



SPECIAL TELECOMMUNICATIONS SERVICE

**The Romanian State
Network
- RSN -**



Content



- Legal Framework
- Network Layers
- ICT Services & Apps
- 112 System Architecture



Legal Framework



- **The RSN is 100% state owned**
- **Law 92/1996 (STS), 76/1993 (ITU), GO34/2008 (112)**
- **Core Activities:** ICT services to Romanian authorities
- **Portfolio of Services:** fixed, nomadic and mobile
Voice/Data/Video & Security Services





Customers:



Ministry of Foreign Affairs

Ministry of Public Finance

Ministry of Transportations and
Infrastructure

Ministry of Justice

Ministry of Agriculture, Forest &
Rural Development

Ministry of Culture

Ministry of Communications &
Information Society

National Bank of Romania

National Agencies

Ministry of Administration and
Interior

Ministry of Public Health

**The Romanian
Parliament**

**The Presidential
Administration**

**The Romanian
Government**

Ministry of Defence

Guard & Protection Service

Romanian NSA

Ministry of Educations,
Research & Inovations

Ministry of Labor, Family
& Social Protection

Ministry of Economy &
Commerce

Ministry of Environment

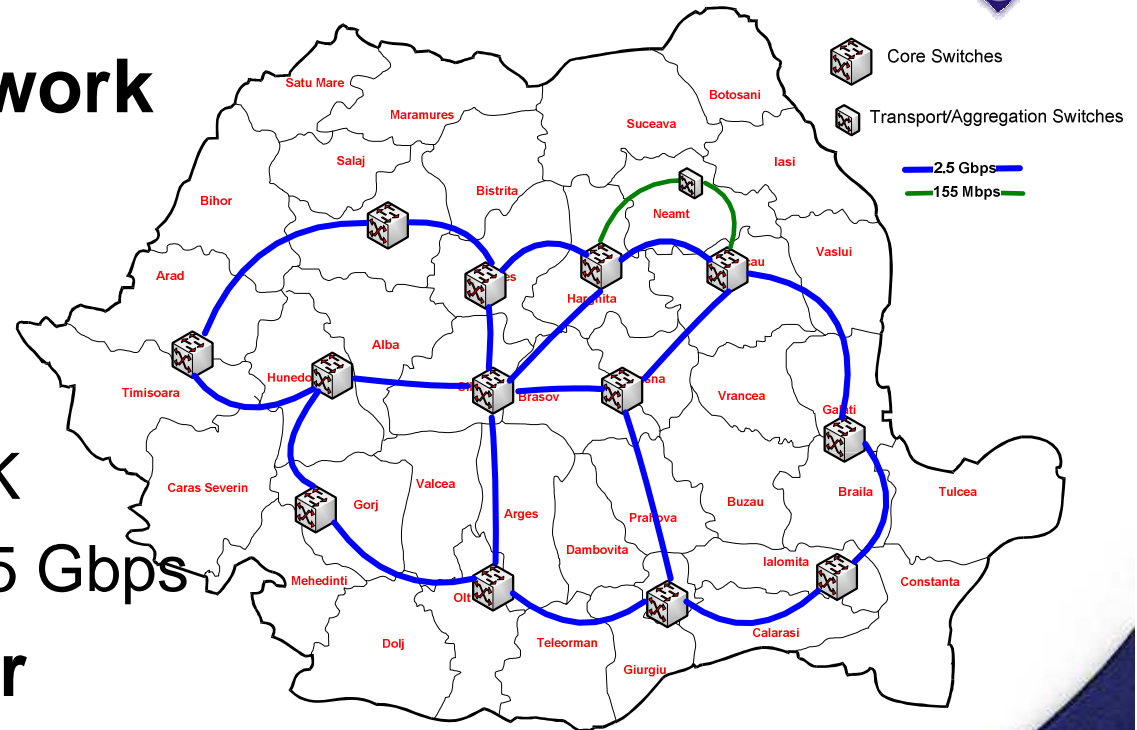
Ministry of Regional
Development



RSN Network Layers

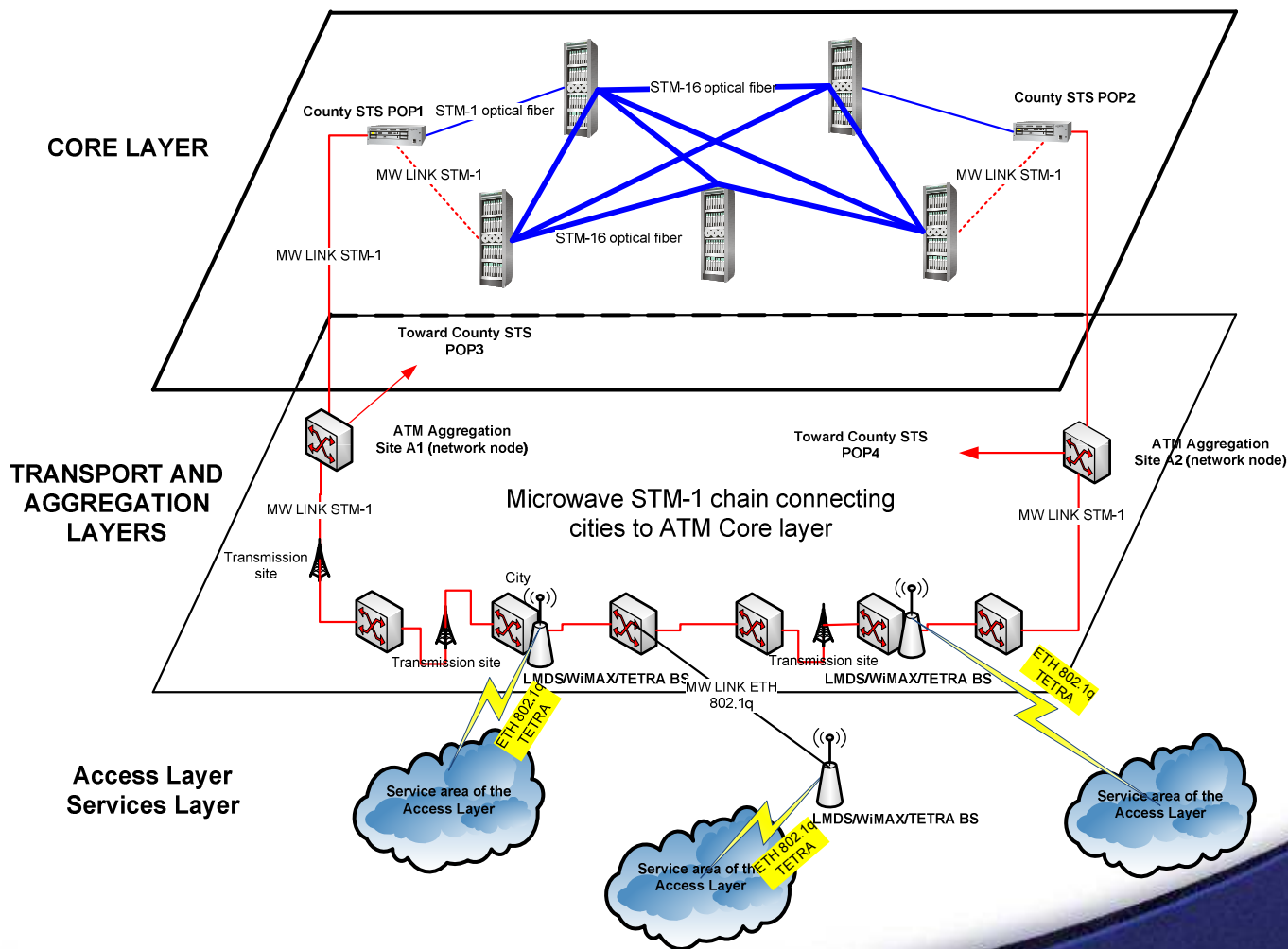


- **An integrated multiservices network**
- **Core Layer**
 - Optical Fiber
 - OA, WDM & SDH
 - Switching: ATM 15K
 - Traffic Capacity: 2.5 Gbps
- **Aggregation Layer**
 - Optical Fiber & STM1
 - Microwaves
 - Switching: ATM 7K
 - Traffic Capacity: 155 Mbps





RSN Network Layers





RSN Network Layers



- **Acces Layer**

- Cables
 - Optical Fiber
 - Copper
- Radio
 - P-P PDH & ETH
 - P-MP LMDS & WiMAX
- Routers & L3/L2 Switches





RSN Network Layers

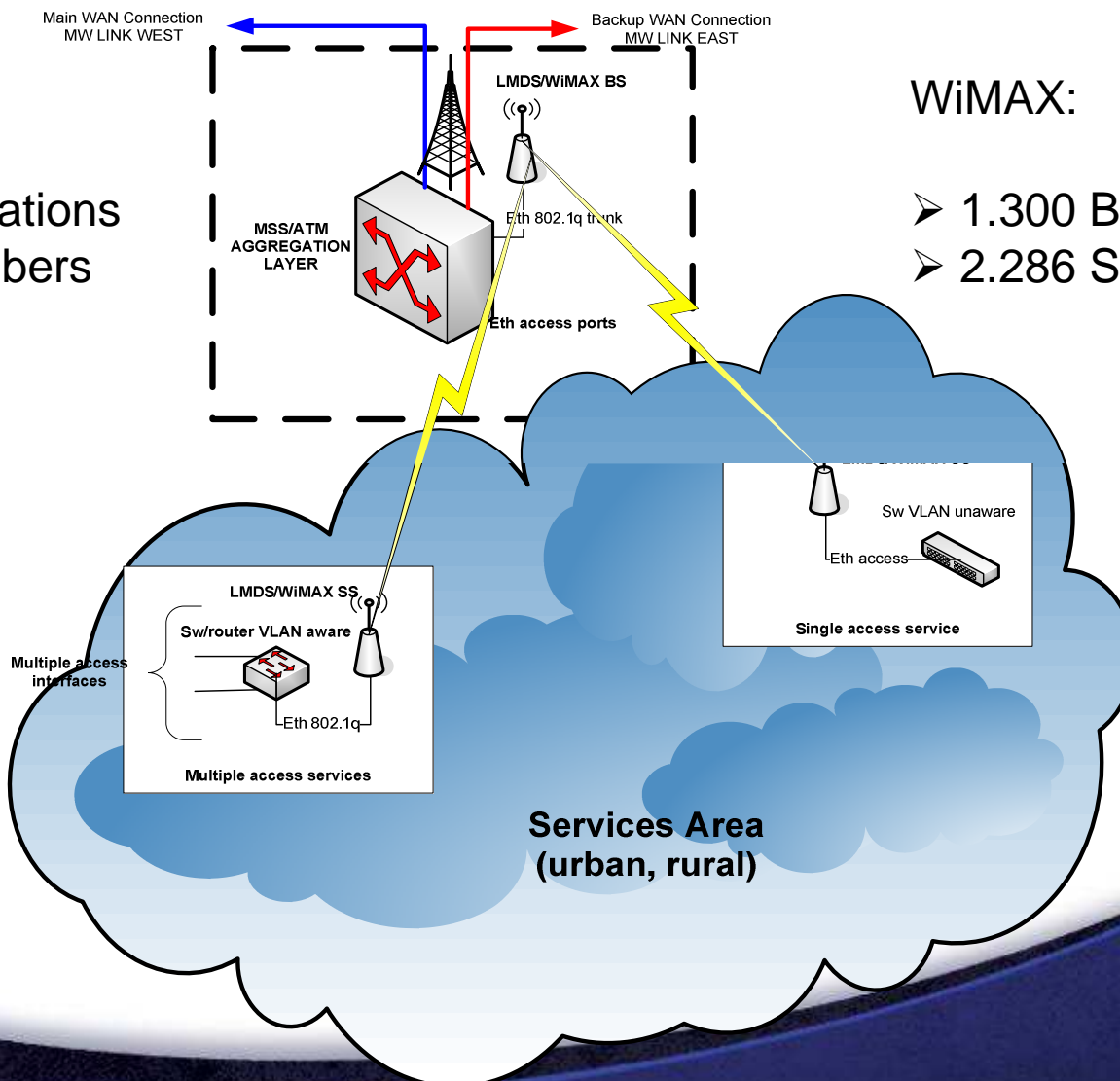


LMDS:

- 544 Base Stations
- 1.243 Subscribers

WiMAX:

- 1.300 Base Stations
- 2.286 Subscribers



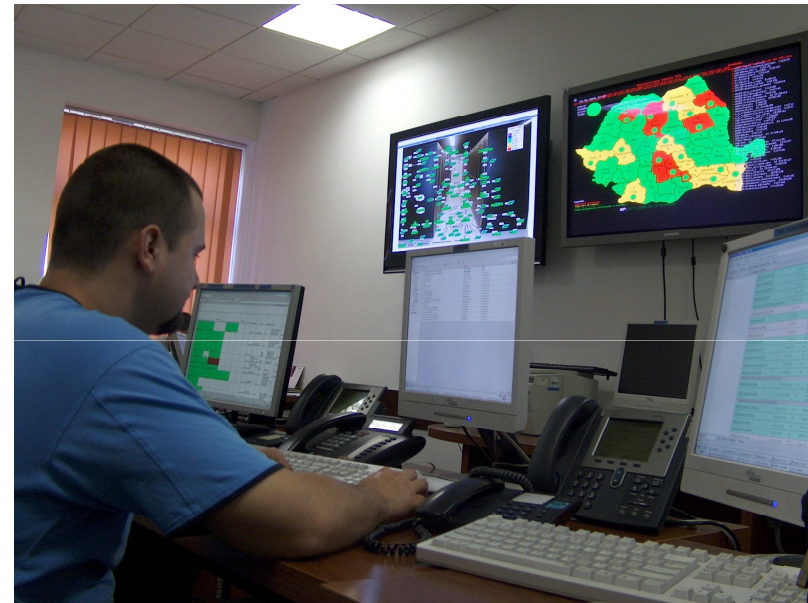


ICT Services & Applications



- **Fixed**

- Voice – TDM & IP
PBX
- Data – Intranet,
Internet
- Videoconference &
IPTv





ICT Services & Applications



- **Nomadic**

- Voice, Data, Video over VSAT



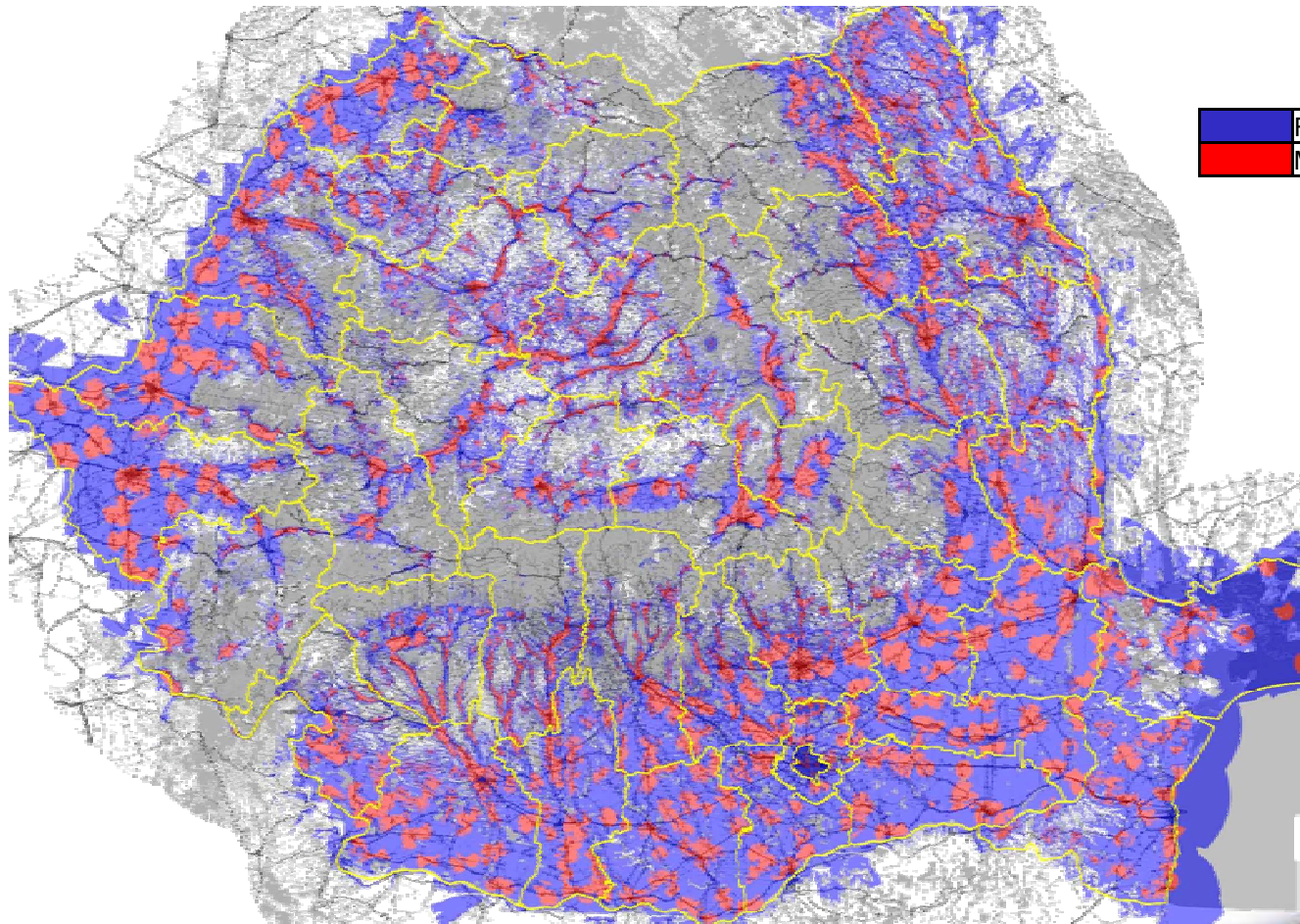
- **Mobile**

- Voice & Narrow Band Data over Tetra Network
- Broadband Data over WiMAX
- GSM APN





RSN Wimax Network Service Area



Blue	FIXED TERMINAL
Red	MOBILE TETRMINAL



RSN Tetra Network

u3



- **Tetra**

- 55.000 radios
- Coverage 70% HH, 90% M
- GoS 0.5%

- **Services**

- **Voce** Group/Selective/Emergency Calls
- **Data** ARL, WAP, still video
Single/Multi-Slot PD



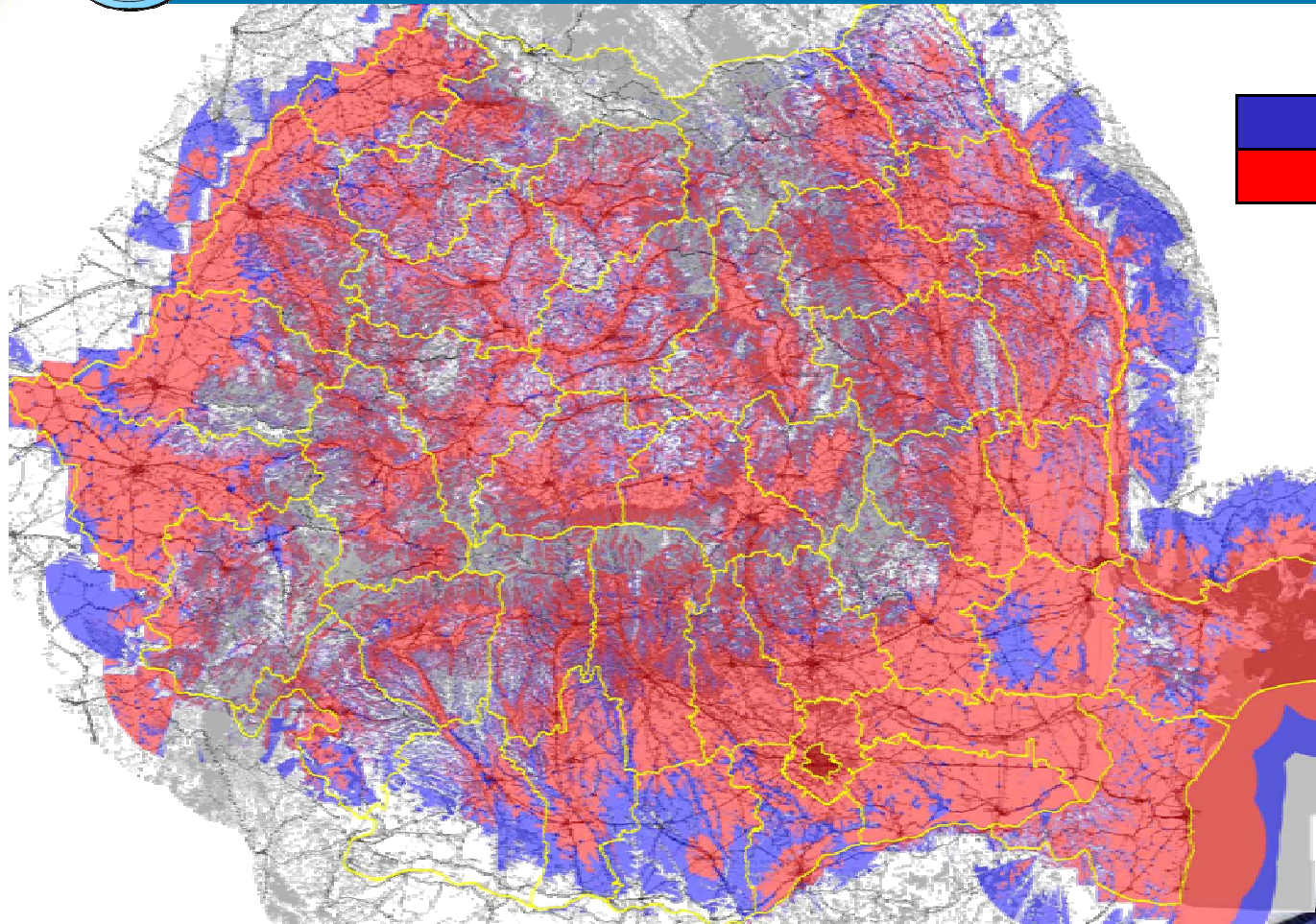
Slide 12


u3

poza 112 ecran localizare
user2, 29/02/2012



RSN Tetra Network Service Area



	MOBILE TERMINAL
	HANDHELD TETRMINAL



112 System

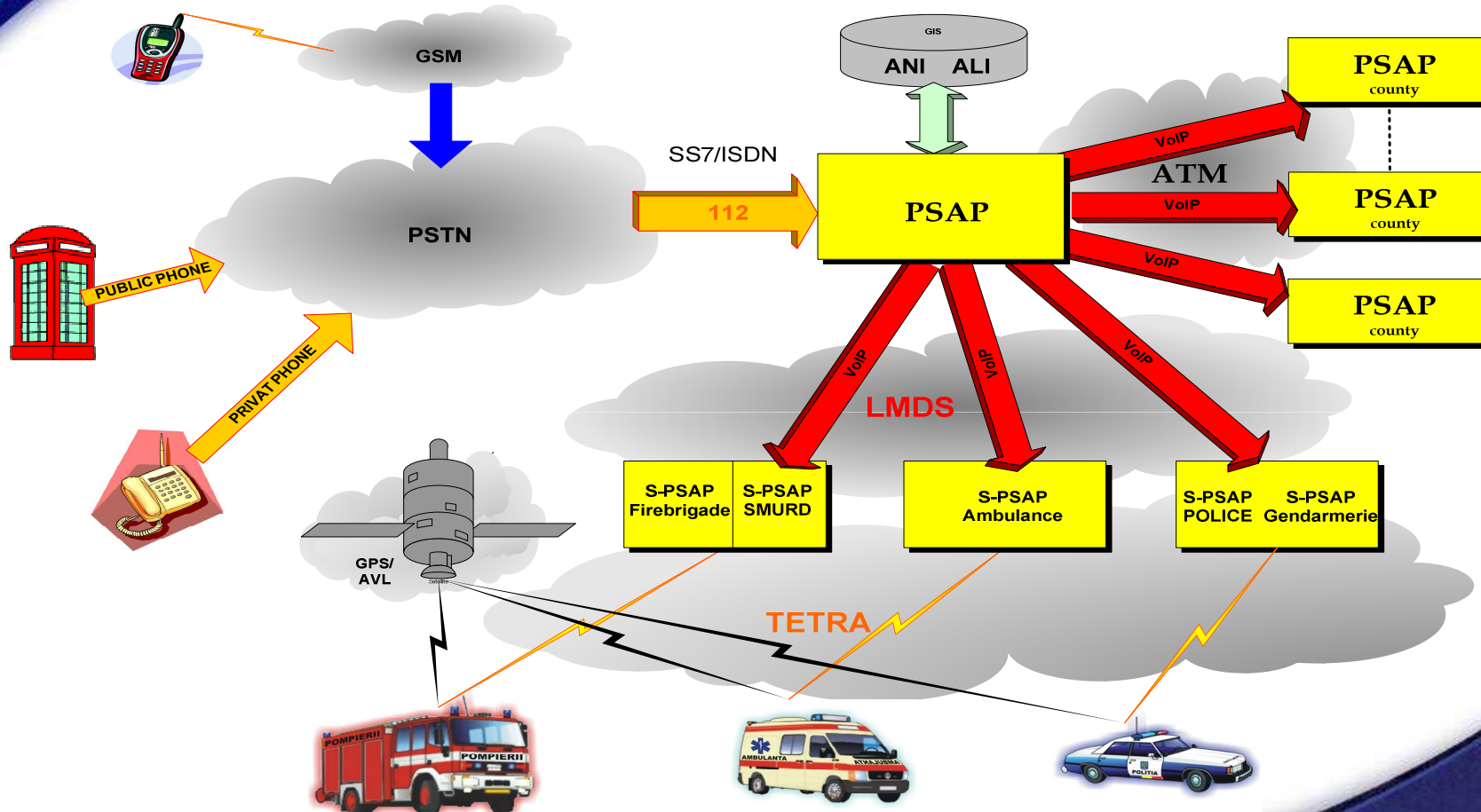


- **41 PSAP**
- **> 160 Dispatch Centers**
 - Police & Gendarmery
 - Medical Emergency Services
 - GIES
- **18 mil calls / 2011**



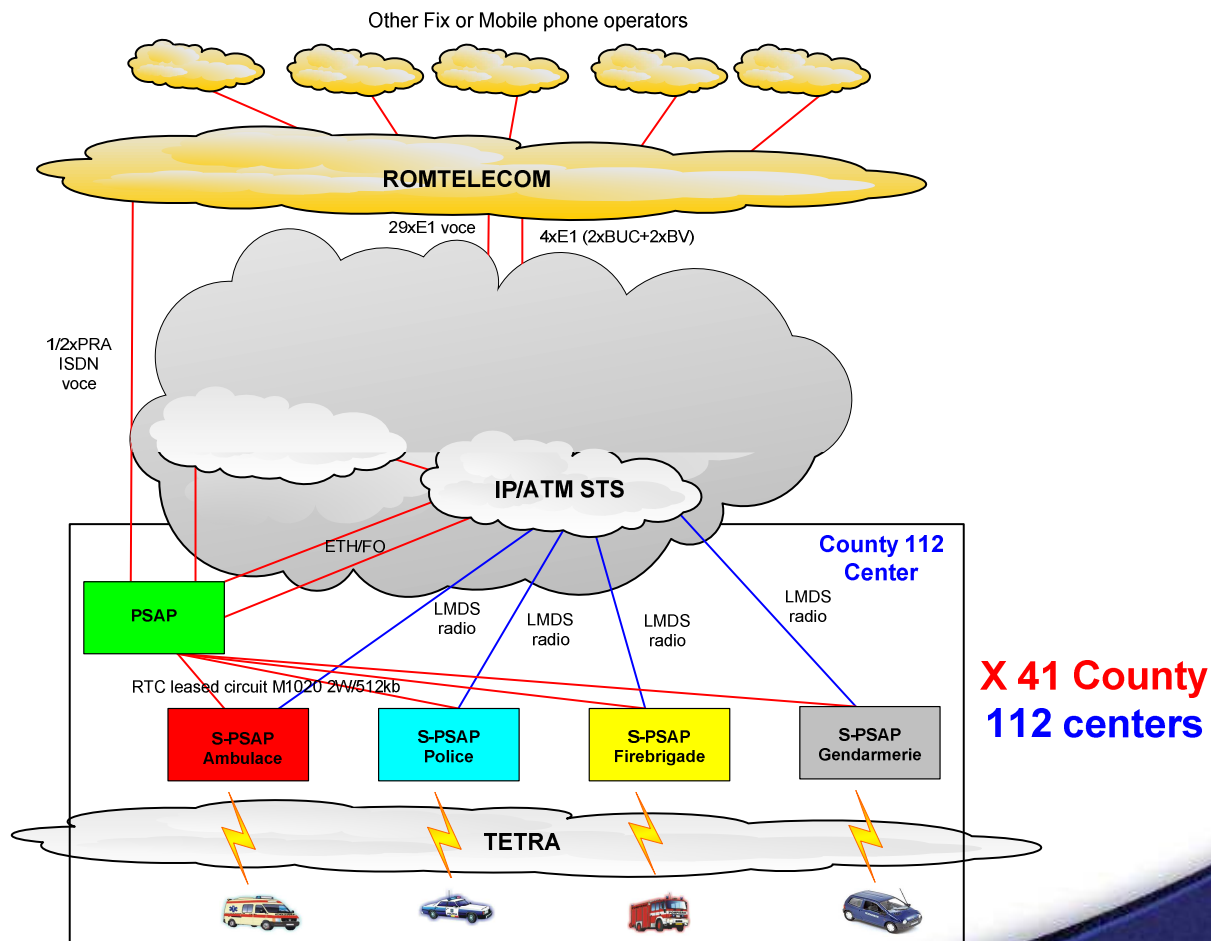


112 System Architecture



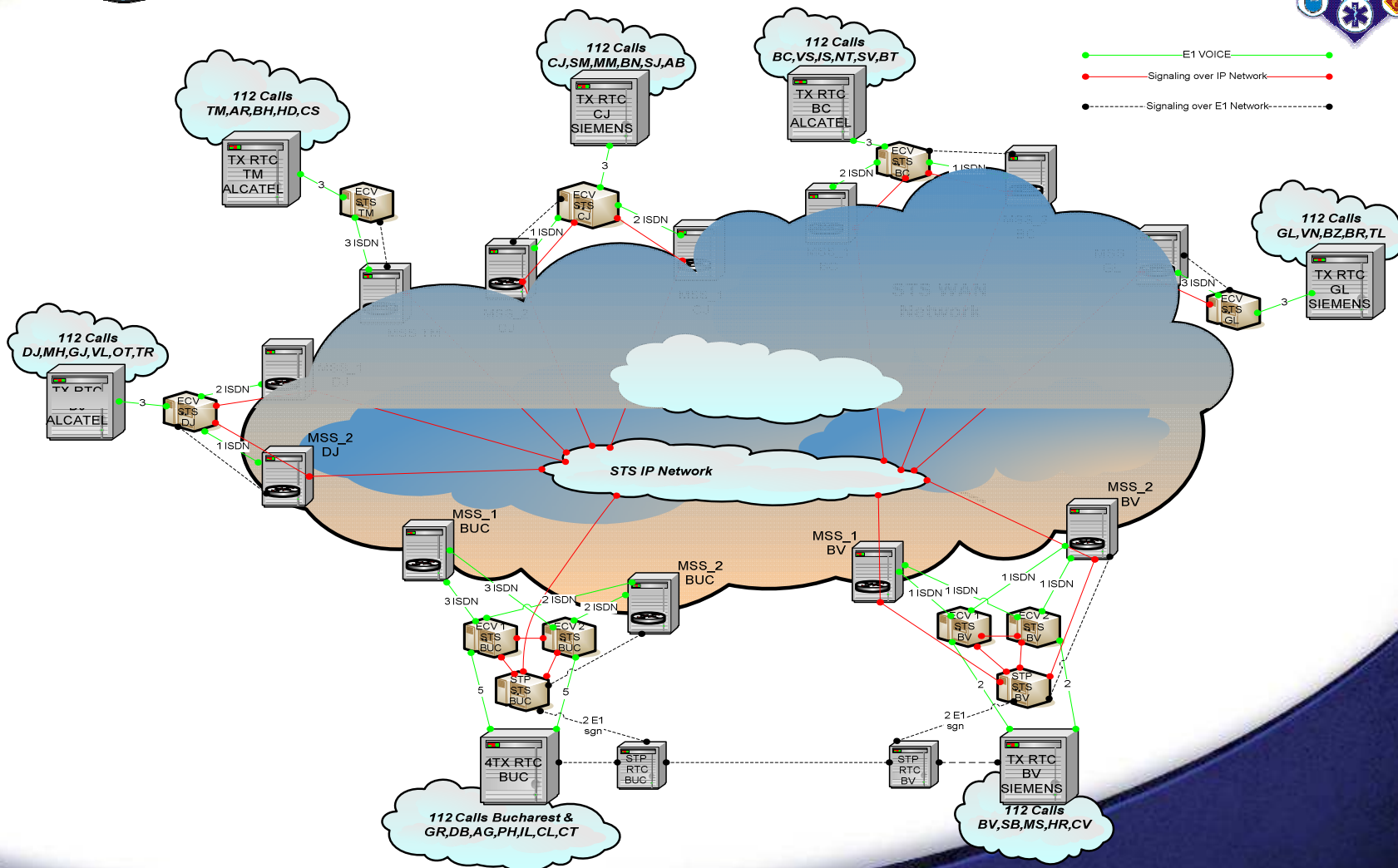


112 System Architecture





112 System Architecture





112 PSAP Interface



Nedefinit ACCIDENT DE METROU Prio: 1

Nedefinit ACCIDENT DE METROU Prio: 1

Persoana - H	Loc: P:Str. Timeretului 46 A44 1 11	Informati caz - Q
Eveniment Victima Apelant	Obiectiv: [dropdown] [Informatie] [Stergere]	Tip: Nedefinit
Introducere text	Adresa: Bucuresti	Prioritate: 1
Introducere text	Bucuresti	ID Caz: 112 Bucuresti 967
Mihaita: [input] <input type="checkbox"/> Anonim	Str: Timeretului 46	Stare: Personal
Moldoveanu: [input]	Bloc Scara Etaj Ap Interfon	Centru apel actual: <input type="checkbox"/> Preordonat
0727746113	A44 1 11	112 Bucuresti
Victima	Buc	Supraveghere in timp
Mihaita: [input]	<input type="checkbox"/> Loc public	Organizatie: [dropdown] Adaugare
Moldoveanu: [input]	Directia ruta	Organizatie: sts
Unitati: [dropdown] Sex: [dropdown]	17:20 miercuri 22 august	Descriere: Serviciul de Teleco...
Varsta: [dropdown]		Creare: 22.08.2007 17:20:29
<input type="checkbox"/> Urgent		Mihai: m

ACCIDENT DE METROU CU VICTIME

Persoana - H | Comentarii - A | Fișiere atasate - G | Loc: P:Str. Timeretului 46 A44 1 11 | Cautare numar - T | Obiective gasite - O: 0 | Actiuni - L | Informati caz - Q

Index - I | Sfat - R

Cautare in index

ex Cooperare

- 112: Nedefinit
- 112: Amenintare cu BOMBA
- 112: Interes de serviciu AMB
- 112: Interes de serviciu FB
- 112: Interes de serviciu POL
- 112: Interes de serviciu POL ILFO
- 112: ACCIDENT DE AVIATIE
- 112: ACCIDENT PUTIER
- 112: ACCIDENT DE METROU
- 112: ACCIDENT NAVAL
- 112: ACCIDENTE DIVERSE
- 112: ACCIDENT N.B.C.R.
- 112: ACCIDENTE MONTANE
- 112: INUNDAȚII
- 112: AUTOVEHICULE LOVITE PE CALEA PERATA

CU VICTIME

- 1 BLOCARE IN TUNEL
- 1 INCENDIU
- 1 ATENTAT
- 1 EMISIE DE FUM ȘI SAU SUBSTANȚE PERICULOASE
- 1 AMENINTARE CU SUBSTANȚE PERICULOASE/EXPLOZIE
- 1 DIVERSE NEINDICATE
- 1 PERSOANE BLOCATE
- 1 IN TUNELE/PASAJE
- 1 INCĂLCĂTURI PERICULOASE ȘI SAU EXPLOZIBILE
- 1 AUTOVEHICULE LOVITE PE CALEA PERATA

Apelază Ambulanța

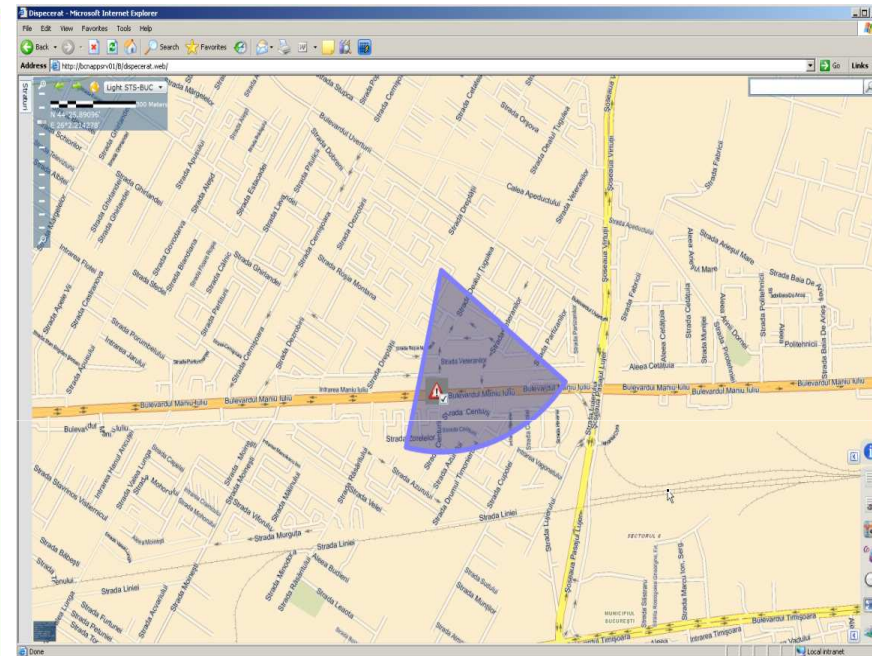
Apelază Pompieri

Apelază Poliție

Apelază Smurd

Intrebari - F

Personel 22.08.2007 17:20:29





112 Dispatcher Interface



Politie Accident de metrou Prio: 1

Persoana -H

Eveniment | Victima | Apelant

Introducere text

Mihaita Anonim

Moldoveanu

0727746113

Victima

Mihaita

Moldoveanu

Unitati Sex

Varsta

Urgent

Loc: P:Str. Tineretului 46 A44 1 11

Obiectiv

Adresa

Bucuresti

Bucuresti

Str. Tineretului 46

Bloc Scara Etaj Ap Interfon

A44 1 11

Str. Circa politie 10 - Zona 2

Loc public

Directia ruta

17:23 miercuri 22 august

Tip Prioritate

Politie 1

ID Caz Stare

112 Bucuresti 987 Comandat

Centru epel actual Preordonat

112 Bucuresti

Supraveghere in timp

Organizatie

Organizatie Descriere

sts Serviciul de Teleco...

Creere

22.08.2007 17:23:03

Accident de metrou Cu morti

Persoana -H Comentarii -A

Plan -N : 0/1

Resurse asociate -U

Resursa	Stare	Temp	Categorie
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Terminare

Plan index: Nivel Index 1

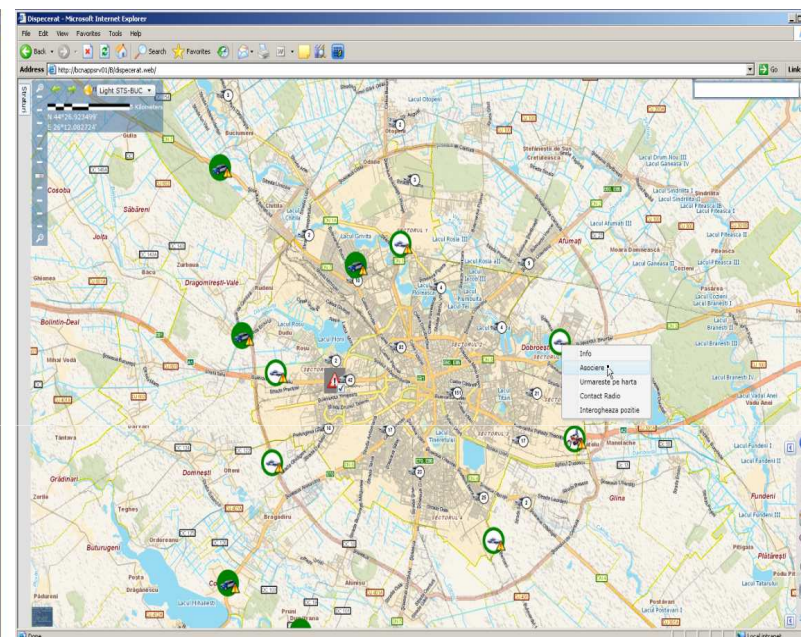
- Activare lista contact: Politie toate
- Activare lista contact: polordine pu Y
- Transmiterea evenimentului subun competenta
- Informarea conducerii politiei capit
- Informarea MAI si IGPR dispecera
- Informare Prefectura
- Transmisie telex cand este cazul

====Plan sector politie====

Timp indicat 22.08.2007 17:23:37

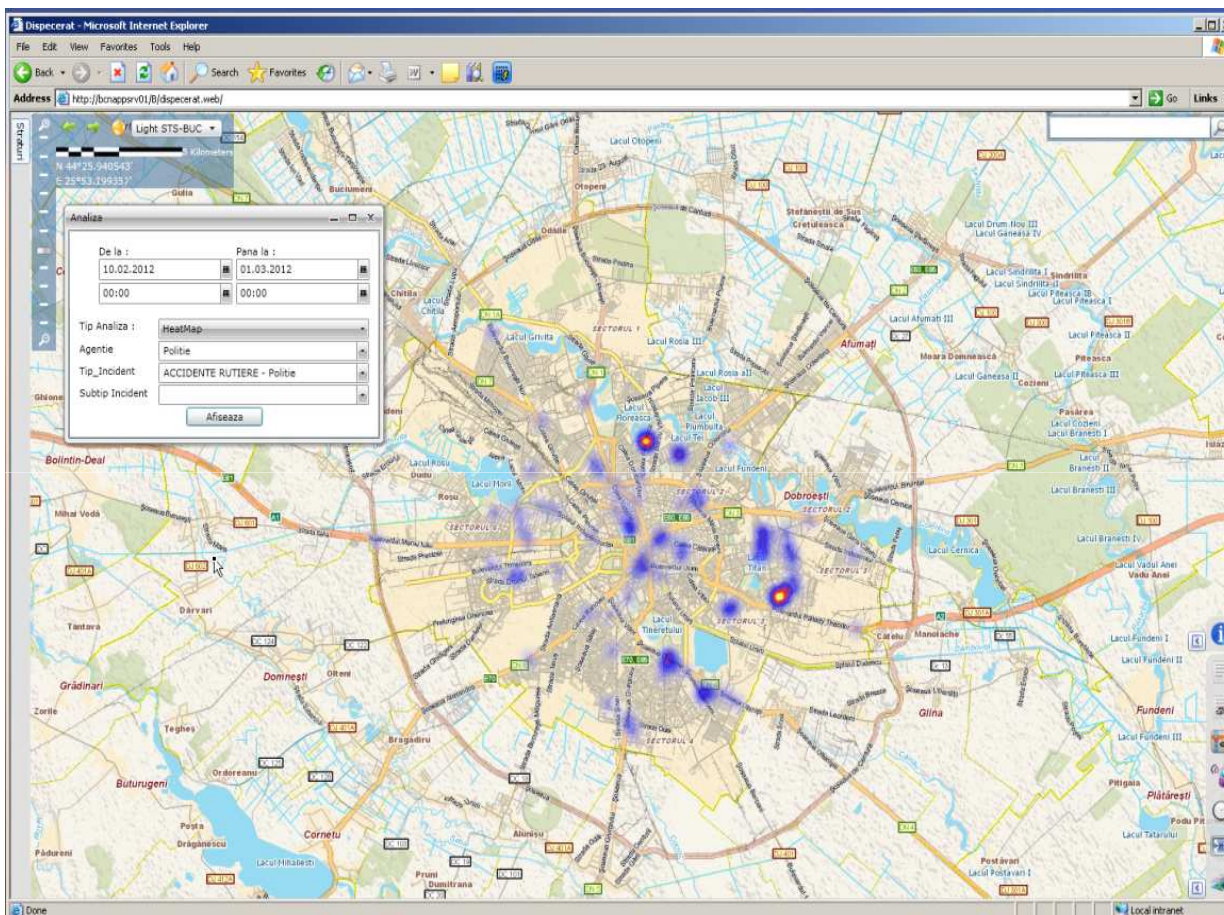
Plan -N : 0/1 Actiuni -L Fisiere atasate -G Resurse asociate -U Tratate misiune, ulterioara -E

Public 22.08.2007 17:20:29





112 Heat Map Analysis





112 Multilevel Redundancy



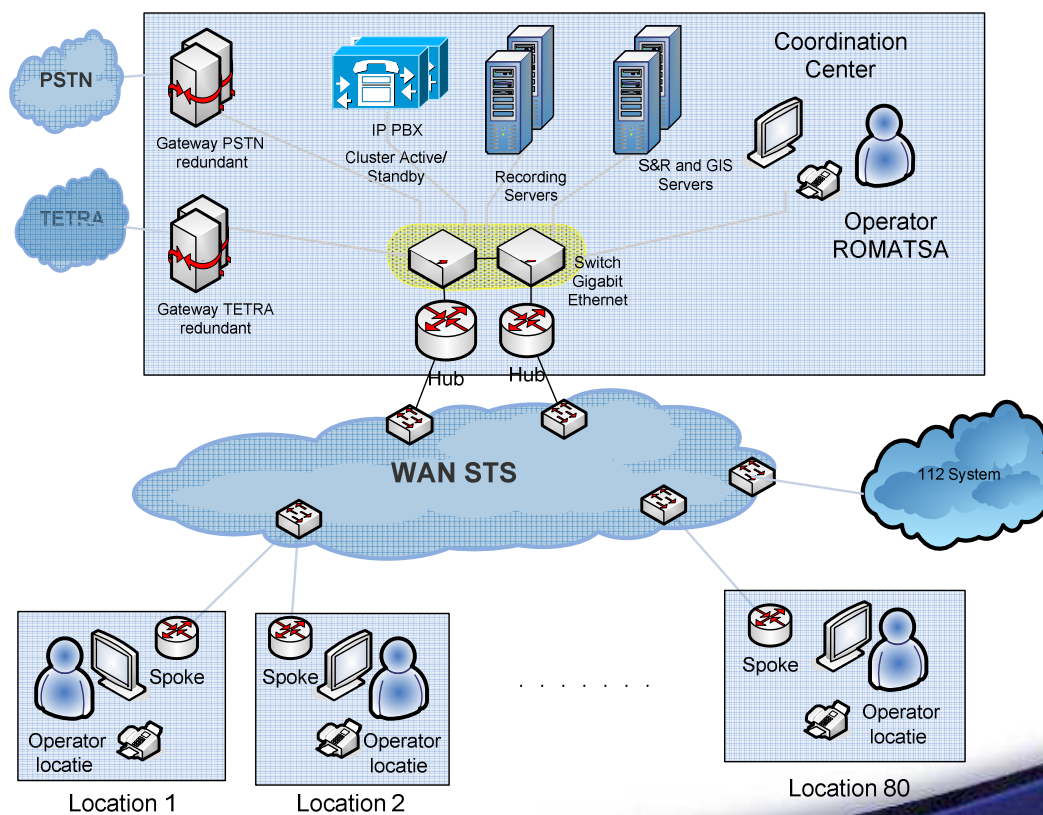
- **Equipment**
 - Hot-Standby Modules – PS, Processors, Interfaces
- **Network**
 - Fault Detection & Automatic routing on alternate path
- **PSAP & Dispatcher Services**
 - Primary – Voice & Data Services
 - Secondary – Voice Only
 - Contingency – Failover in the neighboring site
 - Bucharest Backup Center
- **SS7, Localization & GIS in 2 active sites**



112 Related IS & Apps



• Search & Rescue System

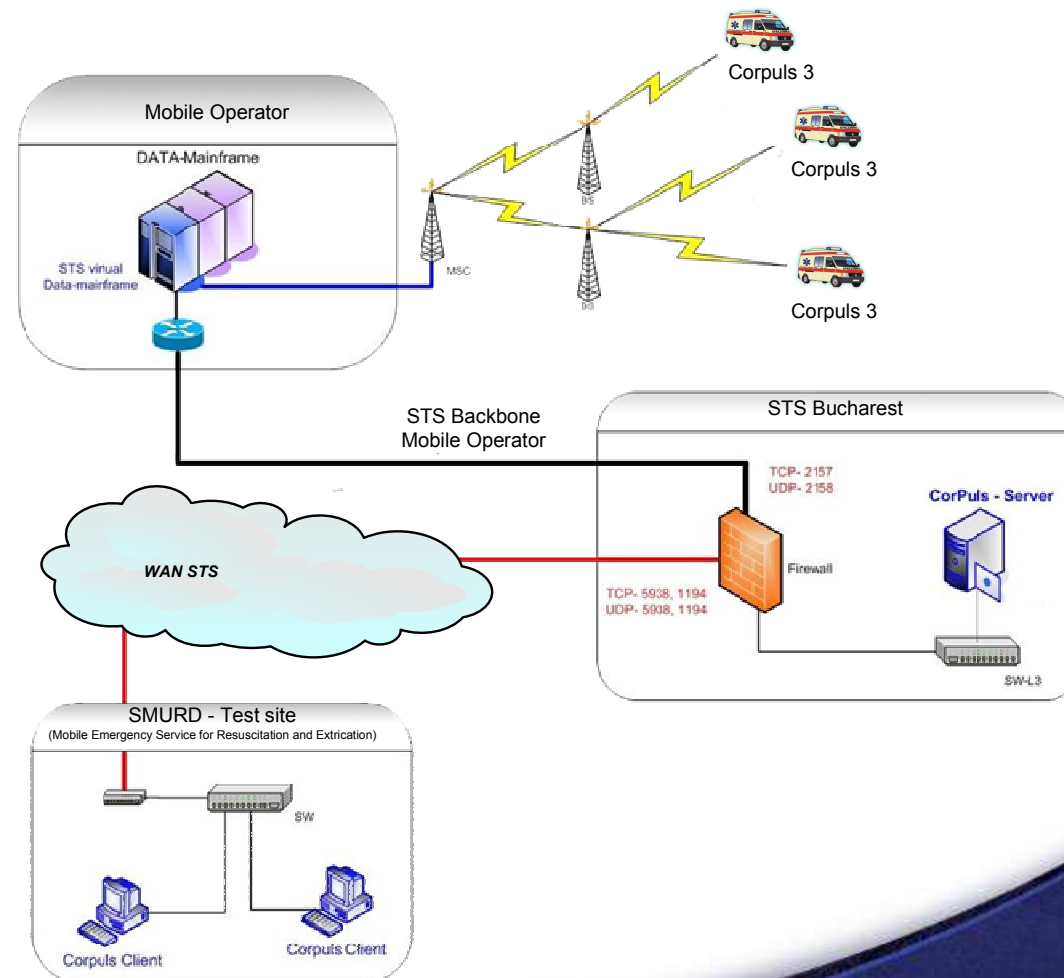




112 Related IS & Apps



- **RT ECG**





112 Related IS & Apps



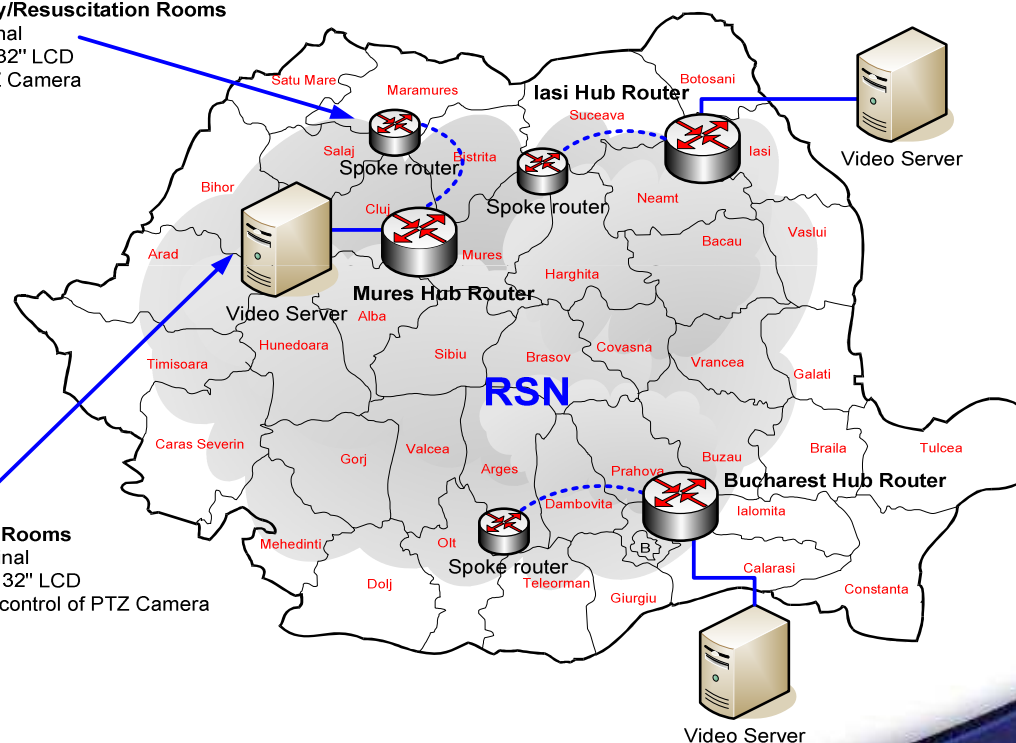
- **Telemedicine**

80xEmergency/Resuscitation Rooms

- 1xVideo Terminal
- HD Camera & 32" LCD
- 1xAuxiliary PTZ Camera
- 1xEKG

3xEvaluation Rooms

- 1xVideo Terminal
- HD Camera & 32" LCD
- 2xJoystick for control of PTZ Camera
- 4xEKG WKS



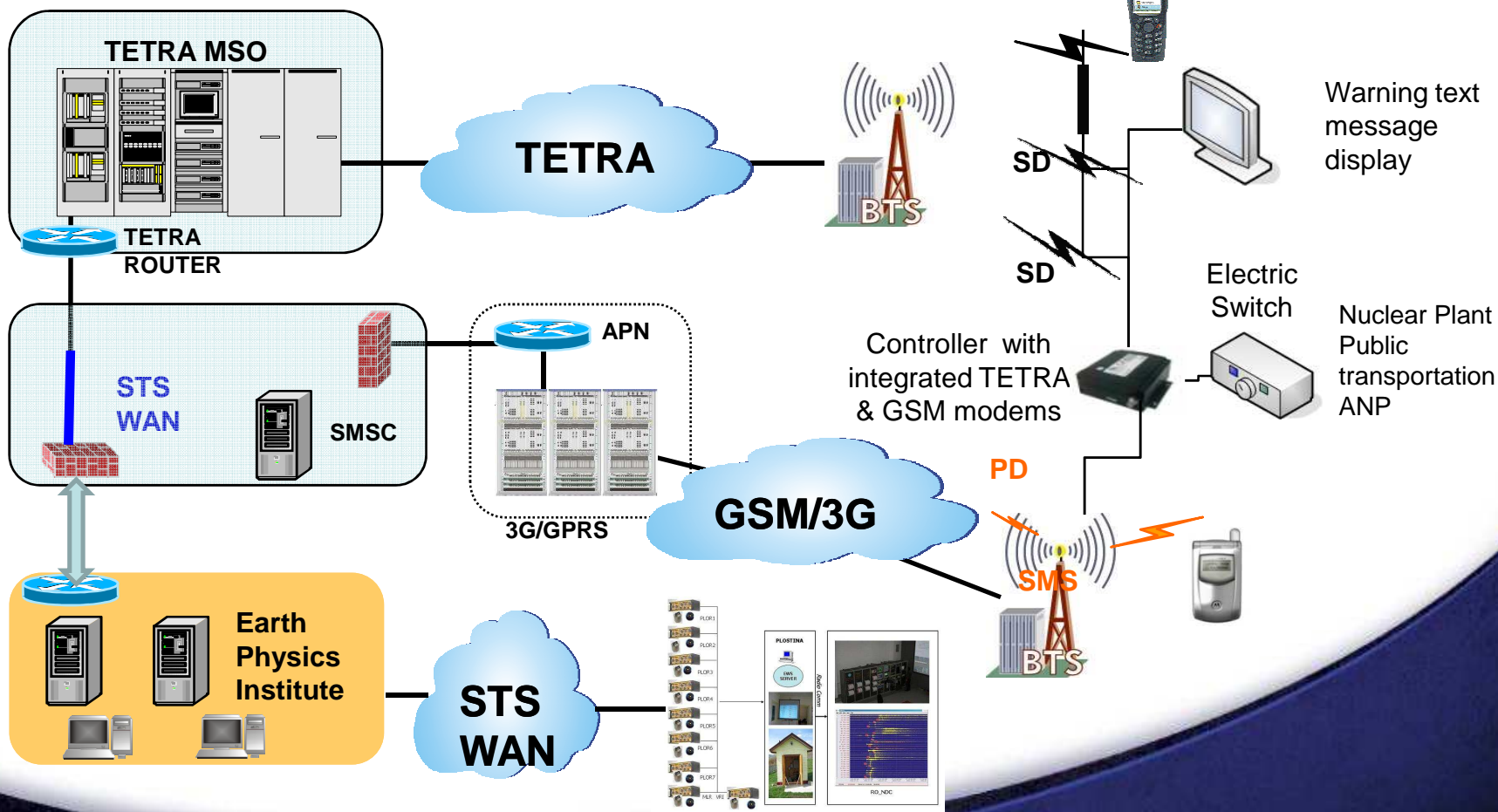


112 Related IS & Apps

u6



• Earthquake Early Warning



Slide 25

u6

DR

user2, 29/02/2012



Thank you!