SES ASTRA
Government Services
7 June 2004

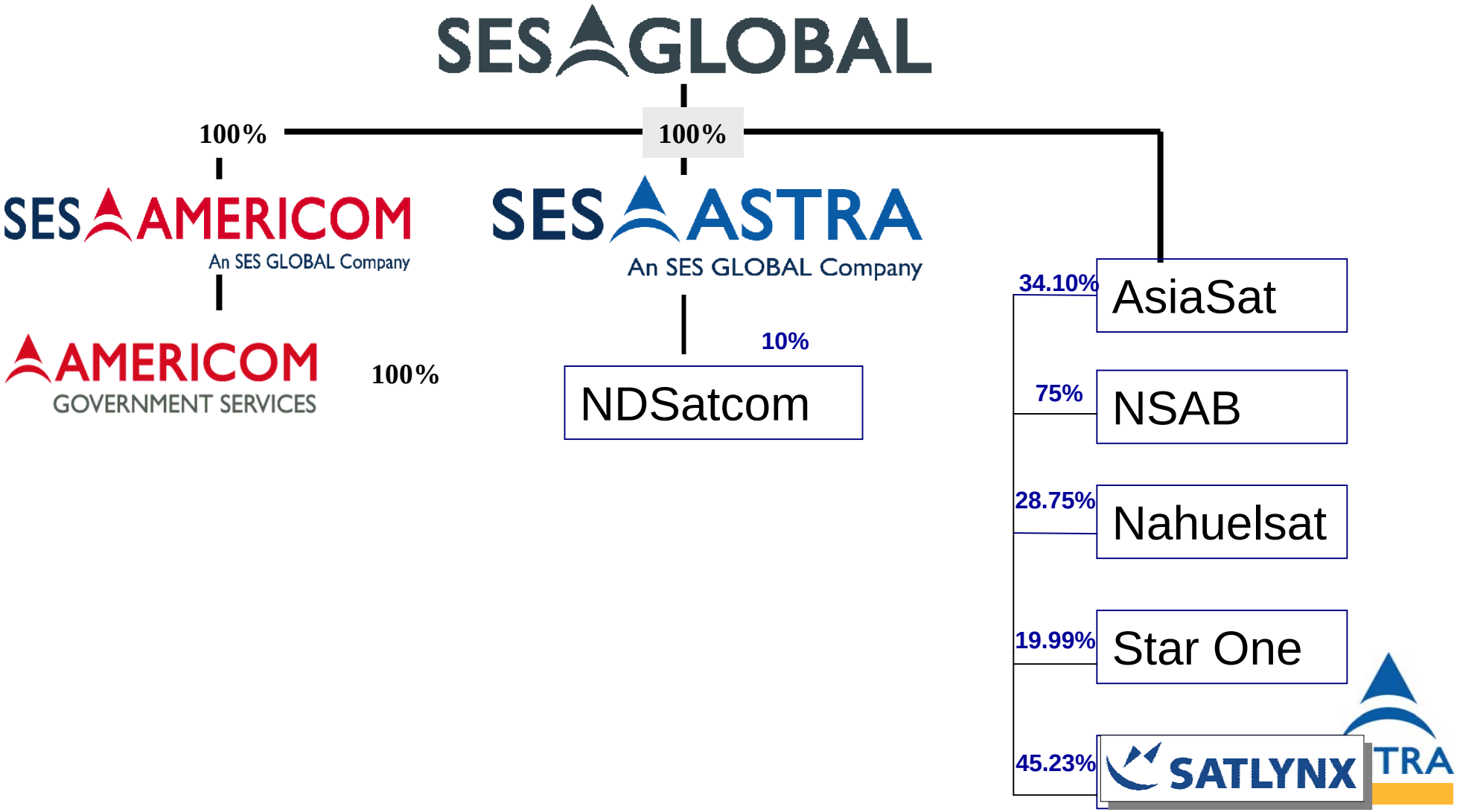
"Satellites for disaster communications: saving lives from natural disasters"

Your Satellite Connection to the World

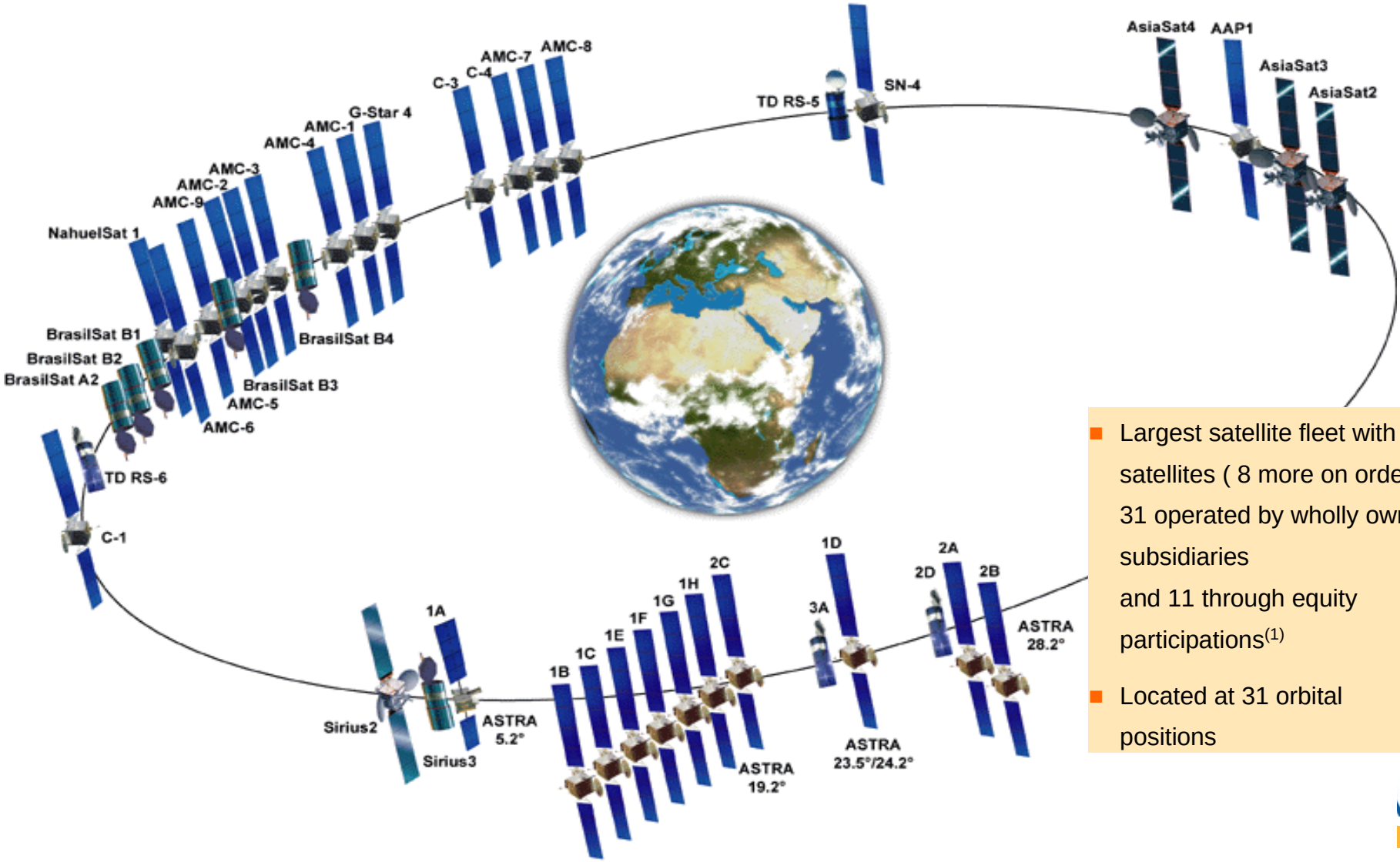
Gerard Donelan
Government Services


“Satellites for disaster communications:
saving lives from natural disasters”
ASTRA

SES GLOBAL group structure



The world's leading satellite fleet



- Largest satellite fleet with 40 satellites (8 more on order)
  31 operated by wholly owned subsidiaries
  and 11 through equity participations[(1)]
- Located at 31 orbital positions

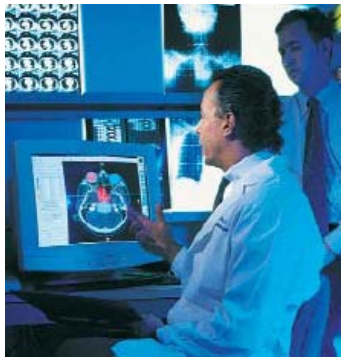
What are Government Services?

The supply of telecommunications services to regional, national or international Governmental bodies for Military or Civil use.

Governmental Projects

What types of Projects?

- Community information services
- Telemedicine
- Medical education
- E-Learning
- **Relief of disaster / emergency**
- Government use:
  - Regional initiatives
    - International Assistance



Assistance to Disaster Relief.

Since the formation of Government Services in June last year. SES ASTRA is now working closely with companies within the group namely: 

and NDSatcom, for the provision of communication services for Disaster and Crisis Management .

This is still an infant area for SES ASTRA but it is an area we feel is of interest.

Assistance to Disaster Relief.

Usage of Satellites

Assistance to Disaster Relief.

- Mother Nature generates more day to day threat.
- Hurricanes/Typhoons
- Tornadoes
- Floods
- Earthquakes
- Blizzards

All these destroy or incapacitate the terrestrial telecoms infrastructure.

Assistance to Disaster Relief.

No nation is safe from these disasters.

Rich or poor the same problems remain-devastation-

Example:

Hurricane Andrew in 1992,destroyed most of southern Florida's telephone service.

What remained became overloaded.

Satellite technology remained and worked so well that the Florida Division of Emergency Management has added permanently, a satellite system.

ASTRA

Assistance to Disaster Relief.

- **World Trade Center - 11 September 2001: Importance of satellite communication as back-up when standard communication lines are cut off or overloaded in case of catastrophy**
  - Congestion of local telephone switches after the WTC terrorist attack
  - The US Postal Service had connectivity! The Satellite solution provider, Spacenet allocated extra bandwidth to the private VSAT network of US Postal Services so that people could use satellite telecommunication in the local post offices.
  - Shows flexibility and independence of satellite solutions

Satellite Example

Service Overview for SCPC -Technology

SCPC = Single Channel Per Carrier

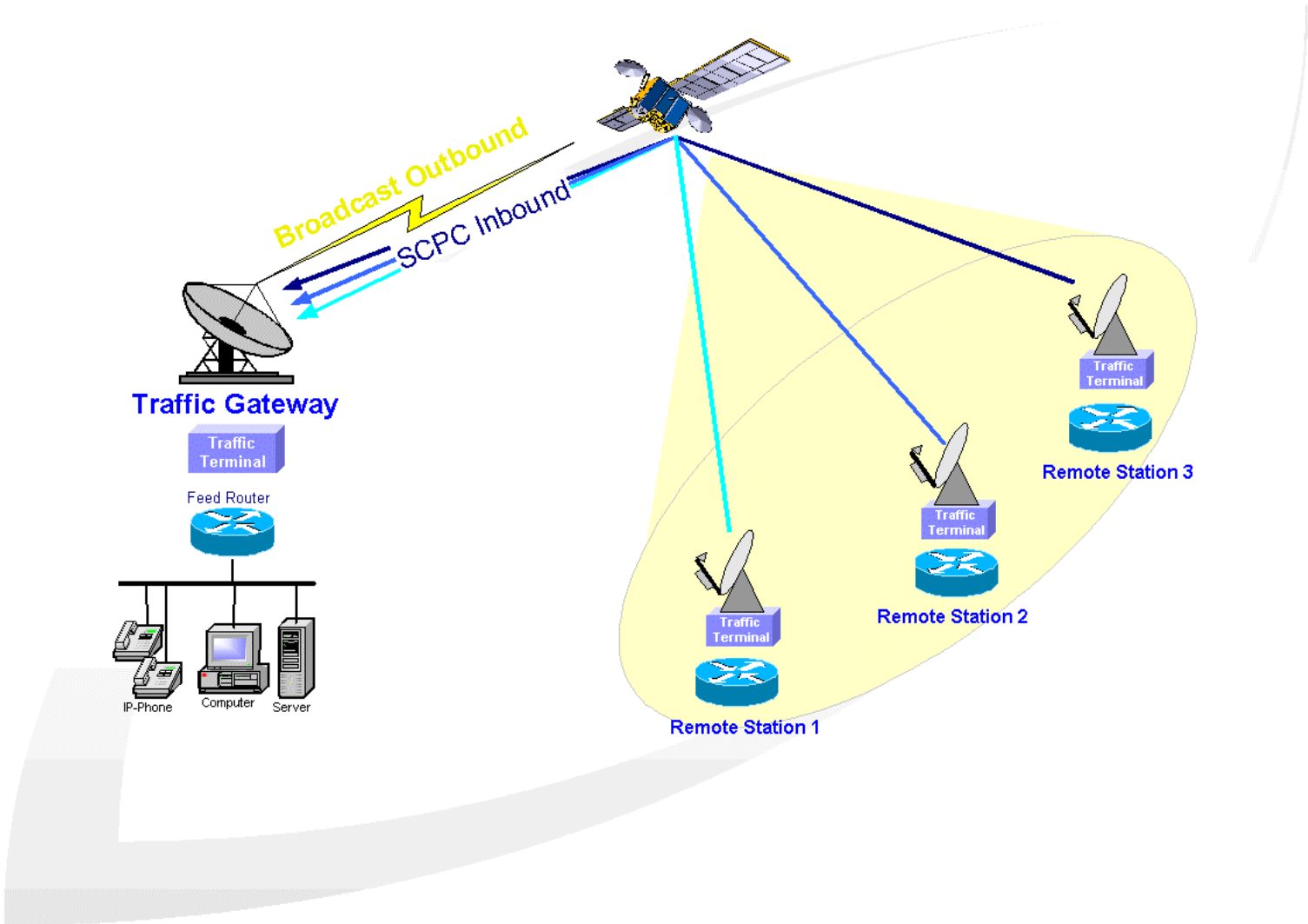
- **SCPC:** (*Hubless Networks, dedicated Links, CIR)*
  - Point-to-Point
  - Star Topology
  - Meshed Topology
  - Broadcast
  - Permanent Links from 64 kbps to 8 Mbps ++
  - IP Star Networks
  - Any-to any communication
  - Dedicated uplinks at customer‘s premises

- **Application examples :**
  - WAN and Enterprise Networks, for Data and Telephony
  - VPN, VoIP
  - Internet Access,
  - WiFi Hot Spot feeding,
  - GSM Trunking

++ Or Higher

ASTRA

Satellite Example



Satellite Example

Service Overview for DVB-RCS Technology

- Major Features
  - Professional 2-way satellite modem
  - Always on
  - Data rates per site :
    - Up to 8 Mbps download stream
    - Up to 2 Mbps upload stream
  - LAN Connection
  - 90 or 120 cm dish
  - Ku/Ku or Ku/Ka band

ASTRA

Case Studies

- **Galicia Oil Disaster in Spain** – January 2003
  - Upon urgent request of the Government of Castilla y Leon, NEO-SKY (a service provider of SATLYNX) set up a mobile satellite communication solution.
  - To connect the oil-clean experts on the beaches with the central disaster coordination team in Madrid and Vallodlid.

ASTRA

Case Studies

- **Pilot under preparation with Regional Civil Protection Departments in South European country**
  - Due to frequent fires, flooding and earthquakes in mountainous areas, the local authorities are setting up with SATLYNX a disaster management system via WiFi satellite infrastructure.
  - Applications:
    - Voice over IP (VoIP)
    - Videoconferencing
    - Data transmission

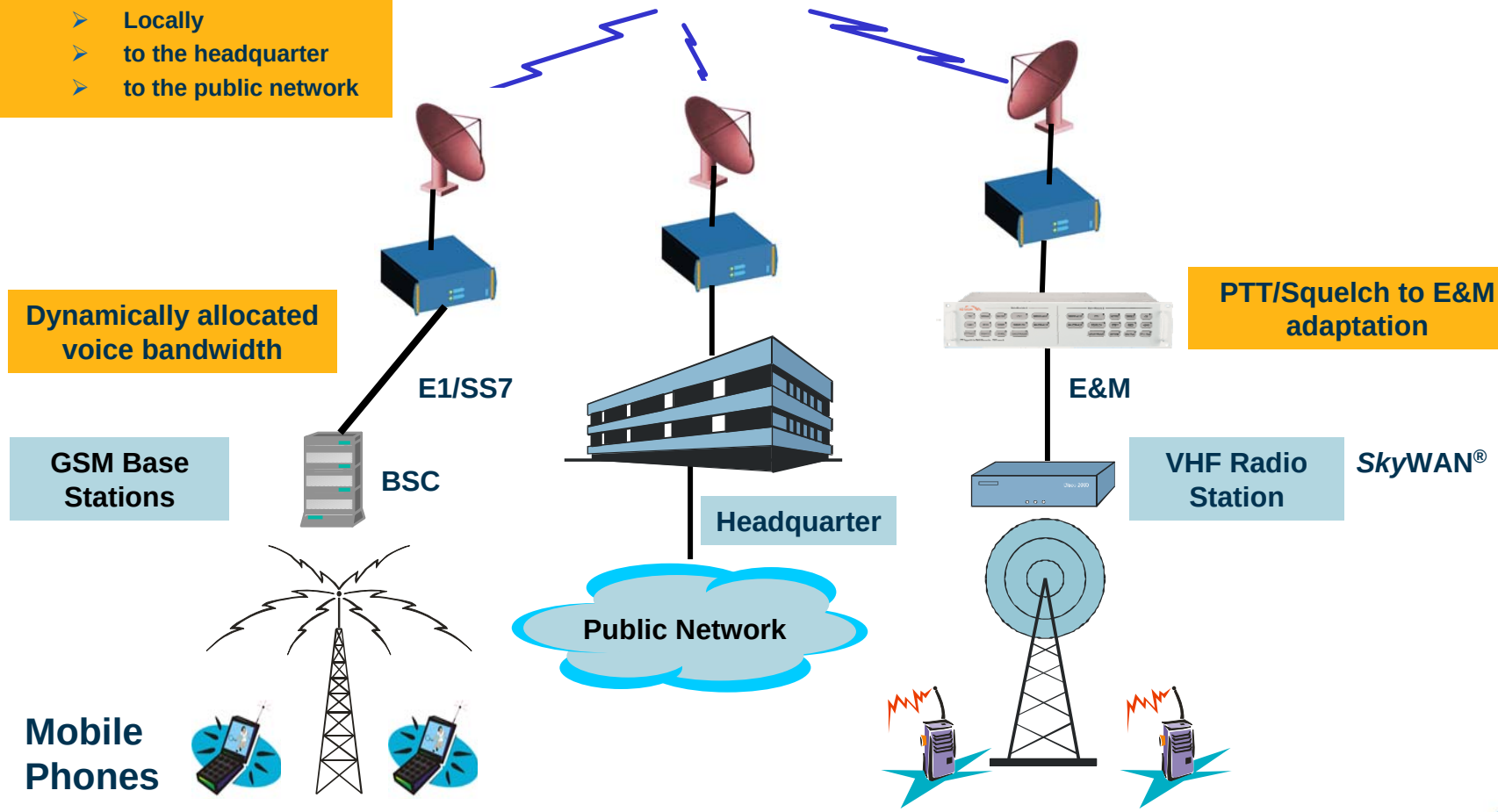
Case Studies
WiFi satellite infrastructure.

Case Studies

- **RFI under review with national government in Europe for mobile back-up solution to the GSM cellular phone network in case of catastrophies**
  - 2 Mbps bi-directional satellite connection to interconnect a truck to the Communication Center of the Government
  - Application:
    - "GSM over satellite"
    - Data & video streaming
  - To secure the communication between the authorities & the emergency services on national level and with neighbouring countries

Case Studies- GSM connectivity

- Provides communication
  - **Locally**
  - **to the headquarter**
  - **to the public network**



Case Studies

- **Pilot with SWISSPHONE: application for organisations with Safety Tasks**
  - Mobile 2-way satellite solution for emergency services
  - Applications:
    - VoIP
    - Data communication
  - To be deployed in Switzerland and eventually also Austria
  - SWISSPHONE manufactured an easy-to-deploy satellite solution that can be installed in 15 minutes.

ASTRA

Case Studies

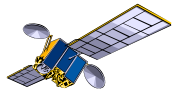
SATLYNX

SWISSPHONE .ch

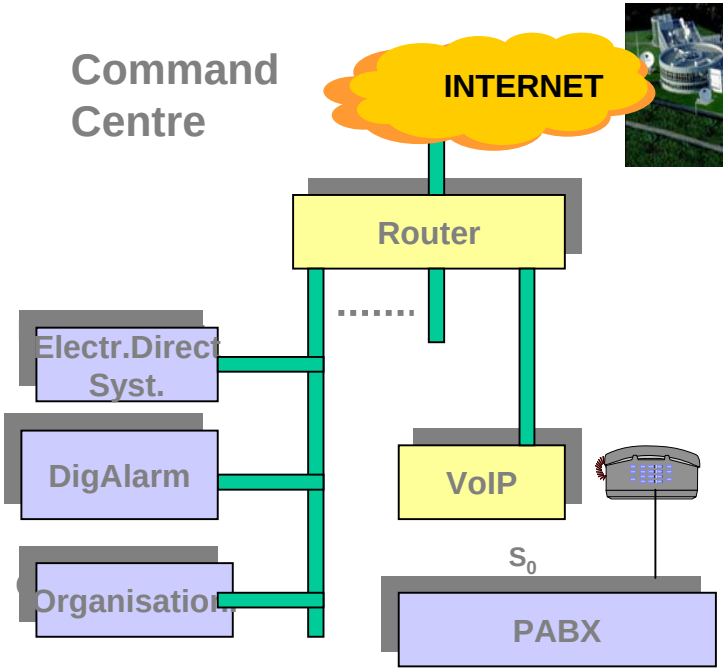
Swissphone‘s „FIRECOM“ based on SKYSTAR 360E

ASTRA

Case Studies



Command Centre



Command Vehicle

SATLYNX 360 E, boards built-in

ASTRA

Case Studies

- **European Forest Fire Exercise from 18-21 April 2004 in the Bouches-du-Rhone department**
  - France organised the first great scale Community exercise on forest fire fighting.
  - Under the shield of the European Commission & led by the Ministry of Interior. (Direction of Defense and Civil Security)
  - Partnership with SATLYNX, Alcatel Space and REMIFOR, in charge of the live retransmissions of the simulation exercise.

Summary

First responders to an emergency require, easily deployable and simple to use systems.
These systems should be permanently deployed (where possible) and used on a daily basis.

Advantages:

- Knowledge of operation.
- Familiarity-Breeds confidence
- No specialised people required-(Maybe impossible to immediately obtain the driver!)
- Instant communication-Saves lives by shortening the response time.

ASTRA

Recommendations

Governmental and NGO's should work closer with the commercial Satellite Providers to identify solutions and systems.

Regulators in countries should study carefully over strict or too tight Rules governing satellite usage-Possibly even exemptions for Disaster organisations.

Remember,It is easier to implement a system in place than to activate one after the event.

SES ASTRA, working closely with its partners,has experience and global coverage to support Disaster Relief and is working to provide more and more solutions.

ASTRA

SES- ASTRA Government Services

Gerard Donelan

gerard.donelan@ses-astra.com