Communication With Smartphones Where There Is No Cellular Infrastructure

(=NZRC Succinct Data)

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The Elephant in the Room

No matter how (amazingly, fantastically, we are having a 3 day UN workshop about it) useful it is, there is no social networking if there is no communications infrastructure.

NZRC is working on a solution.

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Problem

The smartphone has great computing power, useful sensors, and is very good value for money, but... without a cellular infrastructure it is no more than a PDA. The smartphone cannot function without its network.
Solution

• Create alternatives to established infrastructure where and when required:
  – Wi Fi Mesh with data store and forward
  – Text via satellite
Project Serval

Wi-Fi Mesh
DeLorme inReach

Iridium Satellite

DeLorme Web Page

https://explore.delorme.com
Kestrel Technology Group

Electronic Forms and Data Fusion

Gather Reporting Application

‘Store and Forward’ Reporting

Inable Reporting Application

Backhaul (3G)

Kestrel FusionPortal

https://pe11.fusionportal.org

Assessment and Live Tracking Data

Serval Mesh Network

Store and Forward Reporting Application

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Assessment and Live Tracking Data

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NZRC Succinct Data

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Live Tracking Data

Live Tracking Data

Serval Mesh Network

SMS Gateway

XML Reports
Succinct Data in the Field
Succinct Data on the Move

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Benefits 1

- Real time tracking for safety and management of personnel
- Two way communication without infrastructure yet without range limits
- Formatted data is collated, analysed and displayed without delay or transcription errors
Benefits 2

• Path diversity creates a robust system
• Hardware costs less than a radio
• Most personnel are more at ease with a cellphone than a radio
• Costs less to use than satphones
• Fits in your pocket
Benefits 3

• Integrates with cellular where available, same tool can be used before, during, and after the disaster.

• Cellphones, Wi Fi, and satellite beacons are much easier to move across borders than radios and satellite terminals (voice or data).
Thought Experiment

• The same technology could also provide text communication for the general public when all infrastructure is destroyed:

  **Succinct Data as a Public Call Box**
Succinct Data as Public Call Box

• Install a weather tight module on a lamppost at eye level, containing:
  – Solar panel
  – Battery
  – InReach
  – Smartphone
Succinct Data as Public Call Box

• Have instructions on the outside explaining how to join the Wi Fi mesh
• All cooperating smartphones can now use that InReach module to send text.
• All cooperating smartphones can receive messages sent to that InReach
The End

Any Questions?

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