

SatResponse

Improving Disaster Response Capacity

A Vision for Improving Satellite Services for Disaster Responders

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Omar Iqbal, SatResponse Project Manager
omar.iqbal@cgi.com
www.satresponse.org

esa European Space Agency

CGI

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What is SatResponse about?

Photos courtesy of TSF and Inmarsat

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Introduction

- SatResponse have been contracted by the European Space Agency to
  - study how satellite services can be better deployed for disaster response
  - design an operational system delivering these benefits
  - it is ARTES 20 IAP framework feasibility study

- We have developed a proposal that
  - addresses satcom access, cost management and application delivery
  - aims to help by improving collaboration between industry, institutions & users

- This study is the first step in building an operational system
  - The objective: to introduce a pilot service in 2015 -16 in partnership with ESA and other stakeholders

Who are SatResponse?

Study consortium

PRIME

CGI

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inmarsat

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International Imaging

Advising partners

unitar
United Nations Institute for Training and Research
UNOSAT

tsf
TELECOMS SANS FRONTIERES
Communications for life

eutelsat
COMMUNICATIONS

Sponsor

esa
European Space Agency

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Who has SatResponse spoken to?

UN Agencies	Aid & NGOs	European Responders
WFP	IFRC	DG ECHO
UN OCHA	ICRC	IHP
ITU-D	Télécoms Sans Frontières	DFID
UNOSAT	Die Johanniter	MSB
UNHCR	Save the Children	DMAT
UNICEF		
UNDAC		

And Industry!

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Context

Satellite Services and Disaster Response

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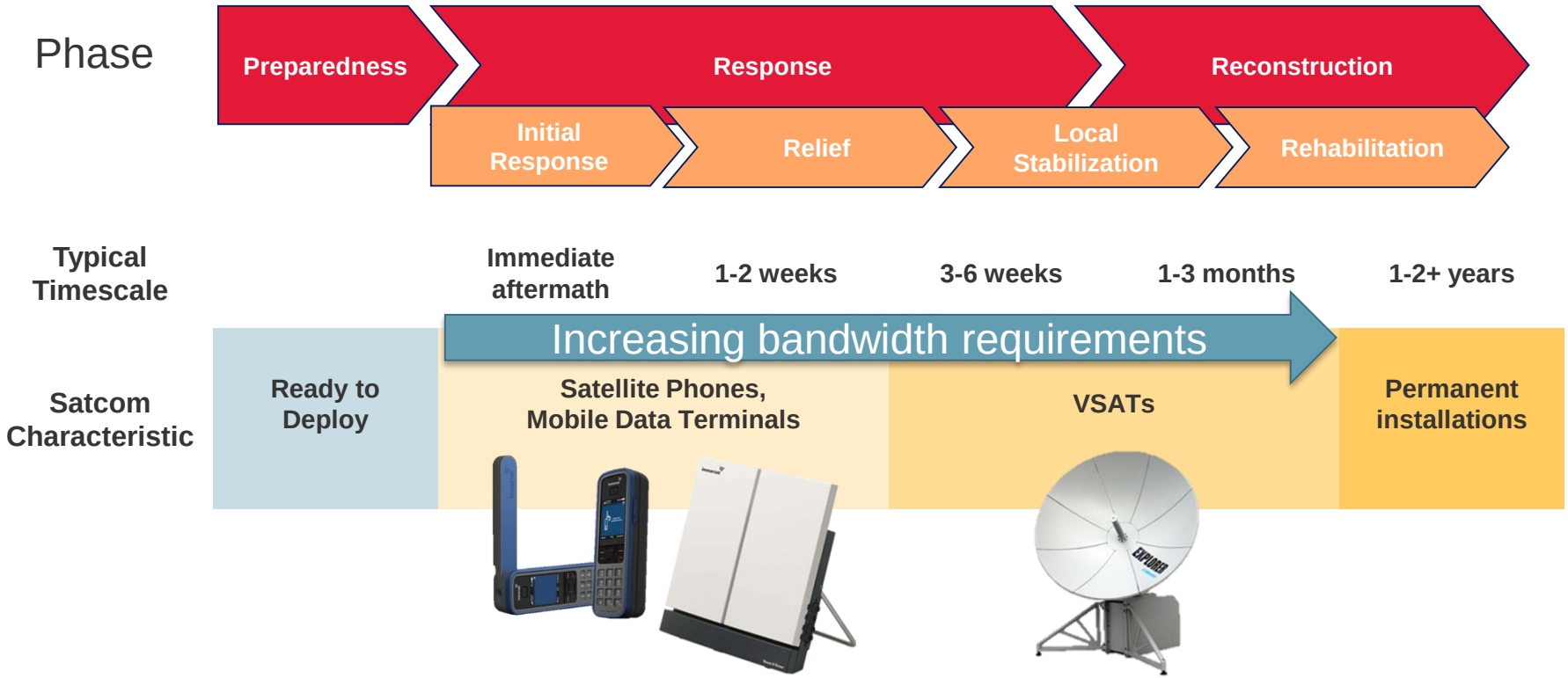
Satcom for Disaster Management



- Voice and data services to/from and between field staff
  - first responders, vehicle gateways, on-site co-ordination centres, semi-fixed installations
  - for situational assessment, operational planning, workforce coordination, logistics
  - AND to deliver affected community services

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Satcoms is widely deployed for humanitarians today…

Euroconsult: NGO market assessment report 2014

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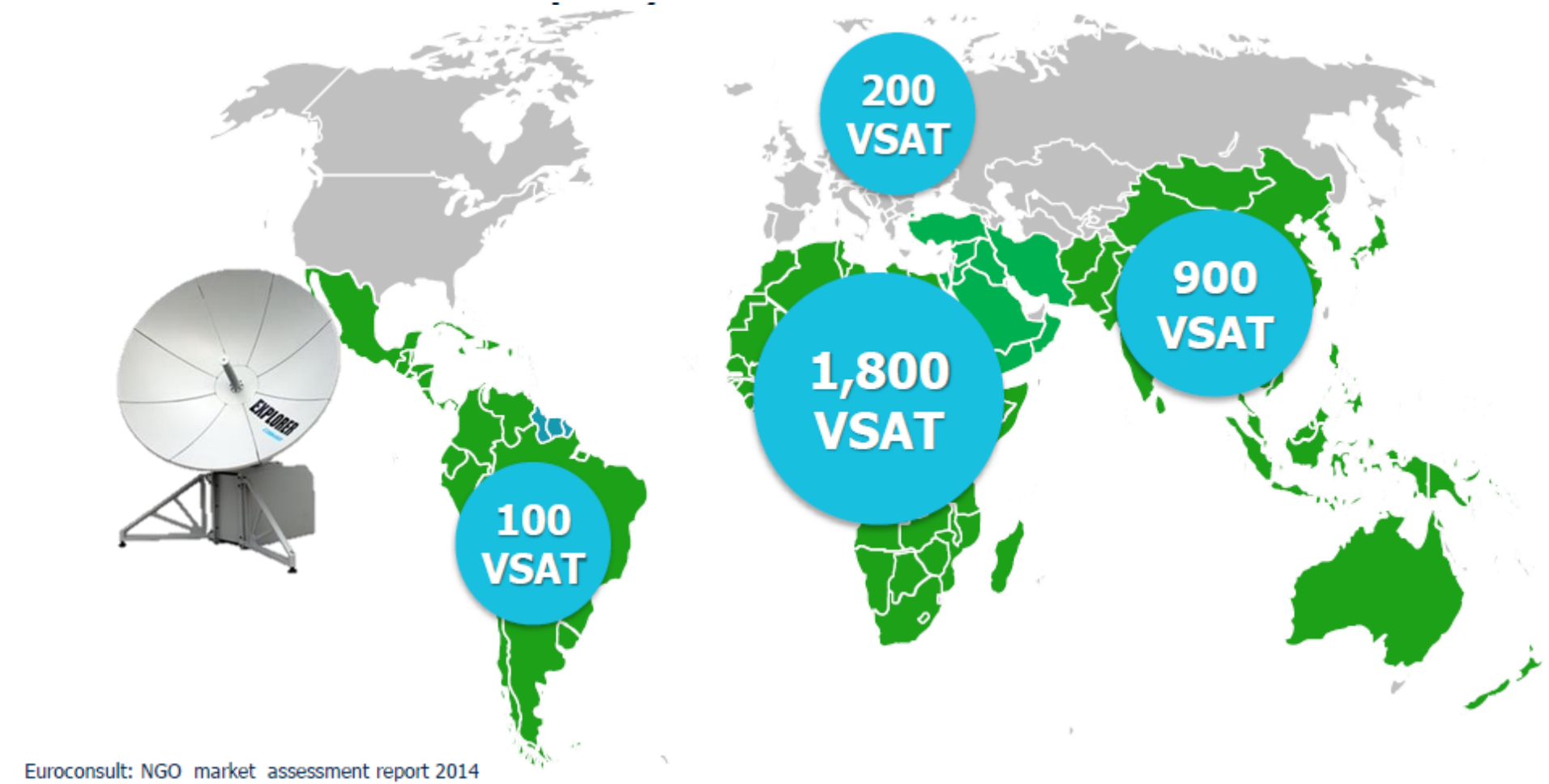

Euroconsult: NGO market assessment report 2014

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So what is the problem?

- *Analyses of emergency response during the past five years reveal that poor information management has severely hampered effective action, costing many lives. Responders have been hamstrung by a lack of shared standards and sharing.*
- *Humanitarianism in the Network Age, UN OCHA, 2014*

- *Potential applications, for which satellite communication could provide relevant support, are still not used … Firstly, there are difficulties in obtaining sufficient bandwidth at short notice, due in part to competition with other customers ... and difficulties in coordinating multiple users and suppliers. Secondly, the costs of satellite services are often … unaffordable for many emergency response teams, especially when requesting high speed data and video services.*
- *Space Applications for Civil Protection, ESPI, 2011*

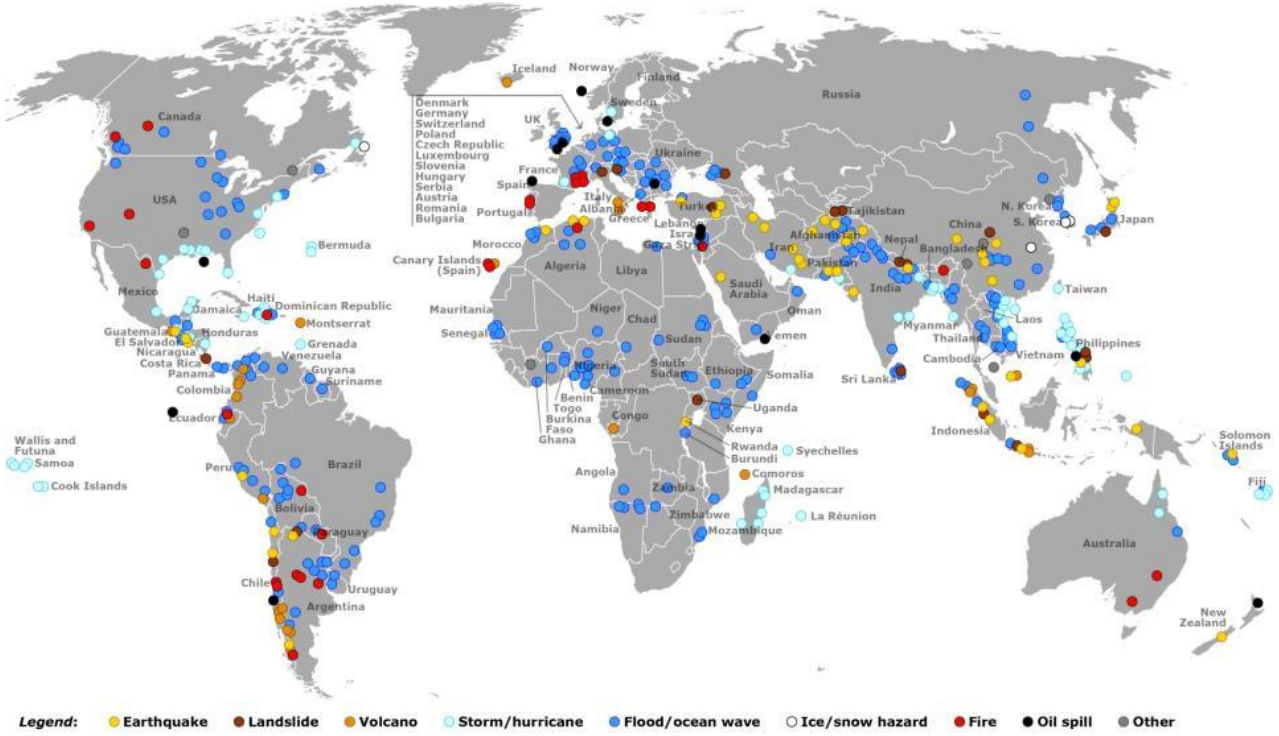
- *At this time SATCOM is still not as highly utilised in humanitarian operations as in civil protection, and there is great interest in adopting a high data rate infrastructure … NGO's are procuring SATCOM in such a way as might create both security and cost problems.*
- *Satellite Communication to support EU Security Policies and Infrastructures, PWC, 2015*

- *The realization of [satcom] opportunities in the AID/NGO sector can only be accomplished with a game-changing solution that both addresses the tight budget aspect of AID agencies and NGOs while pushing premium services to these clients*
- *AID/NGO Market - Carving a Niche, Northern Sky Research, 2012*

Earth Observation - An Inspiration

International Charter
SPACE & MAJOR DISASTERS

European Commission
COPERNICUS
Emergency Management Service



443 International Charter Activations as of Jan 2, 2015

How can a similar initiative built in the more market-oriented telecoms world?

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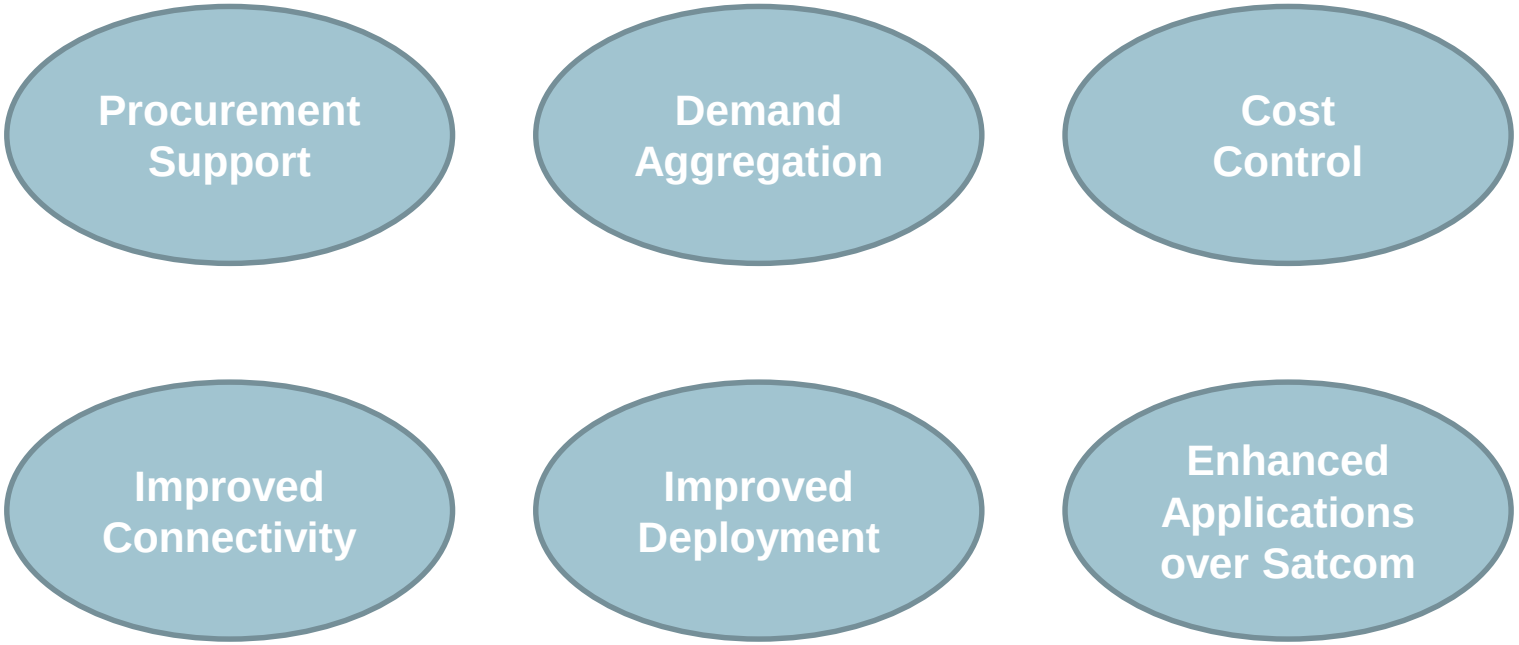
Key User Needs

SatResponse interviewed >15 organisations involved in disaster response and identified the following priority topics



Extending the digital revolution over satcom

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Proposed Solutions

A Vision from SatResponse

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SatResponse Vision

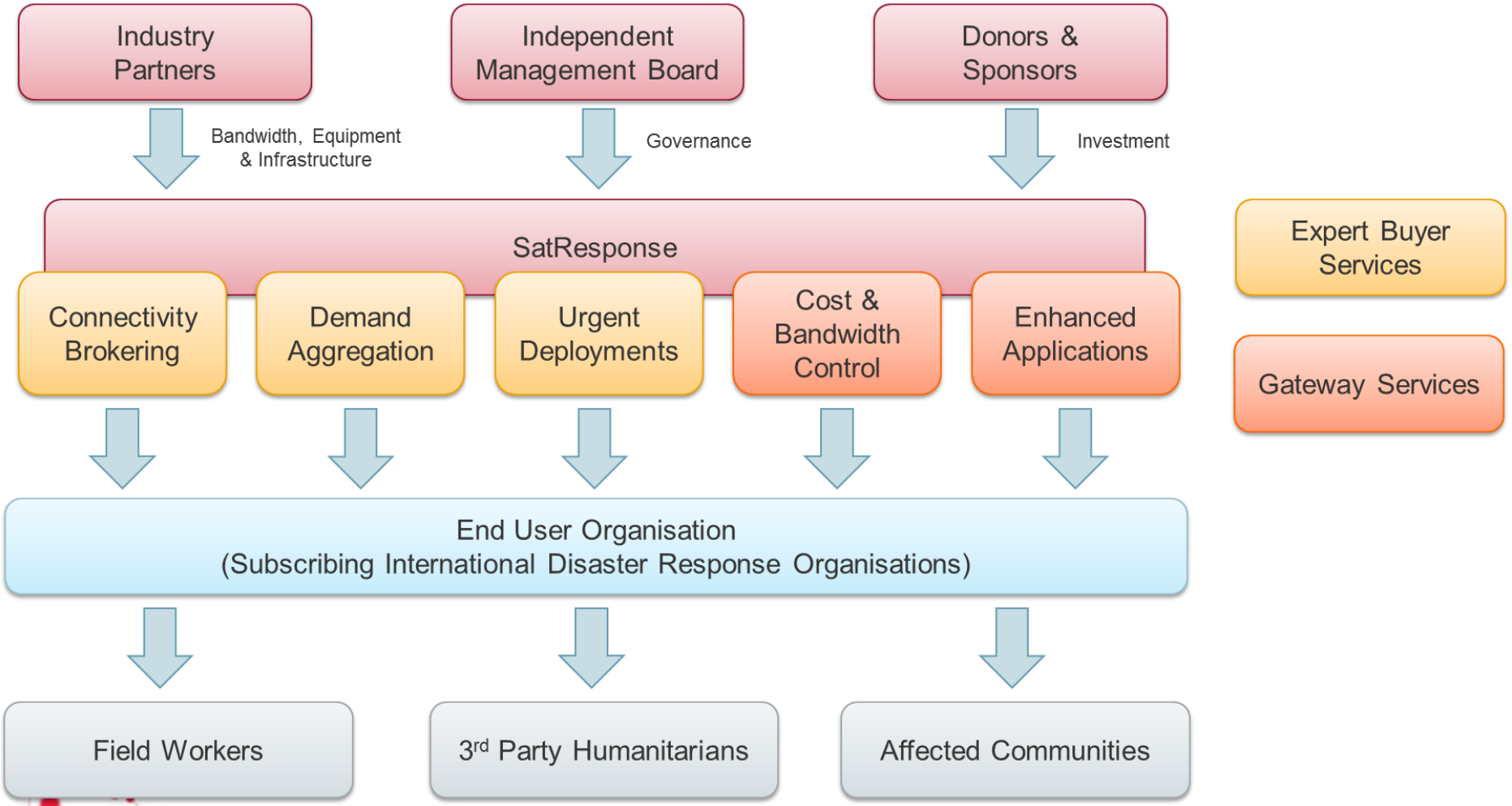
- SatResponse has proposed the creation of a new independent, multi-partner, not-for-profit entity that delivers services to disaster response organisations

- The entity would deliver

  - Expert Buyer Services to assist procurement, aggregate demand, urgently source satcom and reduce costs
  - Gateway Services that allow traffic and applications to be actively managed on satcom networks

- Services would be subsidised through consistent, transparent support from corporate and institutional donors in an agreed framework.

SatResponse Overview



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SatResponse Principles

- Independent and Multi-Party
  - members can be Government, IGO, NGO & Industry
  - a governance framework for fair access to services
  - open & independent of particular industrial interests

- Not-for-Profit Social Enterprise
  - run in the interests of disaster response organisations
  - any profits used to improve or subsidise services
  - does not compete with industry but increases accessibility, transparency & competitiveness of market

- Service Provider to Disaster Response Organisations
  - does not seek to deliver field ICT services directly
  - helps established responders to improve services to their field users

Example Users

- Users can be anyone delivering satcom services in the field for **humanitarian purposes**
- Criteria are set and overseen by the management board

NGOs

Also smaller organisations who can't currently 'afford' satcom

IGOs

Gov Teams

Also affected govs & communities in disaster zones

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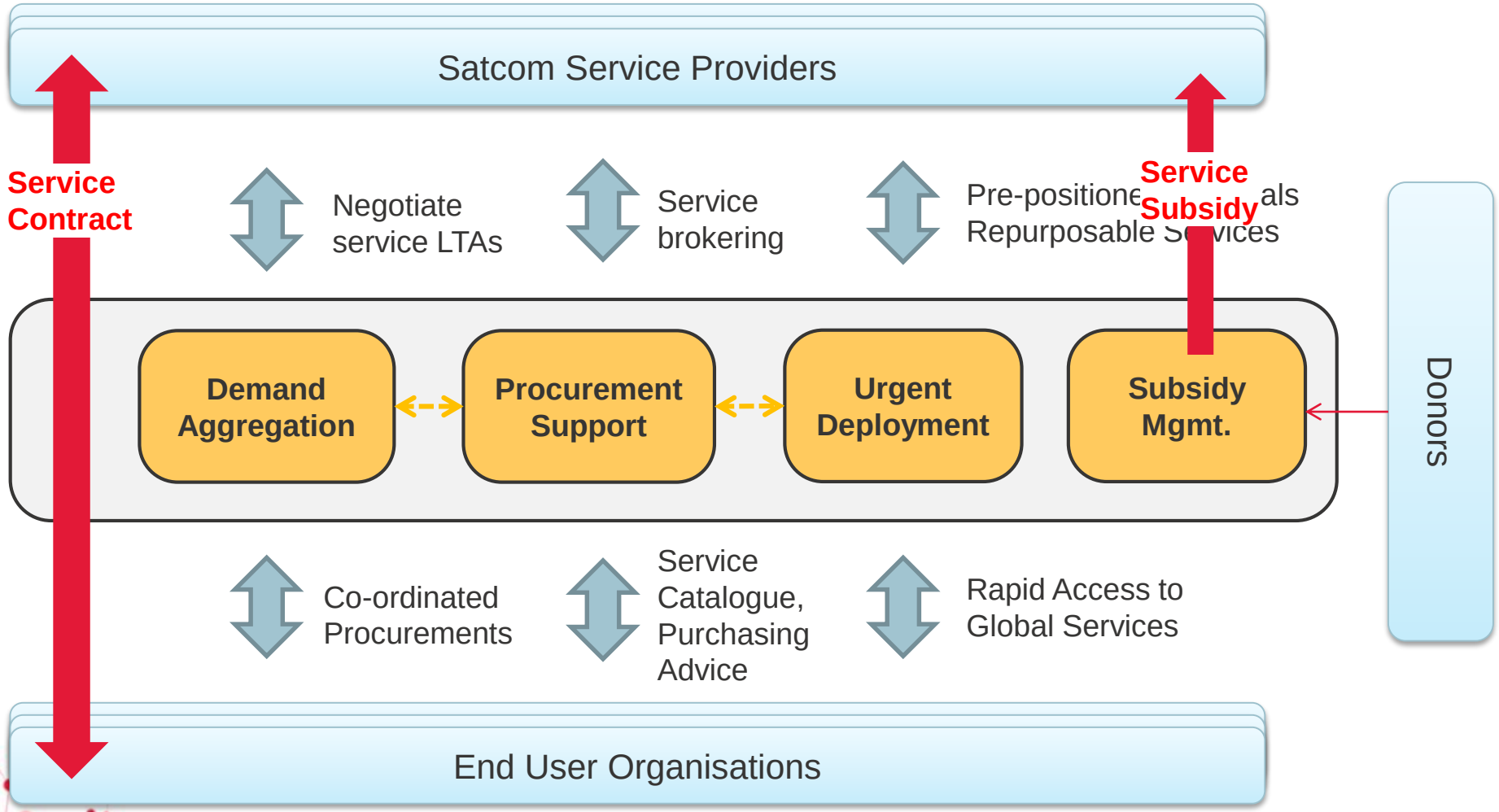
SatResponse Expert Buyer



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Example Service Process: Demand Aggregation

Leveraging co-operative buying power

SatResponse runs biannual collective procurement

Eligible disaster responders decide to participate. Submit initial requirements for standing and on-demand services.

Requirements Iteration

SatResponse liaison officer checks eligibility, consolidates requirements and establishes an agreed aggregate requirement set.

Agreed Requirements

Subsidy

ITT

SatResponse team undertake aggregate procurement – inviting satcom providers to submit framework offers (LTA) for DROs to subscribe against.

Assessed to see if SatResponse subsidy pool can discount offers and to what extent

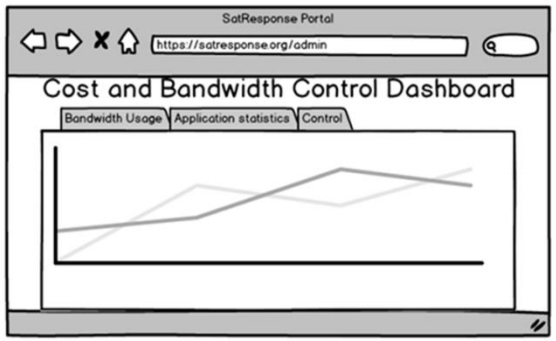
SatResponse evaluates offers and selects best offer.

Selected framework agreement (LTA) published in SatResponse Catalogue.

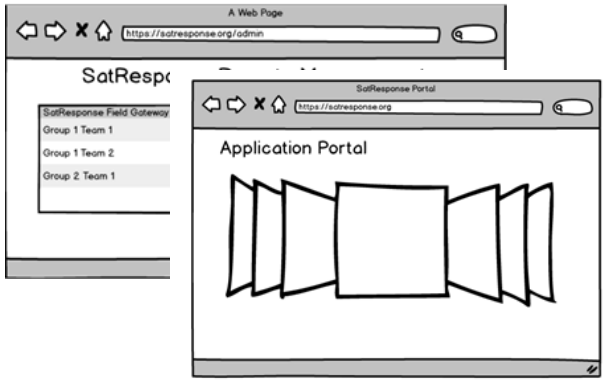
Individual disaster response organisations can enter into individual contractual agreements against framework contract.

SatResponse Gateway

Access to Approved Applications



Local Cost & Bandwidth Mgmt



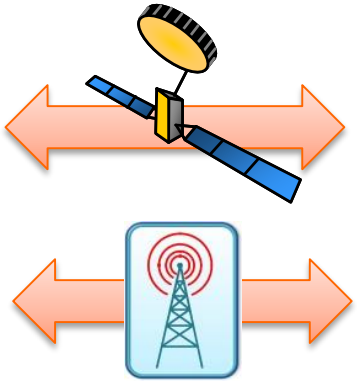
Remote Cost & Bandwidth Mgmt
Application Access Portal

End User Devices

Wireless Router

Standard Laptop

SatResponse Field Gateway Adapter (Software)



SatResponse Central Gateway

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Gateway Technology

Services

- **Cost and Bandwidth Control**
  - actively manages and prioritises data traffic over the satcom channel
  - allows content/application filtering & prioritisation
  - traffic shaping and routing
- **Managed access to embedded & 3rd party applications**
  - suite of disaster response added-value applications
  - assessed & recommended for use over the satcom channel (bandwidth, latency)

- **Principles**
  - **Ease of Use**
    - delivered as a service to minimise complexity
    - remote and local management supported by SatResponse experts
    - SatResponse recommends, but user organisations retain ultimate control
  - **Open Technology Platform**
    - to support all IP satcom connections and suitable 3rd party applications
    - open to multiple providers

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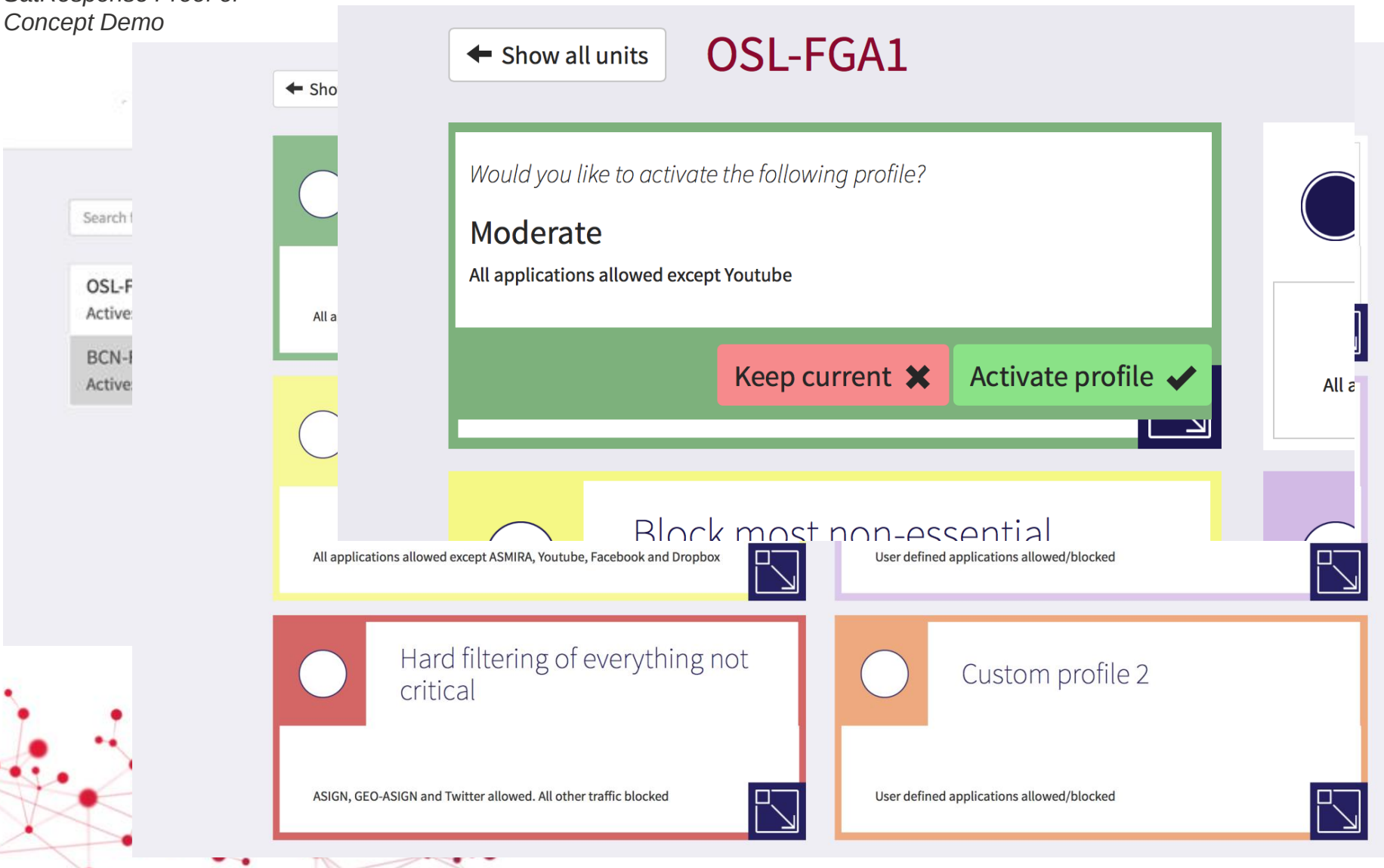
Gateway Technology

Traffic Management Interface

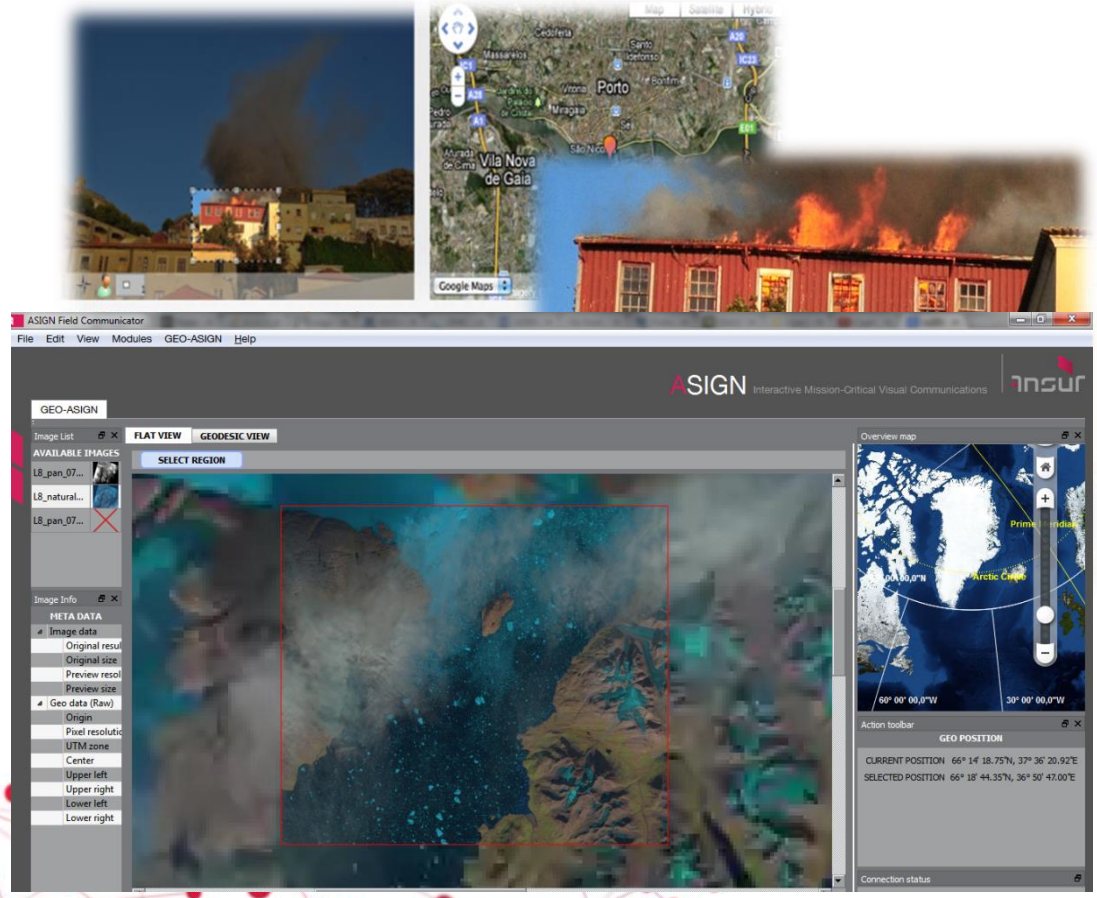
Prototypes from the SatResponse Proof of Concept Demo



Gateway Technology

Application Access

- Applications designed for disaster responders and satcom
- Eg bandwidth efficient apps for situational awareness & rapid mapping



- Plus
  - Managed access to internet applications
    - Based on suitability/utility
  - embedded secure cloud infrastructure
    - Application hosting
    - Communication services
      - Efficient VOIP & Video
      - Optimised email, group messaging
    - Secure collaboration
      - Content management
      - File distribution
      - Team social networking
  - embedded field capability
    - Local ‘cloud’ storage
    - Local/remote app downloads
    - Training guides
  - Web portal management

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Establishing SatResponse

The Why and How of Implementation

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Expert Buyer Value Proposition

Disaster Response Organisations

- Substantial cost savings on airtime & terminal procurements
- Confidence purchases are suitable
- Reduced procurement overheads
- Capability for rapid-onset disasters
- Consistent industry support

Field End Users

- Improved satcom connectivity sourced
- Full time service desk support
- Identified contacts for urgent queries
- Quicker satcom services

Donors

- Increase “bang for buck”
- Improved oversight & auditability
- Reduced administrative burden
- Expert prioritisation of needs
- Rapid funding mechanism

Satcom Industry

- Corporate social responsibility
- Reducing customer access barriers
- Expanded market with small DROs
- Spread provision risk
- Utility for otherwise unused assets

Gateway Service Value Proposition

Disaster Response Organisations

- Straight-forward management of satcom expenditure to budget
- Stop paying for unwanted traffic (ads, malware etc)
- Stop unpredictable cost explosions
- Prioritise important users and applications

Field End Users

- Crucial applications work when required
- Access to added value applications
- Flexibility and ease of use

Satcom Industry

- Shop-window for new services & applications
- Reducing uptake barriers – by removing fear of cost
- Re-use of technology for other customers

Growing Need

- Emergency Response and Relief
  - >8 missions/year on average
  - Emergencies can last 3-6 months
  - 300,000 field workers

- Refugee Camps
  - 16.7 million refugees in 2013
  - 100s of camps worldwide

- Sustainable Development Aid
  - Development funds rose 6.1% in 2013
  - eHealth, eLearning, digital aid & mobile money

- Demand for capacity and services will only increase
  - These demands must be met effectively and economically

Can SatResponse be implemented?

- User demand & feedback
- Technical viability
- Operational viability
- Commercial viability
- Stakeholder partnership

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Conclusions

- SatResponse has developed a vision for an open system to deliver better satellite services to disaster responders
- Our goal is to operate a trial service in 2016-17
- SatResponse is working to involve additional institutional, industry and humanitarian partners to build a broad initiative
  - SatResponse invites any professional interested this topic to contact us
- We are looking to collaborate with the parallel ESA consortium “IDRC” to build a common vision
- We look forward to working with you to take SatResponse forward

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Thank You

Any questions?

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