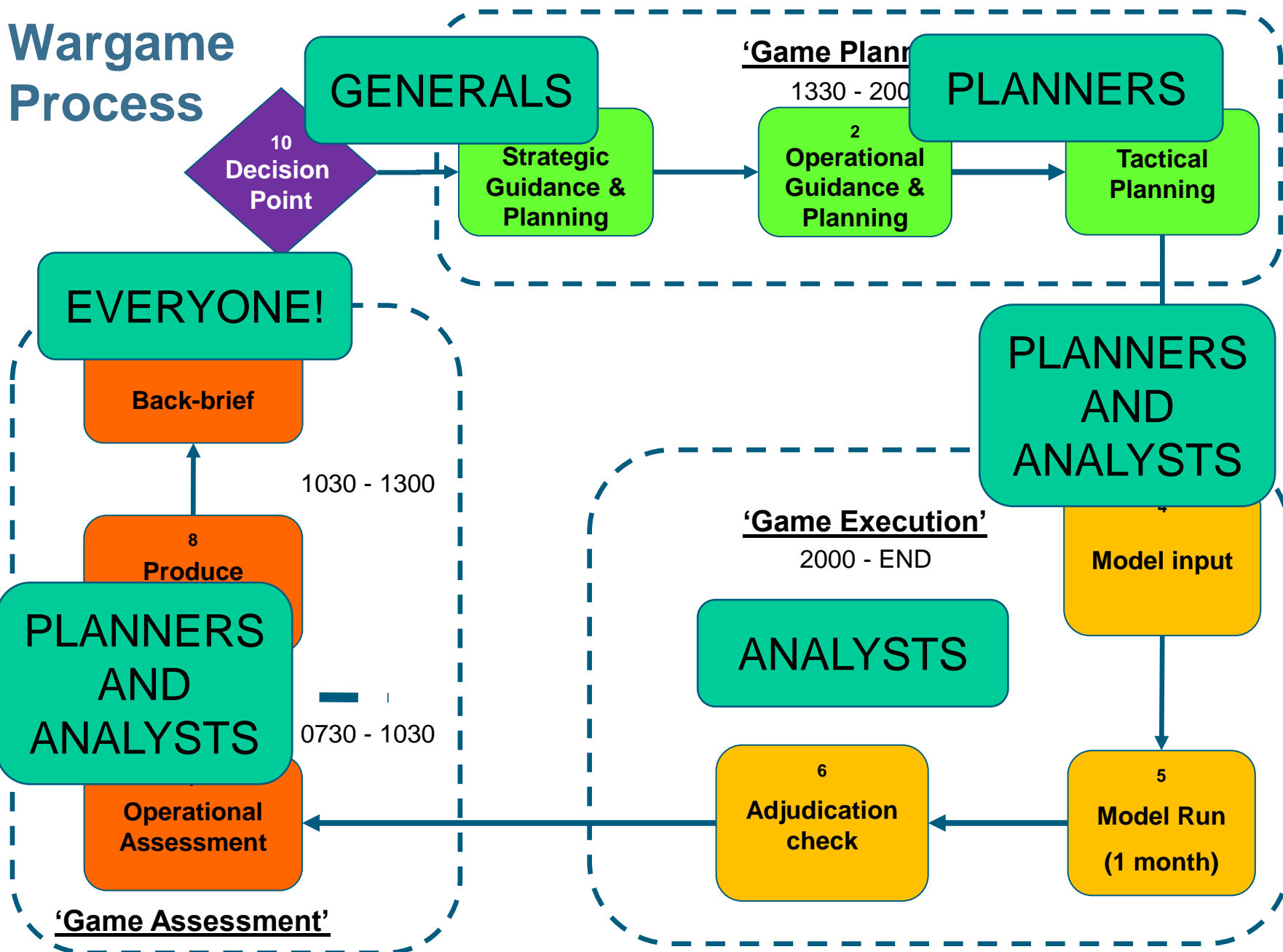


- Academic Partnership / Peer Review:





# Wargame Process



# Op OMID, March 2011

- Dstl team designed five day 'Synchronisation of Efforts' conference
- 16 civilian analysts deployed
  - and *lots* of computer equipment
- 150 senior level participants flown in from across Afghanistan:
  - Military planners from all major coalition headquarters across Afghanistan
  - Senior Military and Civilian decision makers
  - Special Advisors to General David Petraeus (COMISAF)
  - ...and many others

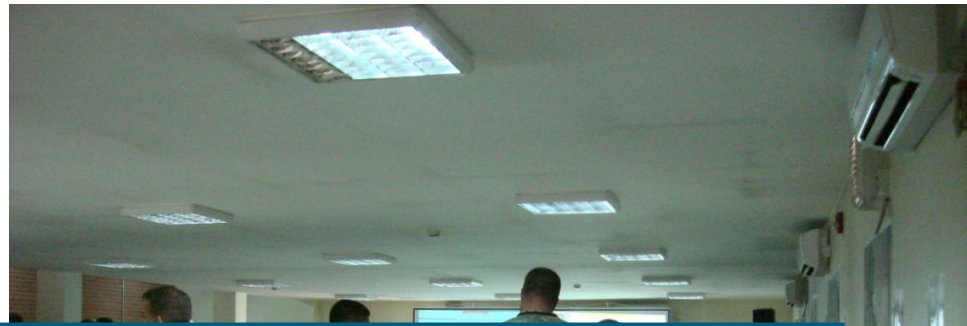


Analyst team (and kit!)



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• **Aim: Test the delivery of the summer fighting plan**



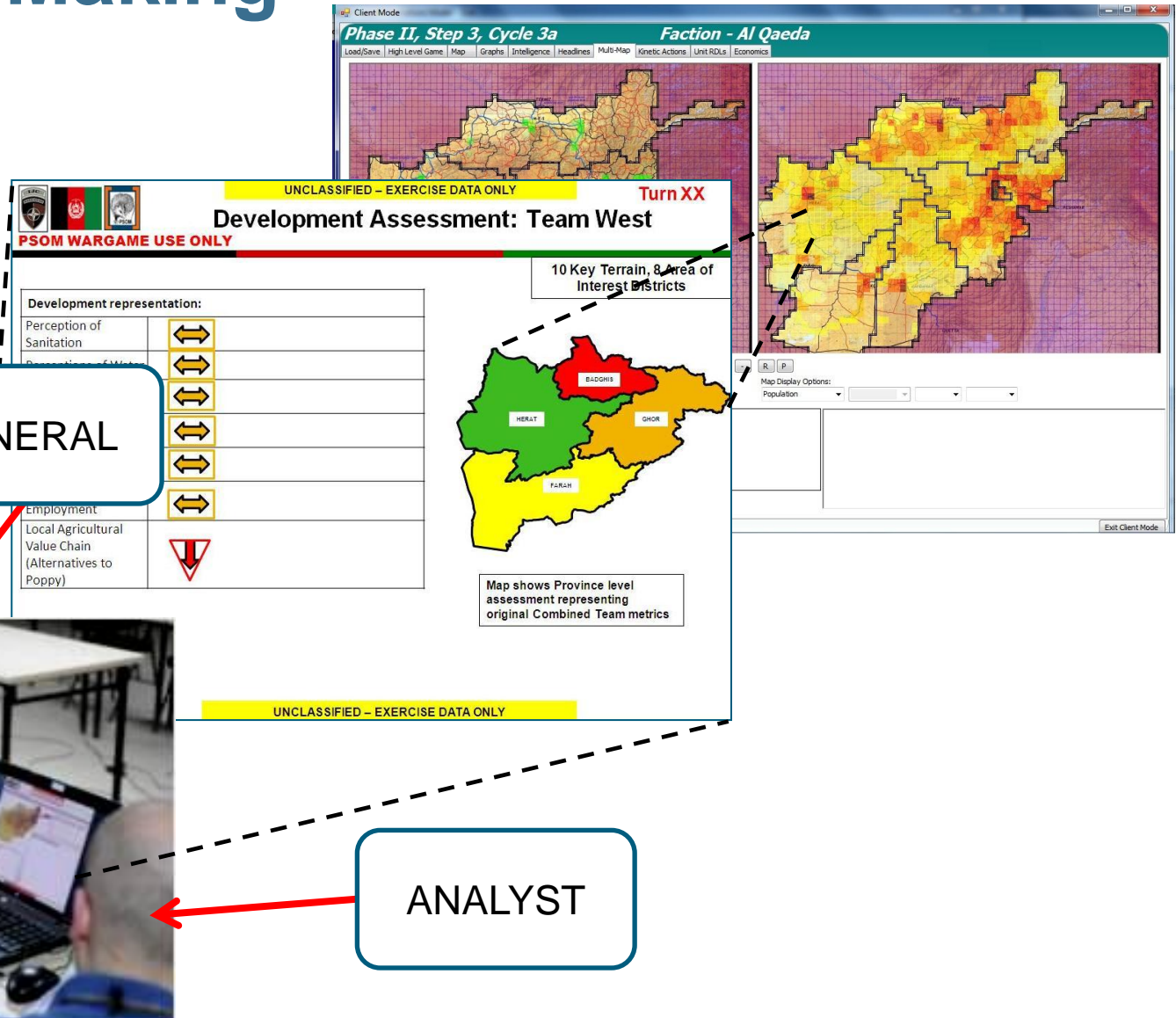


# Model Outcomes, Assessment and Decision Making

PLANNER

GENERAL

ANALYST



# Daily Back-Brief

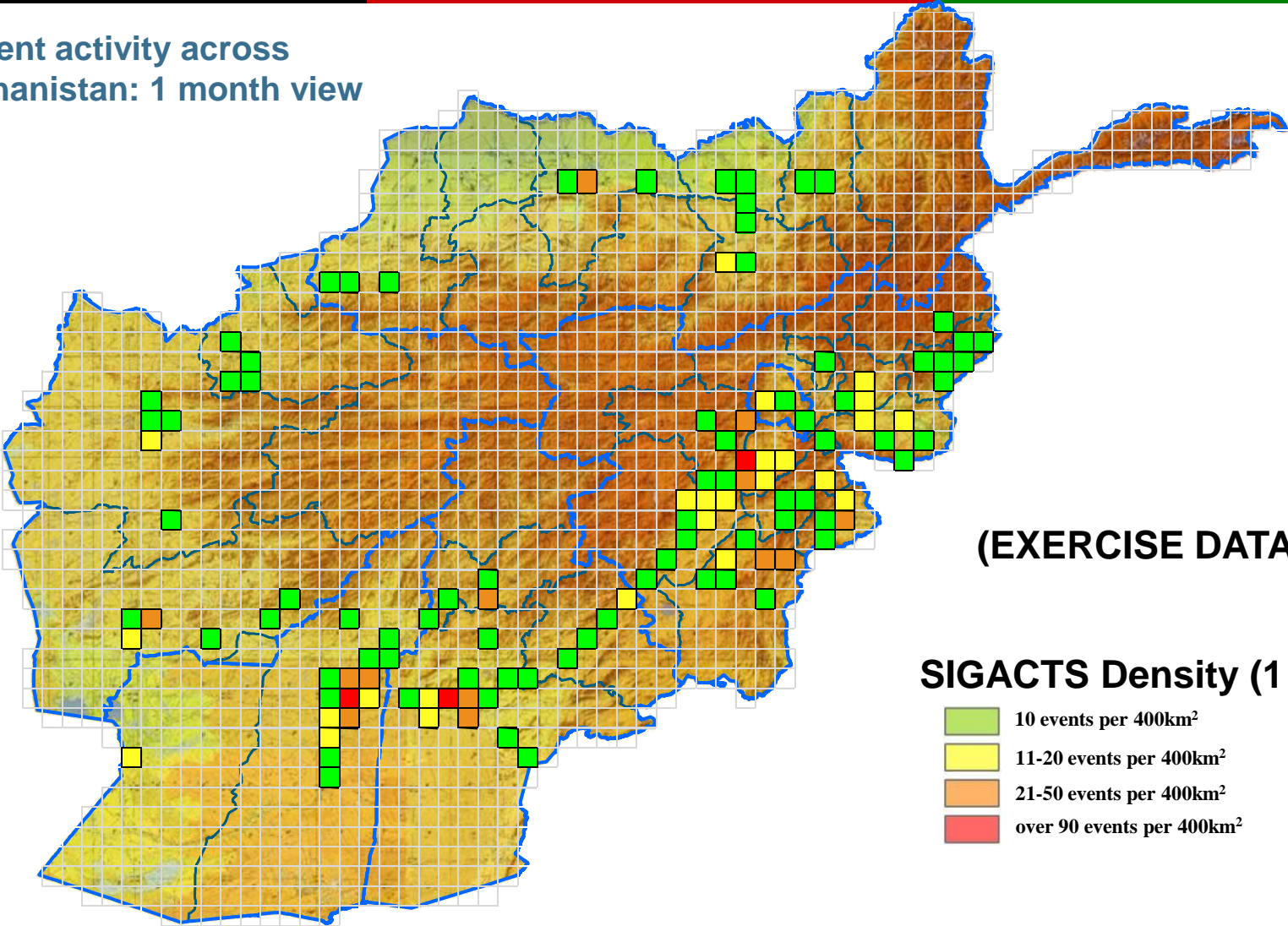




UNCLASSIFIED

# PSOM WARGAME – EXAMPLE DATA ONLY

Violent activity across  
Afghanistan: 1 month view



(EXERCISE DATA)

## SIGACTS Density (1 turn)

- 10 events per 400km<sup>2</sup>
- 11-20 events per 400km<sup>2</sup>
- 21-50 events per 400km<sup>2</sup>
- over 90 events per 400km<sup>2</sup>

UNCLASSIFIED





UNCLASSIFIED

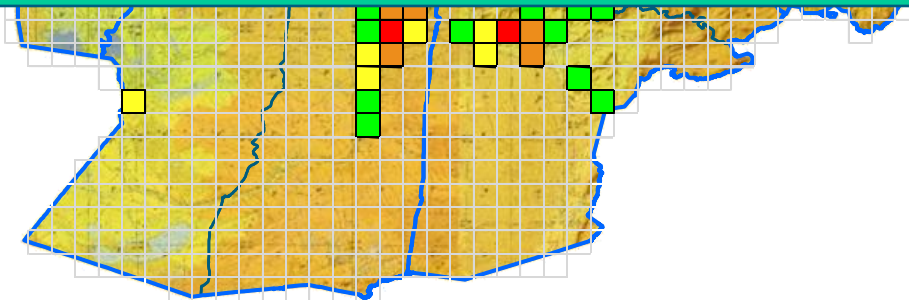
## PSOM WARGAME – EXAMPLE DATA ONLY

1000+ events represented in a single (1 month) PSOM turn

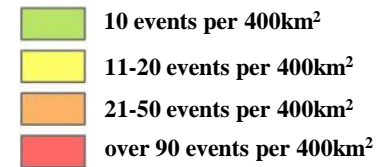
A testing and dynamic context that was **measurable**, **recordable** and **repeatable**.

PSOM can run month after month to visualise trends and outcomes over time  
Specific activities can be re-run to assess different options and alternative approaches...

*With no troops put at risk, and no lives on the line*



EVENTS Density (1 turn)



UNCLASSIFIED

Gen. 'Skip'  
Davis

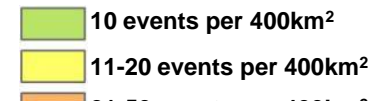
Col Deakin

## EXAMPLE IMPACT:

**Wargame:** 'Insurgents'  
Exploit the RC 'seam'

**Real World:** RC / IJC  
planners develop joint  
CONPLAN to mitigate

## SIGACTS Density (1 turn)



- **Buy-in for OA support to planning a real war**  
– *as it happened...*

# Op NAWEED – The Task

- Longer assessment timeline: Winter 2011 +
- Shape the plan as it was made
- Key issues:
  - Drawdown of foreign forces
  - Transition to Afghan National Security Forces
  - *End of coalition combat operations*
- Lessons incorporated:
  - From ‘what happened’ to ‘so what’ for the plan
  - Greater emphasis on post-game analysis
- Delivered by Joint US-UK team, November 2011



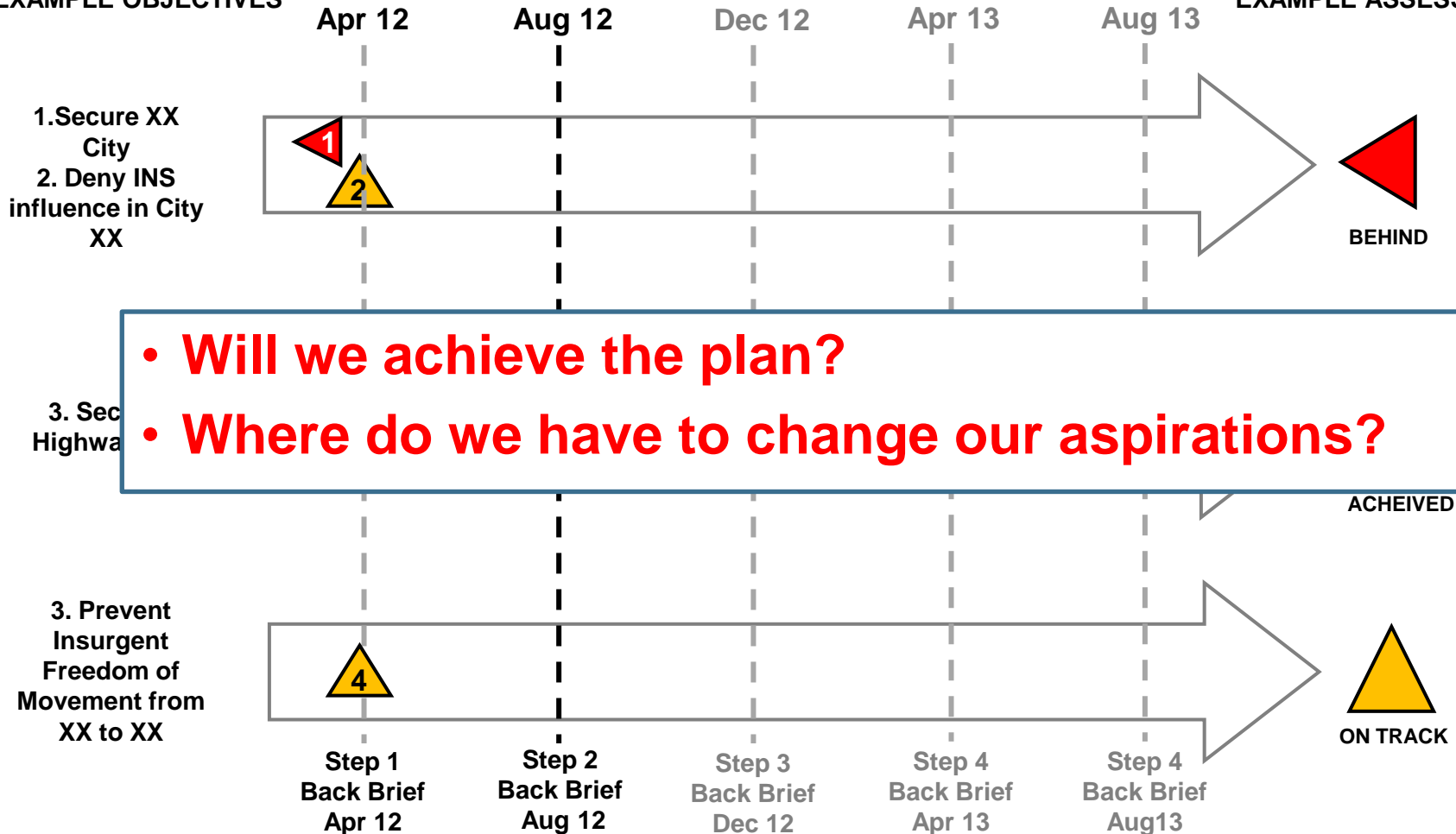


# CT South – Security Objectives

**PSOM WARGAME - EXAMPLE DATA ONLY**

## EXAMPLE OBJECTIVES

## EXAMPLE ASSESSMENT



### KEY

NOT ACHIEVED

BEHIND

ON TRACK

AHEAD

ACHIEVED



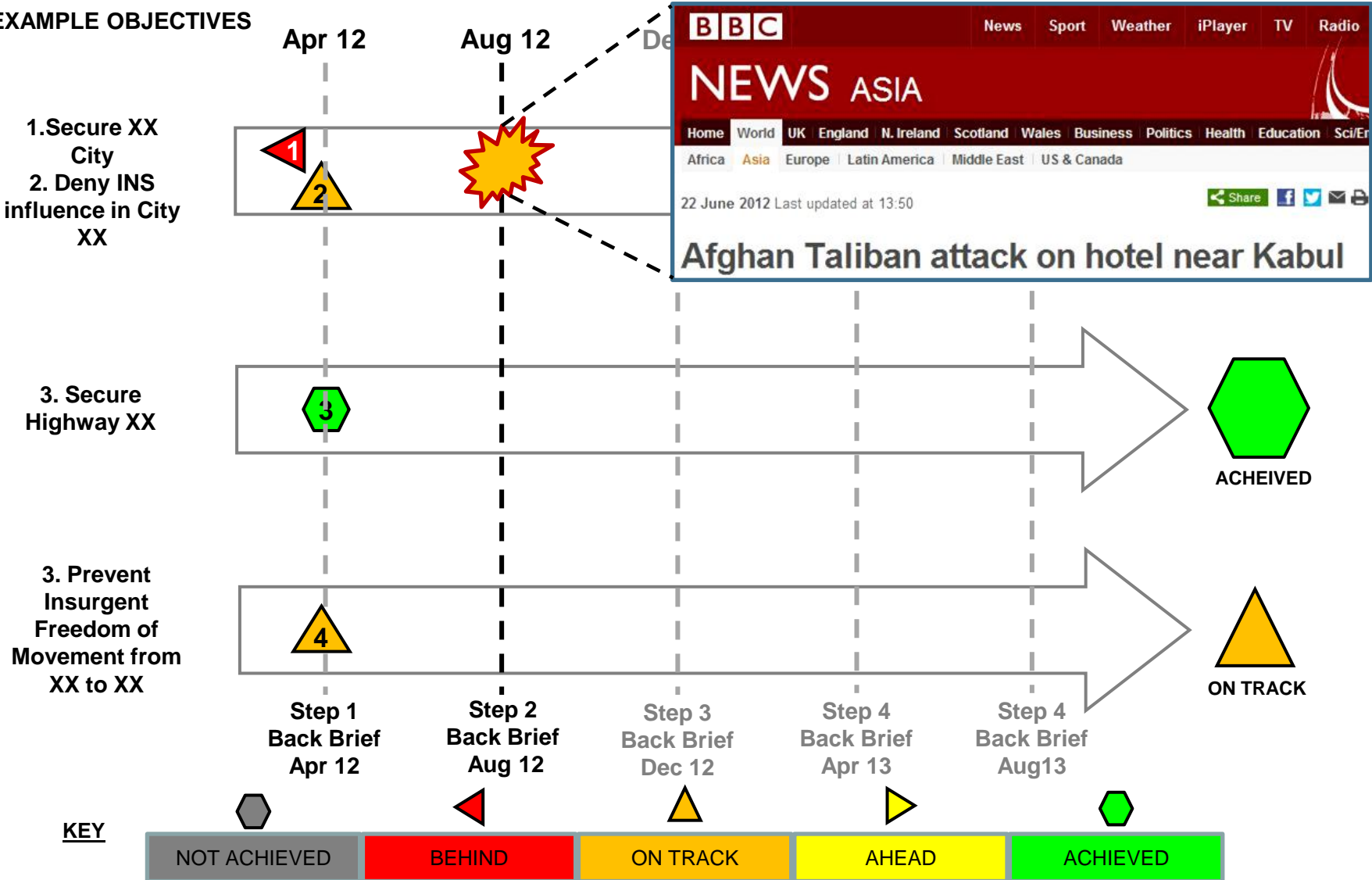


UNCLASSIFIED

# CT South – Security Objectives

PSOM WARGAME - EXAMPLE DATA ONLY

## EXAMPLE OBJECTIVES





UNCLASSIFIED

# CT South – Security Objectives

**PSOM WARGAME - EXAMPLE DATA ONLY**

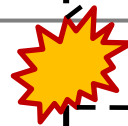
## EXAMPLE OBJECTIVES

1. Secure XX City  
2. Deny INS influence in City XX

Apr 12

Aug 12

Dec 12



Step 1  
Back Brief  
Apr 12



KEY

NOT ACHIEVED

BEHIND

ON TRACK

AHEAD

ACHIEVED

BBC

News

Sport

Weather

iPlayer

TV

Radio

NEWS ASIA

Home

World

UK

England

N. Ireland

Scotland

Wales

Business

Politics

Health

Education

Sci/En

Africa

Asia

Europe

Latin America

Middle East

US & Canada

22 June 2012 Last updated at 13:50

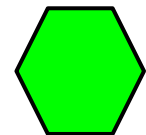


Afghan Taliban attack on hotel near Kabul ends

BEHIND

## Example questions we asked

- **In game:**
  - Can we cope?
  - What is the impact on the plan?
  - Do we need to divert resources?
- **In post-game analysis:**
  - What if Afghan forces have to face this alone?
  - What support might they need?
  - How will this impact population perceptions?



ACHIEVED



ON TRACK

# Op NAWEED – Impact

*“Thanks to PSOM, in five days the HQ was able to **visualize, discuss and analyze XX months into the future...**”*

*“The outcomes lay out what conditions must be achieved to facilitate the ANSF taking the lead, and therefore where we must focus and what risks there are to the campaign plan. **The outcomes of the SOE also impact significantly on the future coalition force structure, force recovery and Transition**”*

*“You all have raised issues that a coalition and combined team, hundreds of thousands strong, have not thought all the way through to the finish. **That early catch will save many lives as well as be critical to the success of the future campaign.**”*

**ISAF Joint Command Exercise Summary**

# Summary

- PSOM provides a unique analysis capability to examine this type of conflict
- Team built a successful method to integrate OA into live planning for real world military operations – and proved it could add value
- Wargame events had a tangible impact on decision making:
  - *Better plans – better executed*
  - *Ongoing impact on current military operations*
- Enduring practitioner support for future application of this approach to inform real world military decision making



# Accolades

- Chief Scientific Advisers Award 2011:
  - 17 individual awards
- OR Society President's Medal 2012
- Ability to give direct, continued support to ongoing operations
  - Feb 2013 Dstl support to US ISAF '2014' wargame
    - **HQ ISAF, IJC, NSOC-A**
  - Recommendations briefed to US Joint Chiefs



# Questions

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