



**Networking for Communications Challenged Communities:
Architecture, Test Beds and Innovative Alliances
Grant Agreement: 223994**

System Integration Workshop

Coimbra December 10 2008

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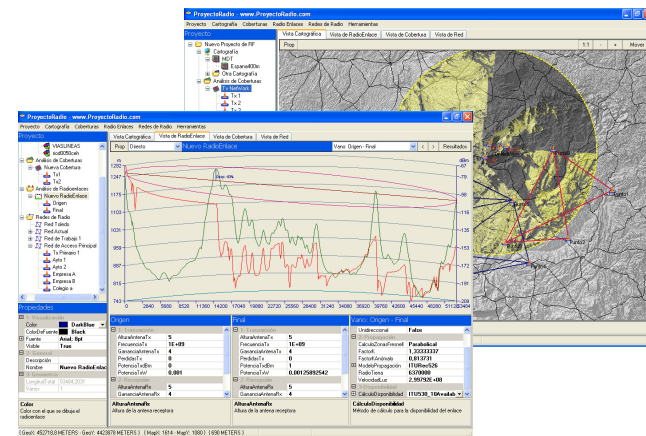
Activity in N4C

Enhancing WiMAX technology for Communications Challenged Communities:

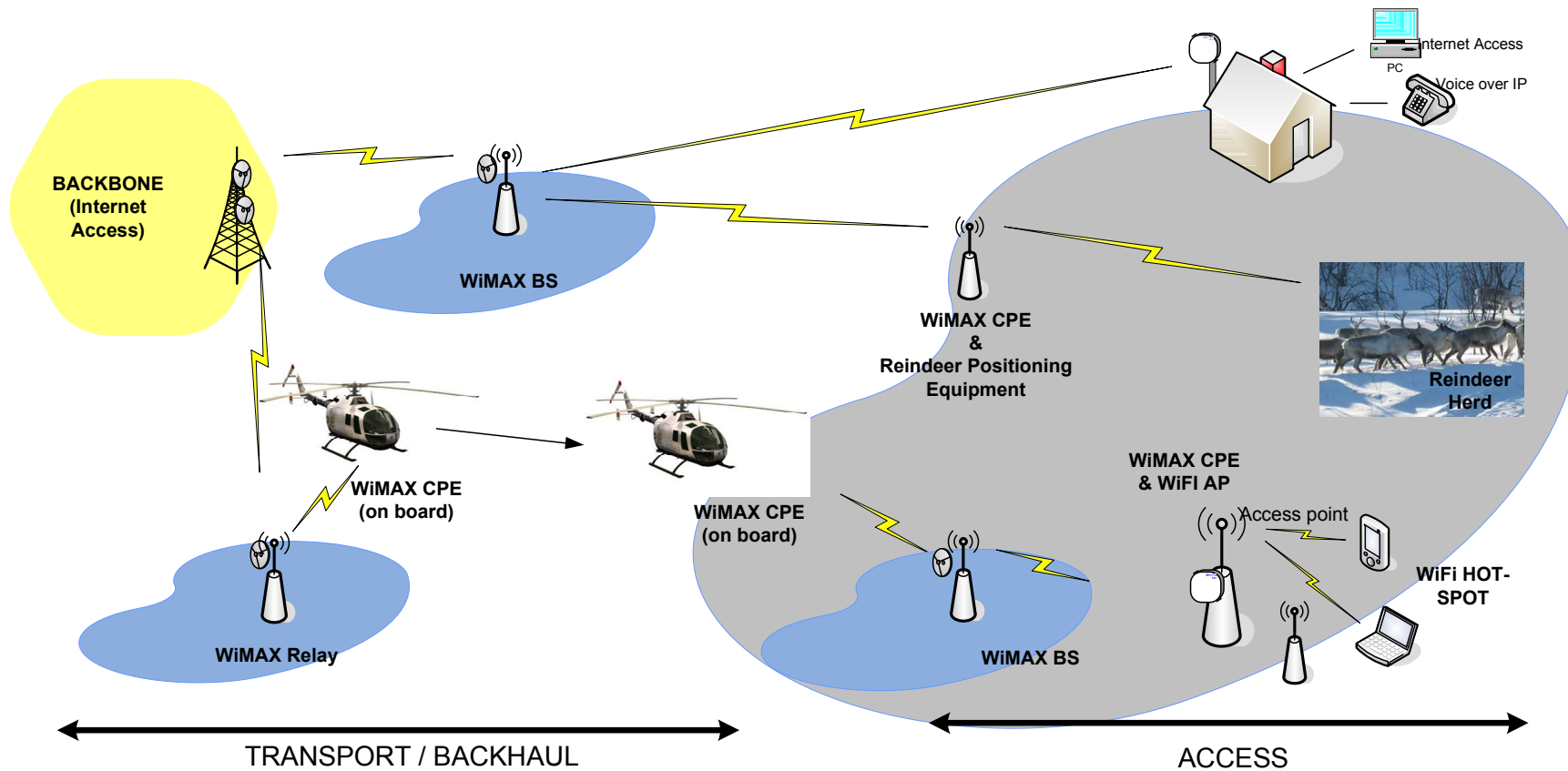


- **Cost Reduction.** Use of multiple techniques to decrease the number of units needed in the network
- **Ruggedization.** Operation in harsh environments shall be supported with the least impact in costs.
- **Form factor.** Small form factor equipment for easy deployment and nomadic applications

Support for Summer test II (2009) & Winter test II (2010). Radio network planning.



Vision of the "big picture"



Interaction with other modules

Working in HW development in collaboration with UPM at different levels:

- Radio Level
- Power Supply Level: Reduce Power consumption, alternative power sources...
- Robustness Level: Temperature grade, Shock, Snow...

Physical proprietary interfaces involved (internal integration)



Equipment that can interface ours in N4C:

- DTN Router
- Wifi AP
- Internet Service Provider (ISP) Equipment

Main interfaces between our modules and the global system



Available interfaces:

Power Supply

Basic	802.3af compliant (PoE)
Optional	12V or 48V (separate connector for solar panel supply)

Network Functionality

Layer-2 Network functionality	Bridging (IEEE 802.1), VLAN (IEEE 802.1q)
Layer-3 Network functionality	Static/Dynamic routing, NAT, DHCP server/client
Supported CS	Ethernet, IPv4oEthernet, VLAN, IPv4oVLAN
Networking modes	Bridge mode, IP routing
Data interface	10/100 Base-T Ethernet RJ45

Management and Provisioning

Management local interfaces	Web, Command-Line Interface
Management remote interfaces	SNMP, XML-RPC
User and services local provisioning	XML local database
User and services centralized provisioning	AAA Radius, LDAP, XML-RPC

Thank you!