



Wireless Network model for future, a tomorrow vision

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Wireless networks what they are ?

- A new interconnection model able to fill structural gap, in rural, in public administration, in Digital Divide.
- An opportunity to carefully use and that will give best result in a mixed contest with different layer and wired deployment.



Wireless network a strategic value

- Providing with an infrastructure is a key for the development of territory.
- Wireless network are not tactical, in a medium time they'll become a strategic media.
- "Thinking" a wireless network have to be planned carefully, if well done is an investment that will maintain its original value.



Wireless benefits

Infrastructure

Limited initial investment

Proportional at number to be serviced

Extending the wired network

Deployment

Quickly

Scalable

Efficient


Services

Flexible and differentiate

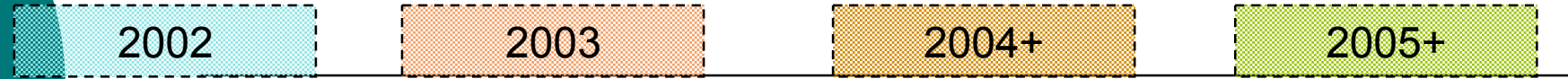
Symmetrical connexion

Dedicated Service Level Agreement

Evolution of wireless application

02		03		04		05		06		07	
<p>“Pure” transport application internetworking, streaming video</p> 						<p>Apps with logical tier, center based, ASP, Web GIS, Data retrieval, building or landing Public Register)</p>					
<p>Building internetworking Video surveillance Substitution leased line</p>				<p>Digital Divide Video surveillance Initial access model</p>				<p>Data collection from territory, Civil Protection , Access evolution, TriplePay,Enterprise applications Food chain tracking</p>			
<p>WiFi Data rate up to 3 Mbit full duplex 802.11 & 802.11b DSSS & FH</p>				<p>Hiperlan ECC (unlicensed) or FCC - Data rate up to 10 Mbit full duplex 802.11 b & 802.11a DSSS & OFDM</p>				<p>Hiperlan ECC & Wimax licensed Data rate up to 15/20 Mbit full duplex 802.11a & 802.16 xx OFDM & OFDM</p>			

The wireless app model evolution



2002	2003	2004+	2005+
<p>Just few K mainly Email e web, via PSTN o ISDN</p>	<p>Medium bandwidth capacity about 1 mbit for each connection, detailed planning ,streaming video.</p>	<p>Phone voice over IP advanced multicast streaming services</p>	<p>Phone voice over IP Base application mainly Email e web.</p>
	<p>Base application mainly Email e web,</p>	<p>Video + Medium bandwidth capacity about 1 mbit connection, detailed planning, streaming</p>	<p>Data web based central access application, geo localization</p>
		<p>Base application mainly Email e web,</p>	<p>Urban mapping,, GIS, etc.. Central based</p>
			<p>Food chain tracing</p>
			<p>Video advanced multicast streaming services.</p>
			<p>Video surveillance and telecontrol risky areas (industrial plant, etc,,</p>

Quality of service

Wireless Network evolution

Product Availability

2004 →

Fixed BWA

- License and Licensed-exempt Spectrum:
0,9 GHz – 26GHz
- Fixed outdoor and backbone
- National Operators, Competitive Carriers and ISPs.
- Target subscribers:
 - Residential users
 - Enterprises
- Voice, Data & leased line services



2006 →

Portable BWA

- Licensed and unlicensed spectrum
0,7 GHz – 26 GHz
- Fixed , Self-Installed CPEs, Portable CPEs
- Fixed Network Operators, Mobile Network Operators, Competitive Carriers & ISPs
- Target subscribers:
 - Residential users
 - Enterprises
 - Business users
- Voice & Data services



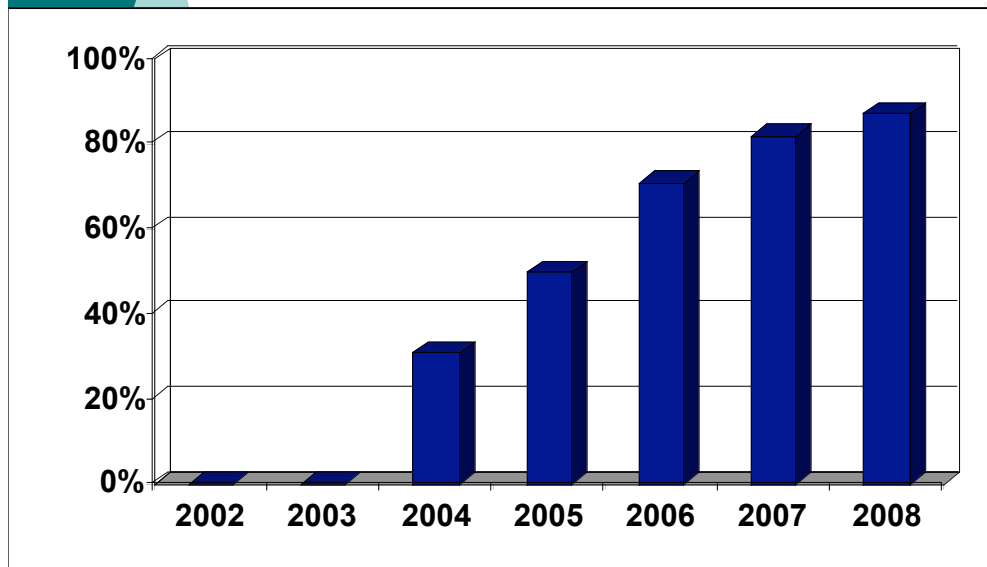
2007 →

Mobile BWA

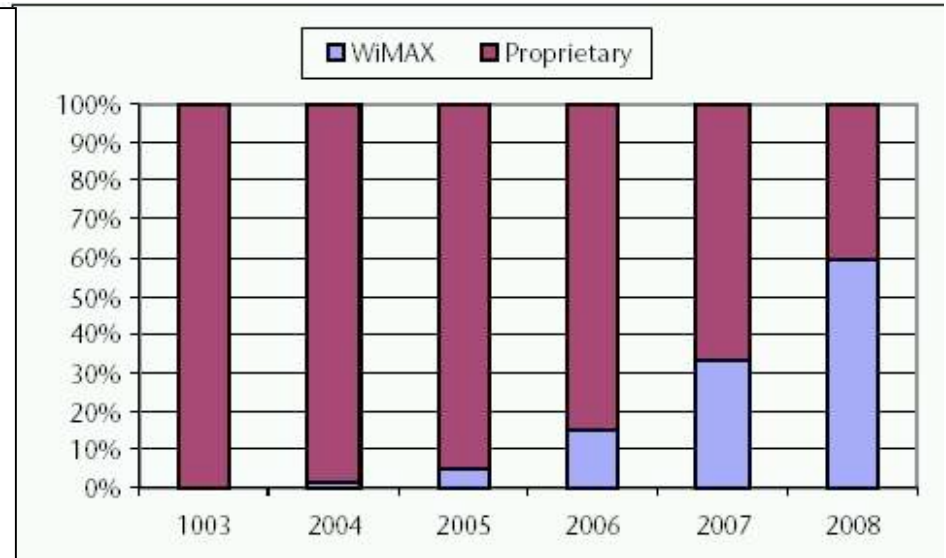
- Licensed spectrum
- Mobile Subscribers
 - PCMCIA cards
 - Embedded WiMAX chip (Notebooks, PDAs)
- Fixed Network Operators, Mobile Network Operators & Competitive Carriers
- Target subscribers:
 - Residential users
 - Business users
- Voice & Data Services



802.16/WiMAX Adoption - World Market



Source: Visant Strategies, Inc.



Source: Pyramid Strategies

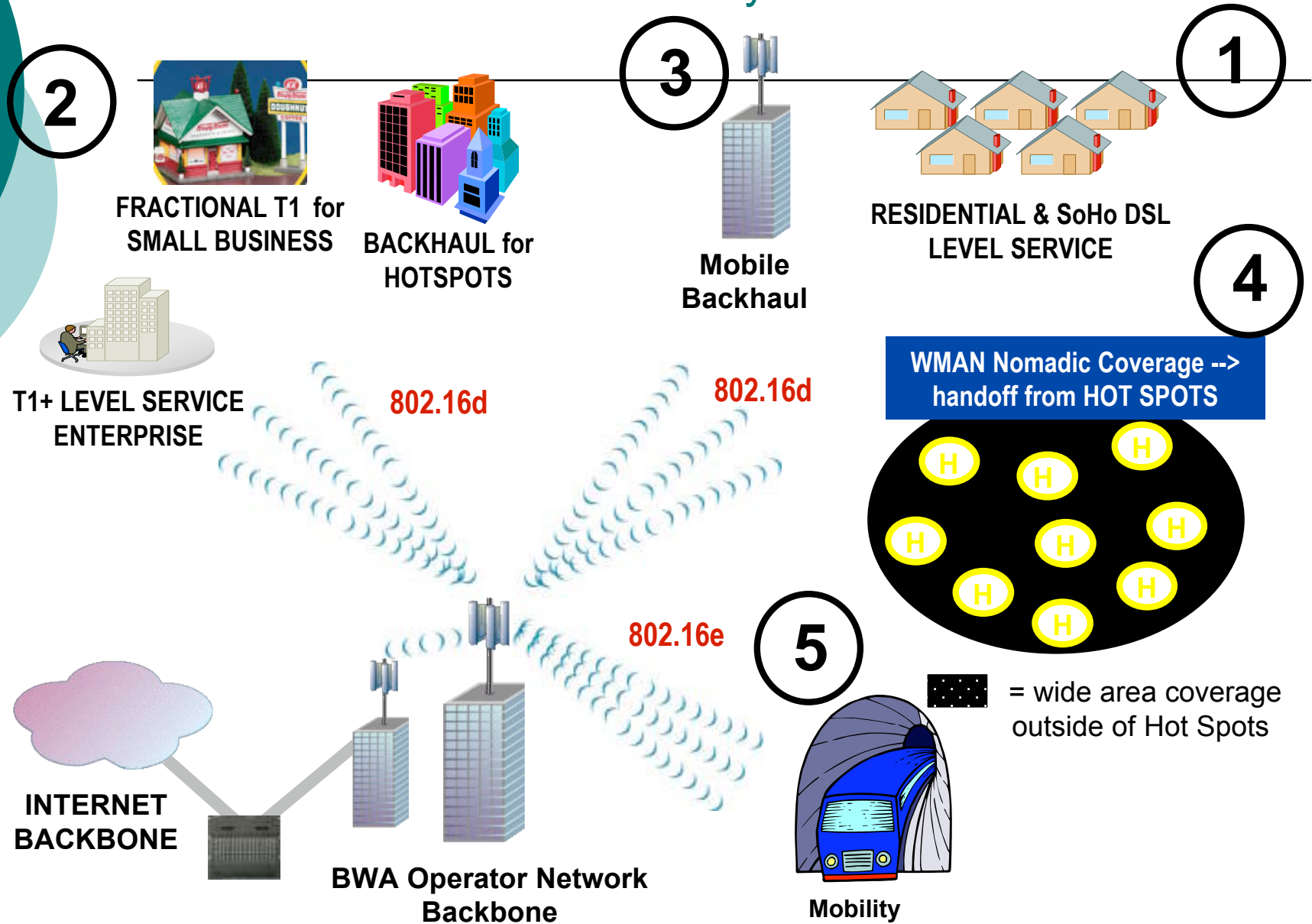
- 802.16/WiMAX CPEs will dominate the BWA Market but proprietary networks will remain for specific use.



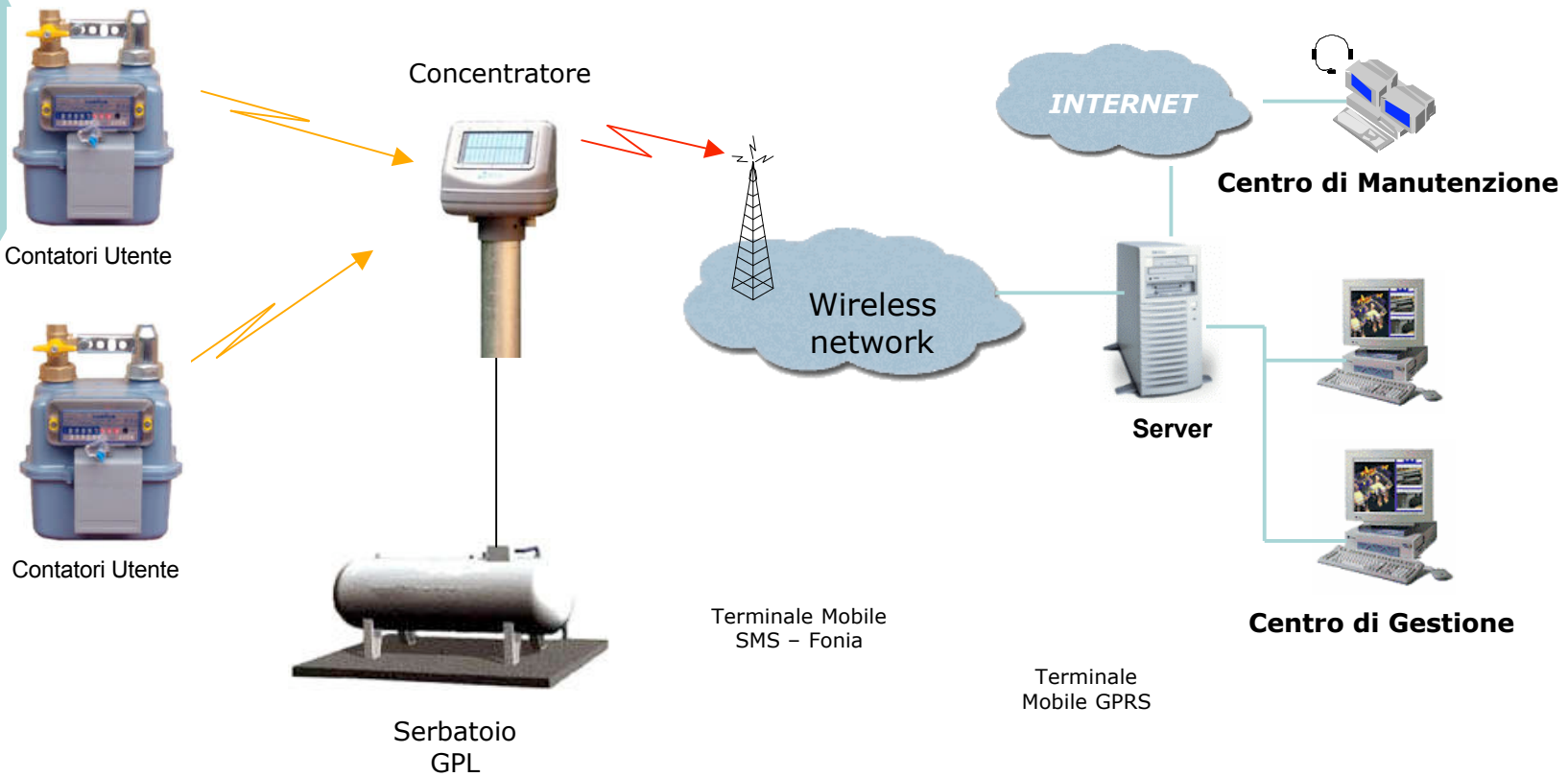
How the network model will evolve

- In the beginning wireless network will fill gaps, mostly giving services in specific areas.
- Middle phase will show a beginning integration between network and data. Ownership of network will be a value.
- Advanced phase will show the value moving from network to application.
- Mature phase will see application value oversize the ownership of the network

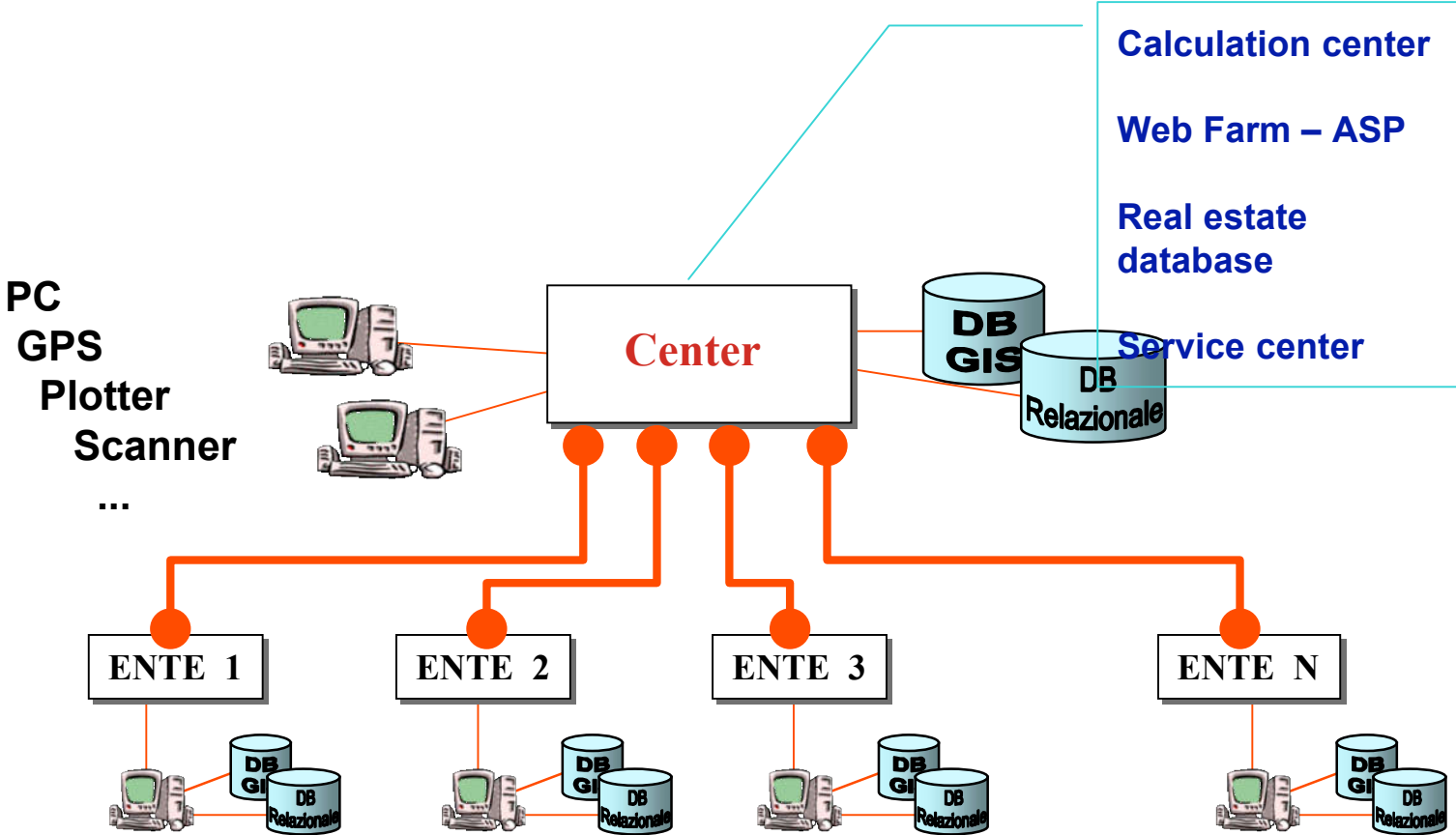
Wireless Network vision Broadband Everywhere



Other network tier will come... (Real PAN Networks but M/M)



Le Wireless killer application already exist: Territory Distributed System



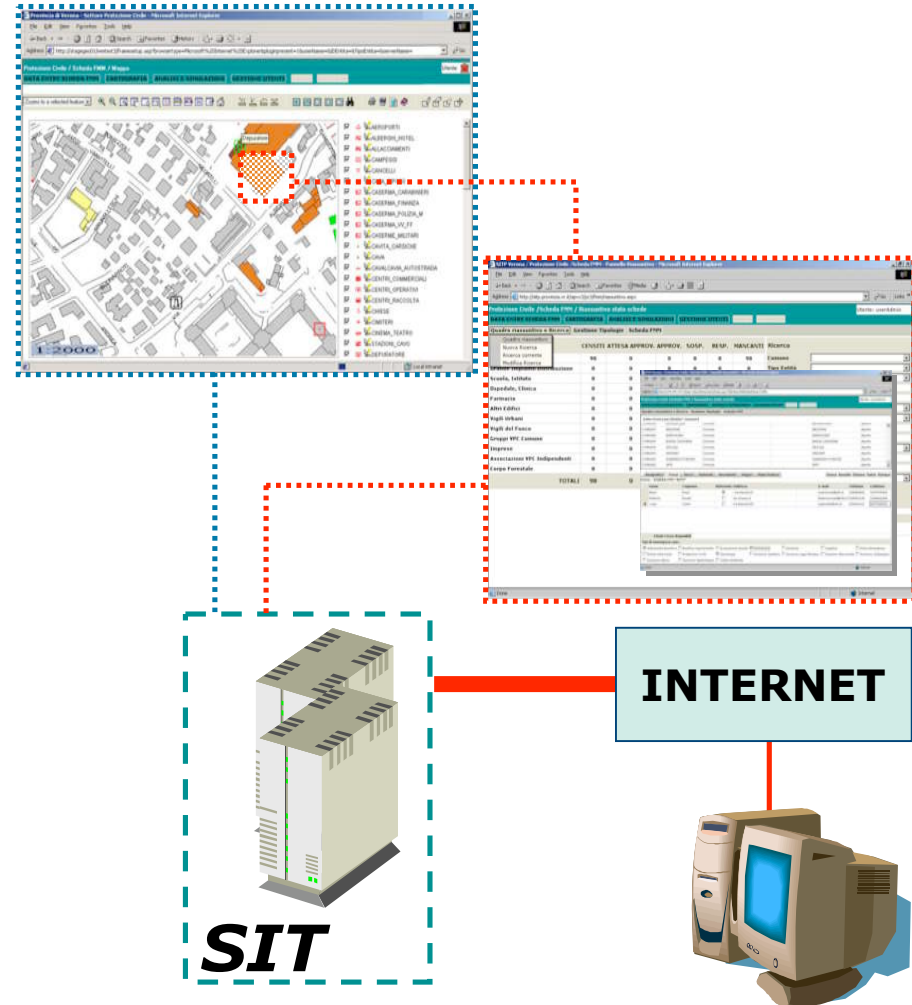
Wireless Networking = Dinamic System

made available distributed application for reading and updating.

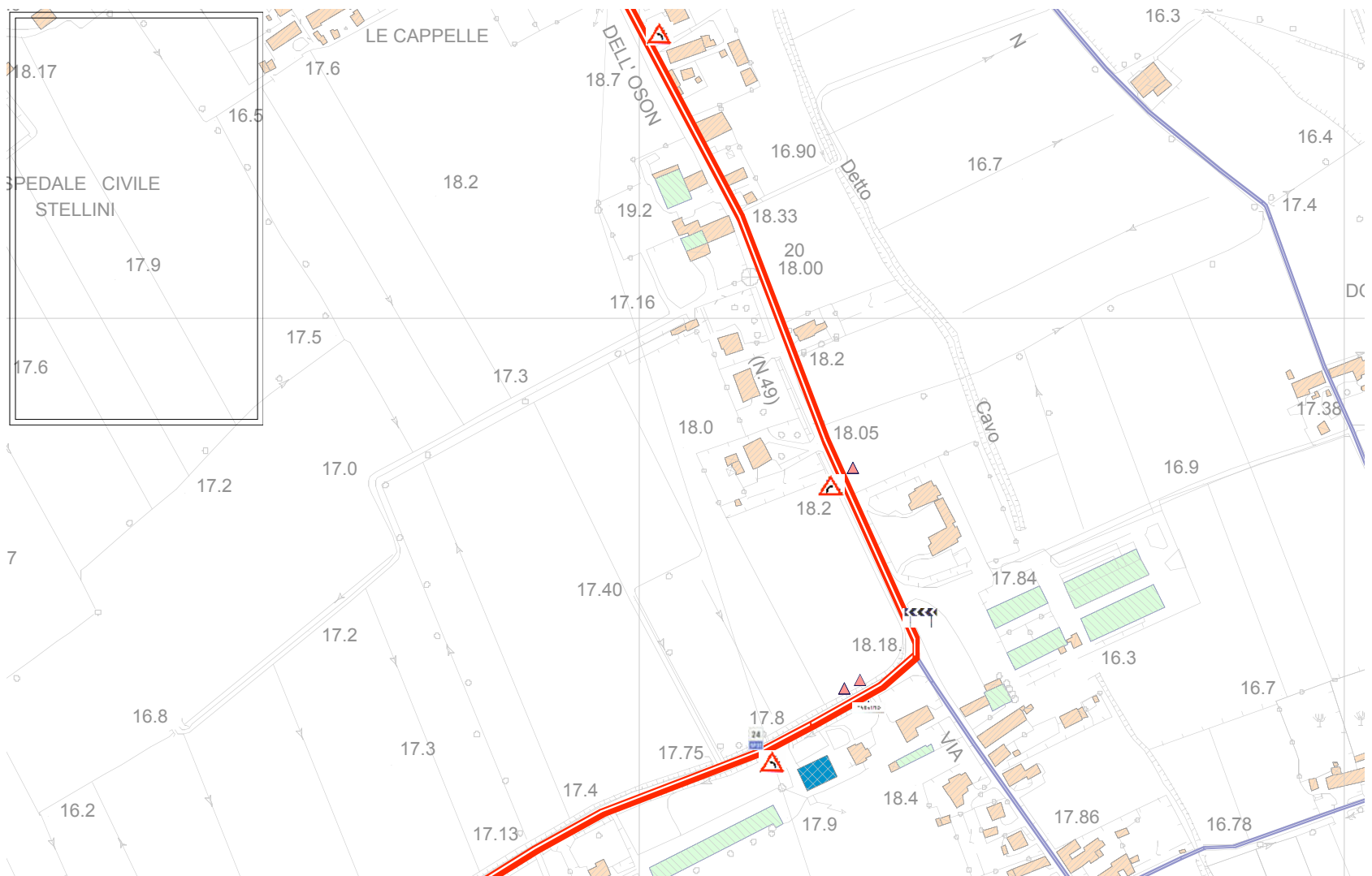
Datamap GIS and document build a **single**

Knowledge System

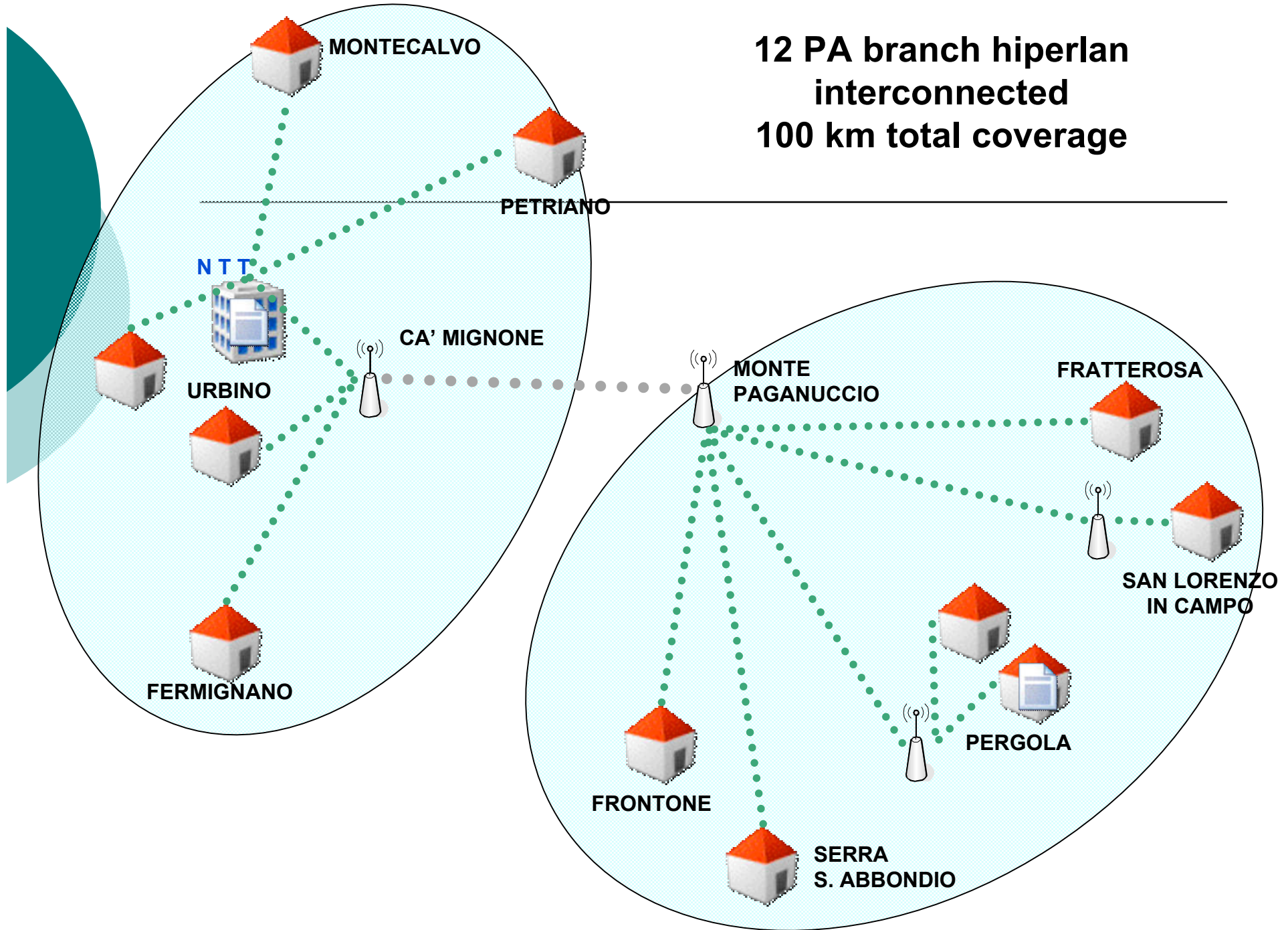
Continuously updated and available



Wireless Networking is also road map and “land registry”



**12 PA branch hiperlan
interconnected
100 km total coverage**





The “producer” of tomorrow application, means which data will flow over the WNetwork!!

- National infoprovider, publishing companies, traditional media.
- Software house involved with Public Administration Warehousing with a “service approach”.
- Municipality, County, Public institution, Government.
- Cultural and “Knowledge provider”, school, University.
- Entertainment companies



Conclusions and hints

WNetwork tomorrow:

- Will permit Efficient networks availability answering to growing PA and infrastructural needs.
- It will be, defining new solution:
 - issuing of permit via Internet, environmental monitoring,
 - management of public property: catasto, real estate,
 - environment defense,
 - administrative data processing, ...
- Will be availability of products and applicative layer, realized with substnible cost and respecting rules and regulations.



Information availability and Access

What Wnetwork will help to do!

- Accessing information is a treshold to the grown and developing of rural areas
- Availability of information and application means more capability of local development.
- Wireless network help to develop access to application and make more easy available data.
- The lack of di bond at information access is the base for the development in general
- Developing is freedom*

*i Amartya Sen Indian Economy Nobel 1998 from his book : Developing and freedom



Q & A

Grazie!

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