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NEW ZEALAND RED CROSS
RĪPEKA WHERO AOTEAROA

Critical Disaster Communications

Matthew Lloyd

Red Cross Humanitarian Technology Programme

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Current NZRC Donated Disaster Communication Tools

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- Iridium Satellite Phones
  - "Talking Briefcase", able to survive the disaster and operate independent of infrastructure

Current NZRC Donated Disaster Communication Tools

- Portable VHF Repeater System
  - “Talking Suitcase”, able to survive the disaster and operate independent of infrastructure to create a VHF radio footprint where and when required.

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Future NZRC Donated Disaster Communication Tools

- Several projects that:
  - Use the vast intelligence and capability of smartphone
  - Free smartphones from their dependence on cellular infrastructure. Thus making them suitable for disaster response

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Future NZRC Donated Disaster Communication Tools

- RAMP (Magpi)
  - Electronic capture of field assessment data using smartphones and cellular/Wi Fi
- Succinct Data (enhanced RAMP)
  - Same as RAMP but independent of local infrastructure (Cell system or Wi Fi) and with a global reach.
- Serval Mesh + Mesh Extender
  - All the features of a cell system, except synchronous voice, at a fraction of the cost and complexity
- Forward Office
  - Lightweight tools for office functions independent of infrastructure

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Future NZRC Donated Disaster Communication Tools

- RAMP (Magpi)
  - Electronic capture of field assessment data using smartphones
  - Using Magpi App on Android phones
  - Assessment forms are stored on the phone, completed forms are transmitted electronically:
    - No transcription errors
    - Data arrives in database within minutes (not days)
    - Data can be manipulated and displayed electronically

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RAMP (Magpi) Data displayed at HQ

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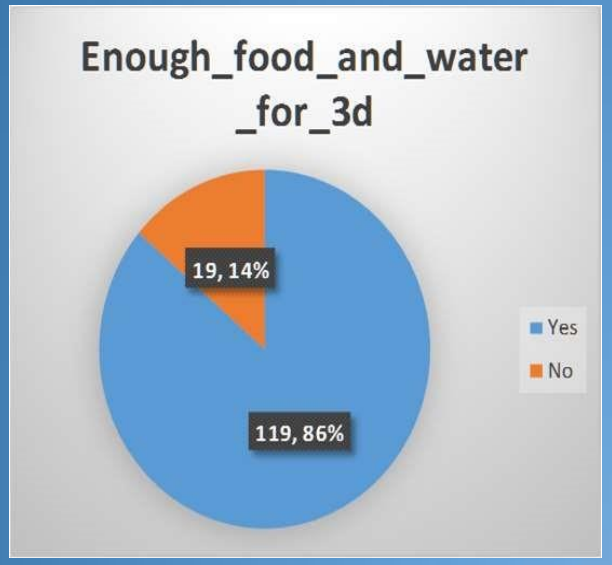

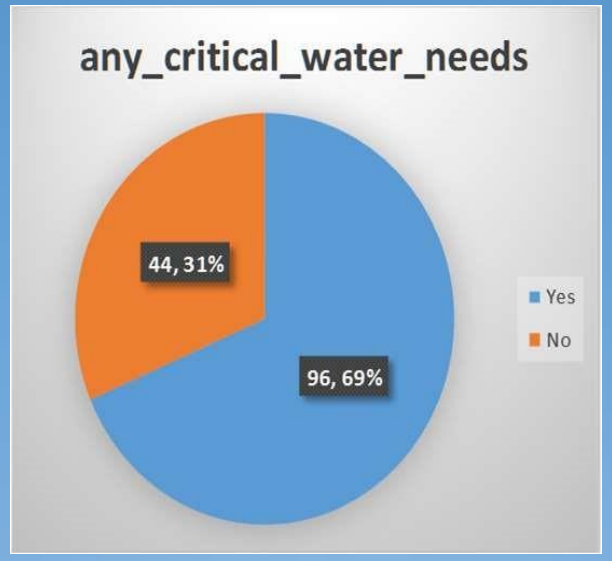

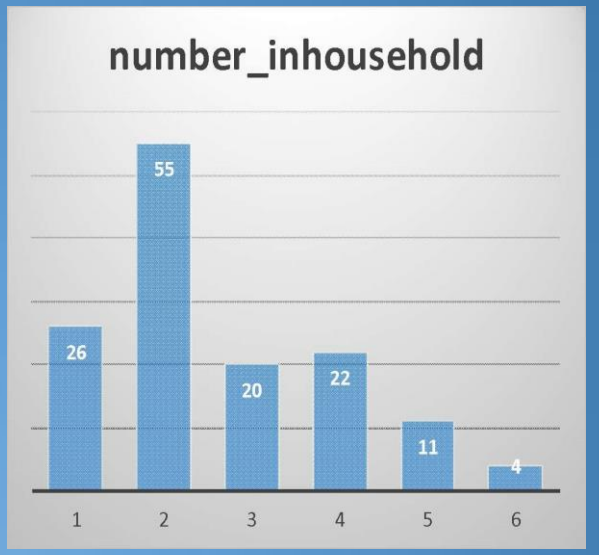

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RAMP (Magpi)
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Succinct Data (enhanced RAMP)

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- Uses commercial off the shelf InReach to communicate through Iridium short burst data module:
  - Use smartphone as keyboard and display
  - Two way text for safety and management of field personnel
  - Carries RAMP data
  - Very high compression (50-98%) reduces user charges

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Serval Mesh

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- Allows smartphones to communicate without cell system
- Same basic cell functions (except synchronous voice)
- Simple and low cost
- Will be explained in greater detail by Dr Paul Gardner-Stephen

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Forward Office

- Office tools but independent of infrastructure
- Tablet with keyboard
- Dual boot Android/Windows
- Projector
- Battery
- Solar cell

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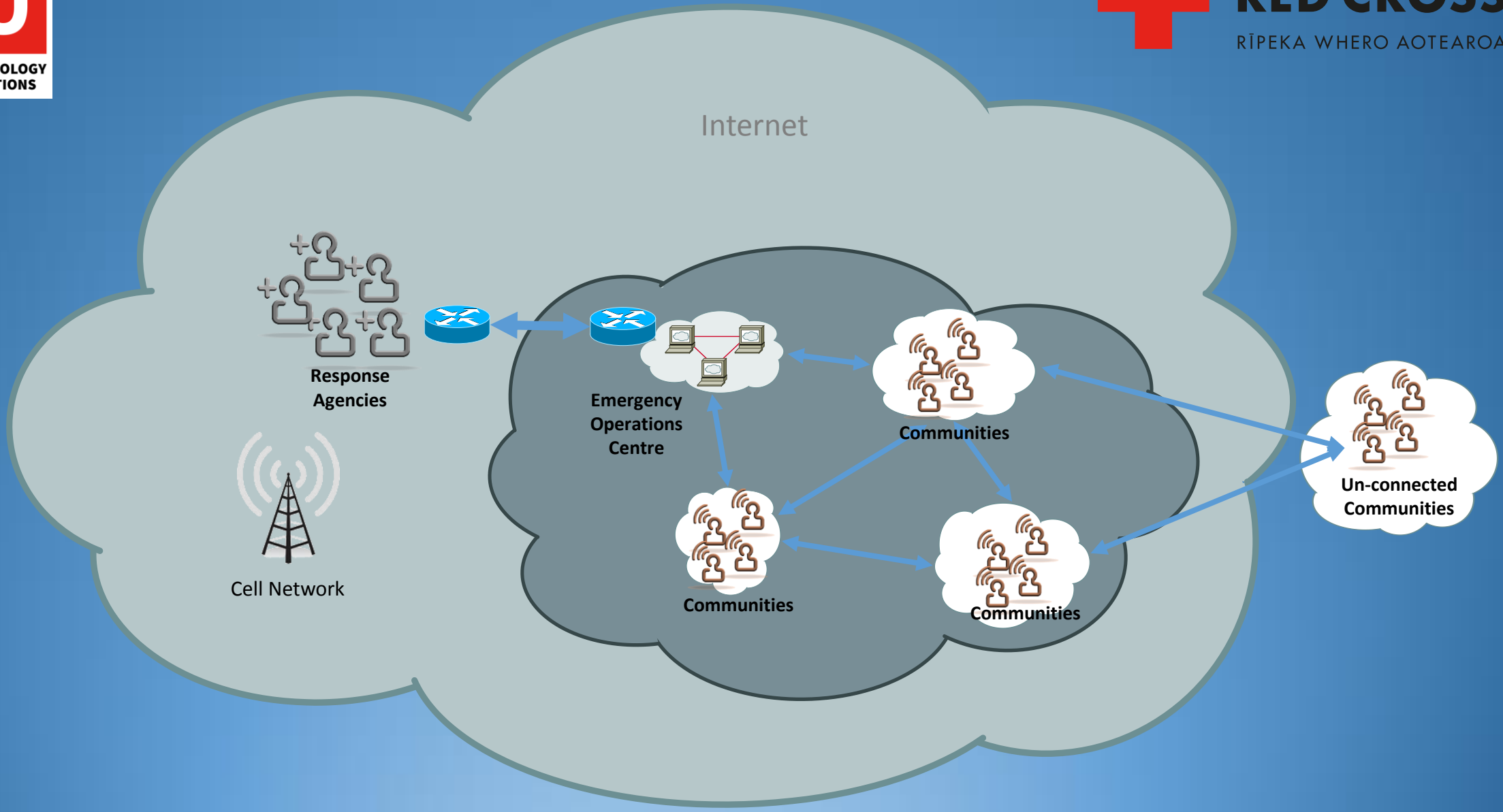

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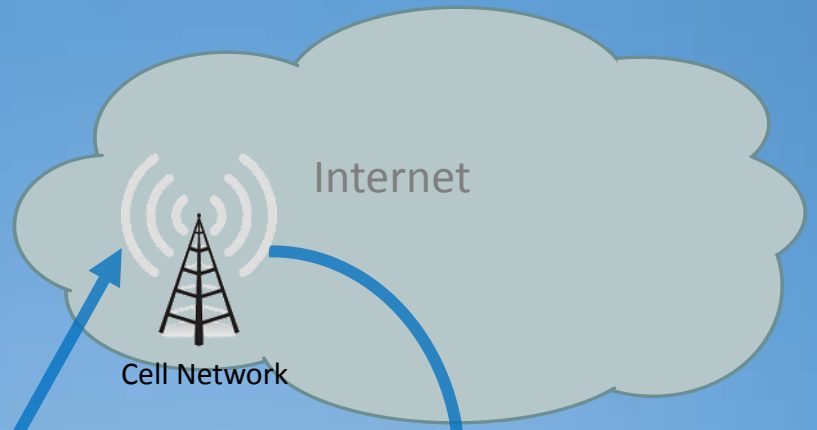

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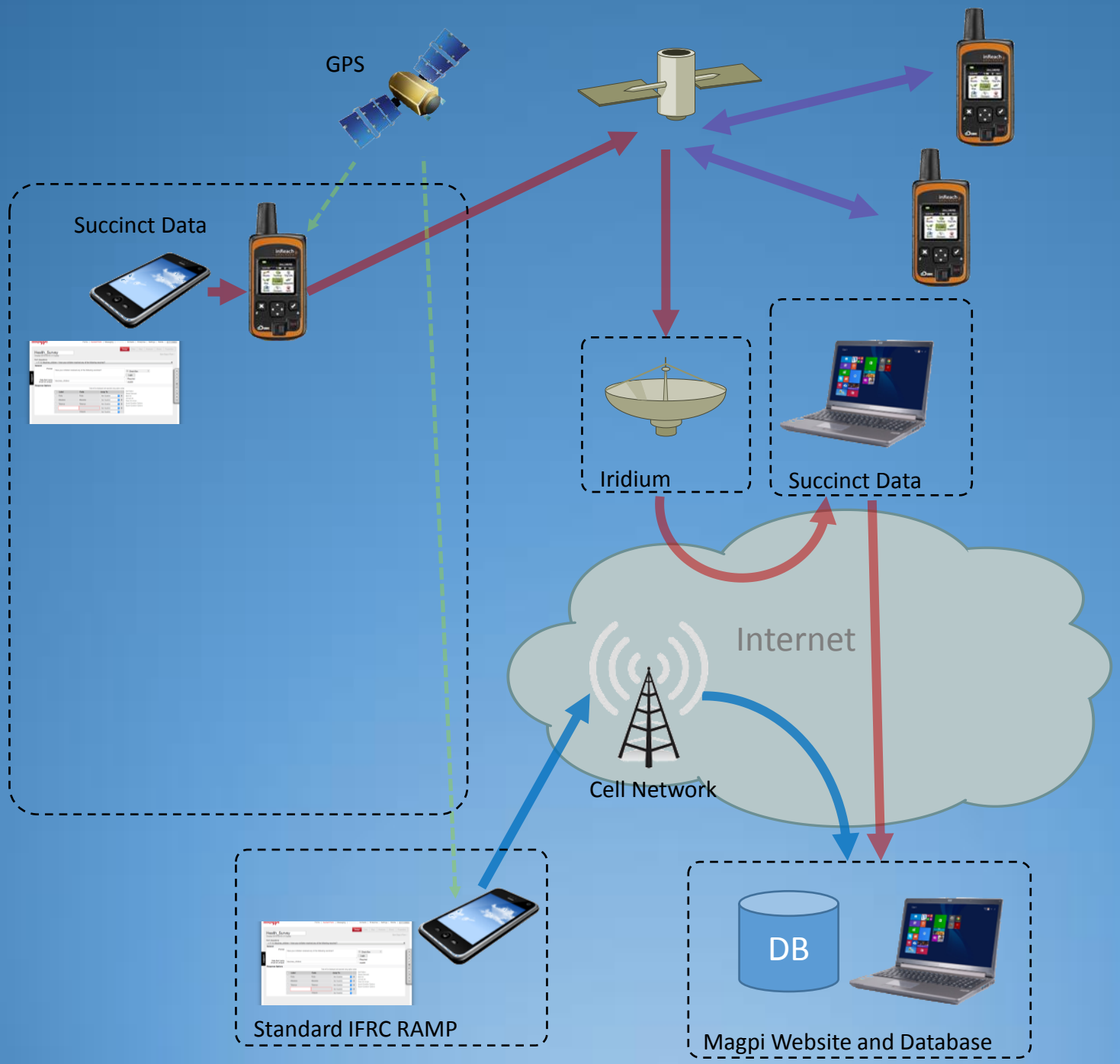

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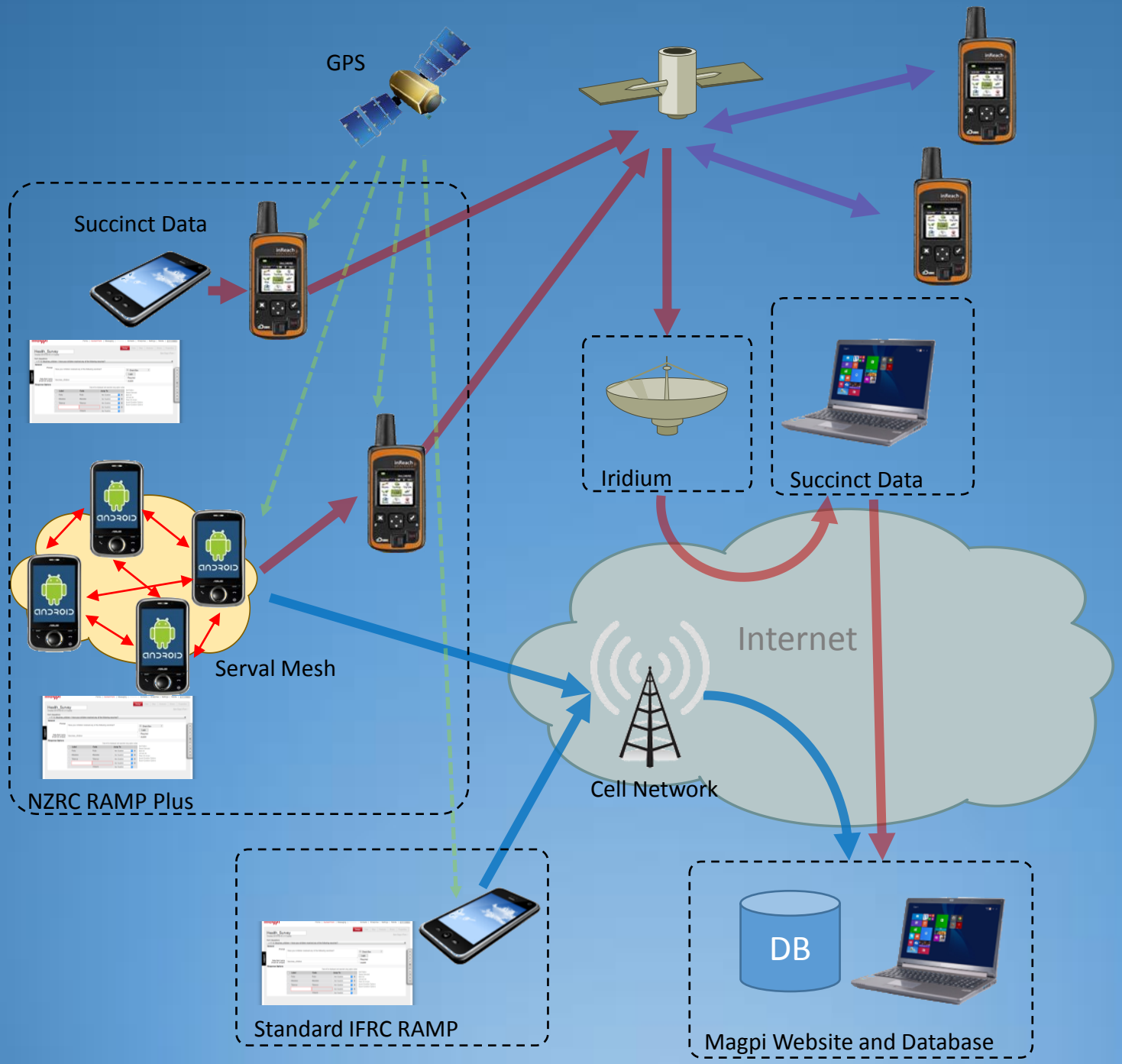

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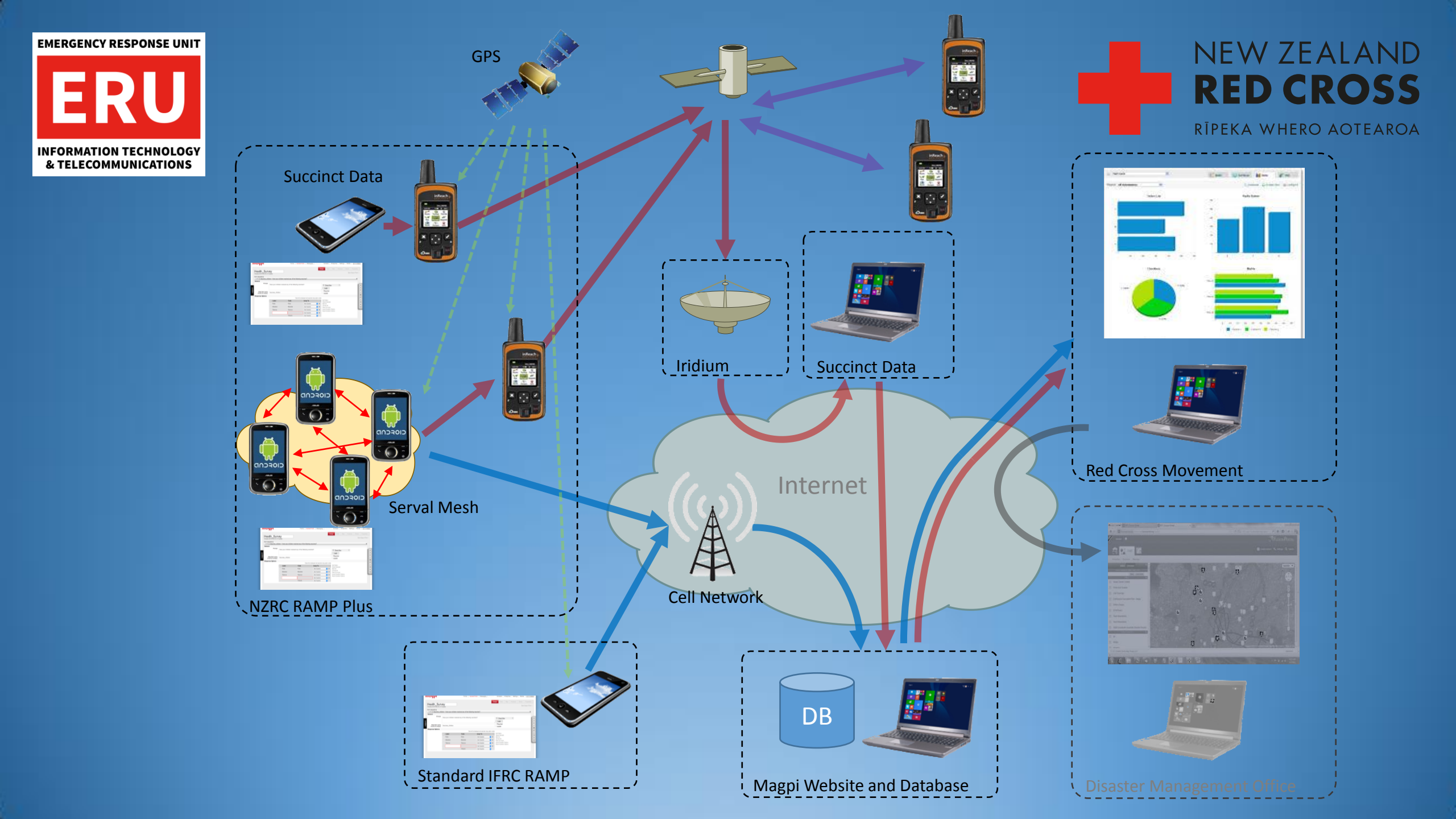

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Any Questions?

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