



How to manage a disaster

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Presentation Outline



- Classification of disaster scenarios
- Conventional procedure after a disaster
- Problems and involved players
- Where can satellites help?
 - An example: WISECOM
- Conclusions



Classification of disaster scenarios



- RED: more critical
- YELLOW: medium
- GREEN: not very critical

| Disaster Phase \ Disaster Size | Small Disaster | Medium Disaster | Large Disaster |
|--------------------------------|----------------|-----------------|----------------|
| Early Disaster Phase | SD1 | MD1 | LD1 |
| Response Phase | SD2 | MD2 | LD2 |
| Recovery Phase | SD3 | MD3 | LD3 |



Conventional procedure after a disaster



- Some victims call the alarm center (e.g. 112)
- Alarm center sends appropriate rescue forces
- Objective estimation of the help needed
- The first rescue teams start the TRIAGE procedure
- Minor injured patients can stay in a local camp
- First emergency treatment of patients
- Severely injured are transported to nearby hospitals

Major factor for outcome: time

Major problem: communication



Communication problems



- Need of connection from the disaster site to the alarm center
- Data about victims should be tracked
- Communication to alarm center may be needed for several reasons (monitor hospitals overload, monitor site situation, monitor victims)



Communication problems



- Each rescue group has communication needs
 - Non technical people need to be able to setup the telecom equipments
 - Within each group different types of communications are needed
 - Many communications may need to be done simultaneously
 - Manual operations (e.g. update of victim status) are still used
 - Voice communications are usually used
- Different communication needs
 - Rescue teams \leftrightarrow local camp
 - Rescue teams \leftrightarrow Rescue teams
 - local camp \leftrightarrow alarm center (far away from the disaster)
- Many and different players involved
 - Different rescue groups (fire brigades, red cross, military group, etc...)
 - Each group has its own techniques and equipment: is coordination possible?

Communication problems



- Enable communications to and from victims ?
 - Prevent victims to overload communication channels used by the rescue forces...
 - ...but at the same time allow them to communicate with their loved ones.
 - Localize and track victim positions would be very helpful for the rescue forces
 - Broadcast information to victims may be helpful (e.g. „water is polluted“)

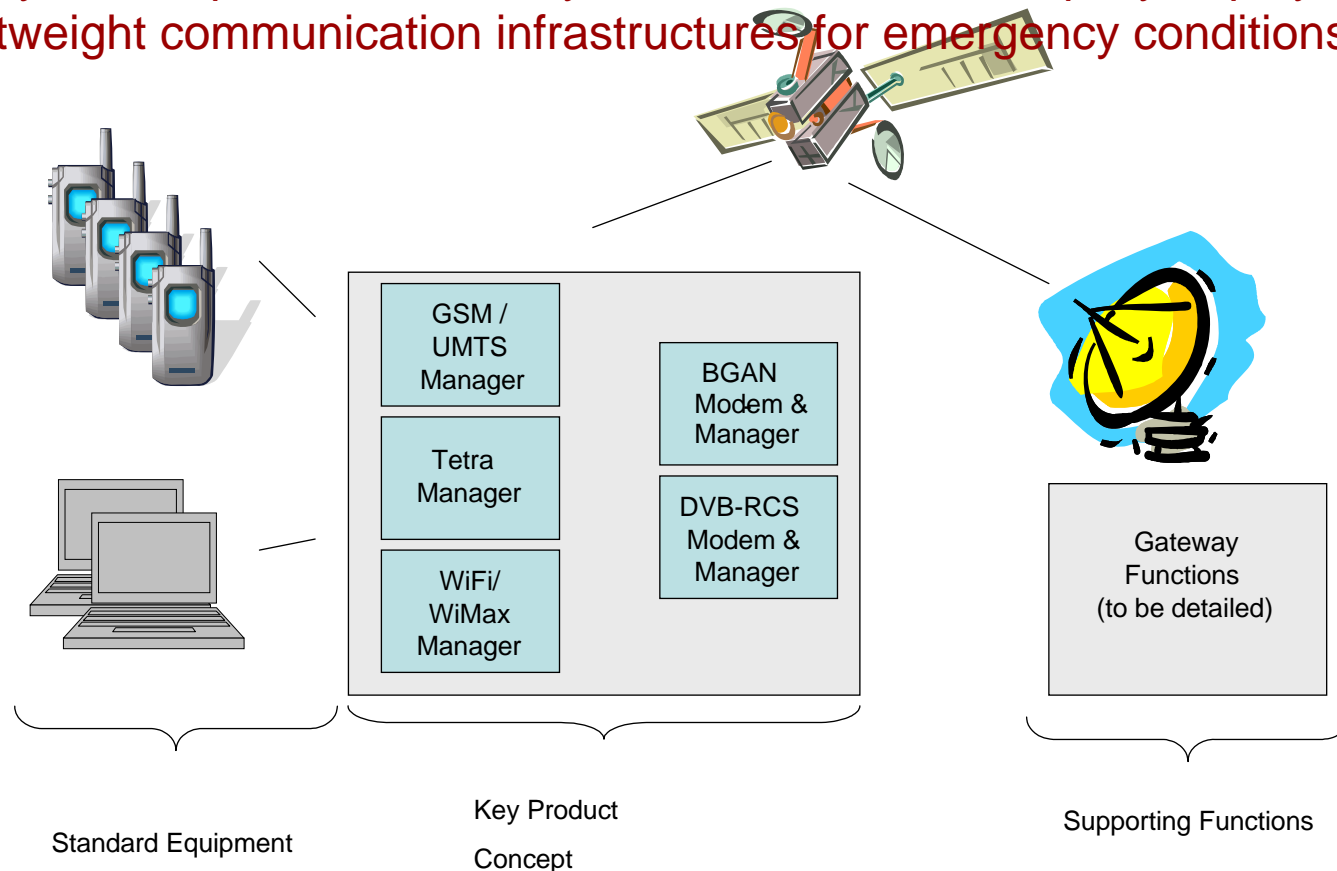
- CONCLUSION: the telecom system needed is complex

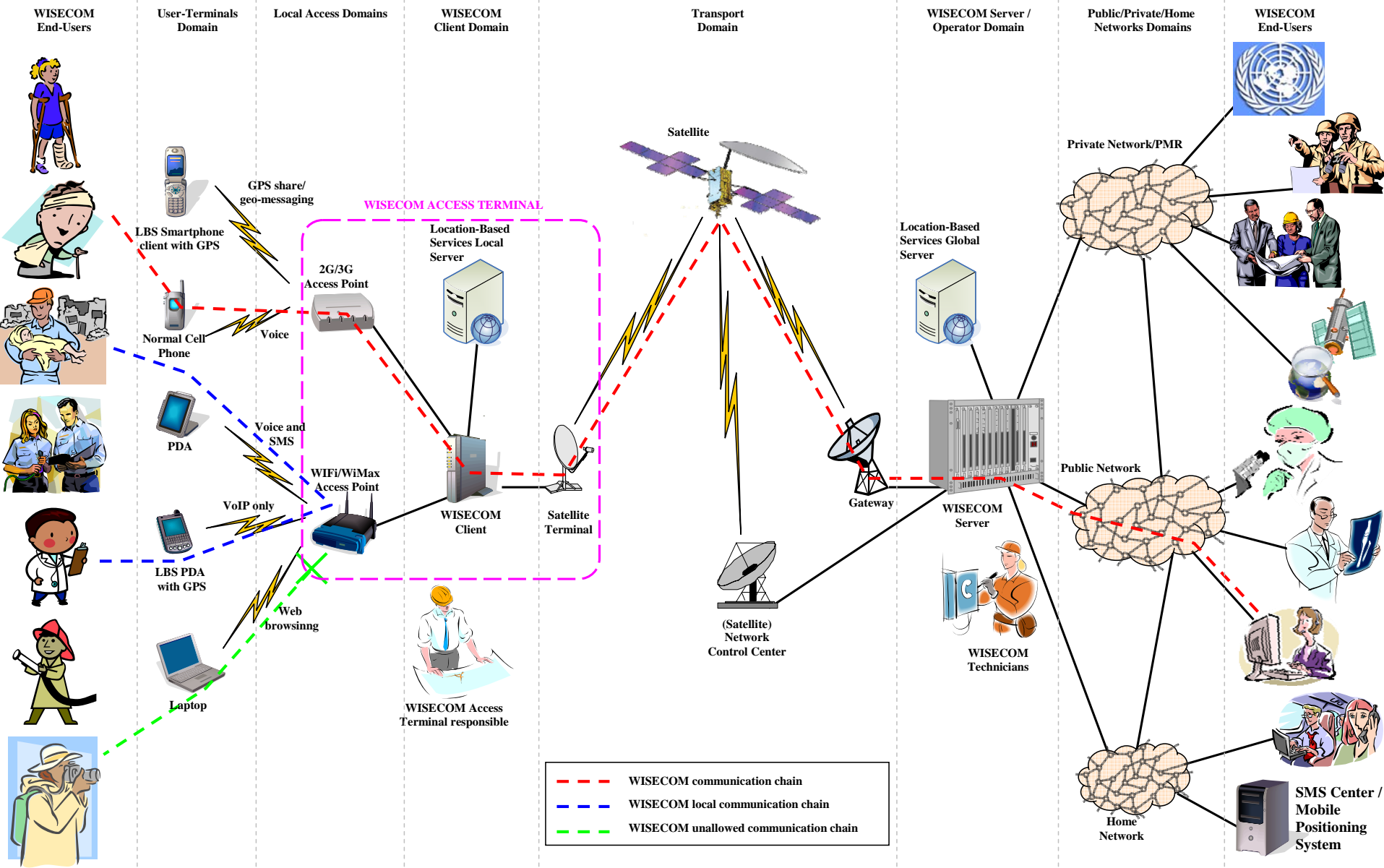
Where can satellites help?



The WISECOM approach as an example

Study, develop, and validate by live trials candidate rapidly deployable lightweight communication infrastructures for emergency conditions





Conclusions



- **communication major problem**
- **most important for survival: time**
- **finding patients**
- **bringing rescue forces to patient**
- **treating patients**
- **bringing patients to final treatment**