

# TI-CADS TriplePlay Nplay over WSMN

**Teleinformatica doo Sarajevo**

**Juli 2009**

**UVOD**

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**TI-CADS  
Content Acquisition and Distribution System**

**Wireless Sarajevo Mesh Network**

## TI-CADS

### *Content Acquisition and Distribution System*

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- The role of the centers is to support Content Acquisition, production and Distribution for TV, radio and new media platforms.
- Teleinformatica has developed TI-CADS, a combination of Contact Centers and Media Servers for streaming and VoD.
- TI CADS supports IPTV, iTV, VoIP, SMS, E-mail, Web, WAP, USSD and Fax communication.
- They have been developed to support very high traffic volumes with hundreds of operators posts, powerful IVR (including Text to Speech and Speech to Text) and storage capacities.
- Every contact type is registered to the Data Base and tied with all previous records of the customer.

## TI-CADS

### *The IPTV Opportunity*

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- The cost to deliver video streams to the home has fallen dramatically with new technology.
- Advanced Video Codeces reduce transmission, storage and server cost by 2X over MPEG-2 and make high-definition streaming practical.
- Open standards have accelerated innovation and will ensure a competitive environment.
- IPTV will drive revenue and subscriber retention, adding significant value beyond basic Internet broadband
- Every contact type is registered to the Data Base and tied with all previous records of the customer.

## TI-CADS

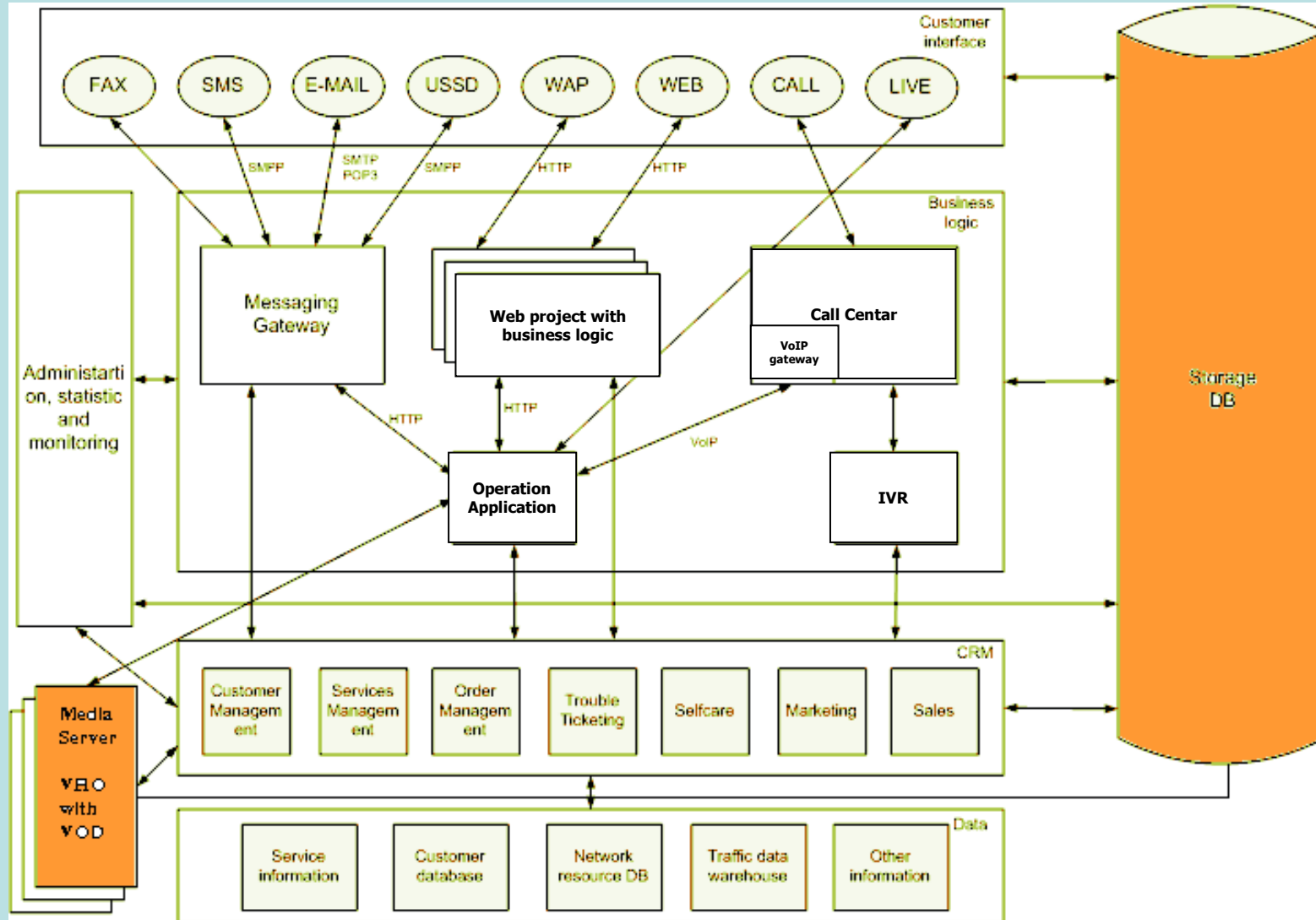
### *IPTV Key Ingredients*

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- Virtual Private Streaming enables to serve each subscriber a customized video stream
- Advanced Video Codeces reduce transmission, storage and server cost by 2X over MPEG-2 and make high-definition streaming practical
- Open standards accelerate innovation and will ensure a competitive environment
- IPTV will drive revenue and subscriber retention, adding significant value beyond basic Internet broadband service

# TI-CADS

## The Basic Configuration of TI-CARDS Centar



## TI-CADS

### *Typical Applications*

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- SMS Voting
- Music dedication programme - Audio/Music on Demand (MoD) – either streaming or pushed/download to play
- IPTV gaming
- IPTV Picture management
- IPTV directory service (local yellow pages)
- One feature is the acquisition of amateur music or video clips through e-mail or web channels.
- Cooperation with professional producers companies is of high importance for high quality content production.

## TI-CADS

### *The IPTV Production and Distribution*

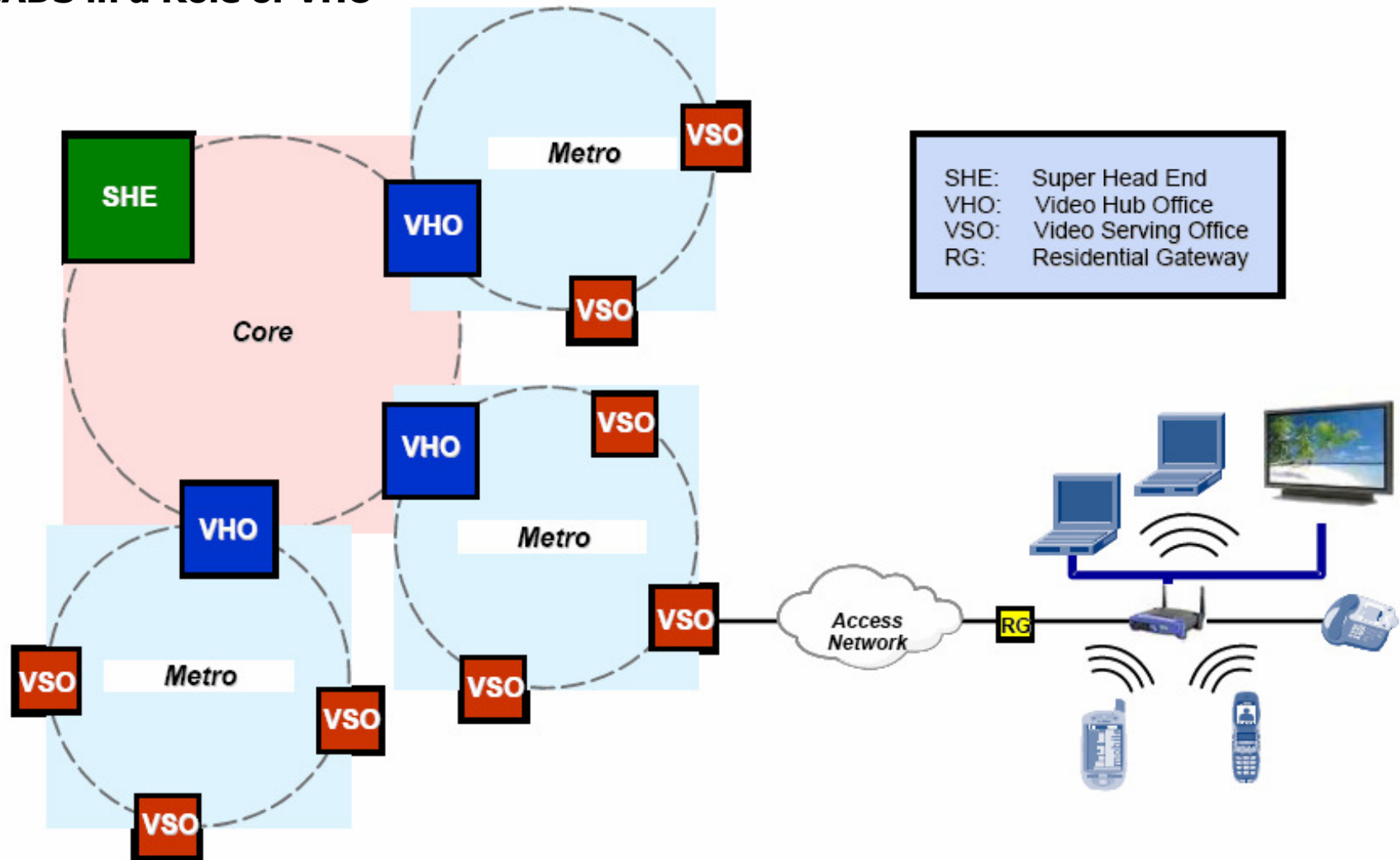
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- IPTV is most suitable form of TV for interactive content production and distribution.
- Apart to existing servers used in the contact center the IPTV VHO is integrated to provide IPTV production and distribution.
- It enables, among others, contact to all Internet users for content acquisition and distribution. Most attractive is Video on Demand service.

# TI-CADS

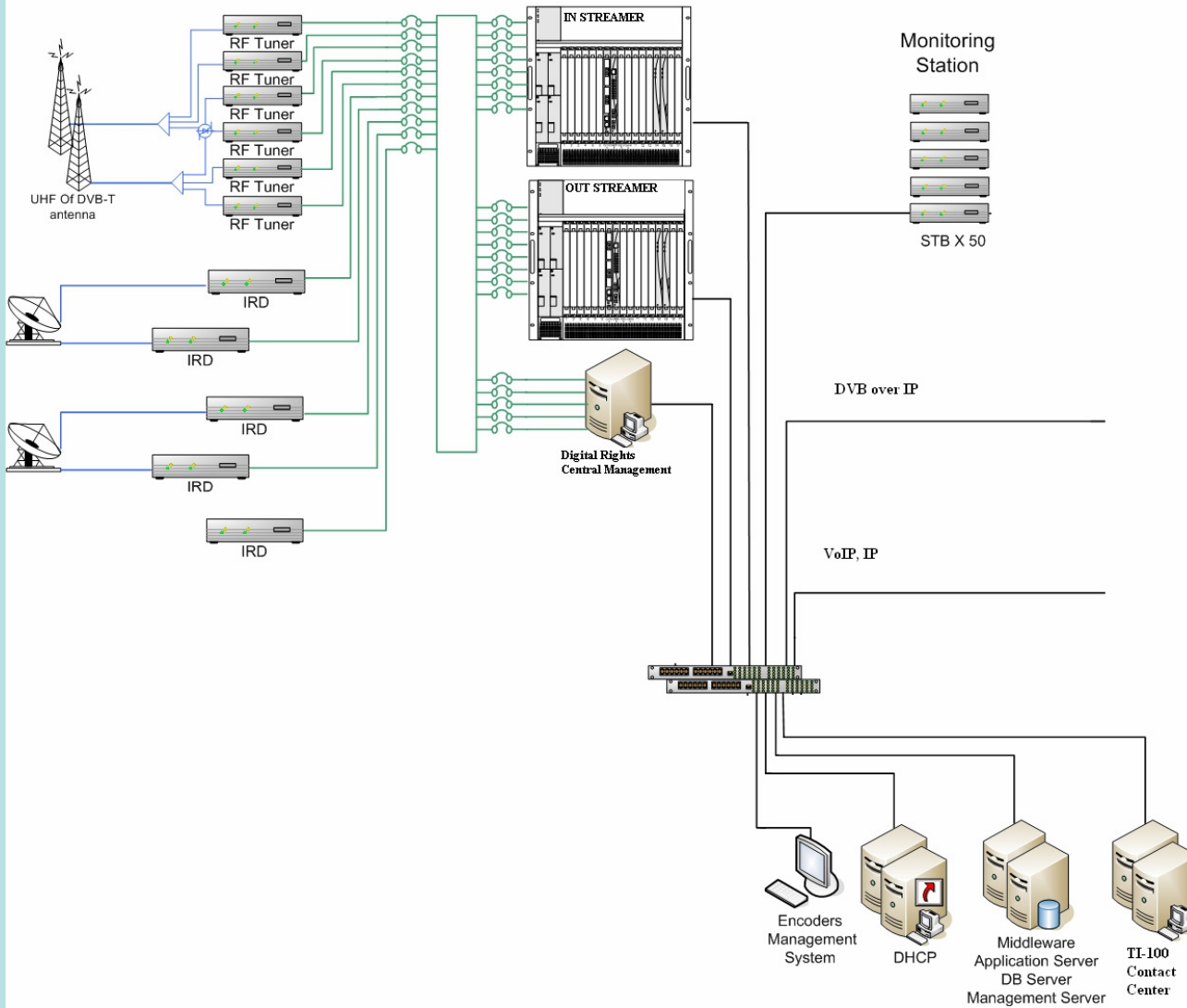
## General IPTV structure

### CADS in a Role of VHO



# TI-CADS

## TI-CADS VHO part



## TI-CADS

### *CADS in a Role of VHO*

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#### **Two Level IPTV hierarchy - CADS in a Role of VHO**

- **Video Hub Office (VHO)** - the video distribution points within a demographic market area (DMA) National content is received from each SHE. Local content is acquired and encoded. VOD servers and other application servers typically located in the VHOs. Insertion of local advertising is also performed in the VHO. TI-CADS is complete VHO.
- IPTV services are provided from the VHO via the aggregation/access network.
- **Video Serving Office (VSO)** - contains/hosts all access systems used to connect the TI-100 softswitches (a VSO assumed to be a Central Office) to the subscribers. In addition, the VSO contains aggregation equipment to enable efficient and reliable interconnection to the VHO.

## TI-CADS

### *Multicast vs. Unicast Comparison*

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#### Multicast

- Bandwidth is proportional to the number of channels
- Private streams adds to the required standard bandwidth
- Hundreds of Video Channels (limited by available bandwidth)

#### Unicast

- Bandwidth is proportional to the number of receivers
- Private streams take required standard bandwidth
- Unlimited Content (only limited by size of storage vault)

## TI-CADS VOD

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- IPTV Video on Demand (VOD) - The Video on Demand service enables TV viewers to select TV videos from a central repository for viewing on a television at their desired time. VOD systems are either "streaming VOD" or "push VOD":
  - Streaming VOD is VOD in which rendering on the display device/viewing can (simultaneously) start as (or at least overlaps with) the video distribution over the network
  - Push VOD is VOD in which the program is brought in its entirety to a set-top box before viewing starts (it can either be invoked by the viewer or by the operator without an explicit viewer request). The operator based option is more likely in the beginning.

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### *Business Case*

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- Subscriber on DSL CO line calls short VOD number or sends an SMS requiring particular video content
- Operator responds and starts AAA procedure
- Unicast streaming started
- Help and other support if needed

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### *Examples of VoD work Support Centers – how it will work?*

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- PPV (Pay Per View) - an offering of pay-television broadcasts to customers in a manner that they can buy a particular program event separately from any package or subscription.
- The program event is shown at the same time to everyone ordering it.
- PPV Purchase can be done via:
  - A phone call to contact an automatic response unit (ARU) utilizing automatic number identification (ANI)
  - A phone call to customer service representative (CSR)
  - filling and sending a form in an Internet web site
  - filling and sending a form on an interactive TV e.g., on an electronic program guide, using the remote control.

## TI-CADS

### *The Conclusions*

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- TI-CADS centers are universally applicable to support different TV business platforms.
- They have plenty of tools to support the other business schemes, like TV screen menu driven VoD, as a supplement.
- TI-CADS enables new innovative services, as a kind of service development and application platform.
- It is based on open standards, so that newly developed equipment of different vendors can be integrated.
- It gives a helping hand to creative TV people to be ahead competition.

## TI-CADS

### *Set Top Box TI-STB 100*

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- Core Global Functionality
  - Simple Operation/Interface
  - Audio and Video-On-Demand (including high definition)
  - Linear/Broadcast Audio and Video Programming
  - Internet on TV (including support required for games)
  - Internet TV
  - High Speed Internet Access
  - GSN / ICN Auxiliary Interface
  - IP Telephony

## Wireless Sarajevo Mesh Network

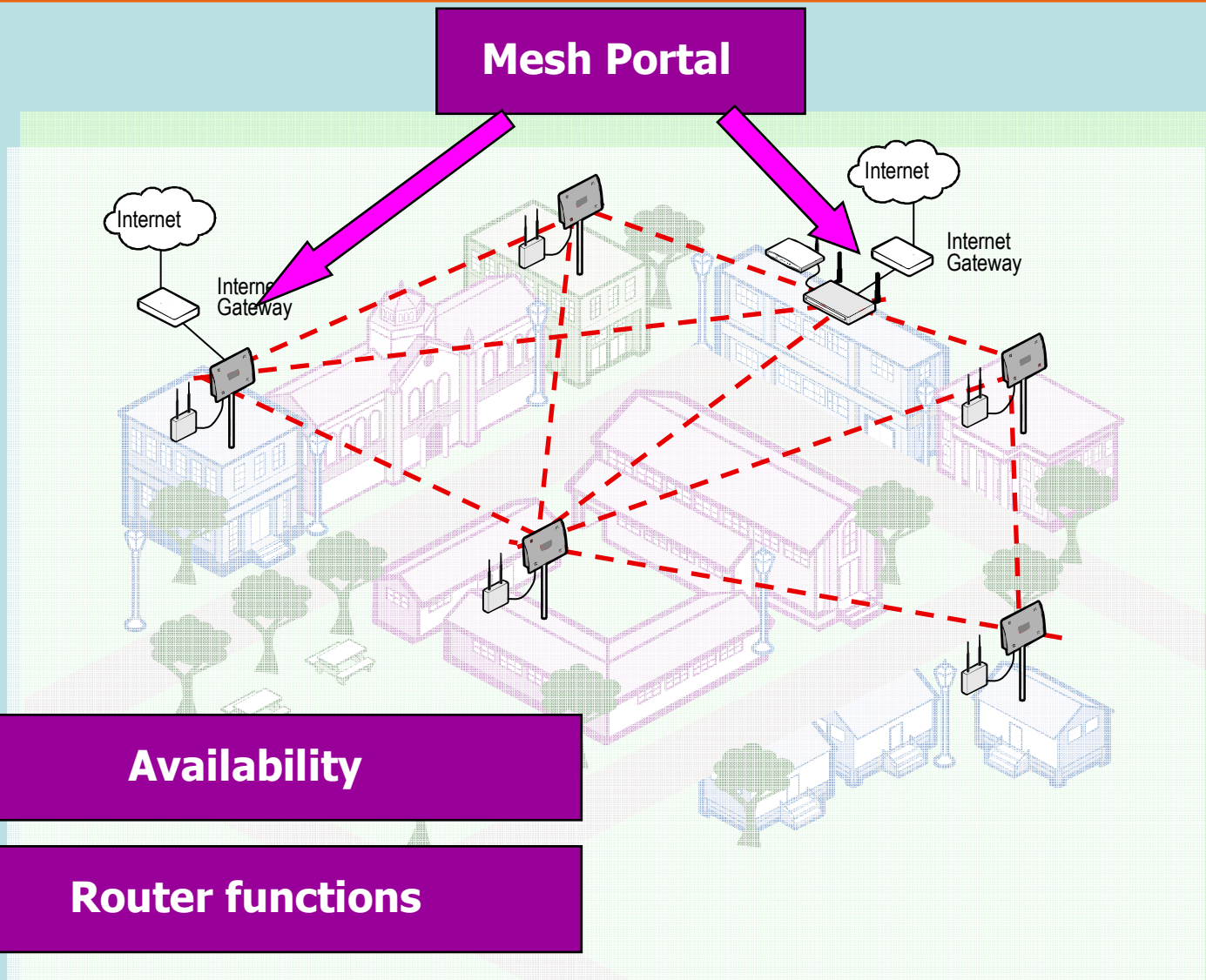
### Introduction

- WSMN is metropolitan level network fully managed with Network Management System. It can support real time applications like IPTV. It is the heart of Teleinformatica's eGov and Outsourcing services offer. The WSMN can be applicable and used in major areas such as:

Vertical Markets	Value Proposition
<ul style="list-style-type: none"> <li>• <b>Industrial Automation</b></li> <li>• <b>General Public Customers</b></li> <li>• <b>Backhaul/pub net infrastructure</b></li> <li>• <b>Government</b> <ul style="list-style-type: none"> <li>- Dept of Defense, Dept of Energy</li> <li>- Municipalities</li> <li>- Public Works, Utilities</li> <li>- Condition Monitoring</li> <li>- First Responder Communications</li> </ul> </li> <li>• <b>Building Facilities Management</b></li> <li>• <b>Security &amp; Public Safety</b></li> </ul>	<ul style="list-style-type: none"> <li>- Lower TCO (fixed cost vs. variable cost)</li> <li>- Resilient (self organizing / self healing)</li> <li>- Compatibility with legacy systems (SCADA)</li> <li>- Extensible information network (sensing, tracking, operations, computing)</li> </ul>
	<p style="text-align: center;"><b>Applications</b></p> <ul style="list-style-type: none"> <li>• <b>Asset Tracking</b></li> <li>• <b>Security</b></li> <li>• <b>Telemetry (Asset and Patient)</b></li> <li>• <b>Mobile Computing</b></li> </ul>

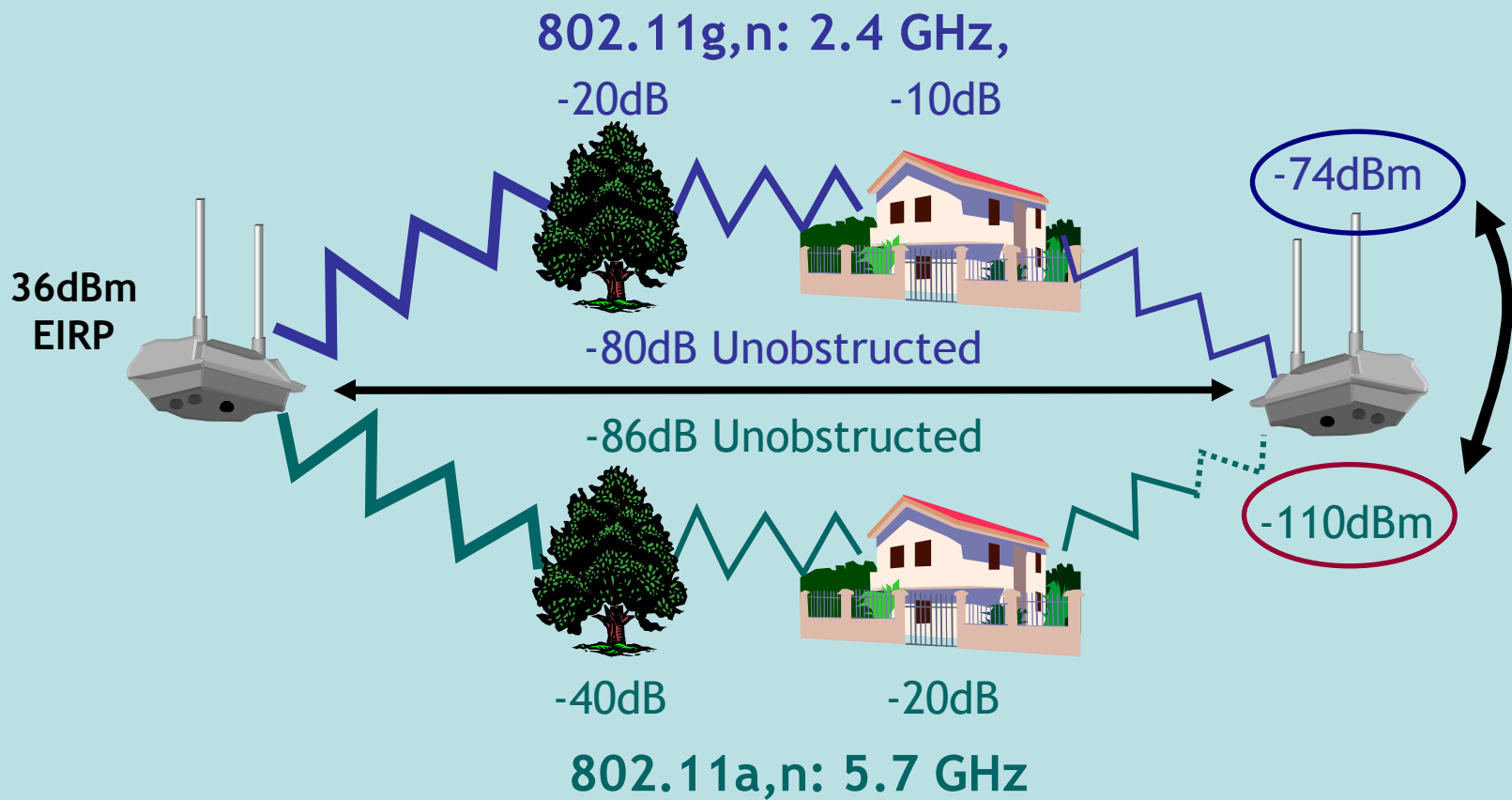
# Wireless Sarajevo Mesh Network

## Introduction



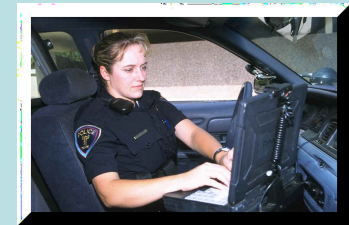
# Wireless Sarajevo Mesh Network

## 5 Ghz networks vs. 2,4 Ghz networks



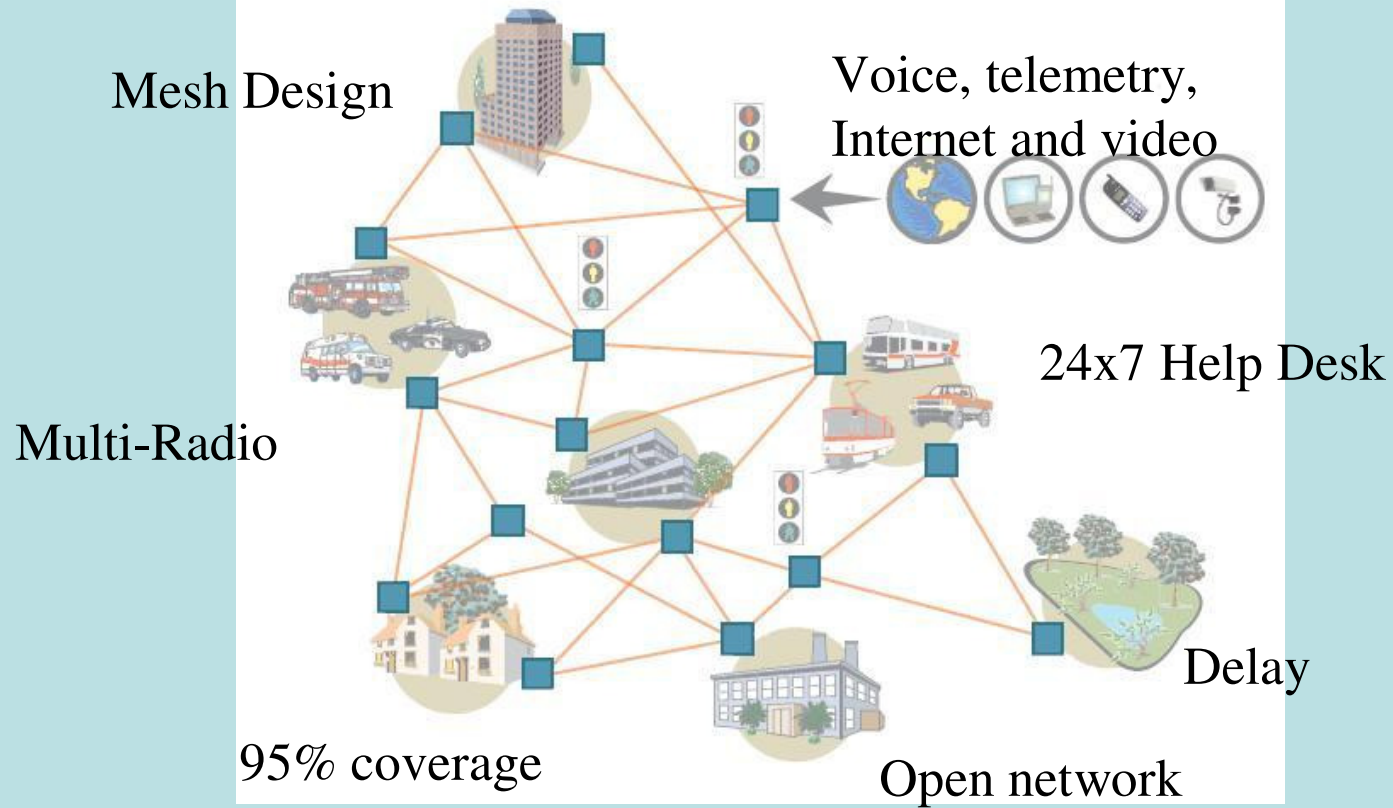
## Wireless Sarajevo Mesh Network *Applications*

- Power Utility  
Reports / GUI / e-mail, SCADA
- Fire protection system  
Video surveillance i Telemedica  
Truck GIS informations  
Traffic surveillance  
BIO alert sensors
- Water  
Water surveillance (SCADA)  
Video Security  
Telemetrija  
GIS informations



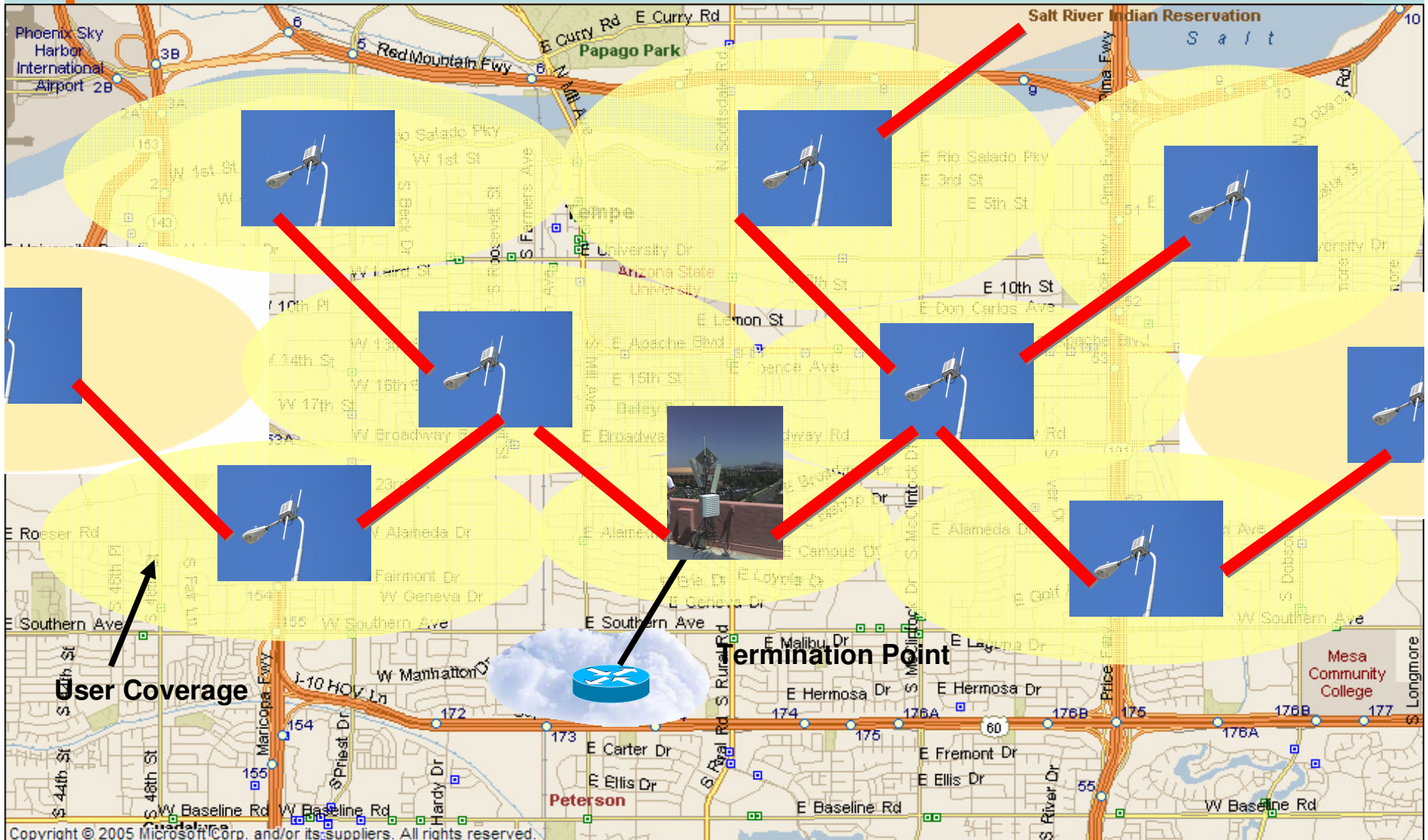
# Wireless Sarajevo Mesh Network

## Applications



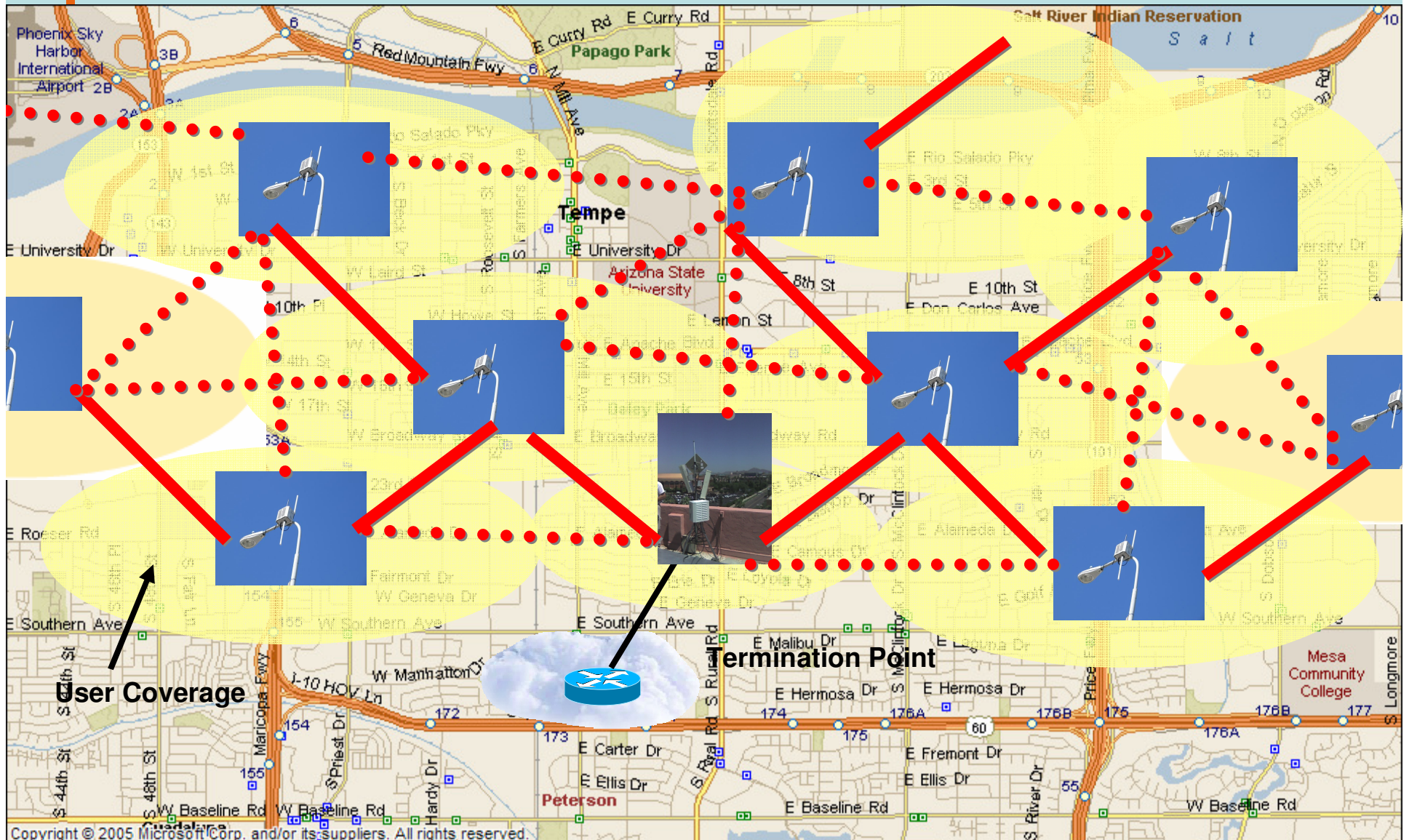
# Wireless Sarajevo Mesh Network

## Structured Wireless Mesh



# Wireless Sarajevo Mesh Network

## Structured Wireless Mesh



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*Sarajevo*

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**THANKS!**