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Homeland Security: Army Spatial Information Capabilities

29 Oct 2003

Major Adrian Harding

Officer Commanding





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Scope

- **Role and Capabilities**
- **Our role within the ADF**
- **Our role in Homeland Security / Counter Disaster Operations**
- **Examples:**
 - **CHOGM**
 - **Victorian Bushfires Jan / Feb 2003**
- **Falconview - Rapid Geospatial Support System(RGSS) Demonstration**





History

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Troops of the Australian 13th Brigade study a map model near Petit Pont, Belgium, on 6 June 1917 in preparation for the next morning's attack on Messines. Construction and updating of the model was the work of engineers and members of the Corps Topographical Section. (AWM F00632)

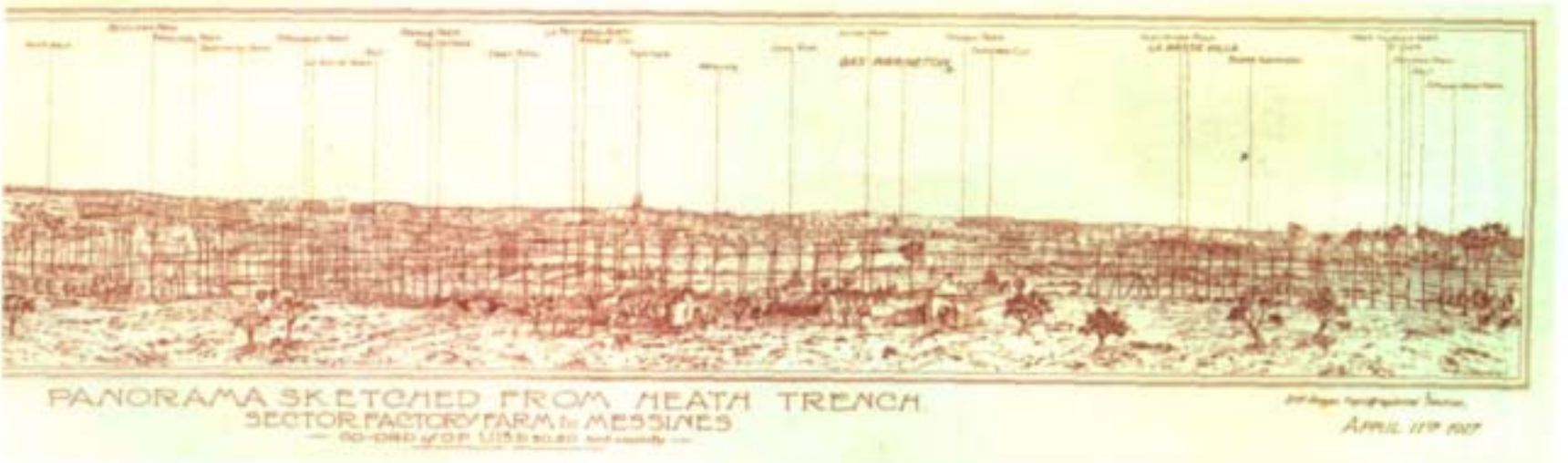
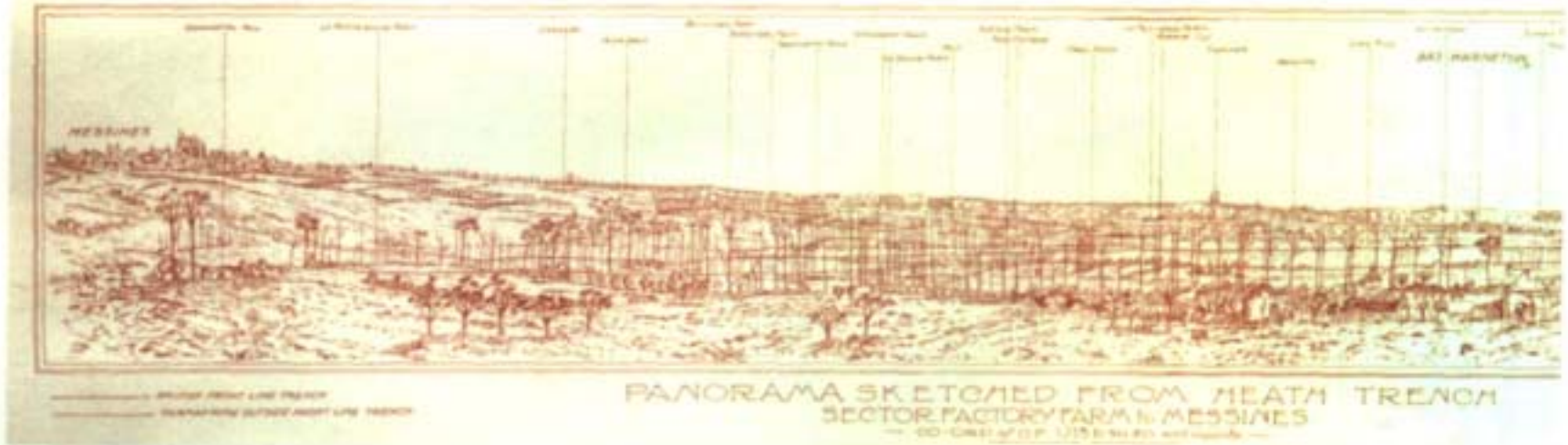


Belgium - 6 Jun 1917
'Terrain Visualisation'

History



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Panoramic sketch of the Messines battlefield prepared by the Topographical Section of II Anzac Corps in April 1917.

Messines - April 1917
‘Terrain Visualisation’





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Sapper F.G.C. Coughlin and Lance Corporal R.J. Pauley plane-tableting in Syria. (AWM 022643)



"Blue" Crane (left) and Corporal J. Campbell observe to a ship during Operation Cutlass, 1956. Parties sometimes spent three or four hours in conditions like these. (AEM)



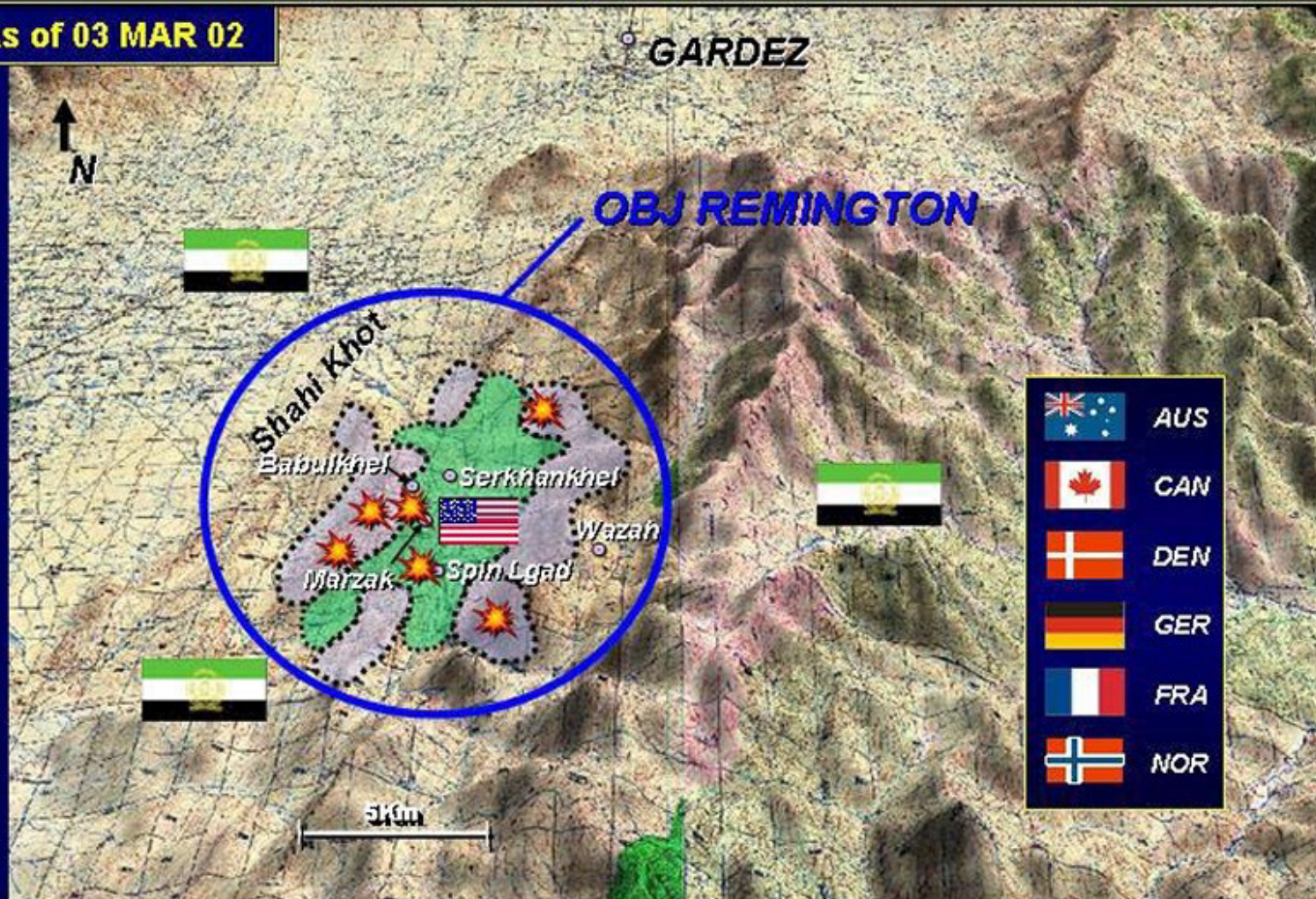
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Shahi Khot II Operation Anaconda

As of 03 MAR 02



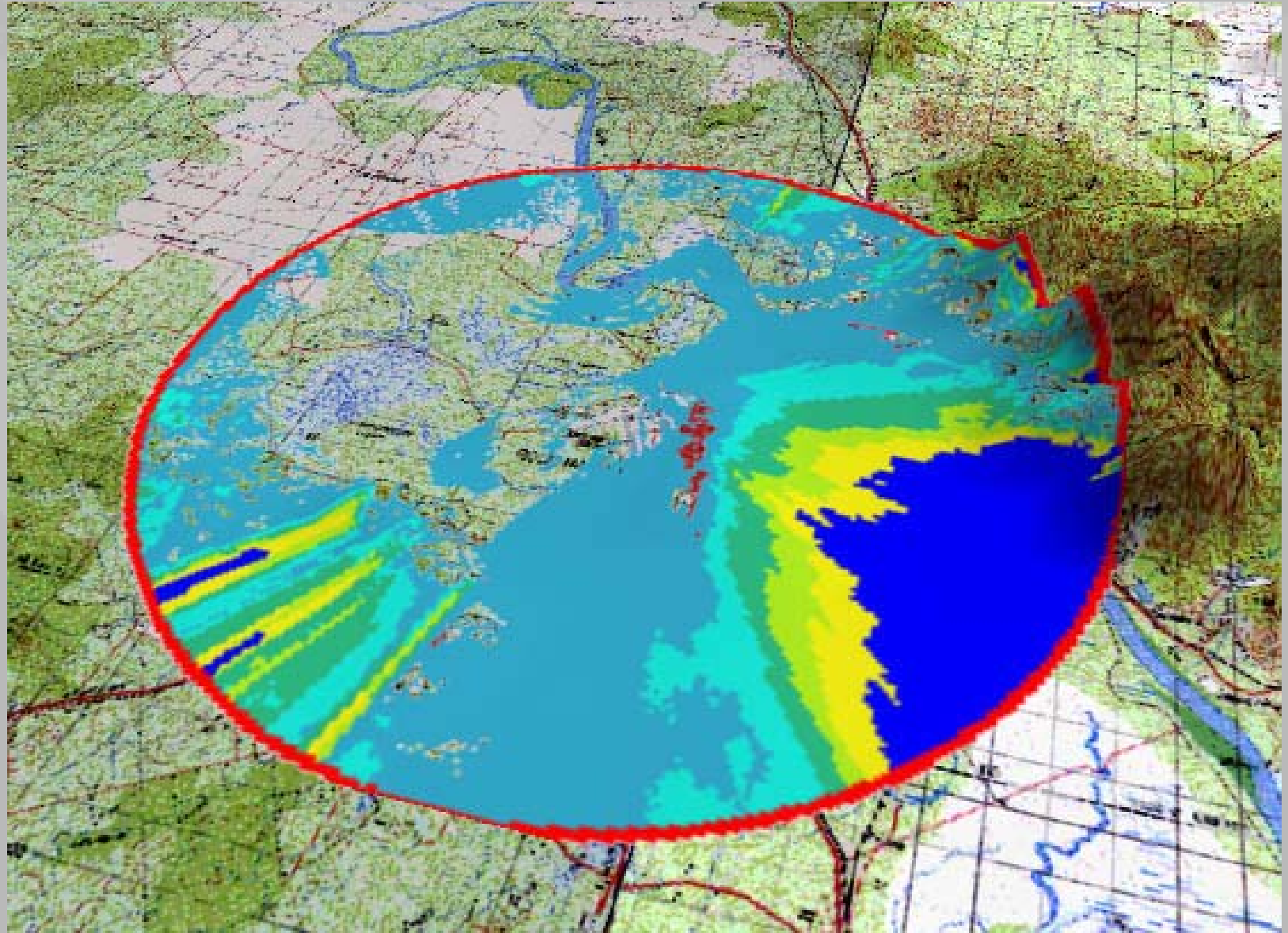
Afghanistan - 2002
'Terrain Visualisation'



Present



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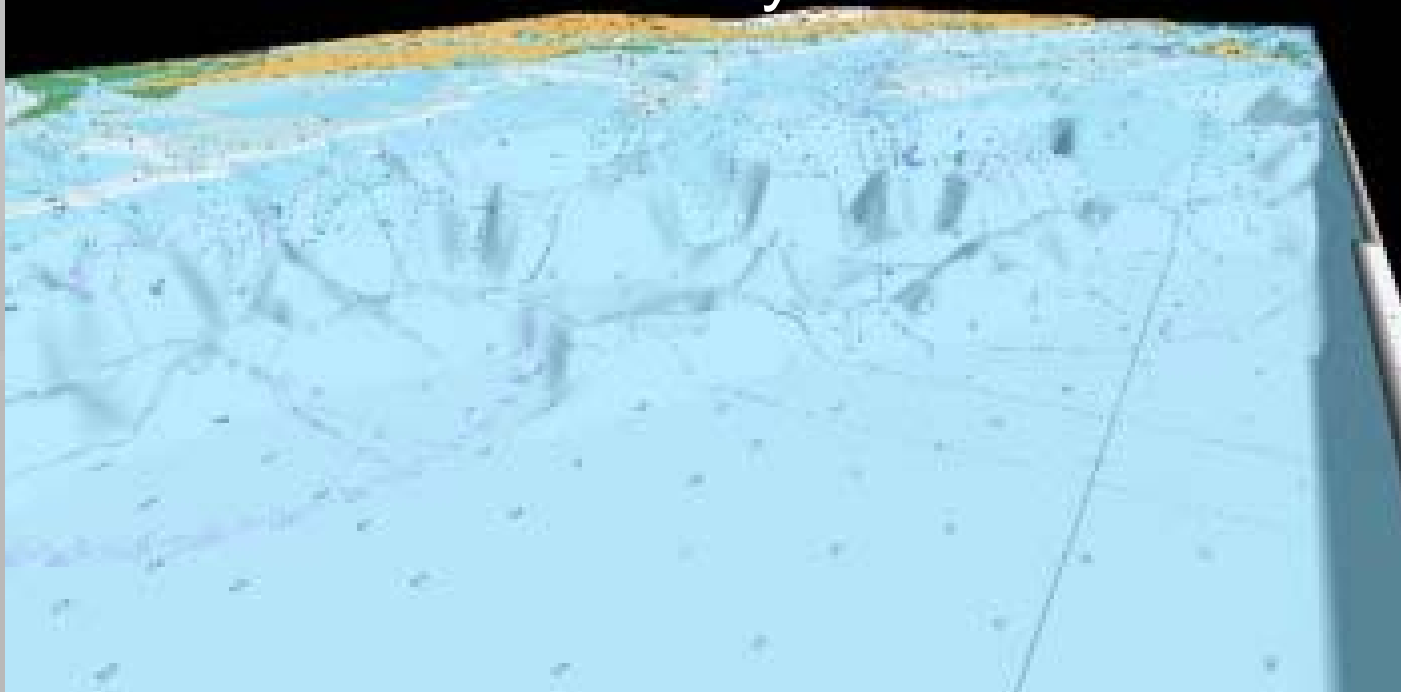
**Bunya Mountains - 2002
'Terrain Visualisation'**





Present

A separate mpeg file can be downloaded from the Seminar website to watch the "Littoral Fly Thru"



**Littoral Approach - Rodds Island
(Vic Gladstone) - 2002**

'Terrain Visualisation'

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Present

A separate mpeg file can be downloaded from the Seminar website to watch “Shanty Town Fly Thru”



**Shanty Town - HRTA (Vic
Townsville) - 2002**

‘Terrain Visualisation’

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Sqn Capabilities

- Principles
 - Graduated response
 - Centralised control (incl Technical)
 - Early Warning
 - Interoperability (fusion of joint and coalition info)

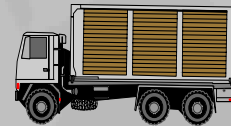
- Capabilities:



**Geo Advice
& Planning**



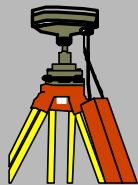
**MGI Spt
Terrain Analysis
and Visualisation**



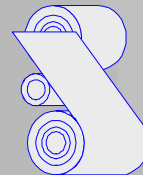
**Geo Data Mngt and
Product Distribution**



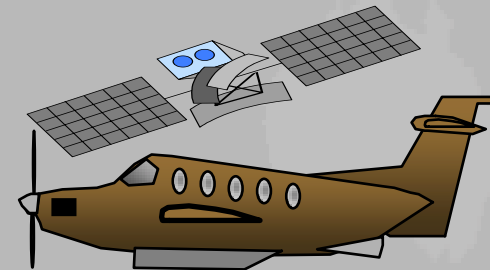
Basic Surveying



**Geodetic Survey/
Theatre Control**



**Geo Reproduction
(Fd and Bks)**



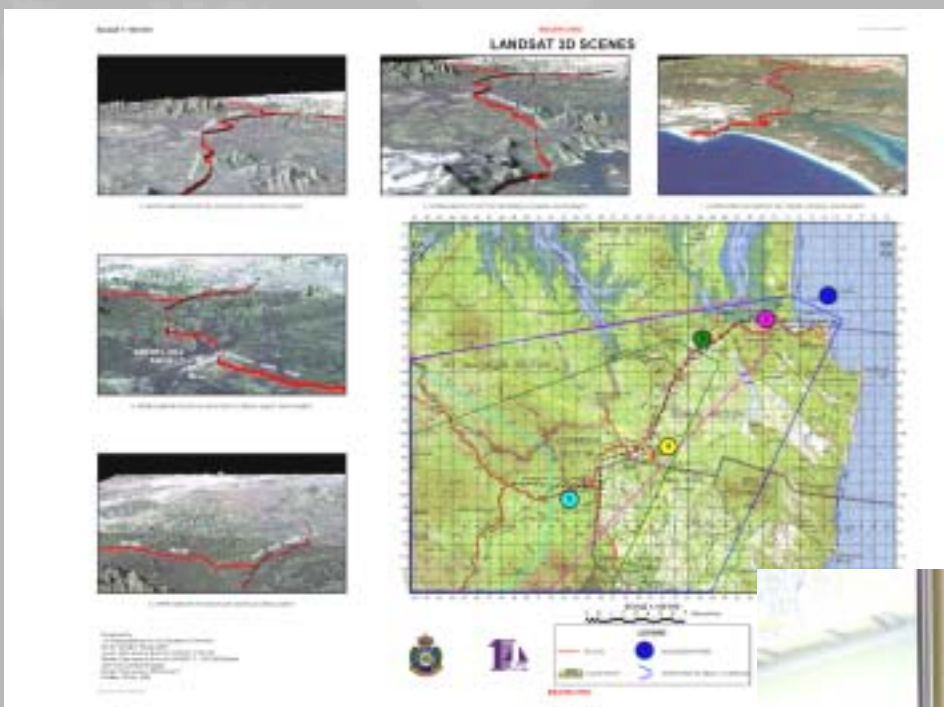
Imagery Acquisition & Exploitation





Geospatial Advice and Planning

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Geo Advice
& Planning

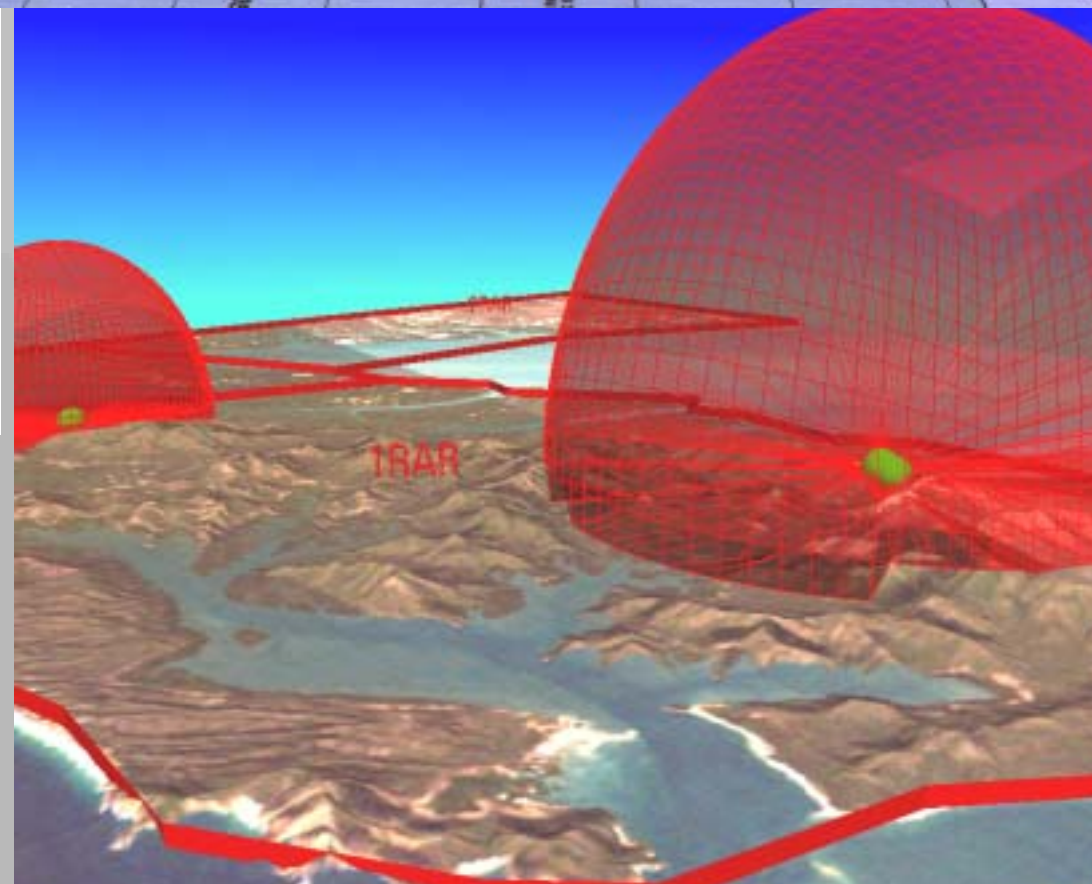
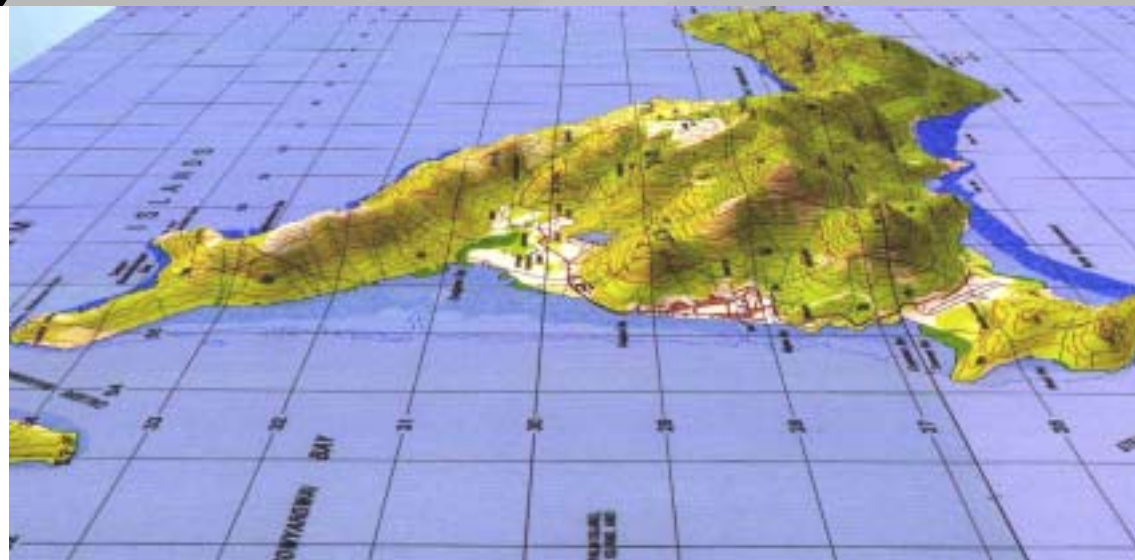




Terrain Analysis and Visualisation

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PORT CLINTON
AMPHIBIOUS APPROACHES



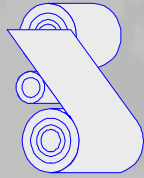
MGI Spt
Terrain Analysis
and Visualisation



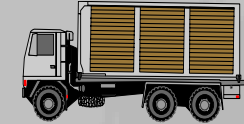


Reproduction and Data Management

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Geo Reproduction
(Fd and Bks)



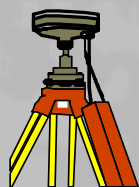
Geo Data Mngt and
Product Distribution



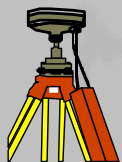


Geodetic and Engr Svy

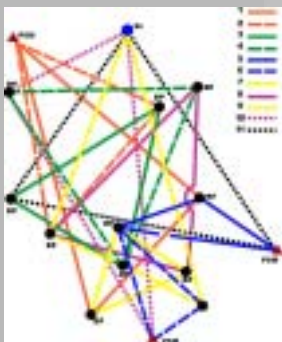
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Geodetic Survey/
Theatre Control

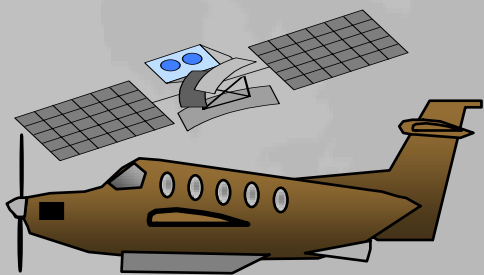
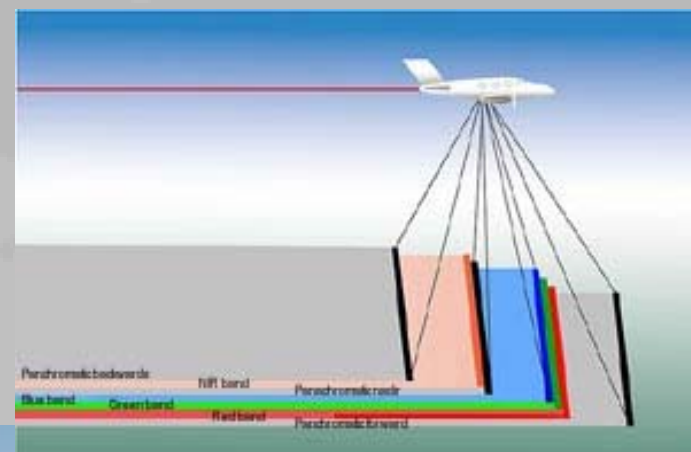


Basic Surveying





Imagery Acquisition and Exploitation



Imagery Acquisition & Exploitation



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Major Systems

- Topographic Support System (TOPOSS)
- Rapid Geospatial Support System (RGSS)
- Airborne Digital Imagery Acquisition System (ADIAS)



TOPOSS



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- Self Contained
 - Vehicle mounted
 - Power
 - Air Conditioned
 - Mass Data Storage
- Ruggedised
 - Harsh operating environments
- Powerful
 - Based on SGI Workstations
 - Selection of I/O devices and formats
- Hardworking
 - 24 hour operation (Shifts)
 - Scalable and connectivity

TOPOSS



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A0
Plotter

Cabling

TV
VCR unit

A3
Printer

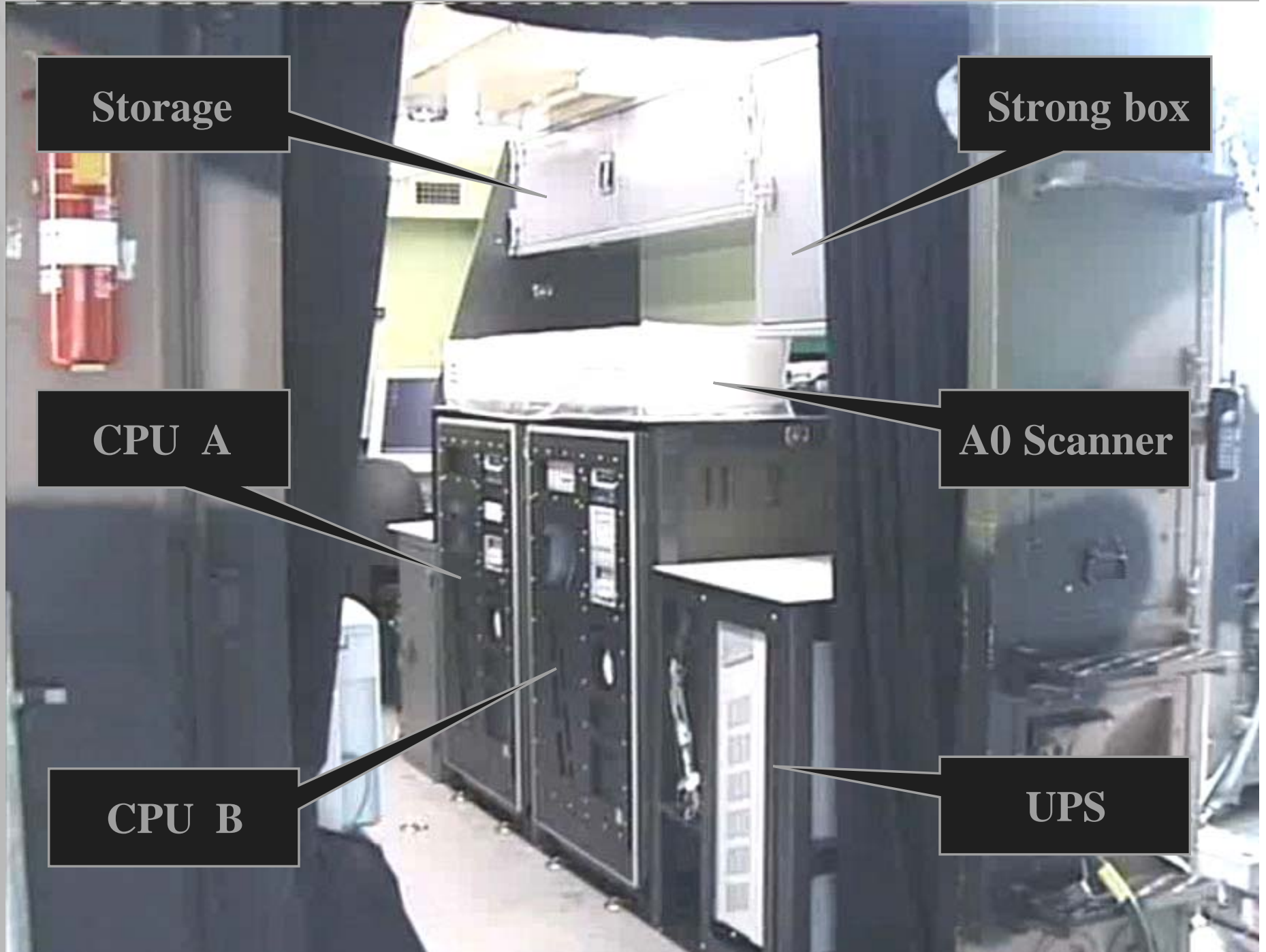
Storage



TOPOSS



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Storage

Strong box

CPU A

A0 Scanner

CPU B

UPS



RGSS

- Rapid Geospatial Support System
- Light 'fly away' capability to precede TOPOSS arrival
- Limited geospatial products can be developed
- Full connectivity to TOPOSS
- Can work from Building / tentage

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HVMP

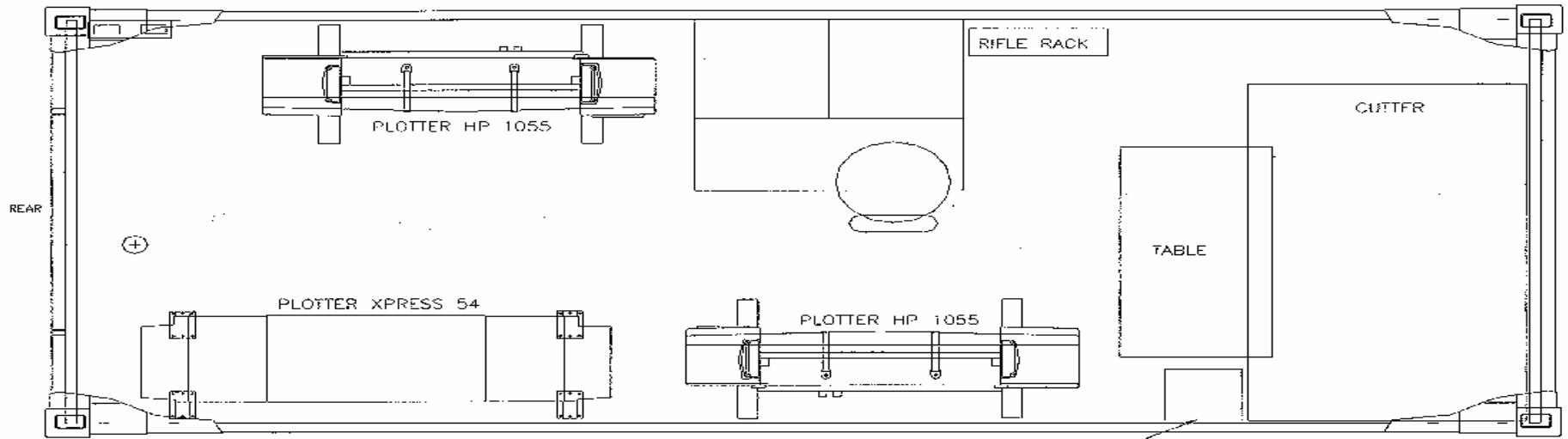
- Will replace Mechanical Press (A1)
- High Volume Multi Product System
- Hardcopy (and softcopy) output
- DVD / CD Towers
- 60" Plotters
- A0 Scanner
- Self contained
- Server / Mass storage and RIP software
- Self deployed (TOPOSS Style)



Plan View



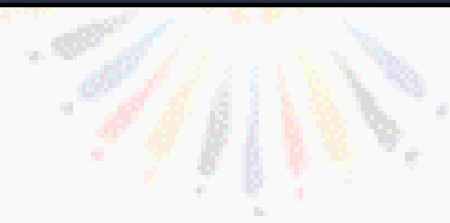
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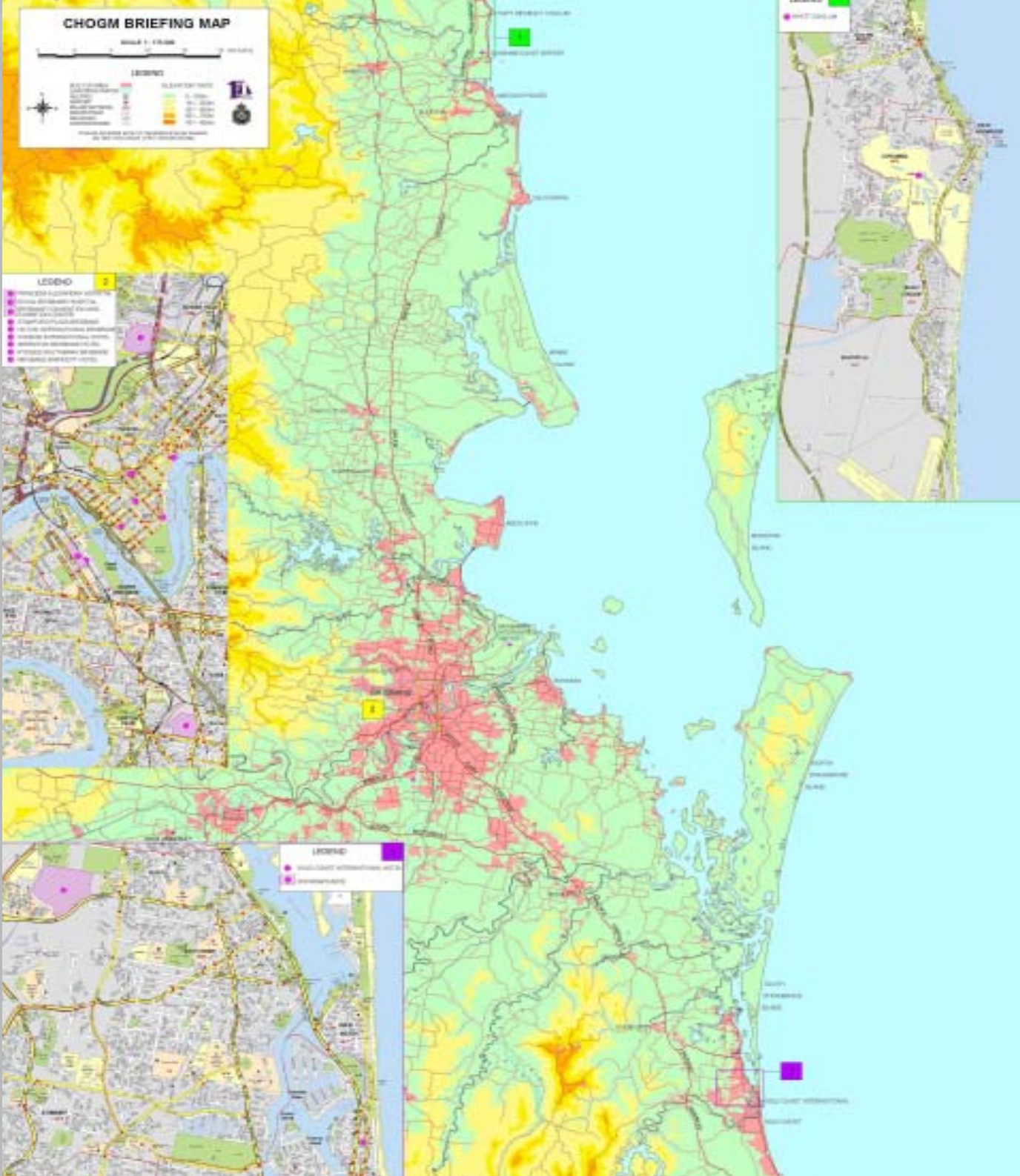
CHOGM

COOLUM 2002



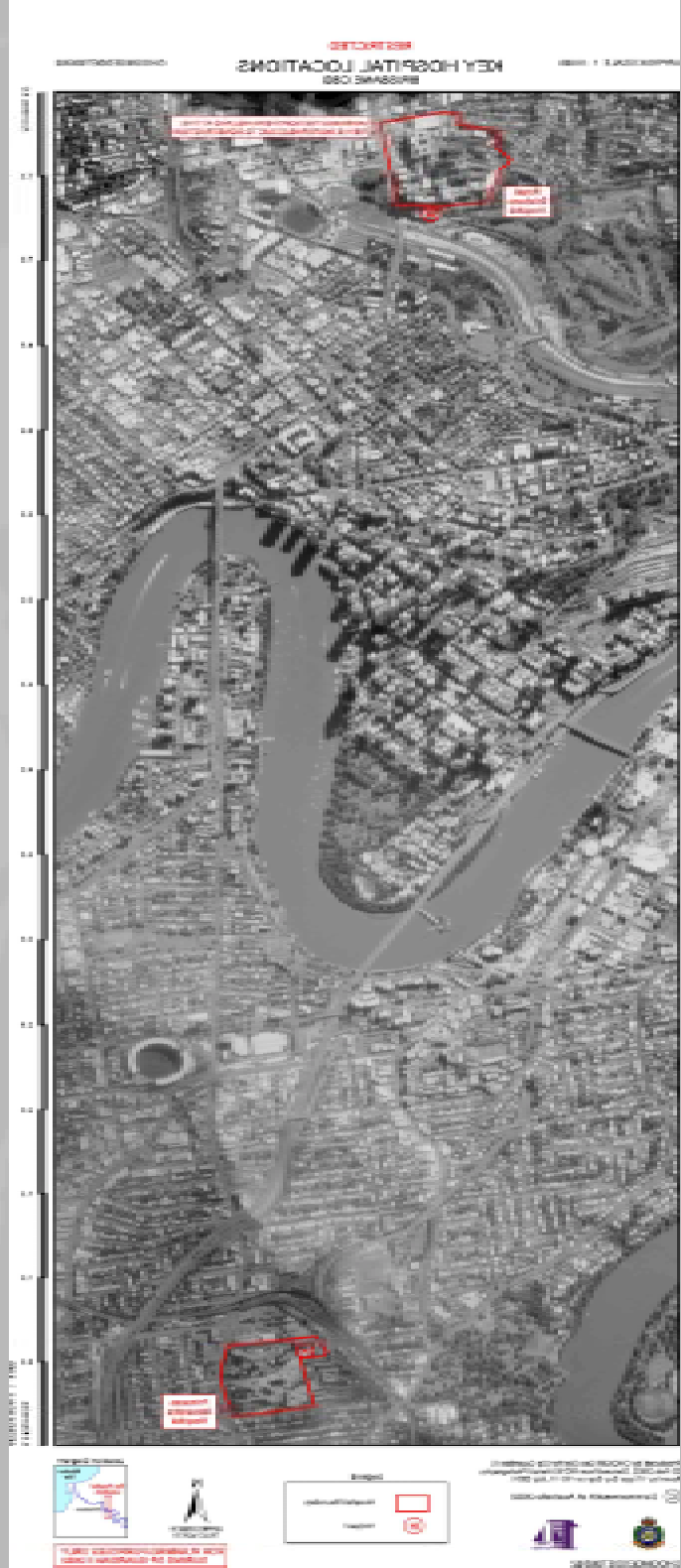


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SCALE 1 : 2 000

WARNING: 100 METRE UTM GRID SYSTEM FOR OP GLADIATOR II USE ONLY

RESTRICTED

INCIDENT RESPONSE VAP HYATT REGENCY COOLUM

CH00AMSE002T1303



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Produced by JTF 642 Geomatics Detachment for Op Guardian II. CH00AM 2002 imagery derived by Rectification and Mosaicing via Digital Photographic methods of Wide Angle Cabot Aerial Photography from May - June 2002. Accuracy: Horizontal: 50% of well defined detail within +/- 10 cm of real position. Supplemental with Digital Still Aerial Photography collected 25 Feb 2002.



Modifications and changes to this product should be directed to the Geomatics Detachment at JTF642 HQ, Anzac Hall, Gallipoli Barracks, Enoggera, PO BOX 332 4146.

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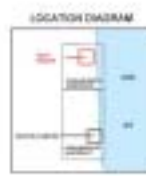


NUMERICAL GRID LINES ARE 100 METRE INTERVALS OF THE UNIVERSAL TRANSVERSE MERCATOR (UTM) ZONE 56 IN WORLD GEODESIC SYSTEM 1984 (WGS84). ELIPSOID GRID VALUES ARE GIVEN IN FULL AT THE SHEET CORNERS OF THIS 800M HORIZONTAL DATUM WORLD GEODESIC SYSTEM 1984 PROJECTION (UNIVERSAL TRANSVERSE MERCATOR)

Legend



UTM GRID NORTH IS THE REFERENCE FOR THIS MAP. TRUE NORTH IS THE REFERENCE FOR THE MAGNETIC NORTH. MAGNETIC NORTH IS THE REFERENCE FOR THE TRUE NORTH.



WARNING: FOR OP GLADIATOR II USE ONLY 100 METRE ACOS 84 GRID SYSTEM



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Produced by JTF642 Geomatics Detachment for Op Guardian 8 CHCGM 2002. Map derived from Brisbane UBD 2000, Black and White Aerial Photography derived from RC10 photography flown by 1 Tavo Sky Sep 10 July 2001. Colour Aerial Photography derived from the Department of Natural Resources Imagery 2001.

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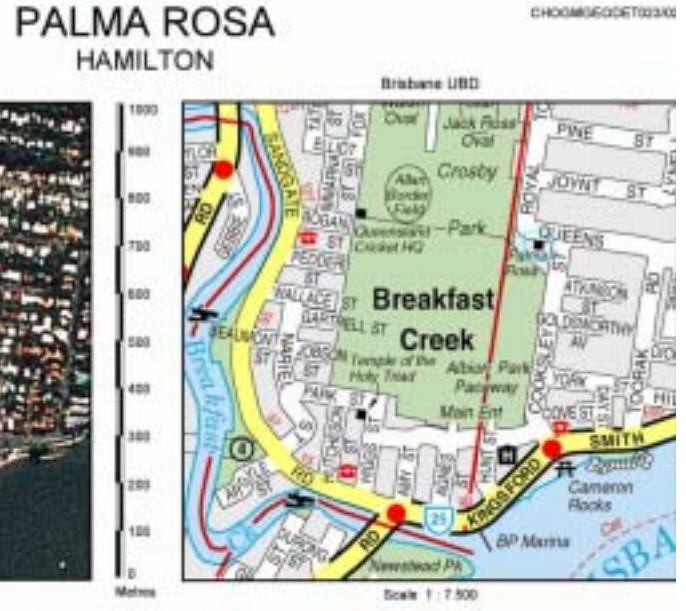
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SCALE 1 : 7 500

LEGEND

- Static Post
- Search Boundary

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Produced by JTF642 Geomatics Detachment for Op Guardian 8 CHCGM 2002. Map derived from Brisbane UBD 2000, Black and White Aerial Photography derived from RC10 photography flown by 1 Tavo Sky Sep 10 July 2001. Colour Aerial Photography derived from the Department of Natural Resources Imagery 2001.

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Palma Rosa is a three-storey stone residence built by Andre Stenhouse in the 1980's. The walls are 3.63 metres (20 inches) thick and the hand-trown sandstone was carried by bullock teams from Helidon. The three floors are practically identical and wide bay windows look out over Albion Park racecourse and the Brisbane River. All rooms have marble fireplaces, the carpet is royal blue and gold and the walls are decorated with three metre panels of gold metallic wallpaper. The ground floor houses a permanent art gallery for members of the public and is available for inspection every Thursday to Sunday from 1100 - 1000 hours.





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Victorian Bushfires

Jan / Feb 2003

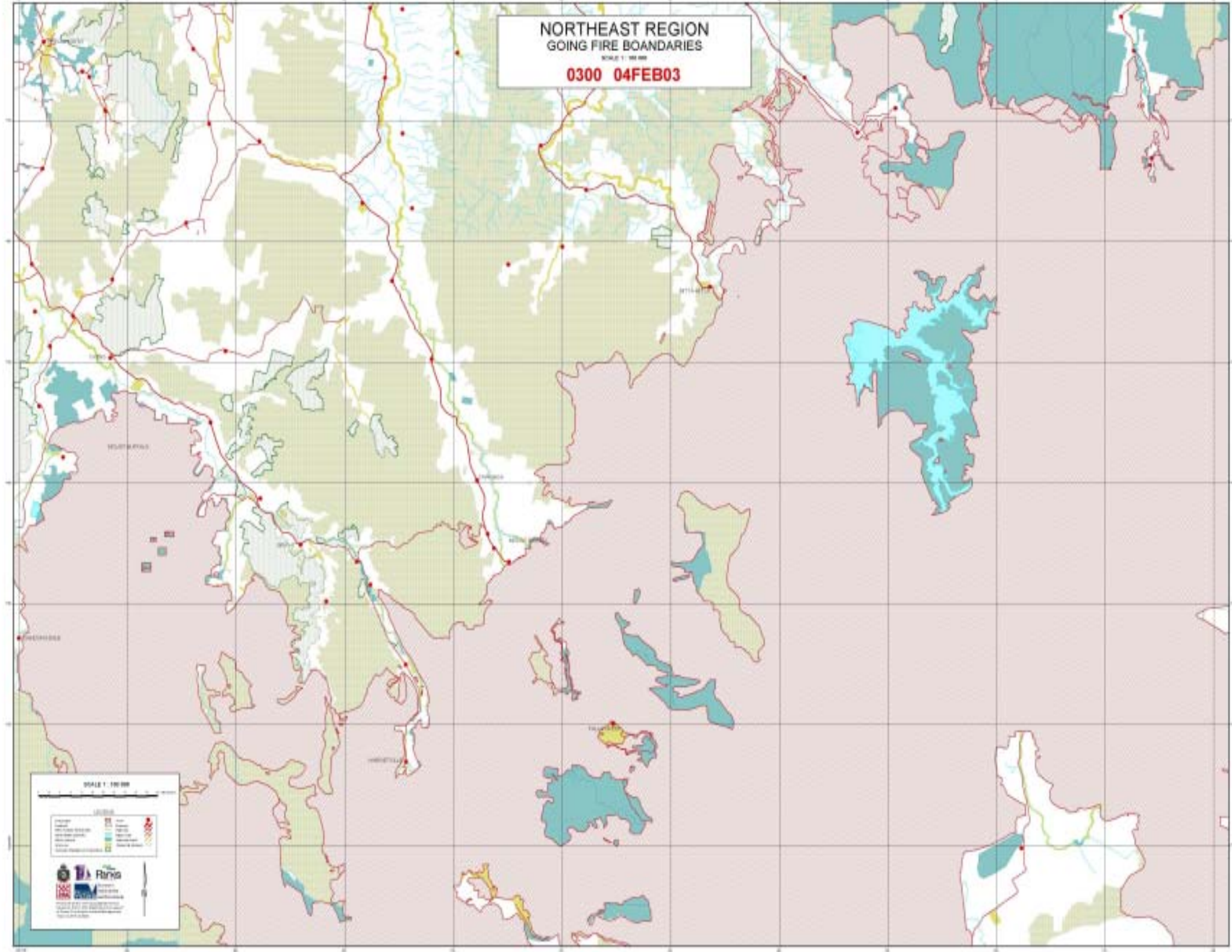
- 1 Topo deployed 5 pers
- RGSS
- Conducted 24 hour operations
- 18 day duration



NORTHEAST REGION GOING FIRE BOUNDARIES

SCALE 1:100,000

0300 04FEB03



SCALE 1:100,000

LEGEND

Water	Blue
Land	Green
Urban	Brown
Forest	Light Green
Open Land	White
Other	Yellow
Boundary	Red
Other	Orange
Other	Black

RINIS

Regional Information Network for Incident Response

© 2003 RINIS



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KEY POINTS

- Capabilities
- Experience
- Procedures
- Practice
- Data





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Questions?



More than just maps ...



...Know the ground ... (Sun Tzu)

Adrian.harding@defence.gov.au

(07) 3332 6317

