Mappt

Mapping. Better

GEOSPATIAL WORLD FORUM™

Spatially Enabling Healthier Communities With Simple Field Mapping Technology

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INSPIRE Geospatial World Forum
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Who are we?

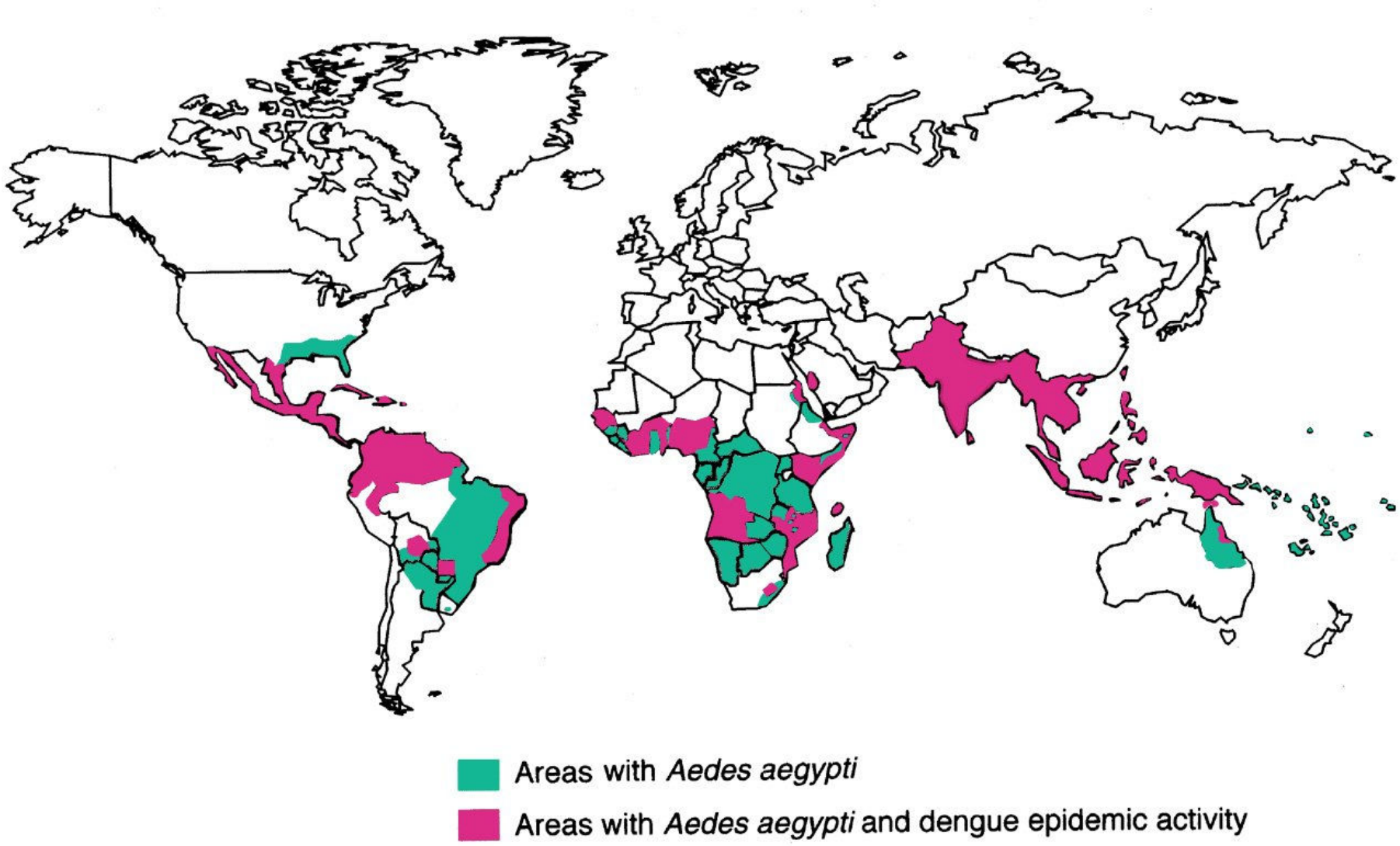
- Mappt is a low-barrier-to-entry Android mobile GIS app that breaks away from the traditional dependency on pre-existing desktop packages.
- Mappt seeks to democractise the mobile GIS industry by providing a simple interface, all within a competitively priced package that is easily deployable to field GIS.

Field data - it doesn't *have* to be messy

Dengue Transmission Cycle

1. *Ae. aegypti* bites infected person
2. Mosquito becomes infected 10 days later
3. Infected mosquito bites human
4. Human becomes infective 4-13 days post infection.

Distribution of Dengue and *Ae. Aegypti*

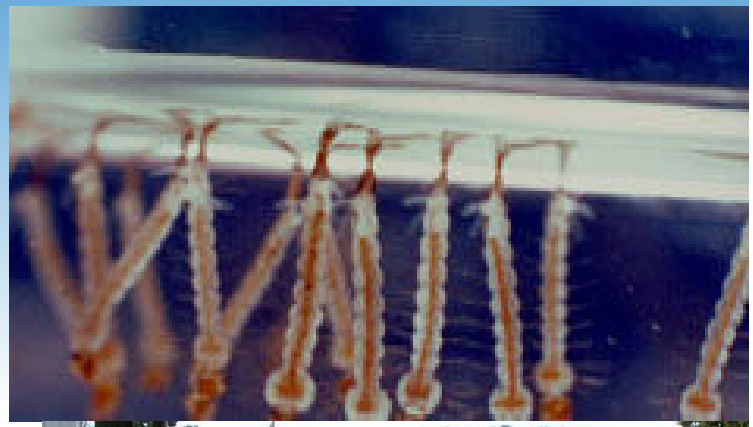


Dengue Is Imported By Overseas Travellers

- Ca. 10 notifications/year N. Queensland
- Tourists, especially arriving from SE Asia
- Residents/relatives (PNG, 50% of imported cases)
- Goal of dengue control: catch patient 0 before he spreads it!
- Dengue Action Response Team (DART) initiate control measures

Ae. Aegypti: Container Breeding

Mosquito Common Breeding Containers: Rubbish



Residual surface spray:

- Kills eggs, larvae, pupae and adults!
- No breeding for up to 6 months!

Ae. Aegypti Fly Into Queenslander Houses

Ae. Aegypti Resting Places

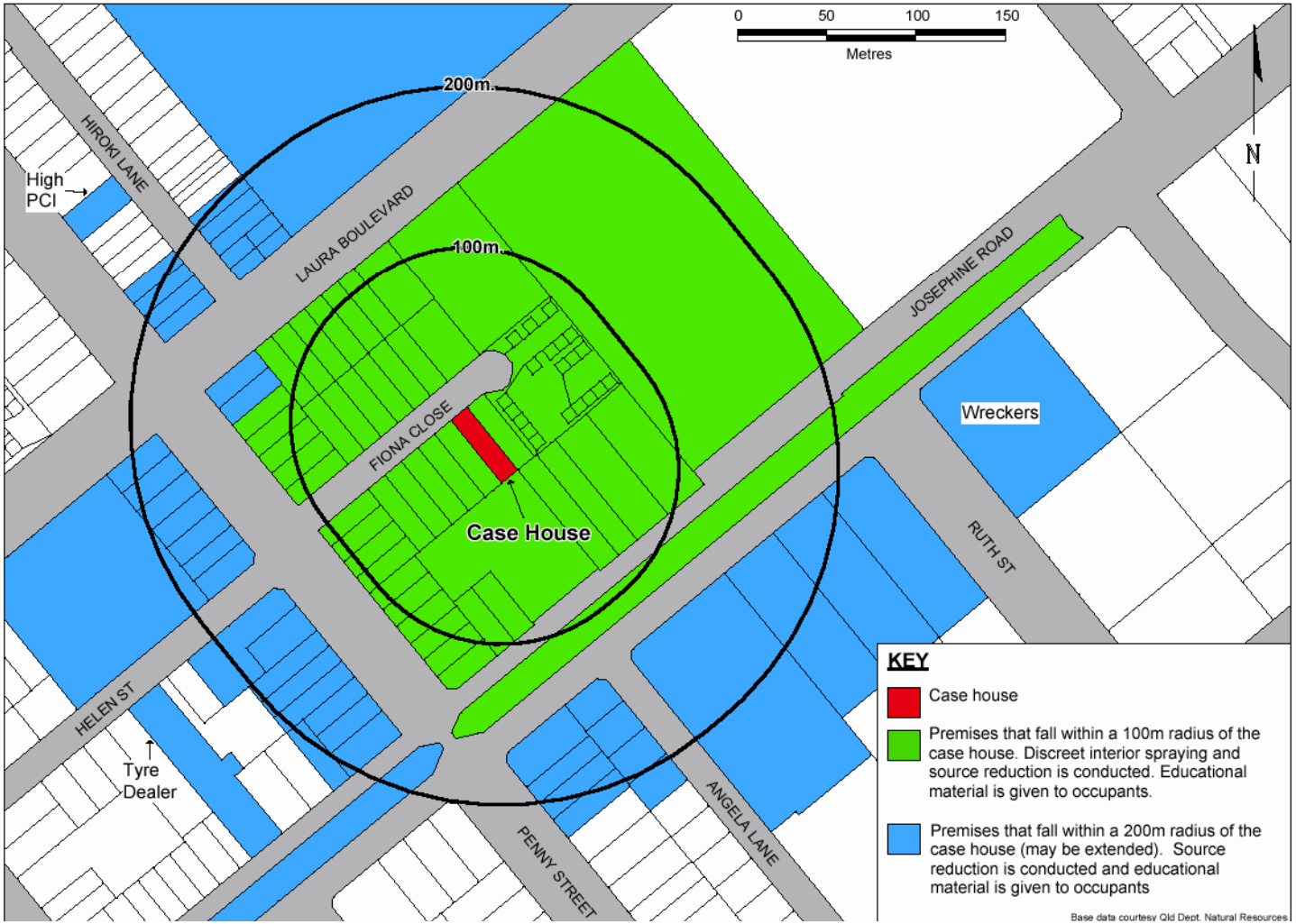
Interior Surface Spraying

- Use synthetic pyrethrins
- Apply with pump sprayer to avoid drift
- Target resting sites indoors
- Residual action for several weeks

Dengue Response Protocol

Within 100 m of case: larval control + interior spray (TPHU)

From 100-200 m of case: larval control (council)

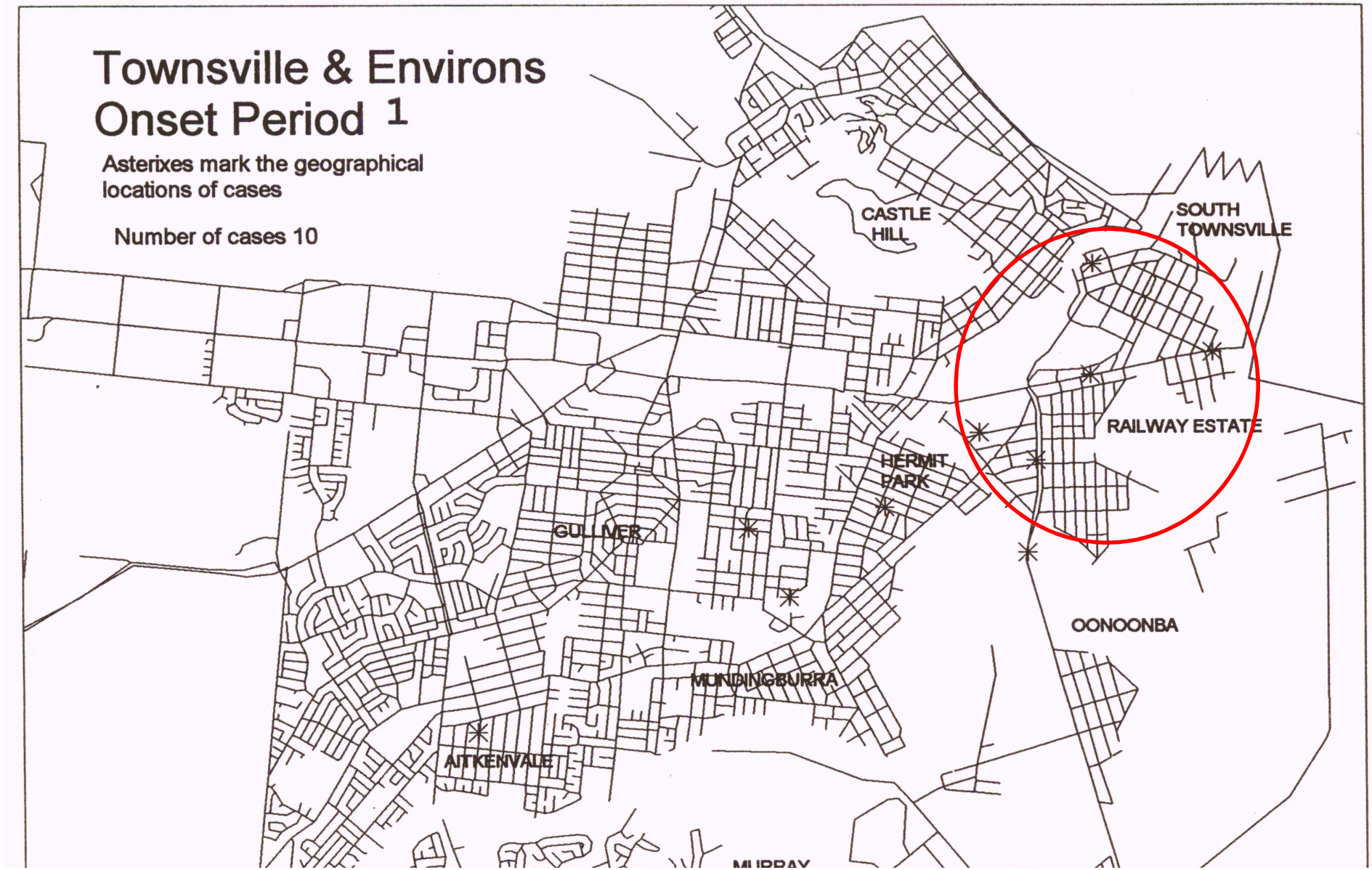


Outbreak Response: Multiple Cases

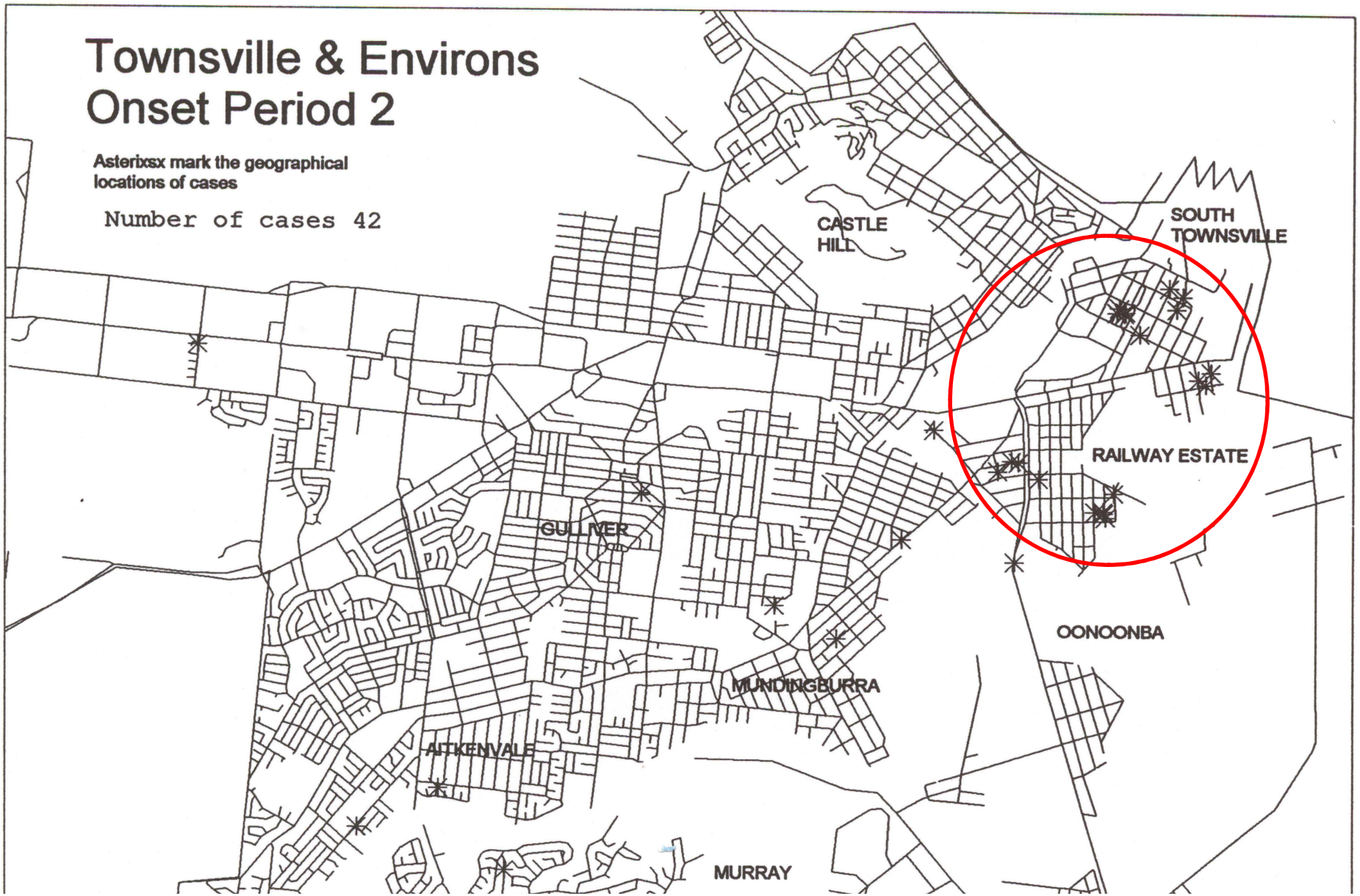
Townsville 92 DEN-2

(Cases/fortnight)

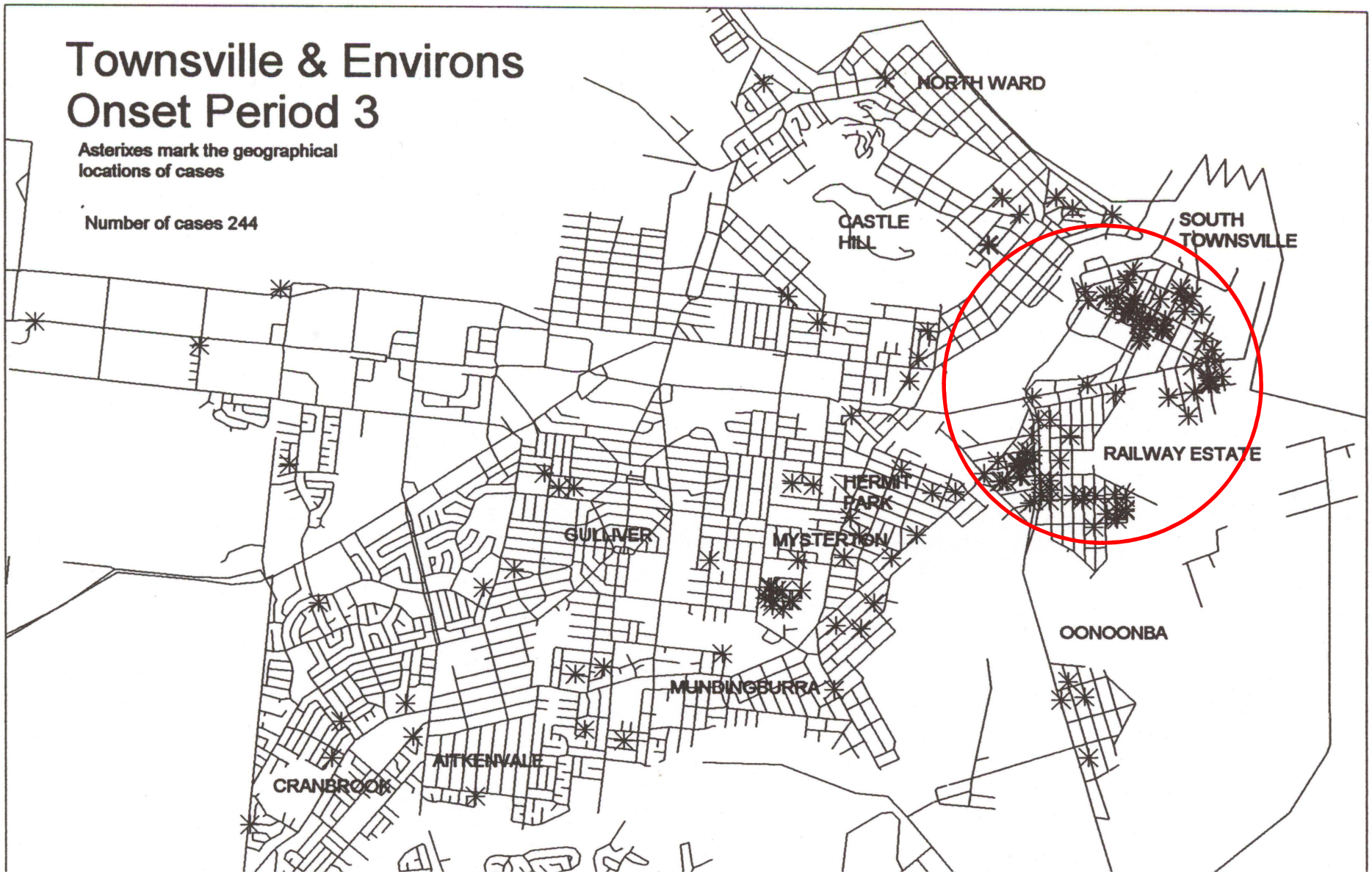
tick, tock



Tick, Tock


Townsville & Environs
Onset Period 2
Asterixsx mark the geographical locations of cases
Number of cases 42
CASTLE HILL
SOUTH TOWNSVILLE
RAILWAY ESTATE
GULLIVER
OONOONBA
MUNDINGBURRA
AITKENVALE
MURRAY

Boom!!! Dengue Explosion !



From this... Java Sea

AEDES AEGYPTI MOSQUITO PREMISE-TO-PREMISE SURVEY FORM

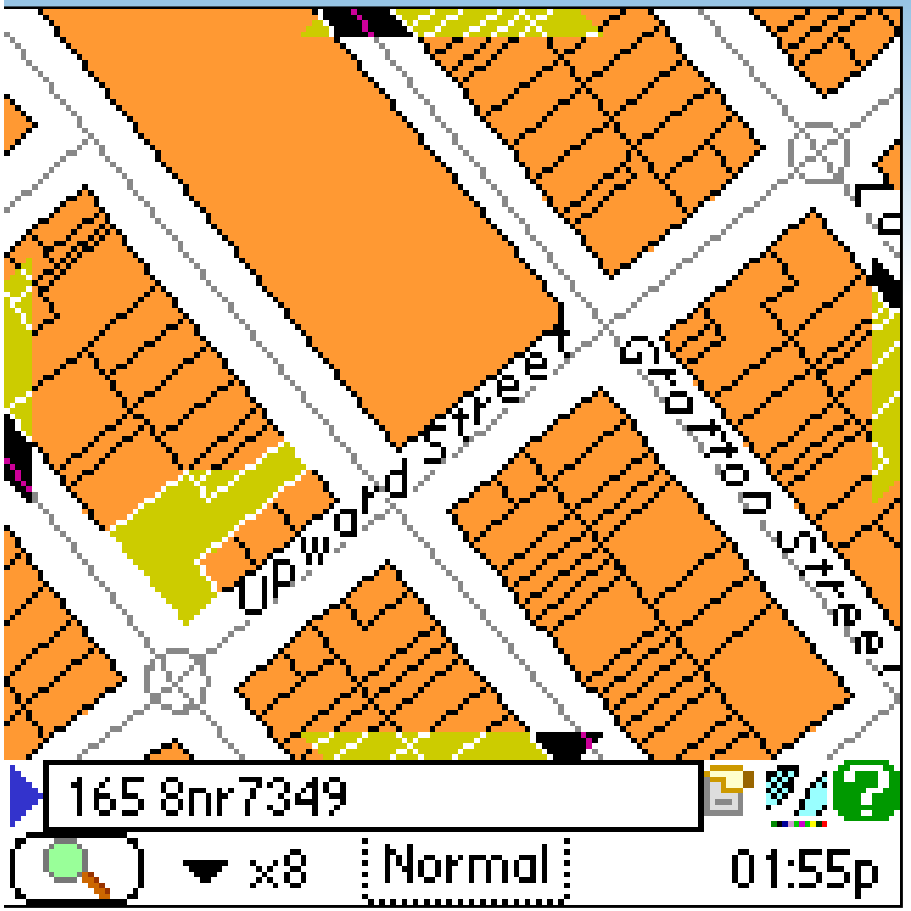
COUNCIL: SUBURB: Coral Sea / CNS Harbour INSPECTOR: SAR, D. Ronsted - AQ15 DATE(S): 13.8.9

[ ] ROUTINE SURVEY [ ] SUSPECT DENGUE CASE [ ] SEROLOGICALLY CONFIRMED DENGUE CASE
[ ] VIROLOGICALLY CONFIRMED DENGUE CASE [ ] OTHER

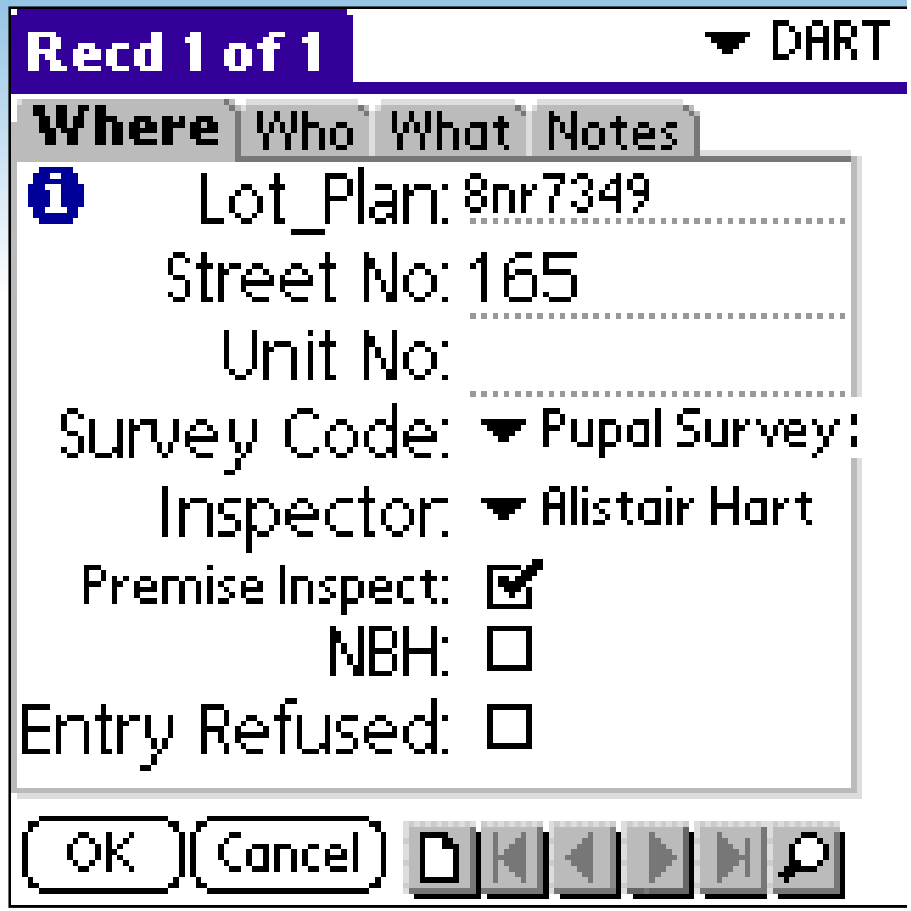
PREMISE		PREMISE INSPECTED		BREEDING CONTAINER TYPE	LARVAE SAMPLE No.	LARVAL ID	AREA SPRAYED			INSECTICIDE USED	NOTES
No.	ADDRESS	YES	NO				INSIDE	UNDER	OTHER		
	Total inspection of Boat										
	Some tyres - salt water in them										
	Some "cavities" w/ H_2O = 20% salt water										
	Hold - H_2O fresh on bottom → sloshing - no larvae										
	Quarters - NO pot plants										

NOTES: very clean. Most H_2O → oily, or salty or both. No larvae, adults seen

To this…!

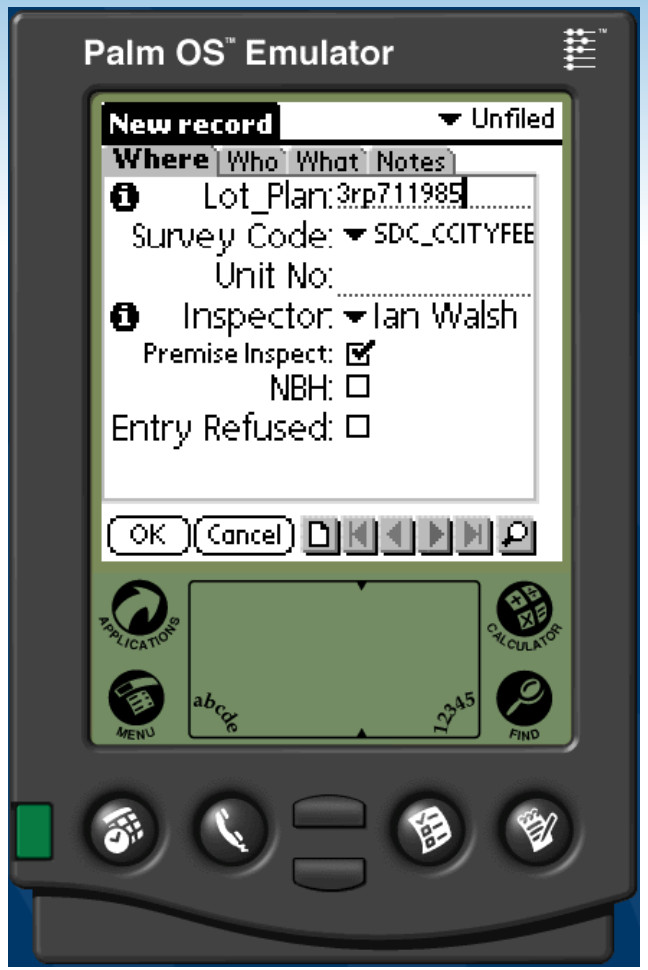

Upward Street
Grafton Street
165 8nr7349
x8
Normal
01:55p

+


Recd 1 of 1
DART
Where
Who
What
Notes
Lot_Plan: 8nr7349
Street No: 165
Unit No:
Survey Code: Pupal Survey:
Inspector: Alistair Hart
Premise Inspect:
NBH:
Entry Refused:
OK
Cancel

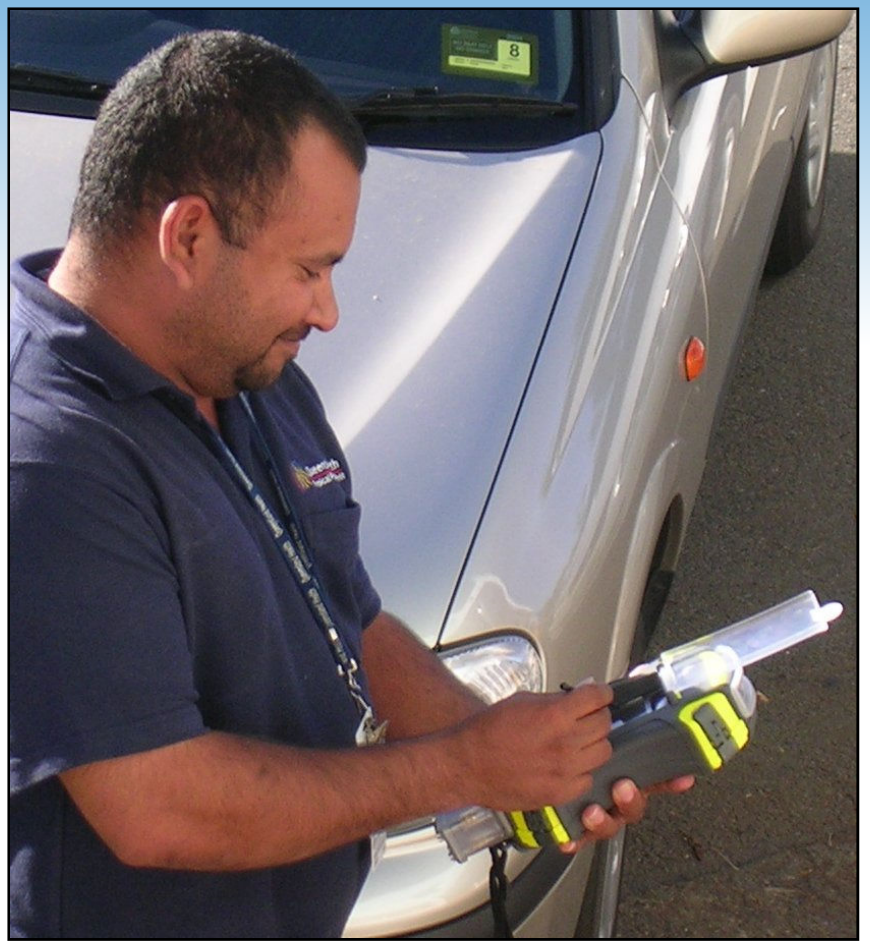
Handheld computers for field data collection

No more survey sheets!



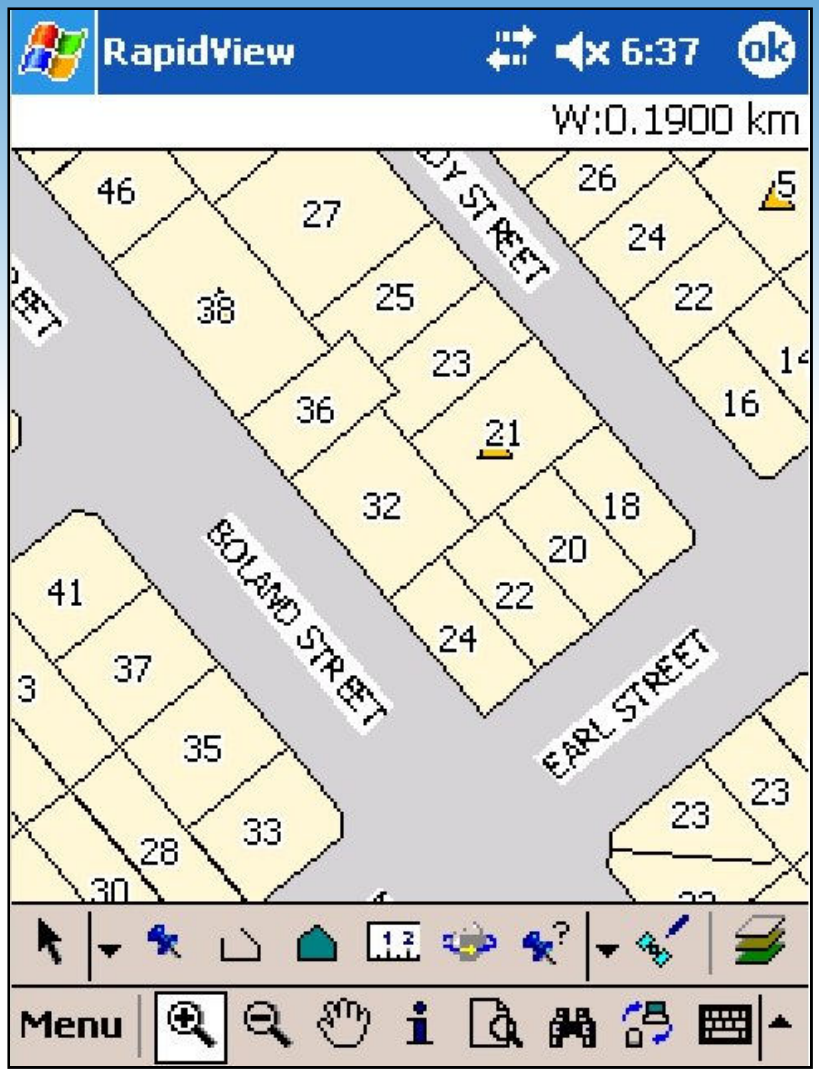
Why ***digital*** field data collection?

- Eliminates duplicate data entry
- Eradicate messy handwriting
- Speedy transfer of data into desktop computer
- Real time situational awareness of outbreak containment



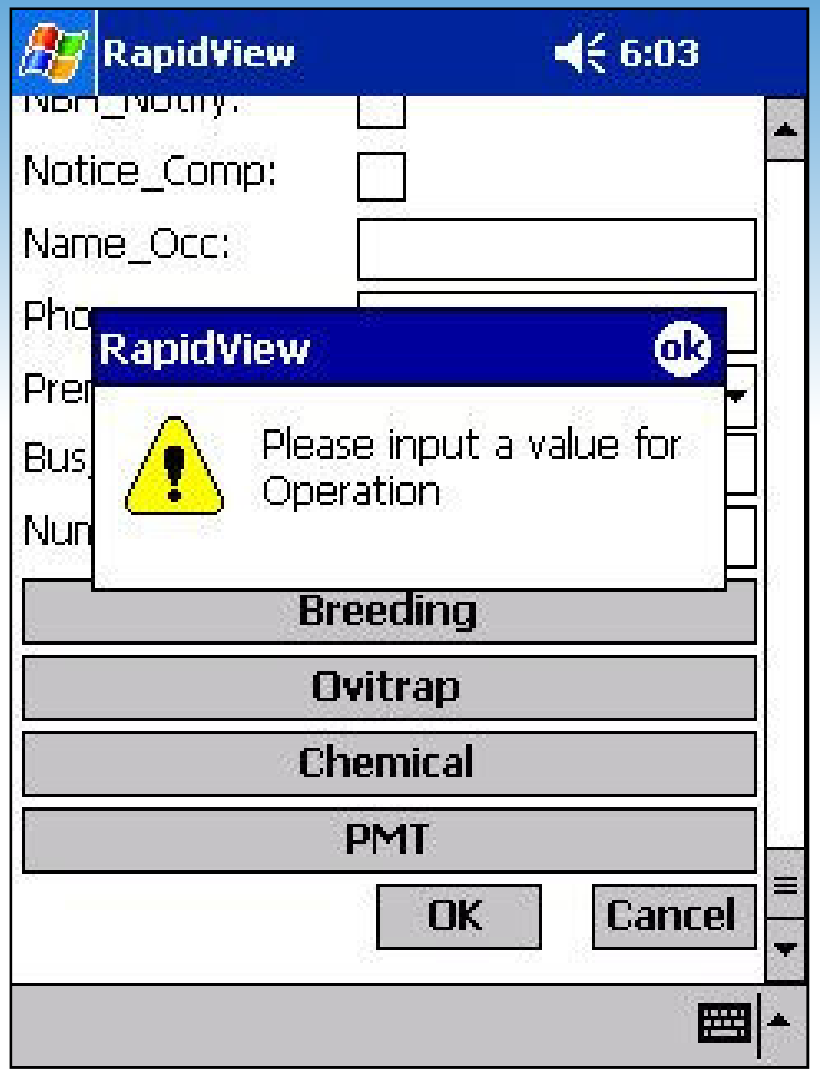
Know where you are!

- We know what the property identifiers are, even when we are on a vacant block.
- Enables 100% automated geocoding of field data



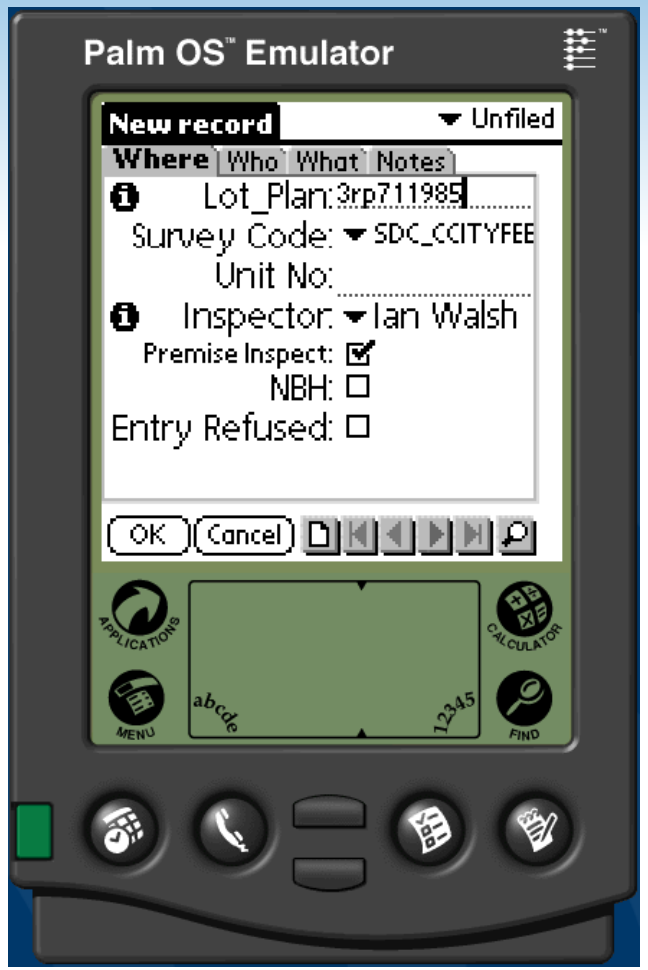
Standardised data collection

- Handheld computers allows us to record all our field data digitally.
- Data integrity rules can be enforced.
- Entry of field data to the desktop automated.



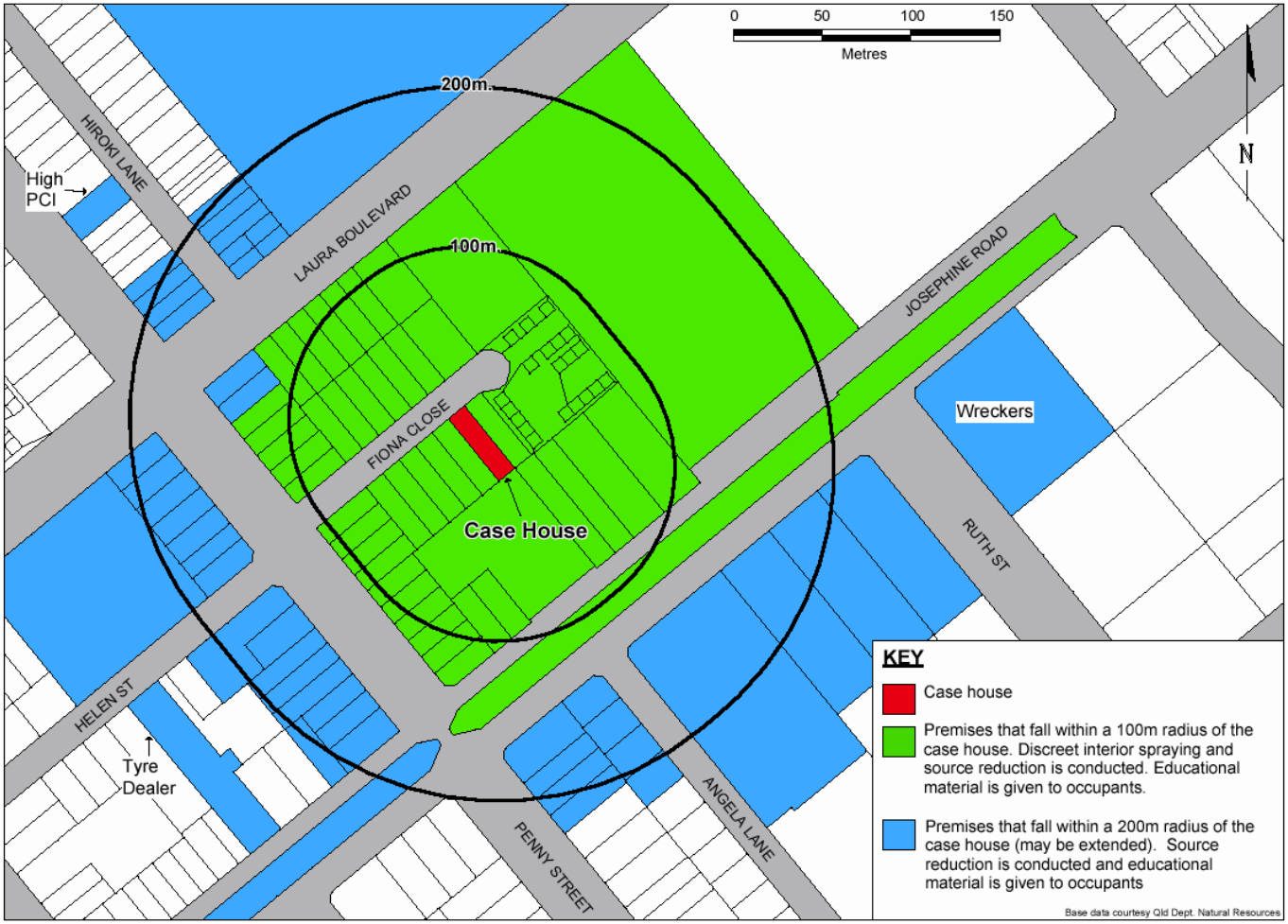
We started with something modest...

- HandMap & ThinkDB



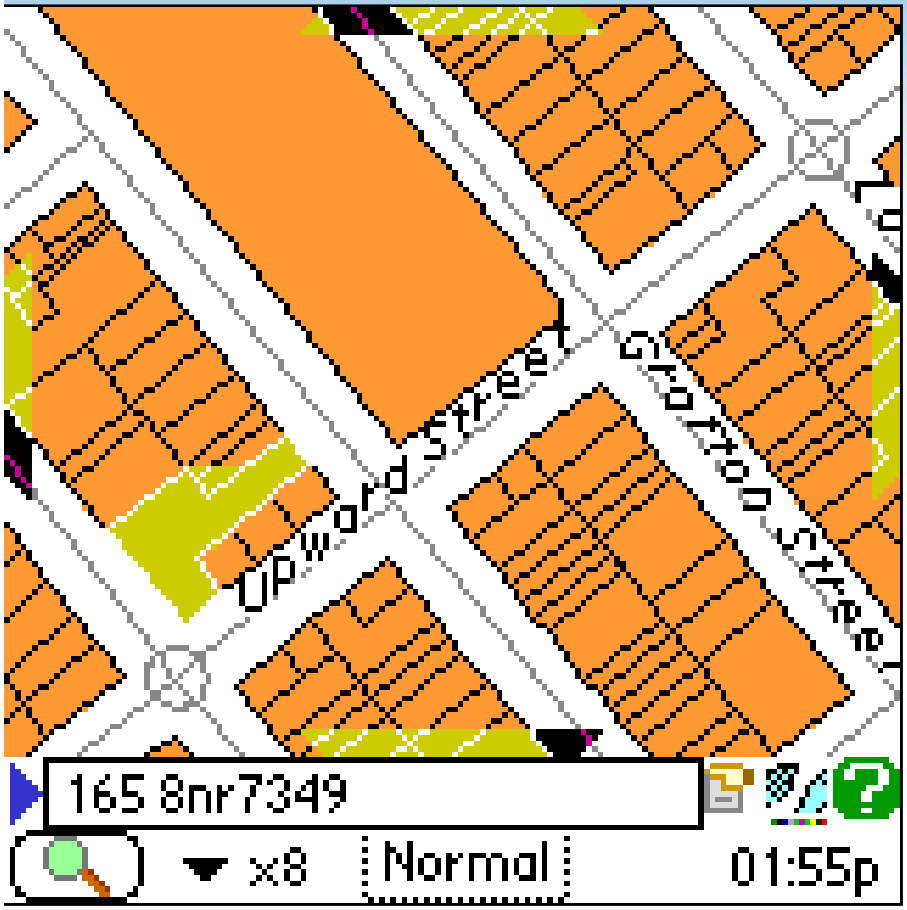
And for an Incursion, we...

Create response map showing case house and control areas using concentric ring buffers.



Conduct field survey

Collect information in ThinkDB database



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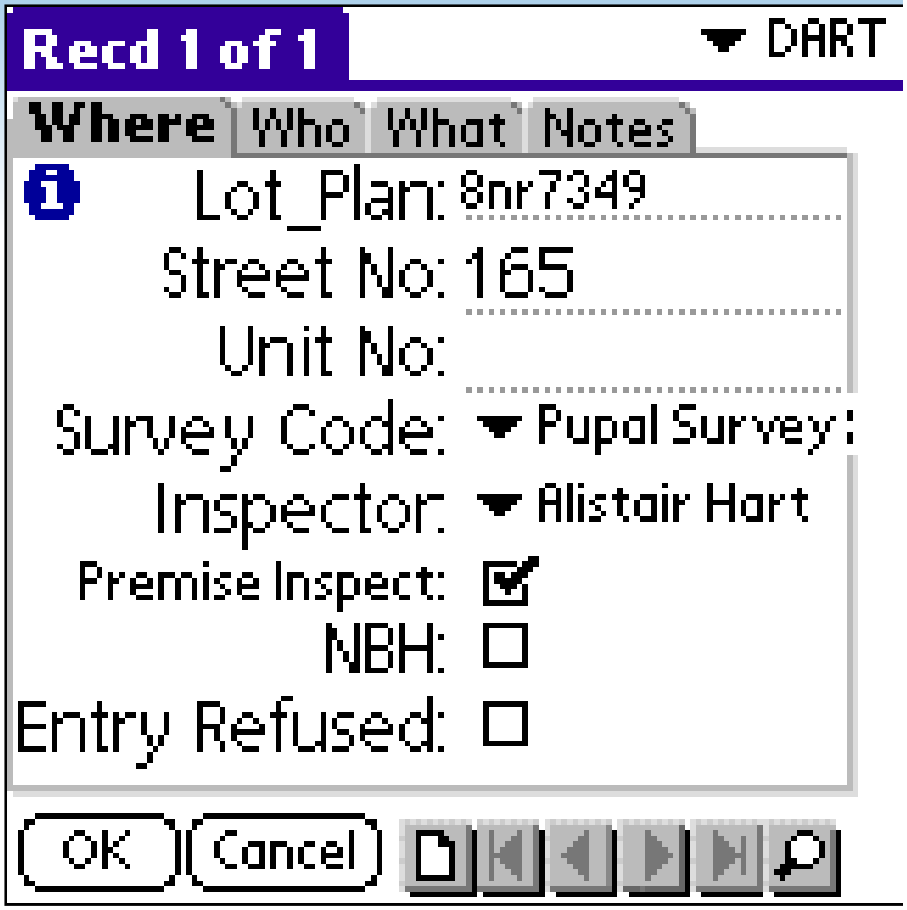


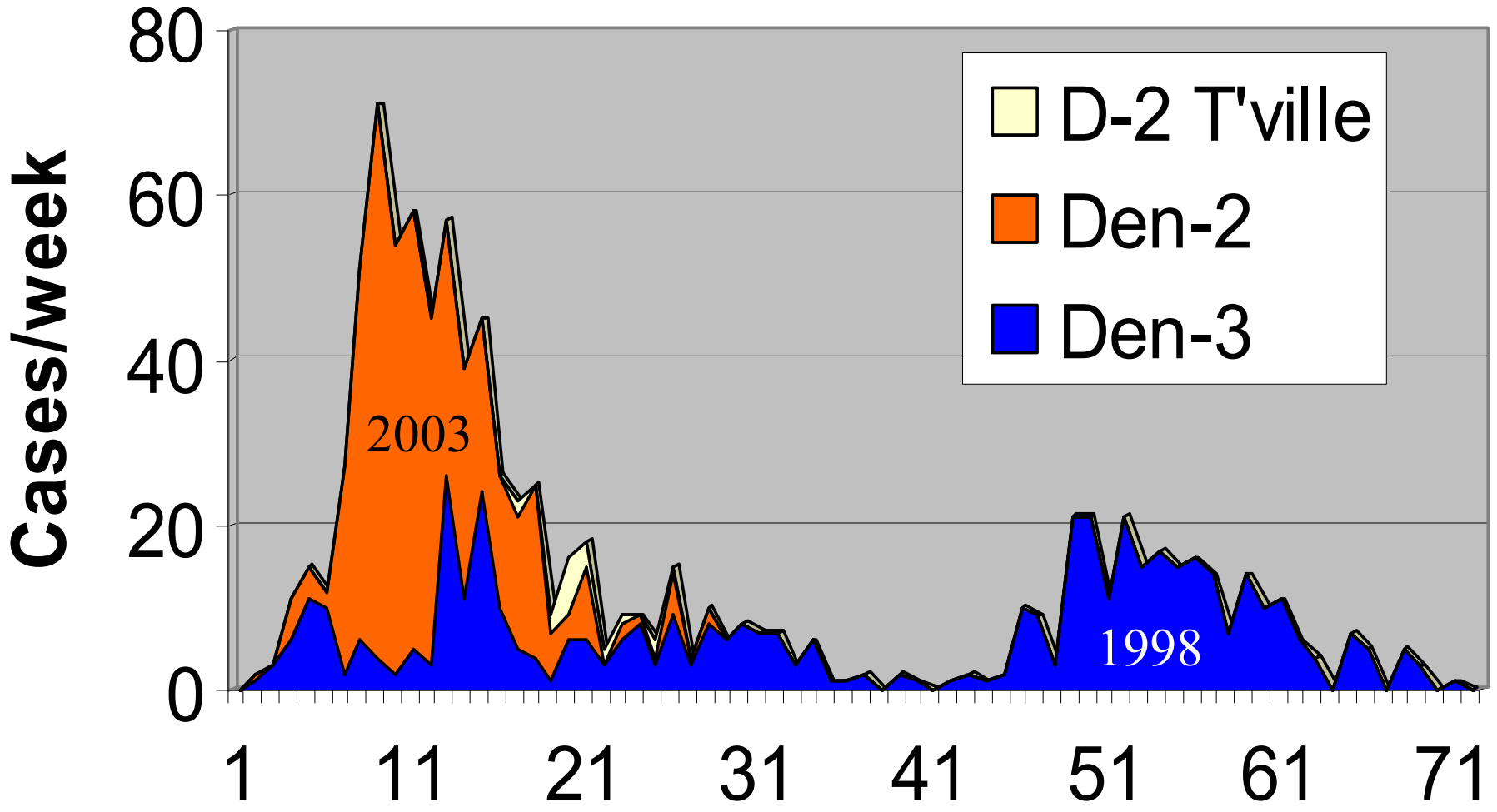
Frustration!!

- FRAGILE: 7 processes in...
- 6 different software packages

- Lots of steps - difficult to teach and maintain
- Map preparation time consuming

- We had two Palm handheld PCs..

98 vs 03 epidemic

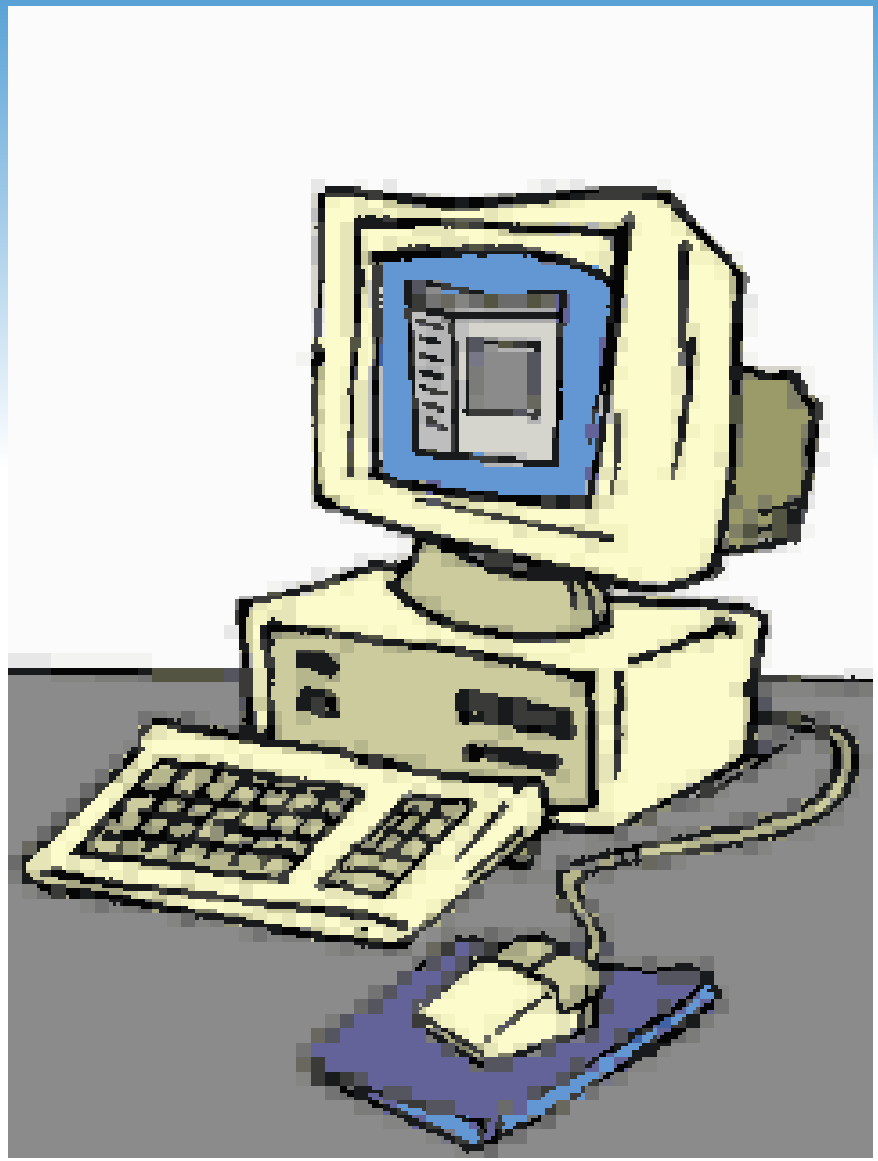


Cairns 03:
2829 yards treated,
1646 houses sprayed - phew!

Up to 5 teams on the ground

Capacity overload!!

- We used paper based data collection for outbreak control during 2003 outbreak, with manual data entry
- Labour intensive
- Poor access to data for analytics
- Issues with hand writing resurfaced



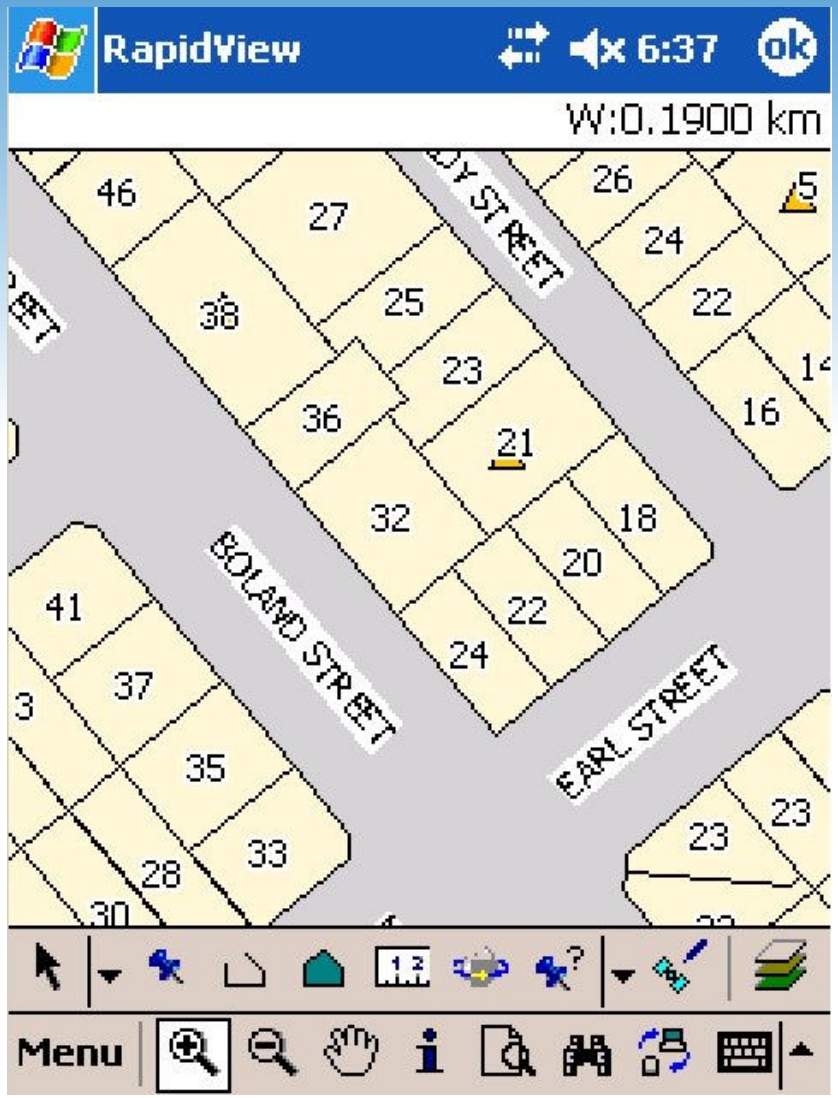
PocketPC

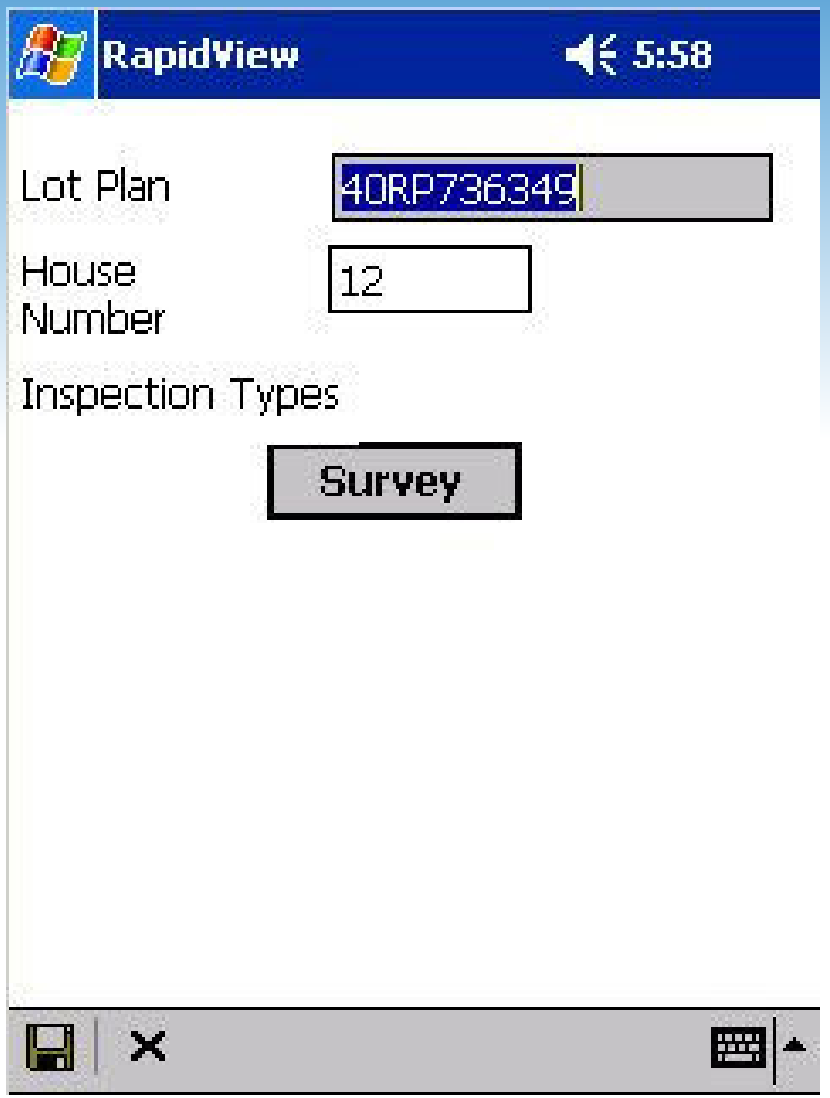
Detailed forms

Compatible with existing GIS

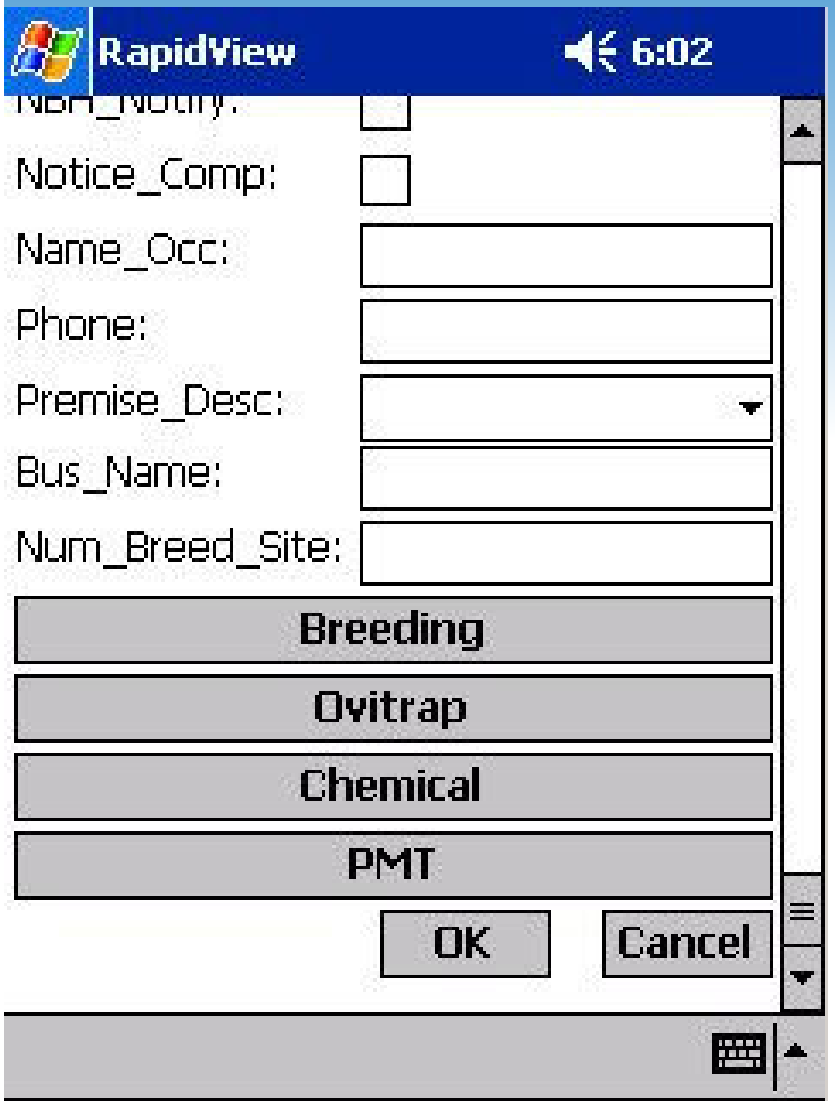
An improvement on the PalmOS solution

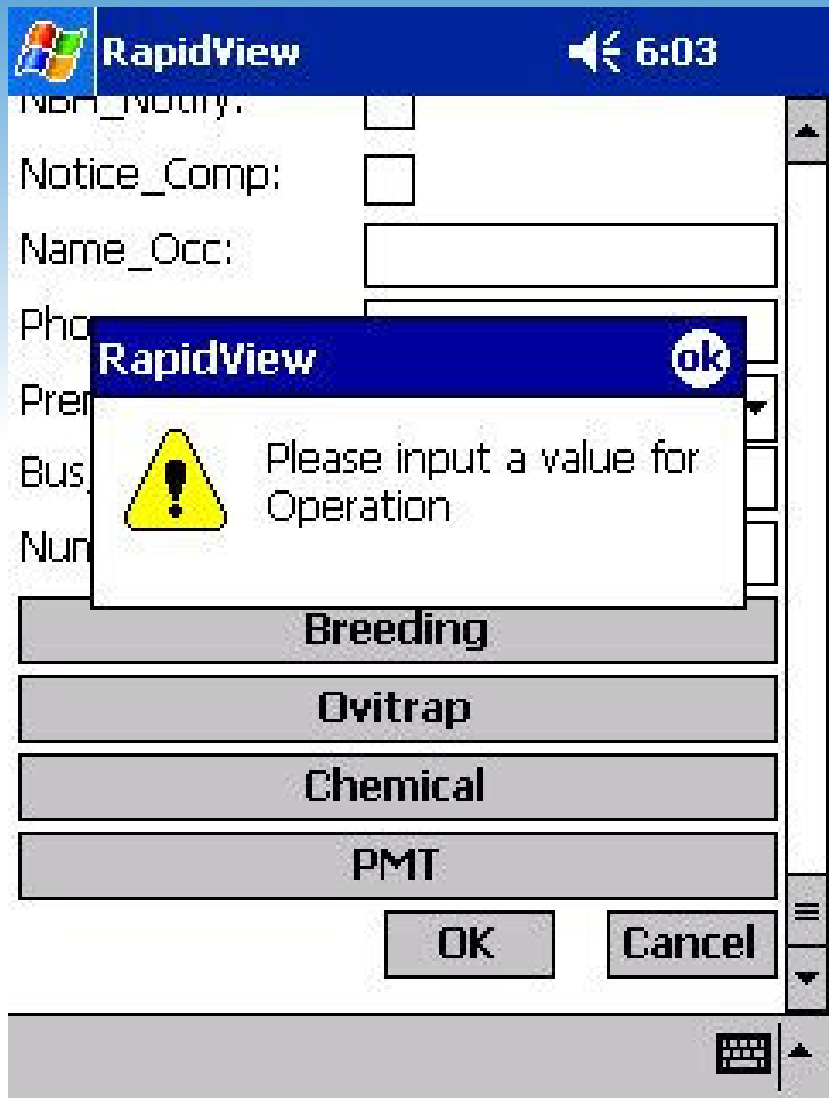
Select premise from map & confirm street number



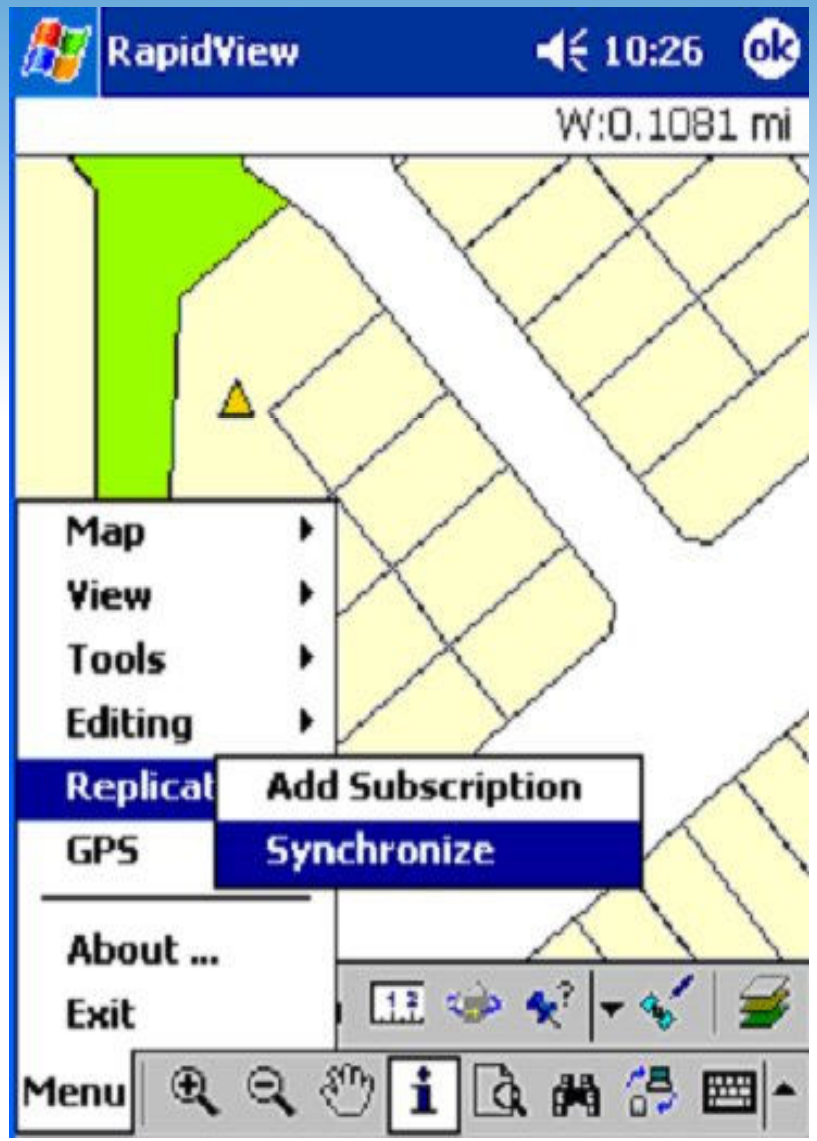


Data integrity rules enforced

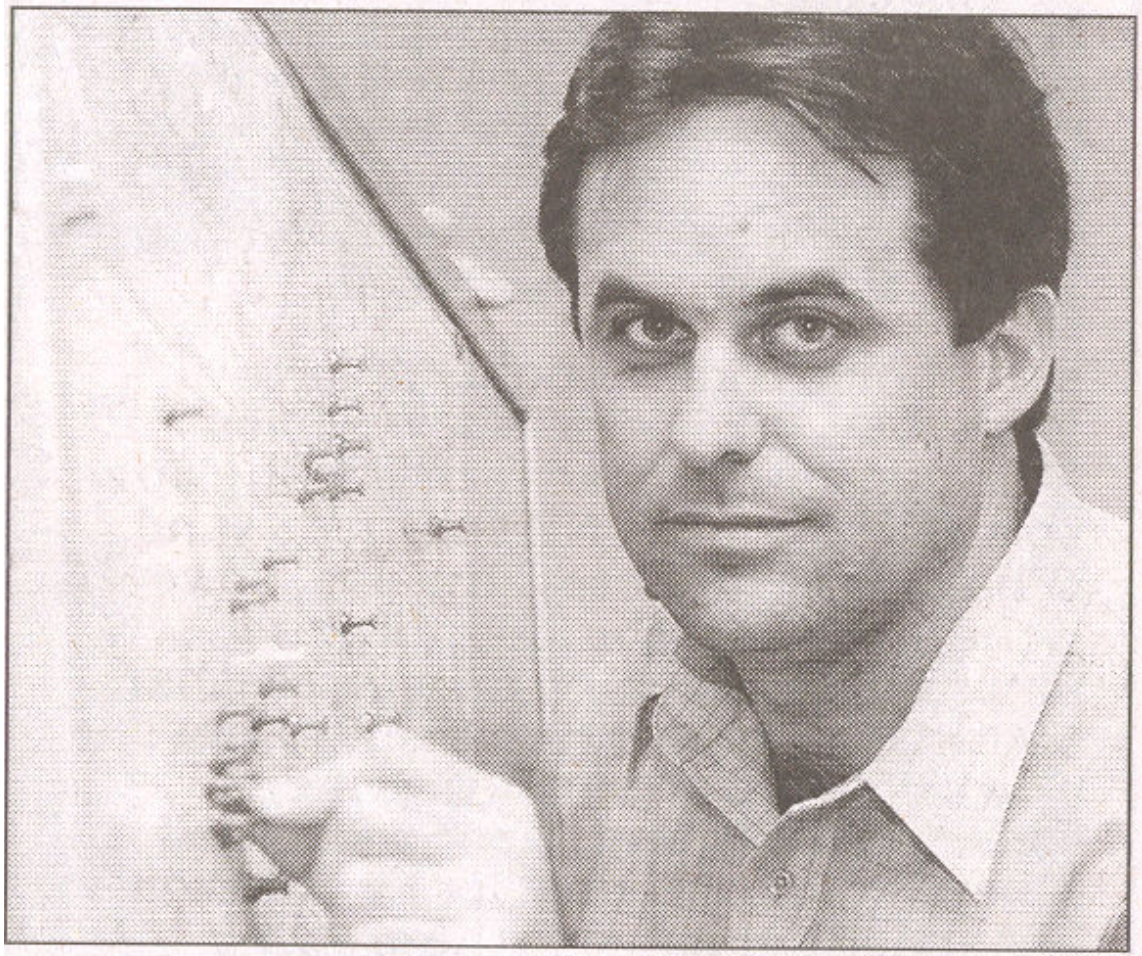




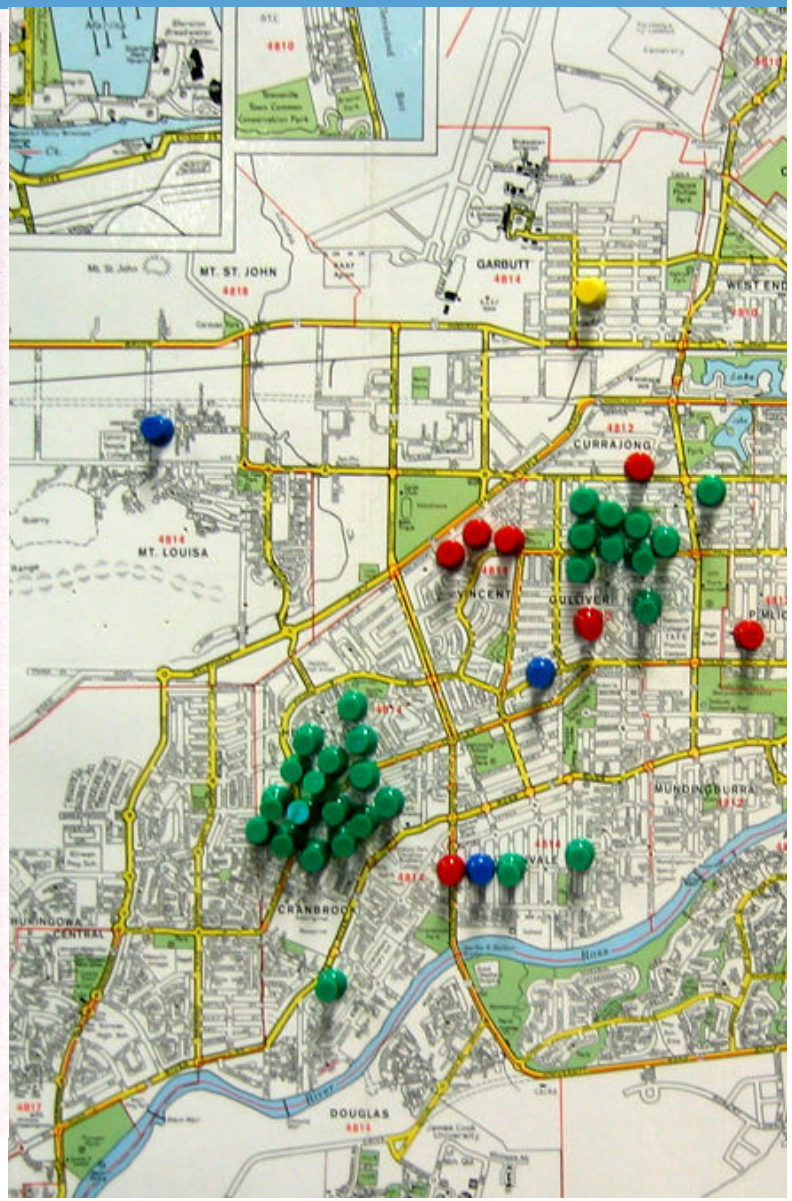
Add to database on server



Dengue Surveillance… From this:



ALARMED . . . John Piispanen plots dengue hot spots throughout the city



To this! Inform the managers

Getting better but… still some serious issues

- Slow address data updates in high-growth regions
- Imagery as a backdrop would be great for context, but you need to have the imagery and it's a hassle to introduce, even if you do
- Batteries don't last all day
- Small data entry screen leads to user rejection

But… there is hope!

What is Mappt?

- Back to basics Designed for ease of use with minimal training
- Create, edit and manage your data, even while offline
- Simple workflow to move data between your Enterprise GIS and Mappt
- Video

Existing solutions vs Mappt

- Problems with Apple vs Android
- Open industry standards
- Not tied to existing GIS package
- No “iTax” on hardware
- Very low barrier to entry (anyone can use it!)
- Easy to learn UI

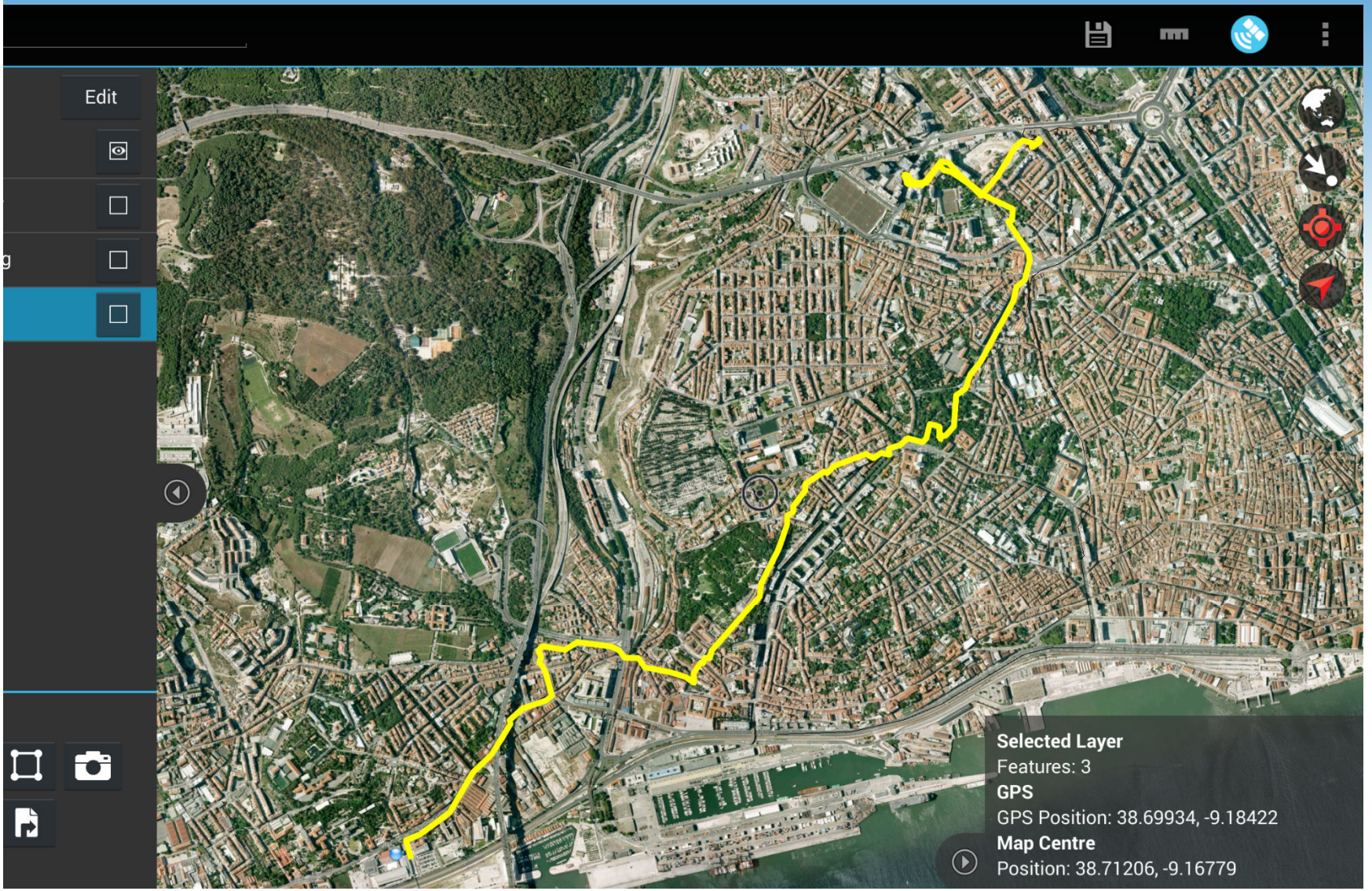
Broad scope of uses

- Current users
  - Mining & exploration
  - Environmental & vegetation management
  - Asset management
  - Cultural & heritage mapping
  - Education & training
- Anywhere you record field data
  - Adaptable (independent of industry)

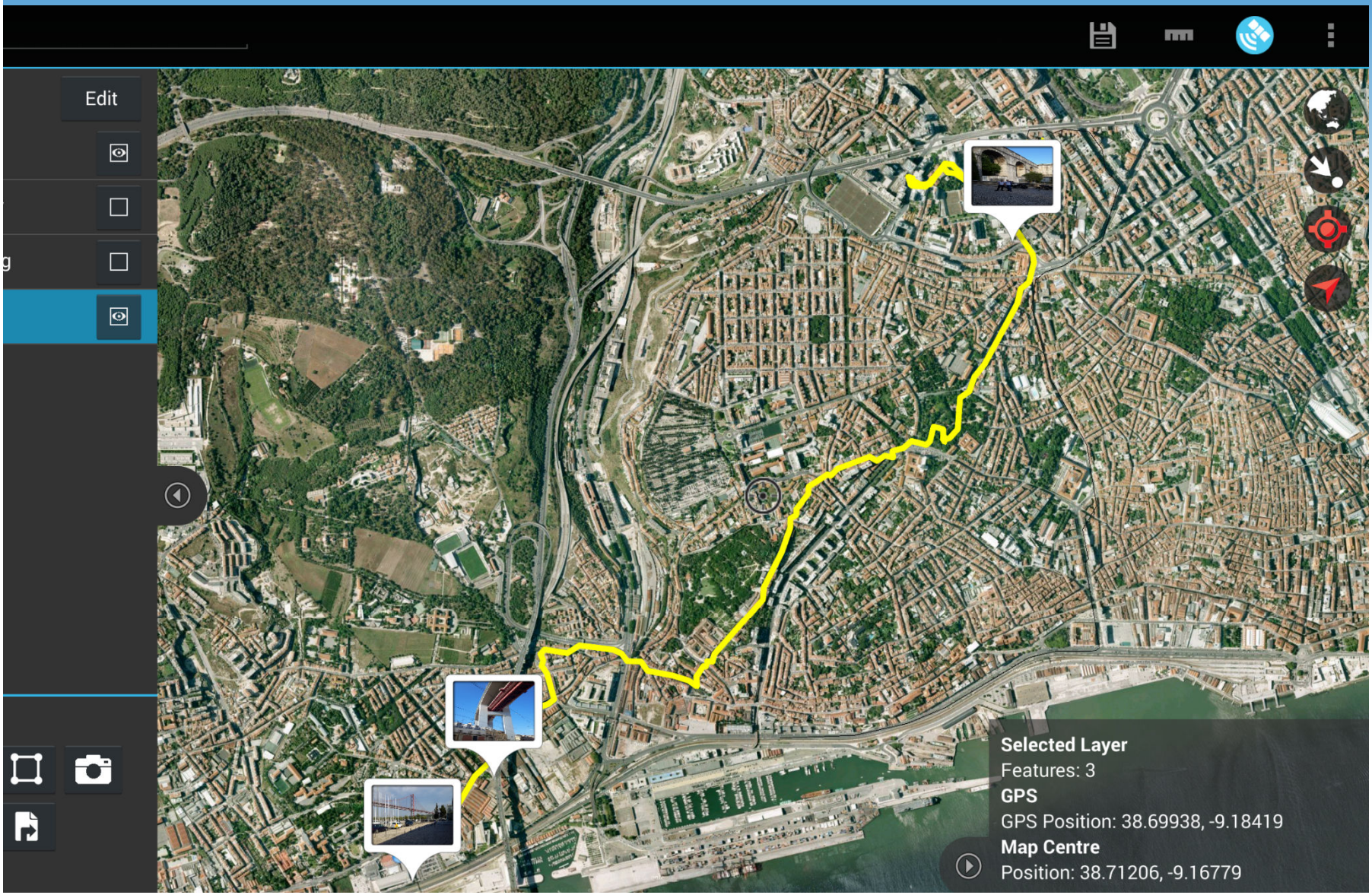
Suitability for fieldworkers

- Laptop vs Tablet (Weight/Battery/GPS)

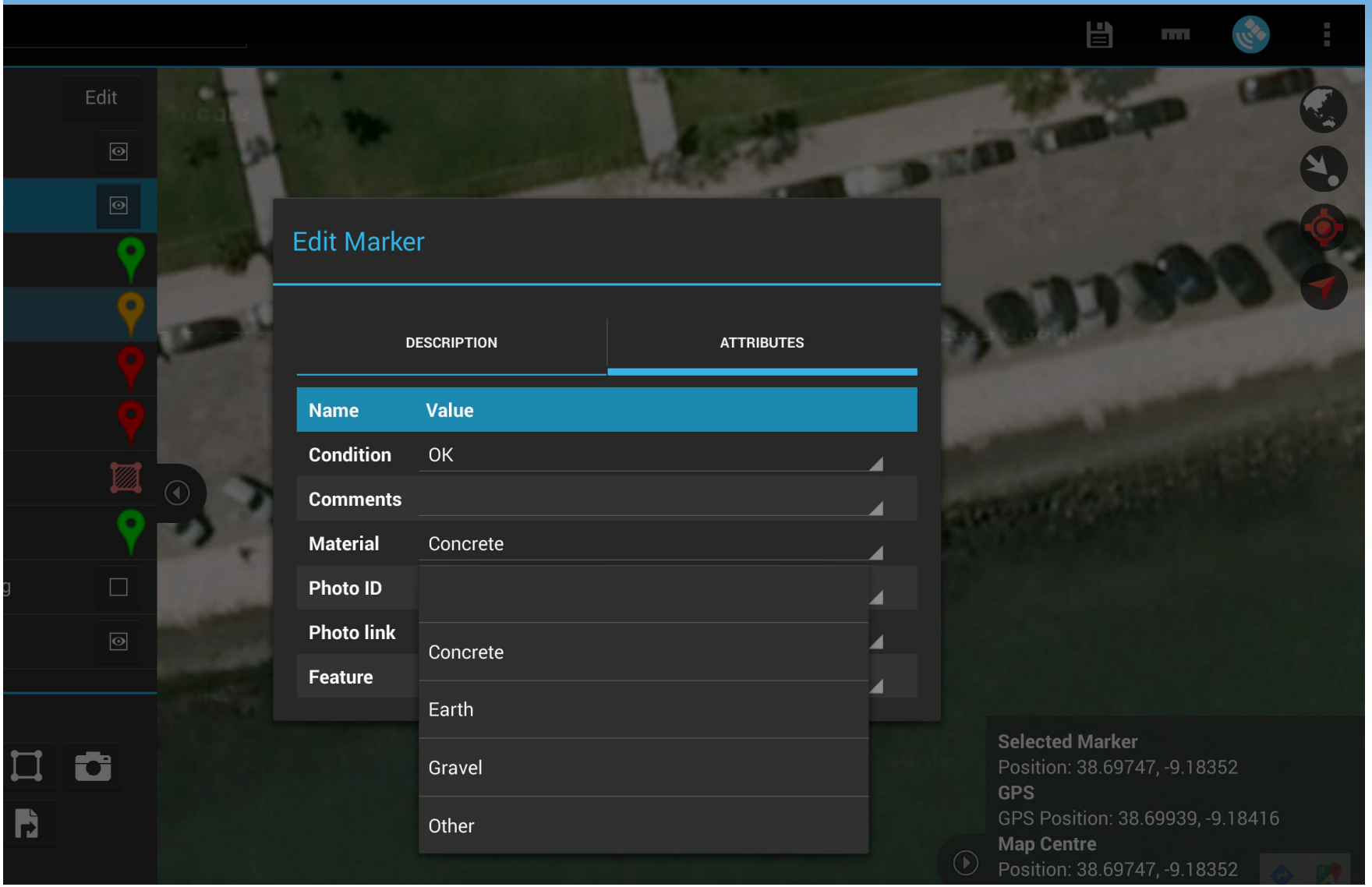
Real-time GPS tracking (never get lost!)



Geotagged Images

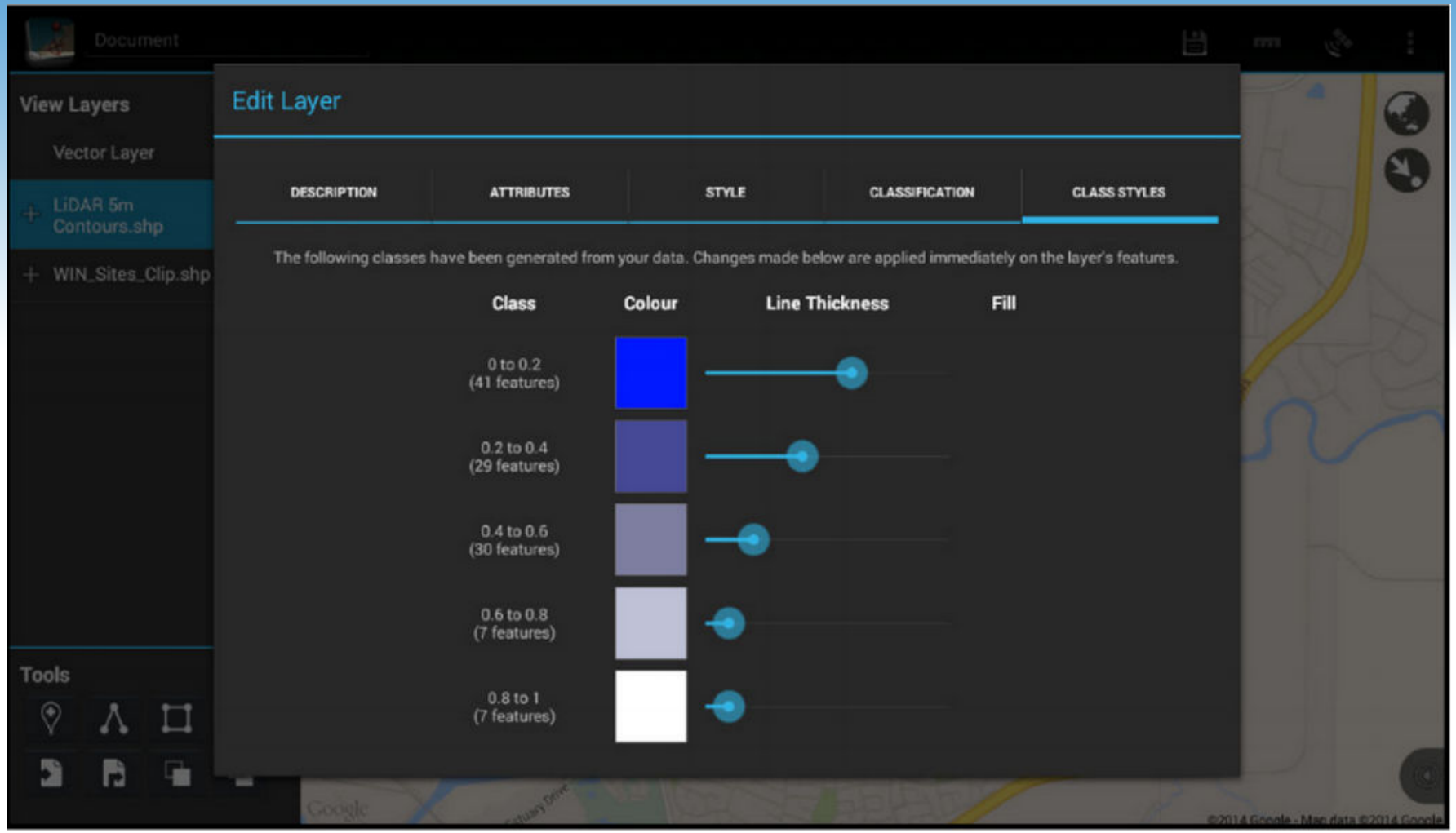


Dropdown Data Entry Forms



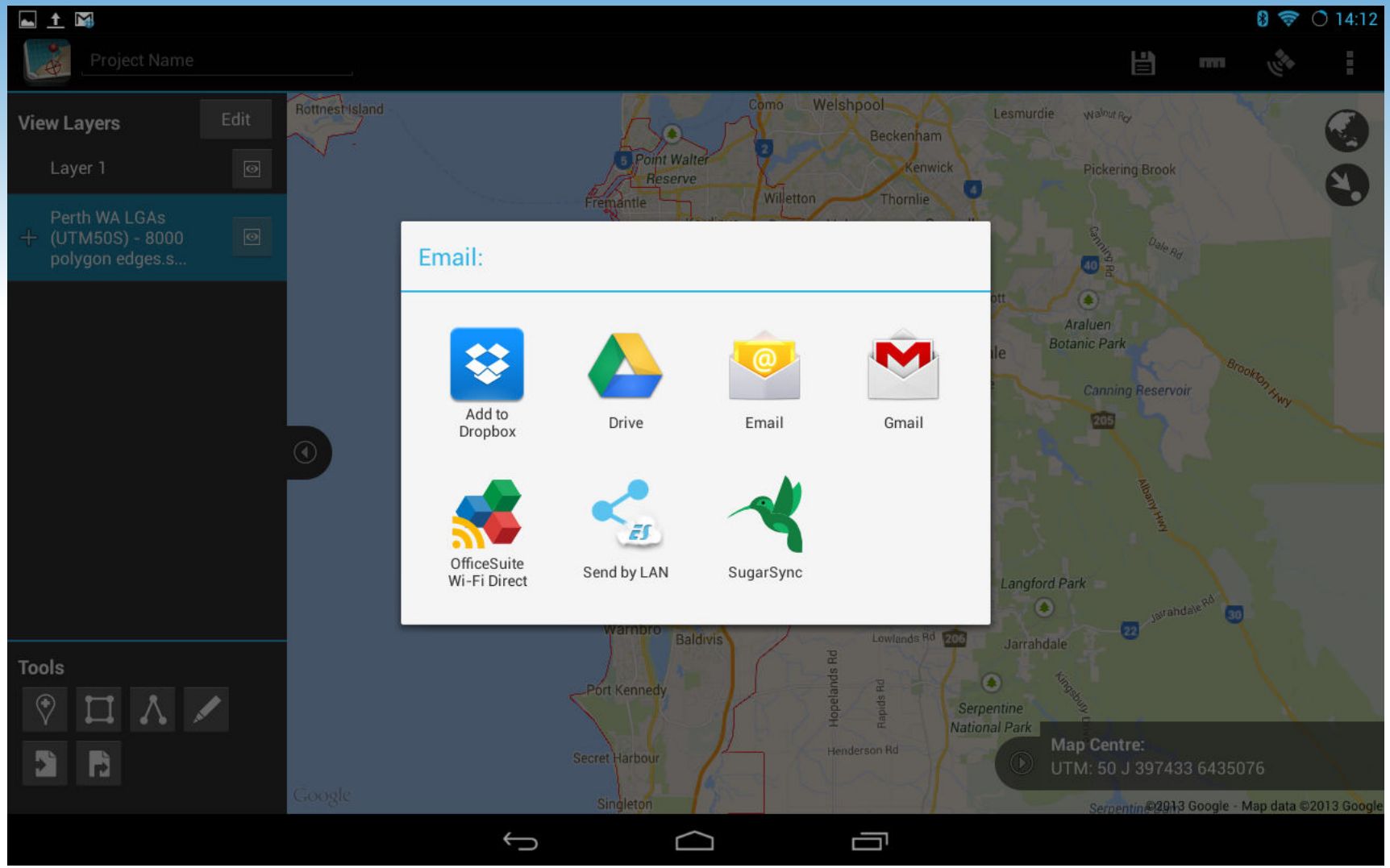
Unlimited Offline Imagery Support!
ECW or JP2

Classification and Thematic Mapping



In field data collection and mapping

Export via Google Drive, Email, SD card or cable to your Desktop



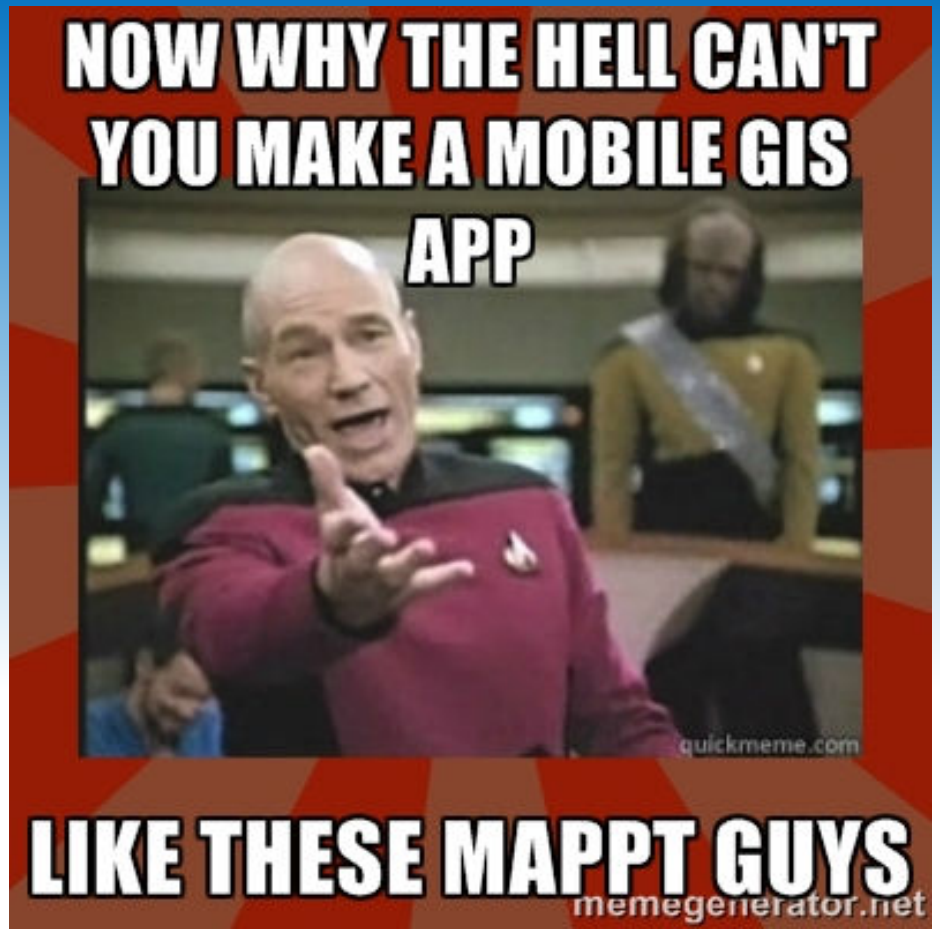
Required hardware

- Almost any Android tablet 7” and up running 4.1
- Samsung, Sony, LG, Panasonic etc.

Pricing and Licensing

- From Standard $660 (AUD)

- $132 per year for maintenance
- Site wide licensing available
- Enterprise clients pay for customisation
- Free updates to regular subscribers



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