

Alcatel-Lucent & Orange, a trusted partner in the long run of modernizing the Healthcare system in Romania



Agenda

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2. Healthcare system - requirements and challenges
3. Alcatel-Lucent implication in the Romanian Healthcare system
2. National Network for Critical Medicine Pilot Project - a start toward an integrate ITC Healthcare system
3. NNCM - part of two European healthcare projects
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Alcatel-Lucent & Orange, a long term
committed partner to meet the healthcare
challenges

Leadership in Delivering Industry Specific Solutions Worldwide

becoming a European leader in e-health

Alcatel-Lucent & ORANGE

Based on his partnership and his portfolio of France Telecom group e-health solutions, Alcatel-Lucent & Orange Romania is to boost the development of e-health

- a successful combination of information technology and health care
- The health sector is changing rapidly in various areas such as its network-based organisation remote consultations, remote diagnoses patient records, digital archiving of medical imagery

the link between the community and the hospital, nomad working, medical information websites and the Internet and mobile phones.

More than ever, health is a challenge to society

The ageing population and the increased number of chronic illnesses (diabetes, hypertension, respiratory illnesses) are leading to an increased demand for hospital places and a rise in medical costs. The challenge is clear: how can we improve the effectiveness of health care systems whilst reducing expenditure?

At the heart of the patient-doctor relationship

Communication technologies are modernising and improving health systems. They contribute to optimising practices ensuring quality and access to health care for all.

E-health is coming

To provide innovative responses that respond to the expectations of people, patients, health professionals, insurers and institutions.

Leadership in Delivering Industry Specific Solutions Worldwide

Financial Strength and Global Reach

- USD 25 billion in revenues
- 80K+ employees worldwide
- Presence in more than 130 countries
- Top 10 most widely-held stocks (NYSE)
- Recognized communications industry leadership
- High-level Governmental Security clearances

Product and Technology Leadership

- Full suite of Carrier Grade Voice, Data and Fixed Mobile Convergence Solutions for Enterprise and Government Customers
- #1 Worldwide in Enterprise Contact Center Solutions
- #1 Worldwide in Optical Infrastructure and Transport
- #1 Worldwide in Access Solutions
- #1 Worldwide in IP Address Management
- #2 Worldwide in IP Multiservice Edge Routing
- Worldwide leader in IP-video delivery platforms and Solutions Integration
- Market Leader in Advanced Wireless Technology (WiMAX)
- Providing network optimization software to 75% of the Fortune 100

Industry Expertise and Customer References

- #1 Worldwide provider of multi-product solutions to telecommunications and networking companies
- More than 250,000 Enterprise and Gov't customers worldwide
- Managing more than 40 service provider and enterprise networks worldwide
- 5 GNOCs on 3 continents serving top Fortune 500
- Unparalleled multivendor capabilities
- Industry practices and industry applications

Innovation

- >USD 2 billion invested annually in research and innovation
- >25K R&D engineers and scientists, including Bell Labs
- More than 25,000 patents across broad technology portfolio
- >25 major Innovations Centers worldwide

Alcatel-Lucent South East Europe: South East Europe Profile

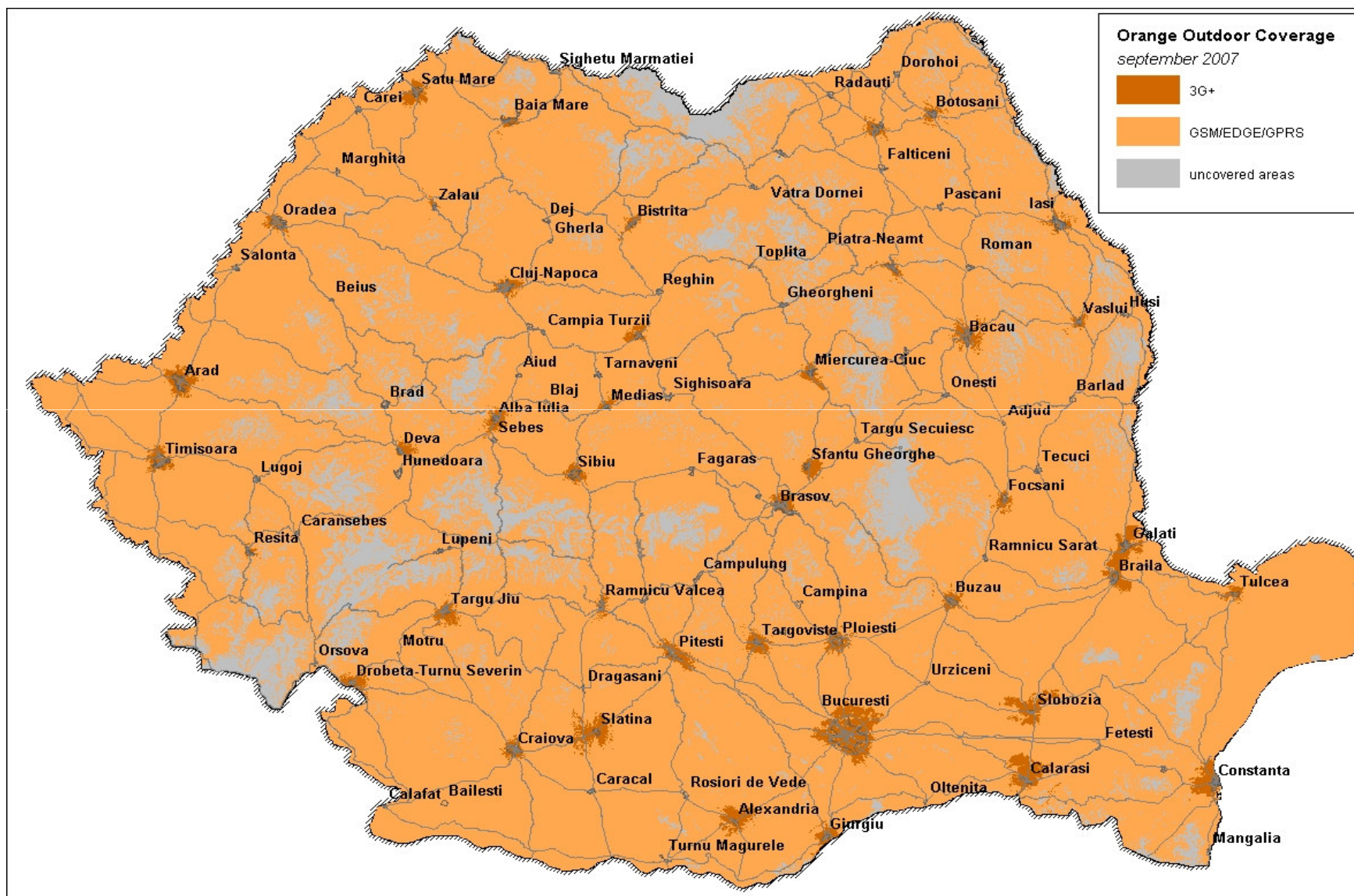


- ALCATEL-LUCENT Romania is a hub of South Eastern Europe Region, coordinating 12 countries, having 1200 employees & 9 branches in the region (Albania, Bosnia & Herzegovina, Bulgaria, Croatia, Greece, FYRO Macedonia, Romania, Rep. Moldova and Serbia)
- Alcatel-Lucent South East Europe offers a large set of professional activities: sales & marketing, operations & maintenance and IT&C development as back office support.

Orange Romania in 2007

- **leader** of the mobile telecom market, with 9,31 million customers (Q3 2007)
- the largest mobile 2G / EDGE (2,75G) / 3G / 3G+ integrated network:
 - population coverage 2G - 96,88%
 - territory coverage - 81.28%
 - EDGE (2,75G) - national coverage
 - 3G + in 20 major cities and 41 cities until the end of the year
 - Dedicated corporate Fixed WIMAX network
 - Territory coverage : 70%
 - Cities coverage : top 20

ORO coverage map

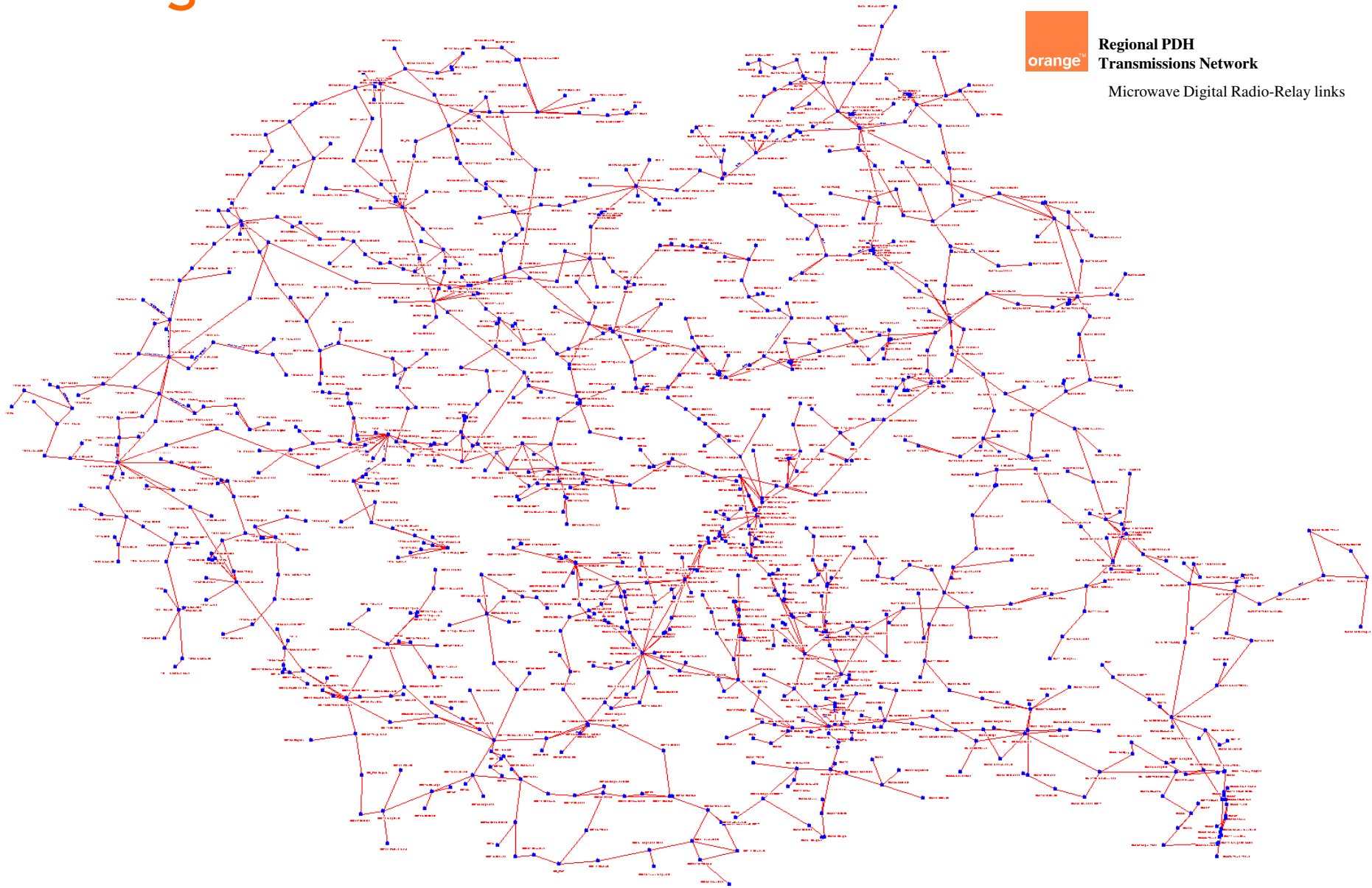


Orange - Transmission Network PDH /SDH

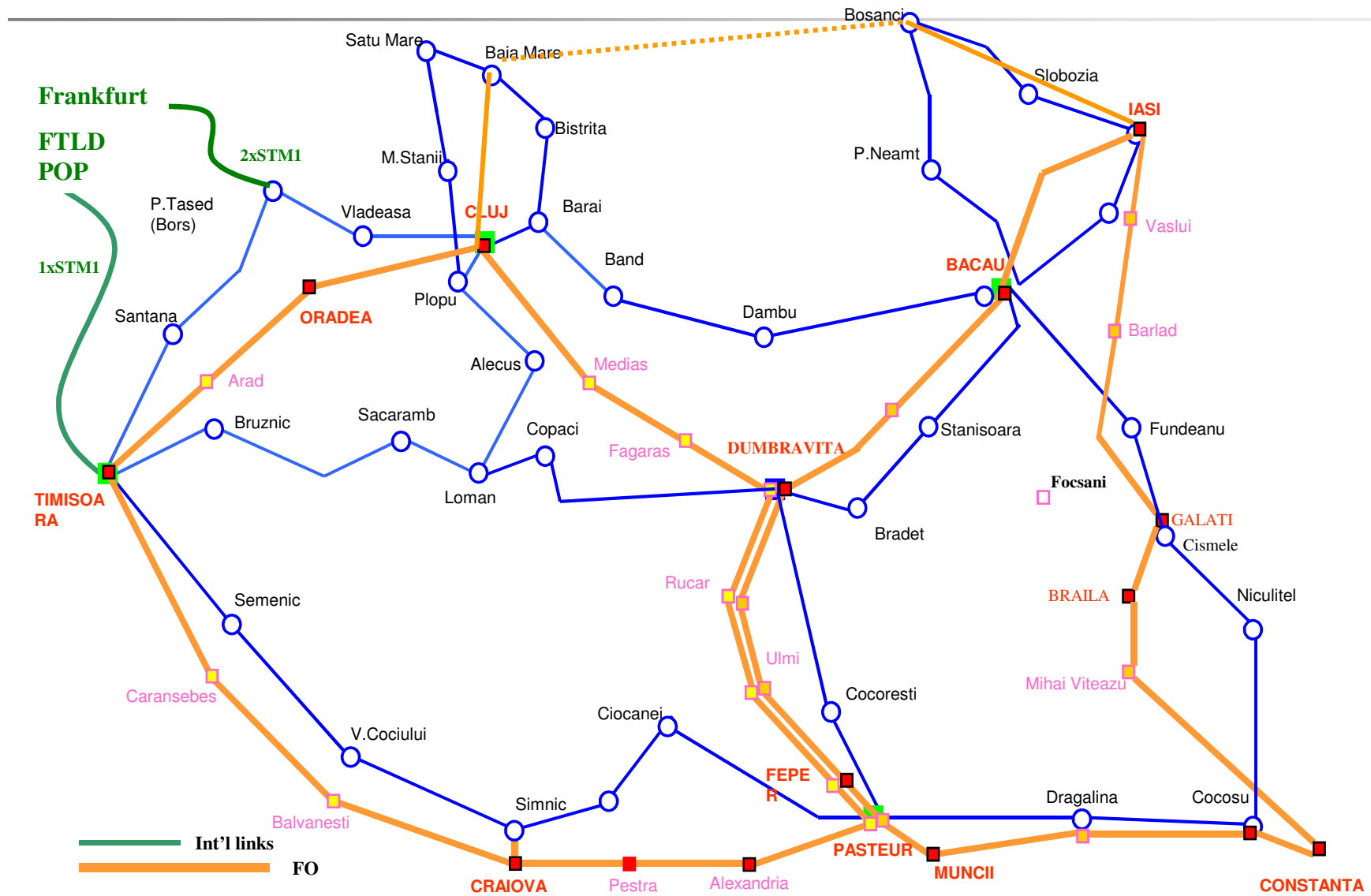


**Regional PDH
Transmissions Network**

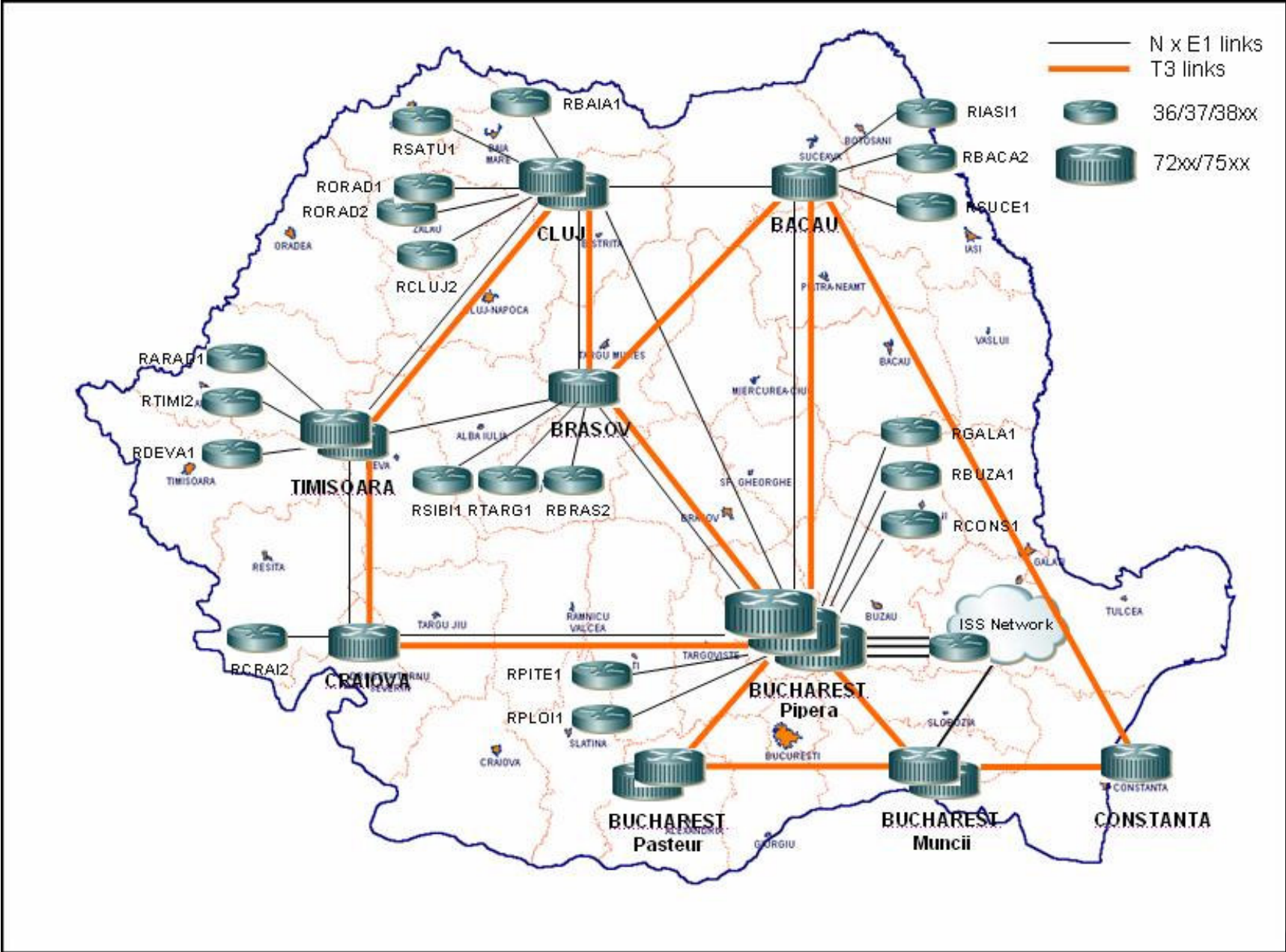
Microwave Digital Radio-Relay links



transmission network - SDH Backbone



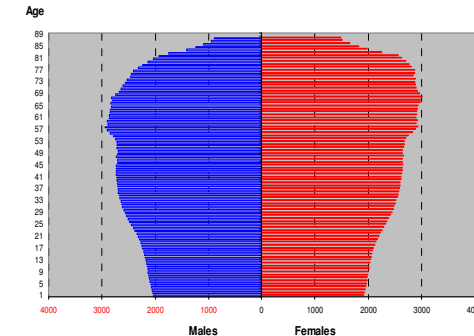
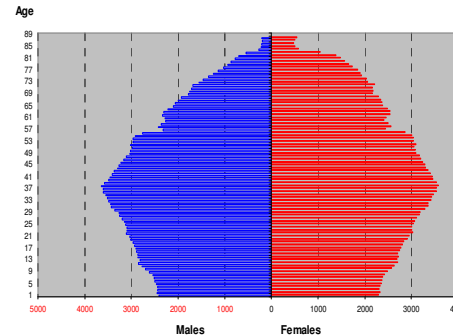
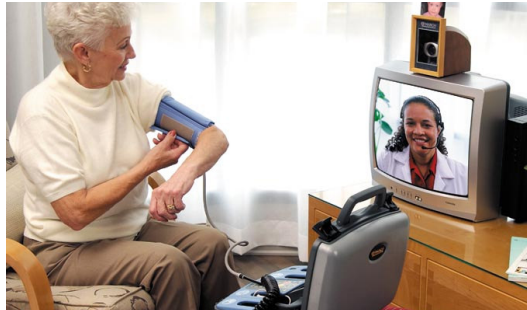
MPLS - multiservice network architecture



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Healthcare system - requirements and challenges

Healthcare: Expectations and Challenges



- **Citizens have growing expectations for better, safer healthcare services and better quality of life**

- Continuity of care at home (post op, chronic diseases)
- Security and privacy
- Anytime, anywhere
- Access for all to best treatment (urban, semi rural, rural)
- Remain autonomous when elderly or disabled

- **Increased challenges lead governments and regions to consider healthcare as costs**

- Increased share of GDP (7% to 11%)
 - 70% costs: chronic diseases
 - Aging population
- Quality of care and organizational efficiency
- Scarcity of clinical staff
- Medical errors prevention
- Continuity of care: find alternatives to in-patient care
- Home care for the elderly and disabled

The world is changing....

Are we prepared for the changes?

The World of Healthcare is Changing...

The changes in healthcare require significant capability from the health info structure, capability which does not fully exist today



There is a big difference...

The World of Healthcare is Changing...

The Old World

- Provider-focused
- Illness
- Site-of-care
- Episode Management
- Supply Management
- Solitary decision making
- Efficiency
- De-centralized, generalized care



The New World

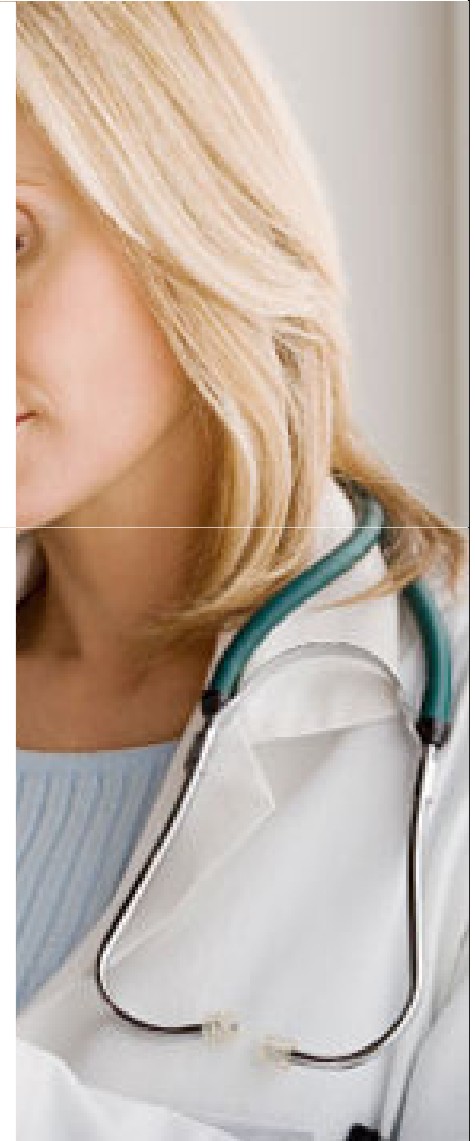
- Patient & family-focused
- Wellness
- Continuum of care
- Disease Management
- Demand Management
- Collaborative, evidence-based decisions
- Effectiveness
- Centralized, specialized care

3

Alcatel-Lucent implication in Romanian healthcare system

Alcatel-Lucent implication in the Romanian Healthcare system

- Alcatel-Lucent has a great experience in health informatization projects, at global level but also in Romania
- In Romania, Alcatel-Lucent has a significant involvement in improving the healthcare system's performance and efficiency by using the latest technologies, through the **National Network for Critical Medicine** project that allows videoconferencing, telephony network, electronic health record, patients remote monitoring.



Alcatel-Lucent long term committed partner

- Alcatel-Lucent local initiative, National Network for Critical Medicine, succeeded to obtain european recognition and become part of two important european projects: **Near-To-Needs** and **Health Optimum**.
- **Near-to-needs** project followed the interconnection of Romanian and Italian IT systems through satellite for offering tele-medicine services. The pilot project was made between the hospitals from Treviso (Veneto, Italy) and Timisoara (Romania).
- The objective of **Health Optimum** project is to provide online healthcare services for a large area of medical specialities.
- Alcatel-Lucent is a founder member of “**HL7**” local association. HL7 main propose is to promote the standard HL7 in Romania. This standard is used at global level for IT healthcare systems integration.



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National Network for Critical Medicine Pilot Project - a first step toward an integrate ITC Healthcare system

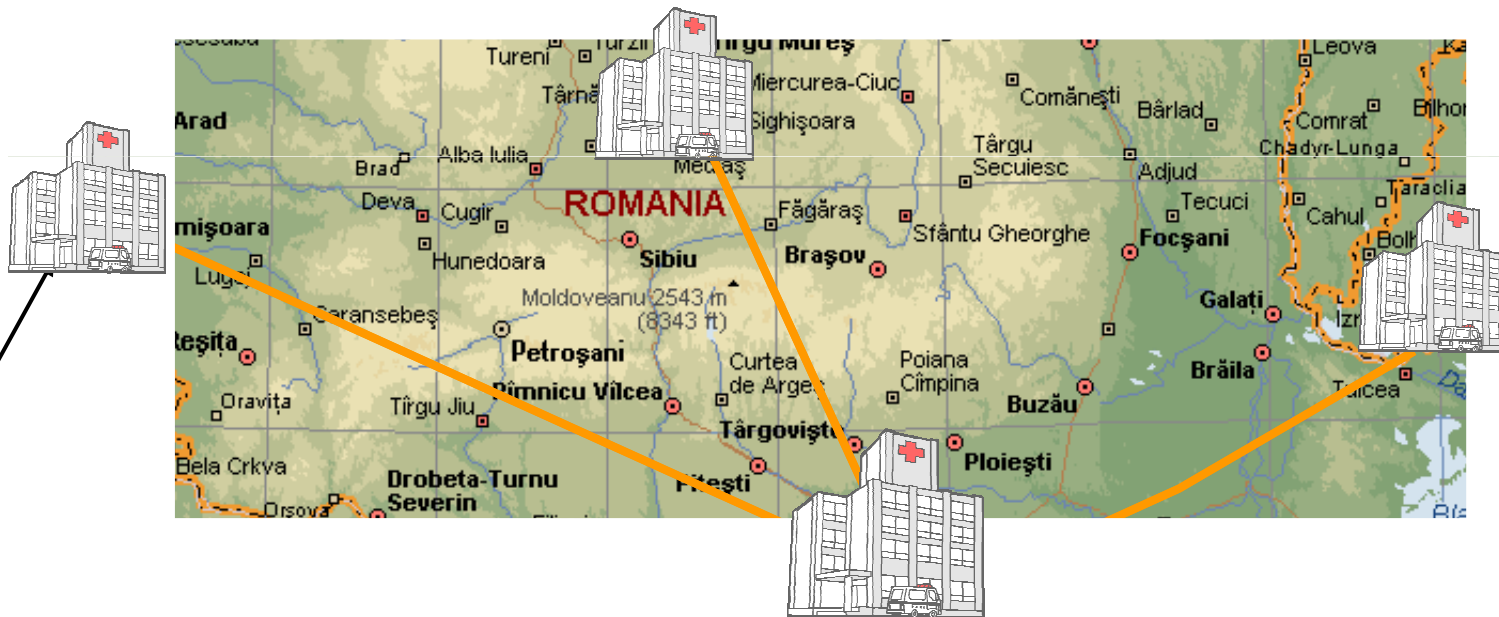
National Network for Critical Medicine Project

- Alcatel Lucent along with other Romanian IT&C companies contributed to the pilot project called - The National Network of Critical Medicine, with the purpose of integrating different hardware and software solutions, administrative medical applications and to offer a proper IT solution for health services in Romania.
- In this project there were involved many sanitary units between becomes possible a secure communication on-line of data, voice and images.
- For example, in case of an accident, the information from that place can be rapidly communicated, the ambulance is directed to the sanitary unit that is most prepared to treat the patient, towards which are transmitted in real time the vitals parameters of the patient. NNMC is a unique point of secure access to electronic medical files of the patients and allows the generation of statistical reports.



National Network for Critical Medicine: Coverage area

*County Hospital
SMURD Tg. Mures*



Health Unit

*County Hospital
Casa Austria Hospital
Orthopedic Hospital*

*Floreasca Emergency Hospital
Euroclinic Private Hospital*

National Critical Medicine Network Portal - www.rntrom.ro

- Integration of national informational healthcare
- Offers an unique, secure access point to patient record
- On-line using of extended secured collaboration communication of data, voice and images between involved entities
- An open environment for e-Learning solutions
- Search for Medical File - the system allows search
- Electronic Health Record / EHR - medical record of a patient
- Visualization of Imagery data in DICOM format
- Monitoring the Access
- Reports
 - Age/county/... distributions;
 - Temporal evolution of activity;
 - Statistics

Integrator:

Alcatel-Lucent 

Partners:

- Asociația Medicală Română
- Orange Romania SA
- Romtelecom
- Microsoft Romania
- Hewlett Packard Romania
- InfoWorld SA
- Romsys
- RomTelecom
- Business Relation SRL

National Network for Critical Medicine - Services

- 👉 Videoconferencing
- 👉 Telephony Network
- 👉 Electronic Health Record
- 👉 Patients remote monitoring (Cardiophone)
- 👉 Communication and collaboration
- 👉 Management of projects and activities
- 👉 Web sites creation and hosting for partners
- 👉 Email
- 👉 Instant messaging and application sharing
- 👉 e-Learning
- 👉 Call Centre



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National Network for Critical Medicine - part of two European Healthcare projects

Near-To-Needs Project

- The project's aim is to set-up an interconnectivity for Healthcare services between Italy (Veneto Region) and Romania (Banat Area and Muntenia Area)
- In fact, in the European development process the Veneto Region has initiated actions which can aid the integration of Countries acceding into the European Union
- The partners involved in the project are:
 - Treviso Local Health Authority;*
 - Veneto Region;*
 - Treviso Municipality;*
 - Timis Region;*
 - Unimpresa Romania;*
 - Treviso Chamber of Commerce;*
 - Institutes of credit;*
 - Alcatel-Lucent Romania - NCMN Portal*

Near-To-Needs Project Objectives

This project proposal is the prototype which will be realized in a Romanian city but seen in a broader vision the project aims at setting up healthcare centres of reference, in areas in which there is a high concentration of Italian companies, in order to:

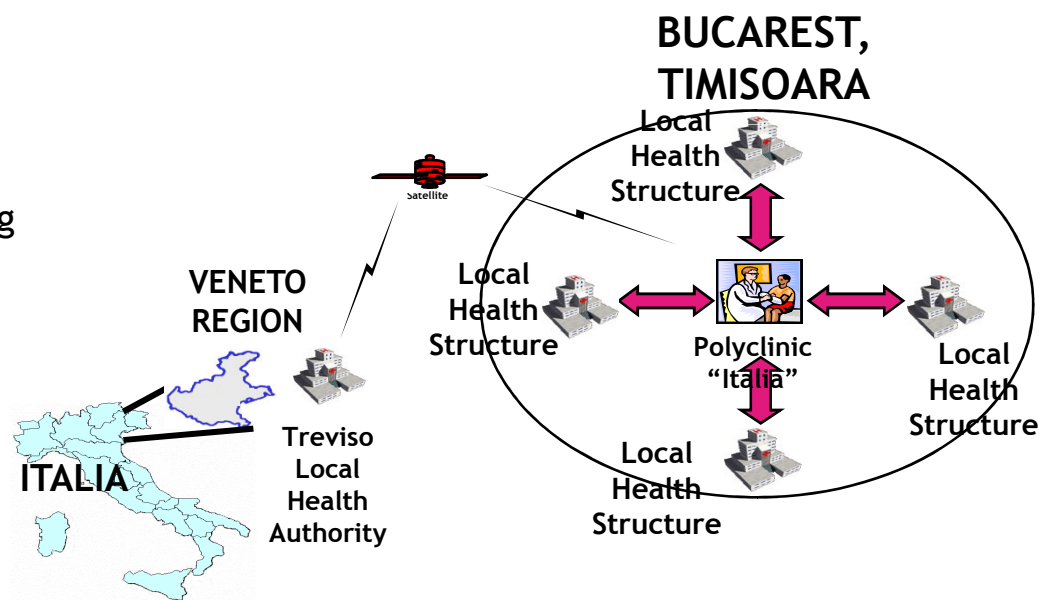
- Provide first aid healthcare services thanks to the help of medical and technical personnel in loco;
- Provide specialist healthcare thanks to the help of qualified personnel who are connected remotely;
- Act as a star centre for network connections with local Romanian Centres of Excellence;
- Produce an “Electronic Health Record” using ePractice from Infoworld from NNCM Portal containing all relative information and the patient’s clinical history which can be consulted by the physician dealing with that patient, wherever he may be;
- Carry out epidemiological studies for the prevention and safeguard from infectious diseases by introducing new tests and methodologies, following standards recognised at a European and International level.

Near-To-Needs Project Services

Intention to develop and validate a prototype service to support diagnosis, treatment and training for nursing and medical staff between the healthcare structures in two different geographical areas of the continent: Treviso Local Health Authority (Veneto Region - Italy) and the “tailor-made” healthcare structures in Timisoara and its repeated model in Bucharest (named Polyclinic Italia) through NCMN portal.

Telemedicine Services:

- Tele-laboratory
- Tele-radiology
- Virtual referral and tele-counselling
- Clinical Data Repository
- Tele-cardiology
- Tele-dermatology



Health Optimum Project

- **Alcatel - Lucent Romania is hosting the central repository of medical data.** The most important services that will be deployed in the HEALTH OPTIMUM project are:
 - a secure mail server,
 - a centralized EHR repository linked to a dedicated PACS server and
 - a Call Centre service.
- Another service is **videoconferencing** between medical staff using a multipoint videoconference server in order to provide archiving and multipoint videoconferences to medical staff during the Virtual Referral and Tele-counselling sessions.
- The last centralised service is the **central repository for EHR records linked to the PACS server.** The patient's medical information is stored in a central repository after hospital discharge and subject to the consent of the patient. Information on tests carried out on the patient during his/her stay in hospital is equally stored in the EHR repository, subject to the patient's consent, as it is needed for Virtual Referral or Tele-counselling session.
- The **Call Centre** offer services to patients and provides medical assistance in emergency situations, medical counselling and redirection within the healthcare system based on the pathology. The request for Tele-counselling can be issued either asynchronously by email or interactively using a video-conference session between the General Hospital specialist or the GP and the Tertiary Hospital physician. The booking of the video-conference will be done using the Call Centre.

6

Conclusions

Conclusions

E-health projects in which Alcatel-Lucent had a key role provide an opportunity to assess how to:

- ✓ Improve the **quality, safety, accessibility and timeliness** of healthcare for Romanians
- ✓ Support **more informed** healthcare decision making, research and management
- ✓ Improve the **efficiency** of the healthcare system and reduce costly duplication
- ✓ Maximize **return on IT investments**
- ✓ Achieve **standards based solution** allowing interoperability

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