



amprnet.se - an extra lifeline

ICTP

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- Non-profit backup Internet Service provider
 - Complementing, not competing
 - Ambition to be the last to go down
 - Operated by radio amateur and radio volunteer organisations



Purpose

- Learning and experimenting with IP networking
- ISP for organizations involved in the operation
 - Asked to become dependent, to keep it up
- Backup in extraordinary situations
 - Focus on regional and local authorities
 - 22 Emergency management regions
 - Independent intranets are priority



The Network



- Built and operated by amateur radio clubs and radio volunteer units (FRO)
- IPv4 and IPv6 address spaces from ARDC and Sunet
- Default Internet transit via Sunet, negotiating alternatives
- Resources provided as donations or loans
 - Antenna locations, fiber links, colocation spaces, equipment, power
- Robustness and graceful degradation are key



The network

- Core and access networks with LOS
 - Mostly 5GHz microwave and a few optical fiber links
 - WiFi/DVBS2 for satellite (QO100)
- Access networks without LOS
 - (New) Packet radio, wifi, IoT protocols
- Routing protocols
 - BGP, OSPF in the core
 - OLSR/DTN supporting mobile nodes
- Redundancy and automatic failover



Network services

- Name service
 - Delegated, distributed
- Time
 - GNSS, DCF77, Rubidium
- Server at each node
 - Synched cache, wifi ap, dns, clock



End user services on own servers

- Voice and Video
 - Remote control of HF/VHF/UHF stations
 - Robust repeater networks (svxlink)
 - IP telephony/voip, videoconferencing (jitsi)
- Data
 - Web services, caching vital data (syncthing)
 - email/winmailAPRS
 - APRS tracking/messaging
 - Chat services
 - TMS – a distributed Ticket Management System for interacting incident response teams



Operators

- Trained by amateur radio and radio volunteer organisations
- Involved in network operation and maintenance
- Contracted by regional and local authorities on a on-call basis
 - Salary, insurances, cost reimbursement
- Regular preparedness exercises
 - Recently to create a common situational picture local – regional – government - parliament



Questions ?

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