

Rapid Inventory Collection System (RICS)

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Introduction (issues during TC Larry, March 2006)

- Address problems with field data collection:
 - Poor weather and difficult working conditions in the period following tropical cyclones and in an “active” monsoon period;
 - Rapid clearing and repairs following a wind related disaster;
 - Rapid use of tarpaulins (obscure damage when viewed from the street).

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“House-to-house” Street Survey (yr 2004)

Field Data Acquisition Units

- HP PSC-1210 Printer, Scanner, Copier
- IPAQ Rechargeable Batteries 1800 mAh
- Kodak Battery Charger AA
- Kodak Digital Camera DX6340
3.1Mpx 4x Optical, 512Mb SD
- PDA -IPAQ 5550, 400 MHz, 128 Mb Ram, Rugged Case, CF Expansion Pack, ArcPad 6.0.3
- 512 Mb Secure Digital Storage Card
- 512 Mb Compact Flash Storage Card
- 3-1 Kodak Card Reader

Hand-held computers (PDA)

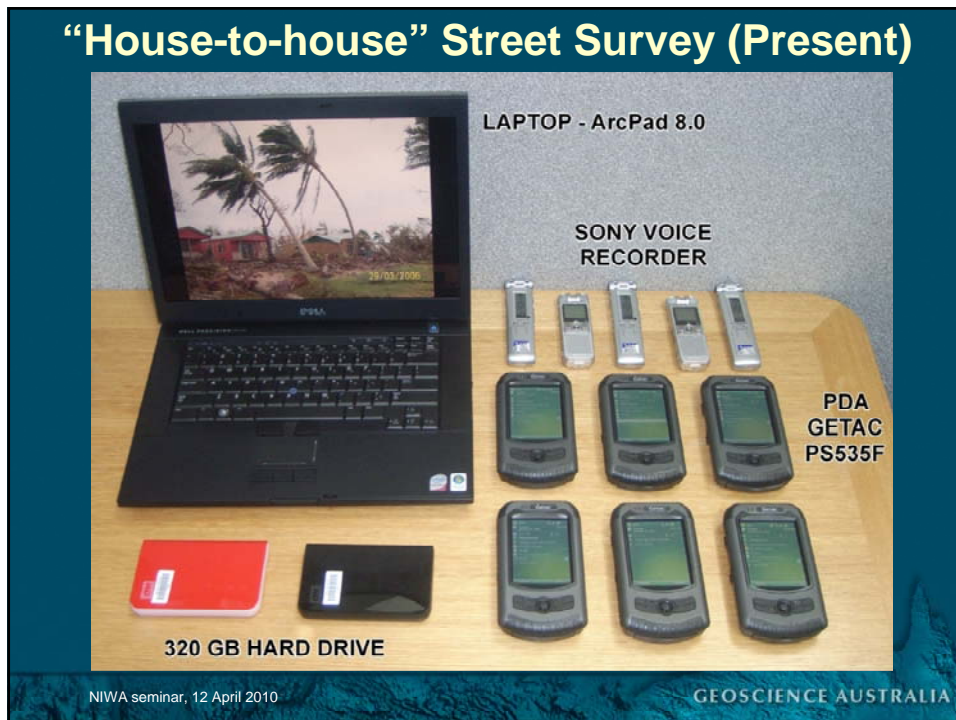
Digital cameras

Bluetooth GPS

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“House-to-house” Street Survey (Present)



• What is RICS?

- A vehicular data collection system (image and GPS)
- Utilised for building/infrastructure **damage** assessment and **inventory** info collection
- The system consists of Ethernet cameras attached to a tripod mounted on a motor vehicle, a GPS receiver and software



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Hardware Components

- High-resolution video cameras operating at approximately 4 frames per second;
- Cameras attached to an aluminium structure mounted either on the tray of a 4WD with three magnets or on a vehicle roof via suction cups.
- Streaming data is captured via an in-car laptop running RICS;
- 300W Inverter used to power the laptop, network switch and cameras.

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RICS inside a vehicle



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Graphical User Interface (GUI)

- Consists of three sections
- Streamed images are displayed in the top section
- The middle section displays the collected GPS data
- The bottom section is a notepad, where users can type notes during a field session



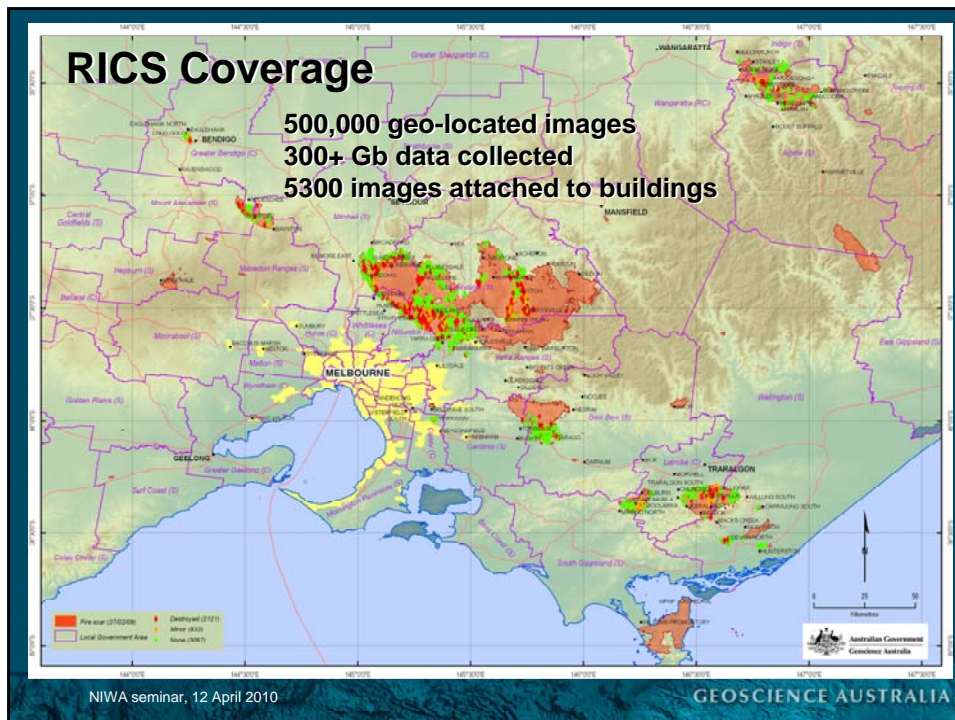
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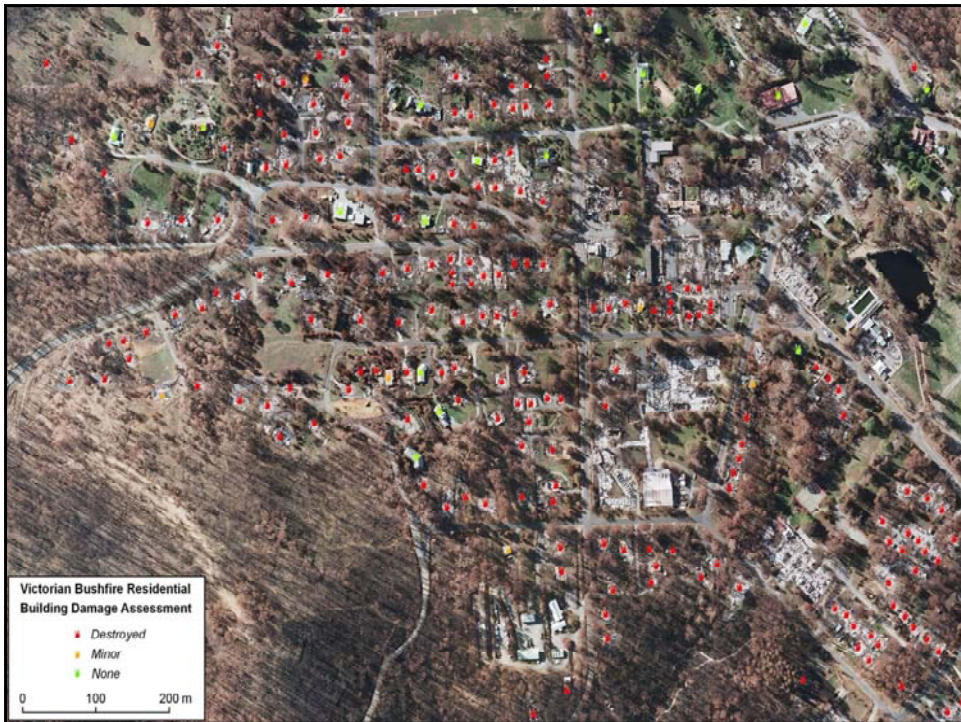
- **Benefits of RICS include:**
 - Rapid inventory collection (support NEXIS)
 - Enhancing the detailed PDA field damage assessment
 - A rapid prioritisation of worst-hit regions
 - Enabling key engineering staff to focus on damaged structures
 - Maximum coverage of building damage in a disaster-affected area

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Summary of damages and houses surveyed

Fire Name	Est. No. Houses in Firescar	House damage level			Fatalities (Vic Police)	Area burnt ha (source DSE)
		Destroyed	Minor	None		
Bunyip	240	35	21	184	0	180,000+
Churchill	359	133	86	140	11	150,000+
Kilmore East	3540	1244	530	1766	121	32,800+
Maiden Gully	172	48	21	103	1	500+
Murrindindi	1064	590	74	400	38	24,500+
Total	5375	2118	832	2593	171	390,000+

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Future Directions

- Open Source (including GIS software)
- Automatic testing tools
- Streamlining the database upload into the GIS environment
- Speeding up of JPEG compression
- Recording of internal car commentary
- Simplify power to cameras

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