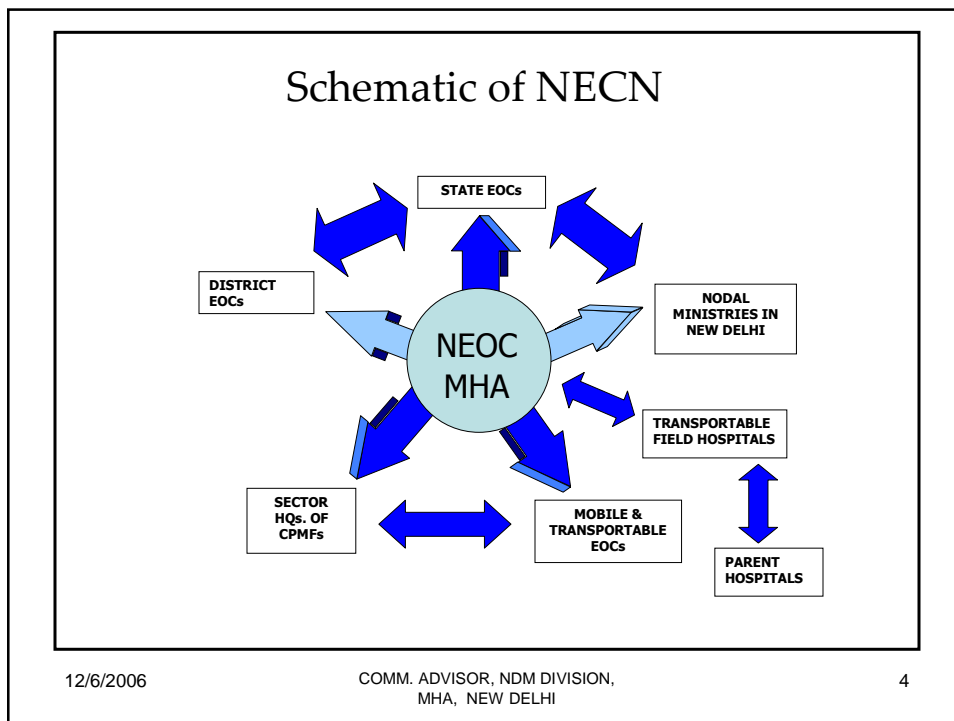
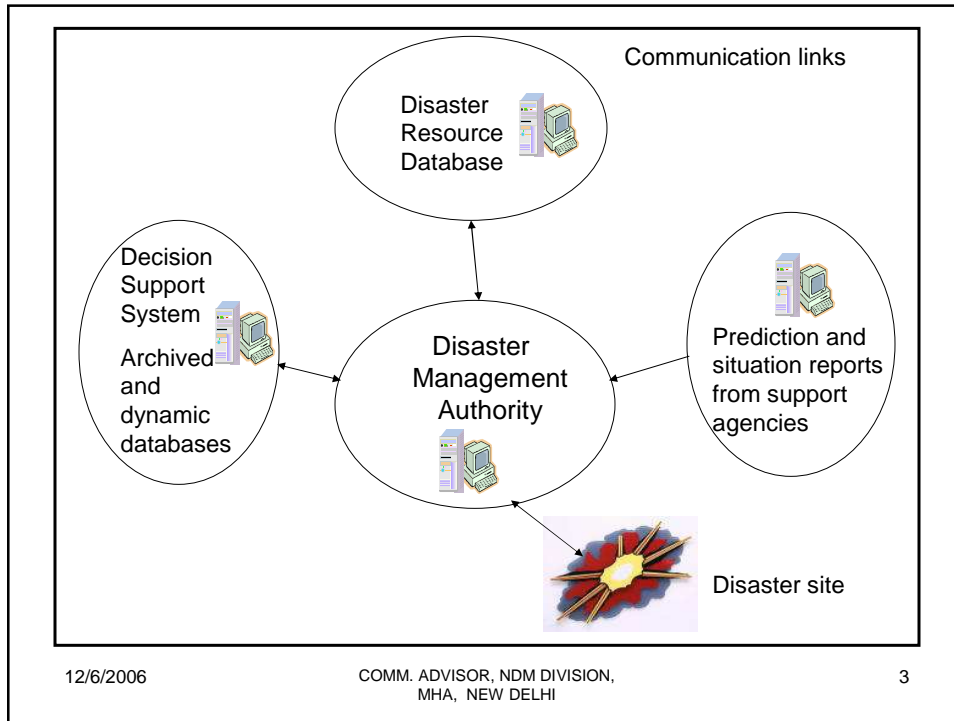


- # **DISASTER MANGEMENT**
- Preparedness and Mitigation Efforts
 - Capacity building
 - Early Warning Systems
 - Rescue and relief operations
 - Rehabilitation
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EMERGENCY COMMUNICATION NETWORKS

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WHY....

- For effective coordination of rescue and relief efforts
- To provide real assessment of extent of damage at disaster site
- For interaction with decision makers
- For access to Disaster Management Support and resource database systems

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EFFECTS ON COMMUNICATION NETWORKS

- Prolonged Mains Power supply interruptions
- Structural damage to telephone exchange buildings, microwave and vhf link towers
- Flooding of back-up power supply systems that are normally installed on lower floors of buildings
- Damage to Optical Fiber and Copper cables due to earthquakes

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EMERGENCY COMMUNICATIONS NETWORK

- Emergency Communications Network (NECN) has to satisfy following criteria:
 1. To be near 100% reliable with multilevel redundancy
 2. Require minimum set-up time and low level of technical skill to install and operate the system
 3. Mains / Battery power requirements should be as low as possible
 4. Should be capable of interfacing with varied network elements

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EMERGENCY COMMUNICATION NETWORK

Emergency Communications Network (NECN) has to provide voice, data and video links between District, State and National Emergency Operation Centers (EOC). NECN will also include a fleet of field transportable as well as vehicle mounted Mobile communications terminals to operate from disaster sites.

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HOW.....

- Setting-up of a redundant terrestrial and satellite based network using: multiple technologies:
 1. Fixed Satellite network terminals for reliable operations even during natural disasters at all EOCs
 2. Use of multiple networks to ensure high reliability

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HOW ?.....

3. Use of Global Mobile Personal Mobile System (GMPCS) terminals for voice / low speed data links from anywhere.
4. Use of Transportable and handheld Very High Frequency (VHF) radio terminals for local / short distance (up to 25kilometers) communication links
5. Use of HAM radio links

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PLANNED NATIONAL EMERGENCY COMMUNICATION NETWORK

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NATIONAL EMERGENCY COMMUNICATIONS NETWORK (NECN)

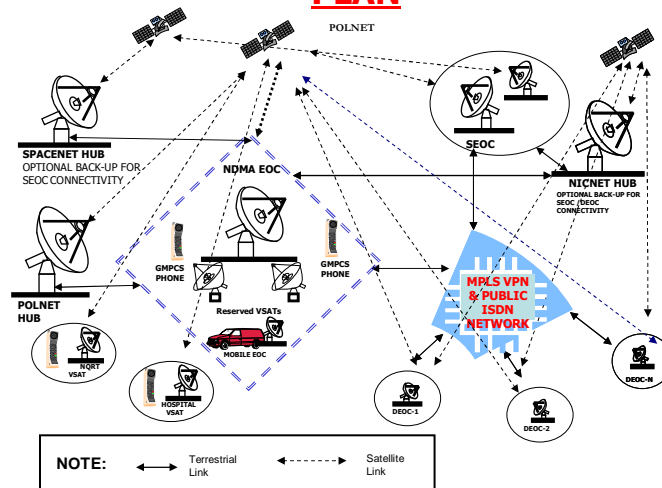
- Will utilise network resources from:
 1. POLNET
 2. NICNET
 3. SPACENET &
 4. BSNL VPN

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NATIONAL EMERGENCY COMMUNICATION PLAN

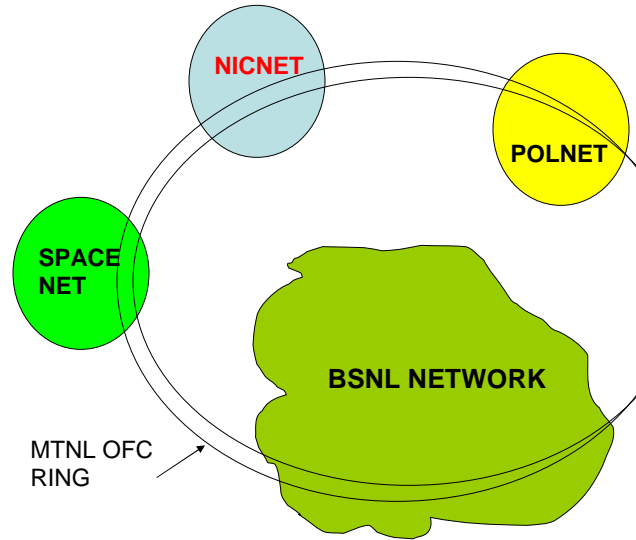


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INTEGRATION OF DIFFERENT NETWORKS

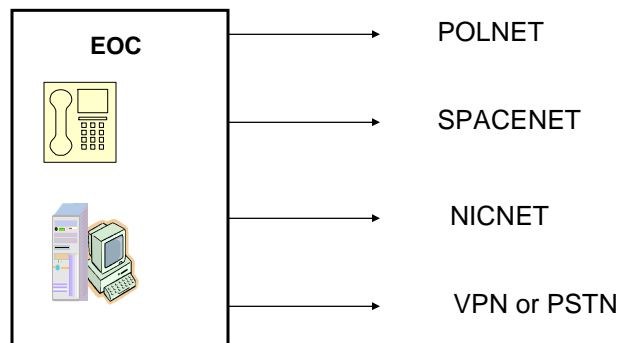


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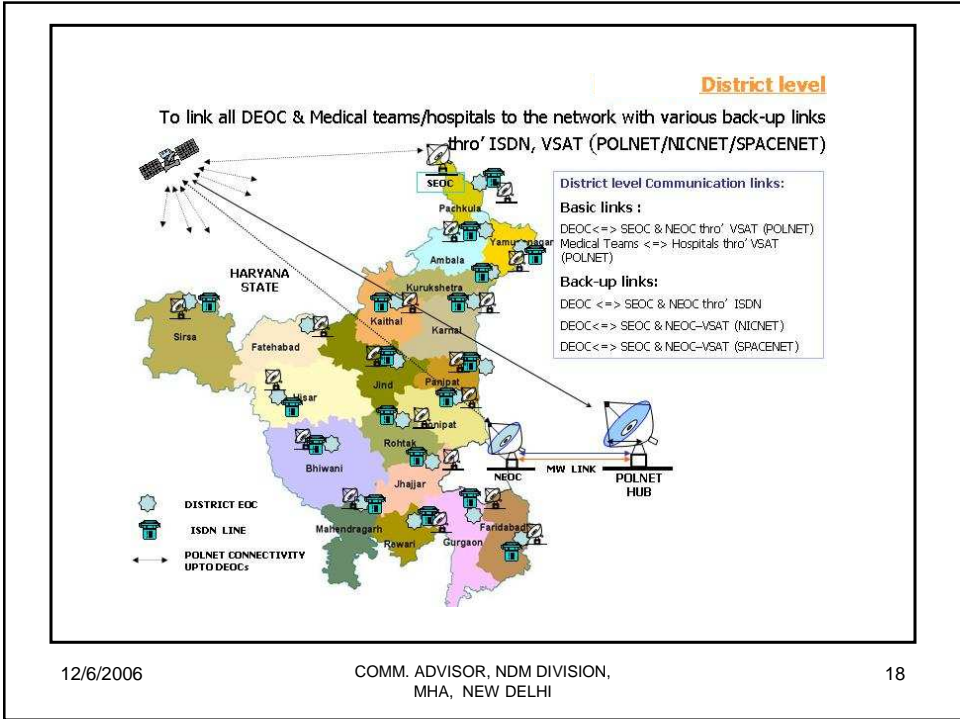
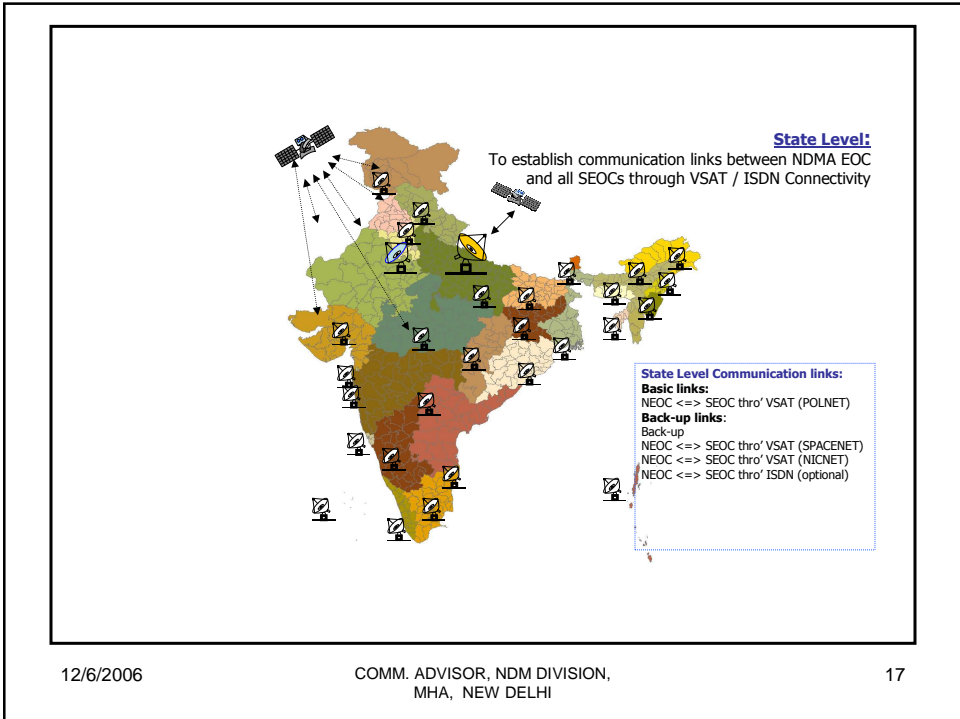
MULTIPLE REDUNDANCY COMMUNICATION LINKS



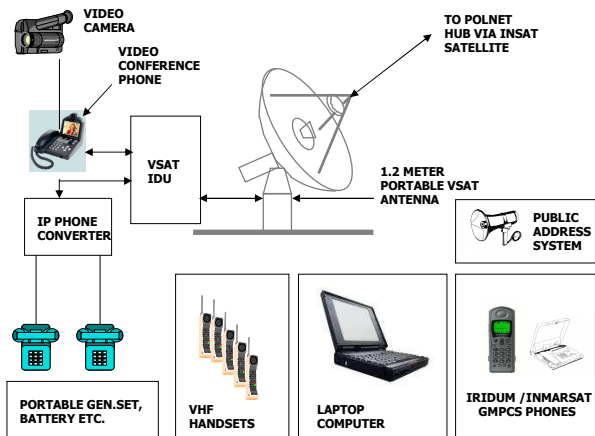
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TRANSPORTABLE COMMUNICATIONS SET FOR SAR TEAMS



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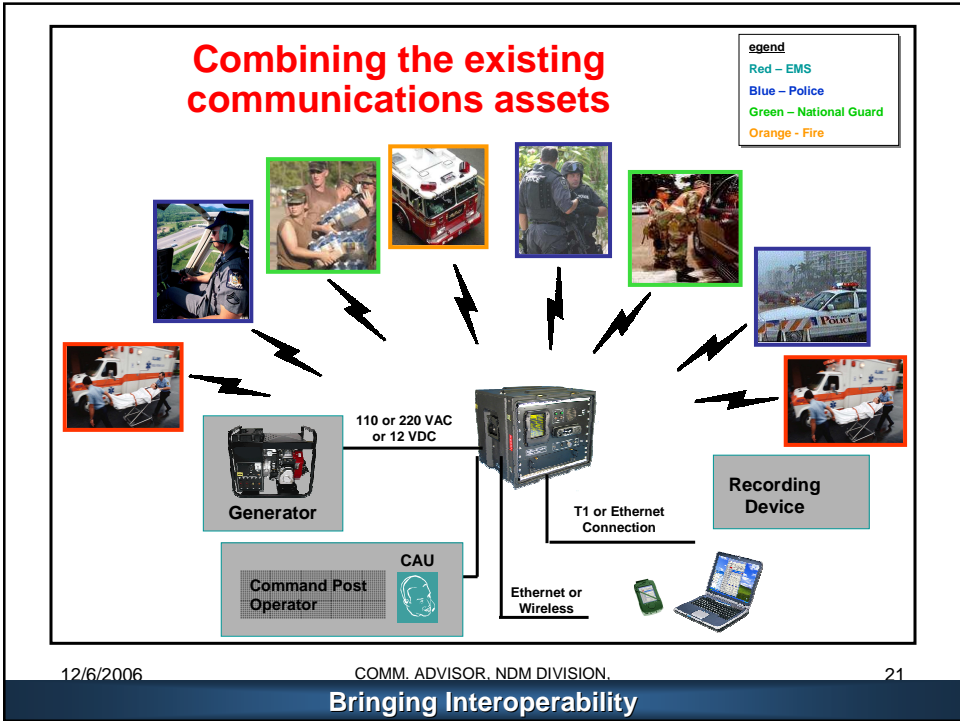
BACK-PACK VSAT TERMINAL



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MOBILE EMERGENCY OPERATIONS CENTRE



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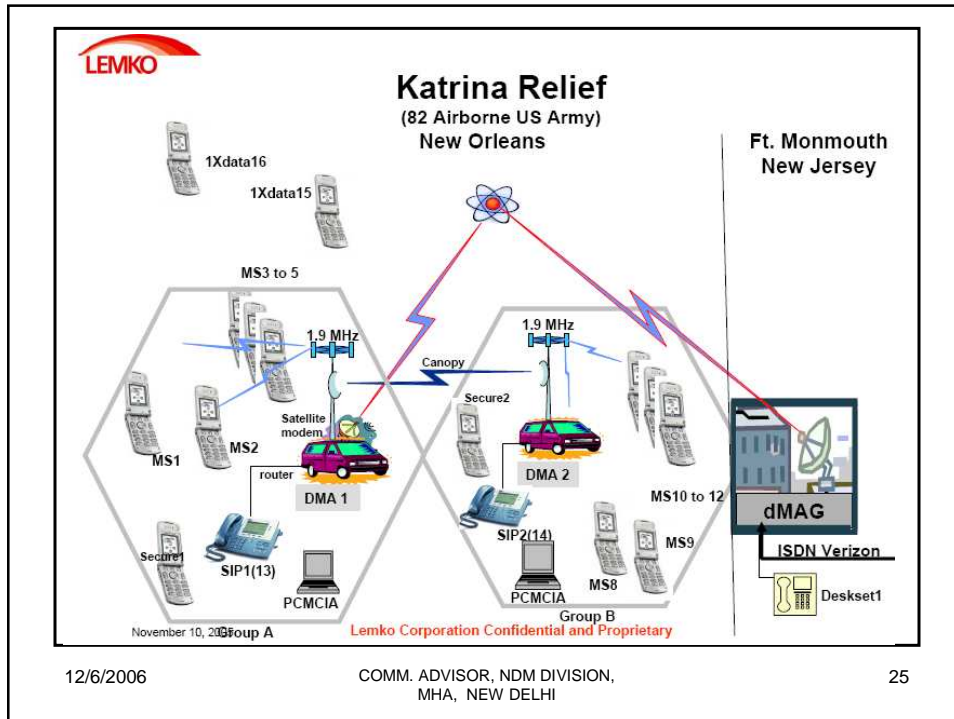
BTS and Lemko dMARC in a HUMVEE



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Countrywide Incident Alert Network
FEATURES

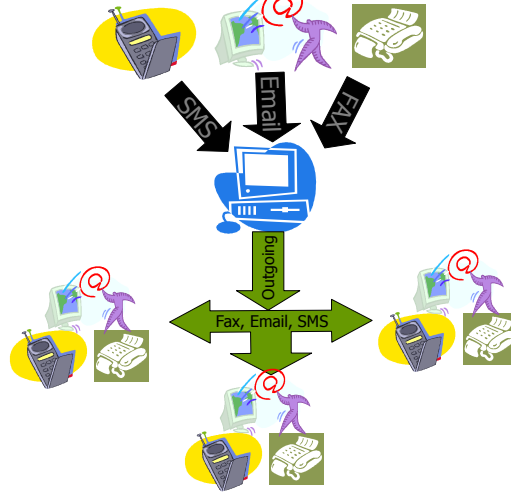
- Receives communication in one place (EOC server) from different sources
- Archival of all information received
- New message or the message already received or sent can be forwarded
 - to one or many addressee at the same time
 - in any of the forms – email / fax / SMS or in all the three modes simultaneously

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Countrywide Incidence Alert Network (CIAN)



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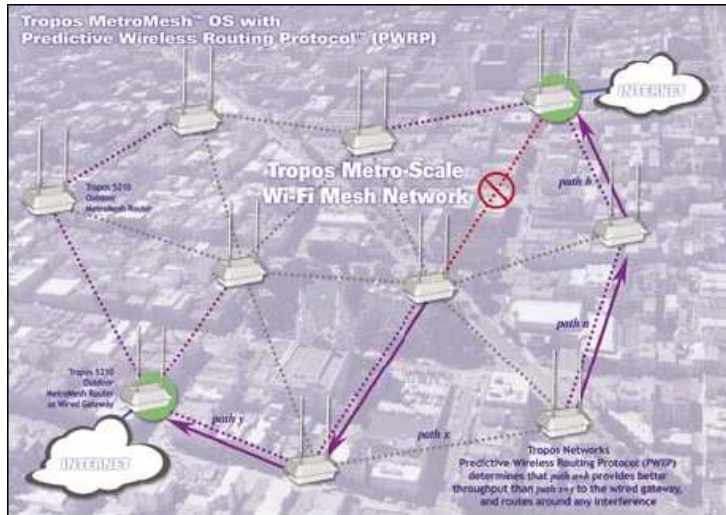
CITYWIDE WIRELESS NETWORK



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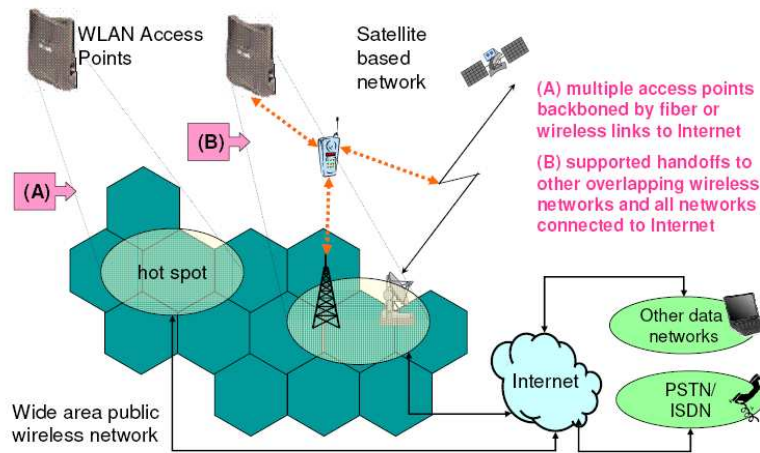


CITYWIDE WI-FI NETWORK

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HOTSPOT NETWORK

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Hop On's HOP 1515

TYPICAL WIFI PHONES

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EARLY WARNING SYSTEM

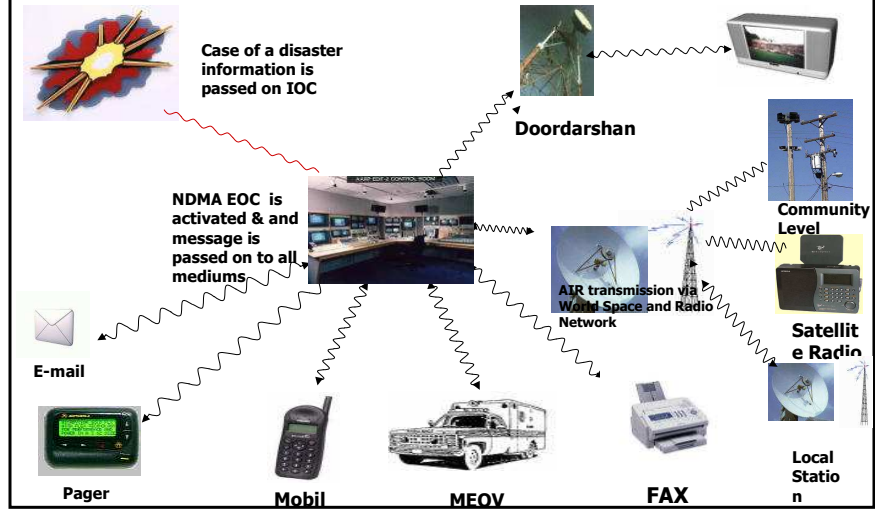
- DEPLOYMENT OF AUTOMATIC FLOOD AND WEATHER MONITORING INSTRUMENTATION
- UP-GRADATION OF DECISION SUPPORT SYSTEMS FOR FORECASTING
- GIS BASED MAPS TO PREDICT INDUNDATATION DUE TO FLOODS
- CENTRALISED EARLY WARNING ANOUNCEMENTS USING SATELLITE RADIO

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The EWS -Overview

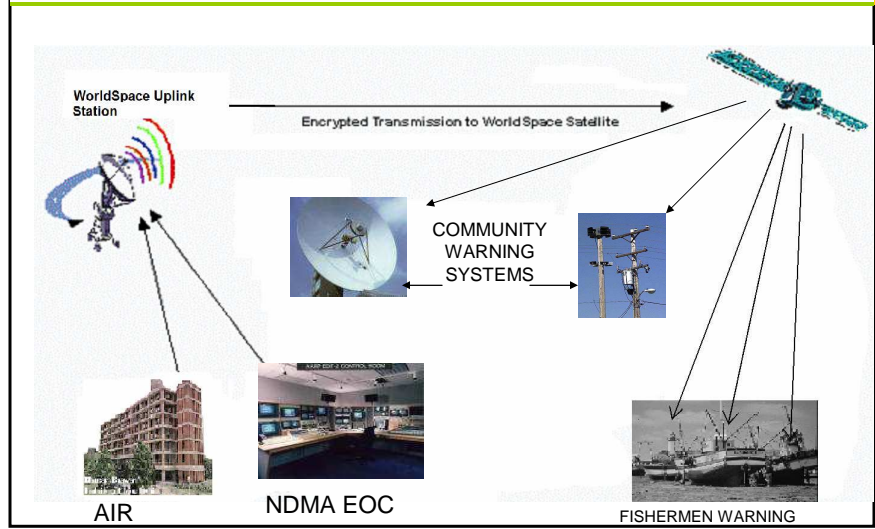


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Graphic depiction of Broadcasting Process



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