



## Defence Intelligence

# Is the Future Geospatial? Joining up the dots

## CAMBRIDGE CONFERENCE

16 July 2007

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Chief Defence Intelligence  
UK Ministry of Defence

## Drivers for Change



### 1960-1990:

- Well defined areas of operation
- Clearly understood threat and objectives
- Staged single-Service mobilisations

### Over last 15 years - and into the future:

- Potential commitments worldwide
- Unpredictable deployment areas
- Joint/Coalition
- Expeditionary/Rapid response
- Sub-State Actors

### Multilateral Institutions Struggling:

- Climate Change
- Energy Security
- Environmental Impact of Conflict

### Today:

- Intelligence led operations

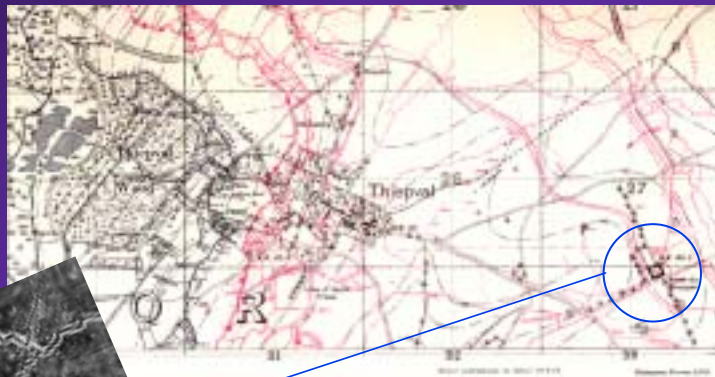
## Nothing new!



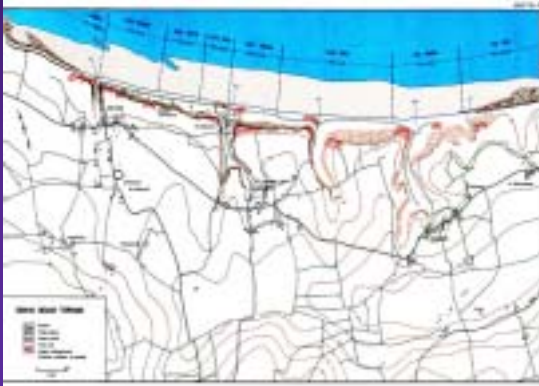
*Those who do not know the conditions of mountains and forests, hazardous defiles, marshes and swamps, cannot conduct the march of an army.*

SUN TZU, THE ART OF WAR

## Mouquet Farm, Somme



# World War II



# Geospatial Outputs

### Forecasts

**24 Hour Total Precipitation**

Sunny	Heavy: 100 mm
Thunderstorm	Moderate: 50 mm
Rain Showers	Slight: 10 mm
Rain	Max temperature (C)
	Wind Direction & Speed (kt)

### Charts

### Infrastructure

### Maps

### Databases

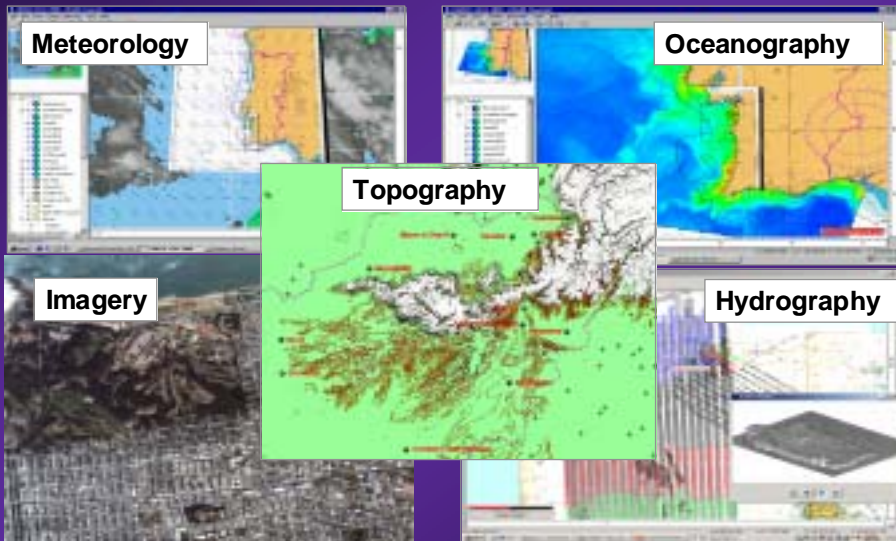
High Level	Mid Level	Low Level	High Level	Mid Level	Low Level	High Level	Mid Level	Low Level	High Level	Mid Level	Low Level
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High Level	Mid Level	Low Level	High Level	Mid Level	Low Level	High Level	Mid Level	Low Level	High Level	Mid Level	Low Level

### Models

**Legend:**

- High Level
- Mid Level
- Low Level
- High Level
- Mid Level
- Low Level
- High Level
- Mid Level
- Low Level

# Geospatial Information (GI)



## Definitions



MOD defines Geospatial Intelligence as:

Intelligence derived from the analysis and exploitation of **geospatial information and imagery** to describe, assess and visually depict physical features and geographically referenced activities of Intelligence interest.

where:

**Geospatial Information** comprises facts about the Earth referenced by geographical position and arranged in a coherent structure. It describes the physical environment and includes data from the aeronautical, geographic, hydrographic, oceanographic and meteorological disciplines.

# Weather: predicted outcome on operations



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average temperature	23	26	27	27	27	27	27	27	27	27	27	27
Average precipitation	24	26	26	24	24	22	22	22	24	24	24	24
Average relative humidity	74	77	78	77	76	74	73	73	73	74	74	74

EO

....advancing at 60 mph

# Humanitarian Crises: Briefing & Planning



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# Humanitarian Crises: Rapid Production



# Humanitarian Crises: Map Revision



# Humanitarian Crises: Planning



# Disaster Relief



# Technology to Increase Capacity



**Defence Intelligence**

- Coastal Imagery (15 Metre)
- MMSDS AML Small Bottom Objects
- MMSDS BattleSpace Geometry
- MFD-1 AML Q routes
- MFD 1 AML Small Bottom Objects
- JAGO route analysis
- MMSDS High Resolution (1 Metre) Imagery
- MFD-1 ENC SB5 (Harbour)
- MMSDS Side Scan Sonar & AML CLB SB7

## Challenges to the Geospatial Information Community

- Joining Up GEOINT with ISTAR with to enable integration from front-line to home base.
- Exploit new sources and techniques, including change detection.
- Meeting demands for greater accuracy, content and currency of data.
- Fuse geospatial information into a 'single virtual' geospatial database.
- Take a Network enabled Services-Oriented Approach to information provision through web services supported by common, collaborative, tools.
- Adopt Open Standards for Information & Delivery.
- Adopt the Defence Geospatially-Referenced Information Strategy.
- Develop a Pan-Govt approach to GEOINT, through cross-Govt Dept activity.
- Maximise benefits from International Collaborative programmes.

## Attracting the Professional

- Training at all levels.
- MSc for the highest level.
- Accreditation of qualification.
- Revisiting skill sets.
- Providing continuity and Operational experience.

