



INNOVATIVE RESEARCH CONCERNING PRODUCTS AND SERVICES FOR eHEALTH

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Romanian Research Programmes Financed by Romanian Authorities

- **CEEX Programme;**
- **National Research, Development and Innovation Plan;**
- **Sectorial R&D Plan;**
- **Institutional Programme;**
- **INFRATECH;**
- **Grants.**



CEEX - Applications Research ***ICT meeting societal challenges***

- For *health*: improving disease prevention, early diagnosis and personalisation; autonomy, mobility and safety of patients; health information space for knowledge discovery.
- For *inclusion*: to improve equal participation in the information society, preventing digital divides; assistive technology, design-for-all.

ICI Projects in eHealth Domain (1)

- **ELIAS-HIS - Modernization of the medical act through the reengineering of the Information system specific to a hospital using Information and Communication Technology**

ELIAS-HIS system was developed in the framework of the Contract 70 within the RELANSIN National Program for Research and Development with the financial support of the Familia M H Elias Foundation.

The principal objective of the ELIAS-HIS system is the provision of an electronic system support for a hospital's activity that permits to the medical personnel a large mobility.

Finalist in eEurope Awards 2003.

ICI Projects in eHealth Domain (2)

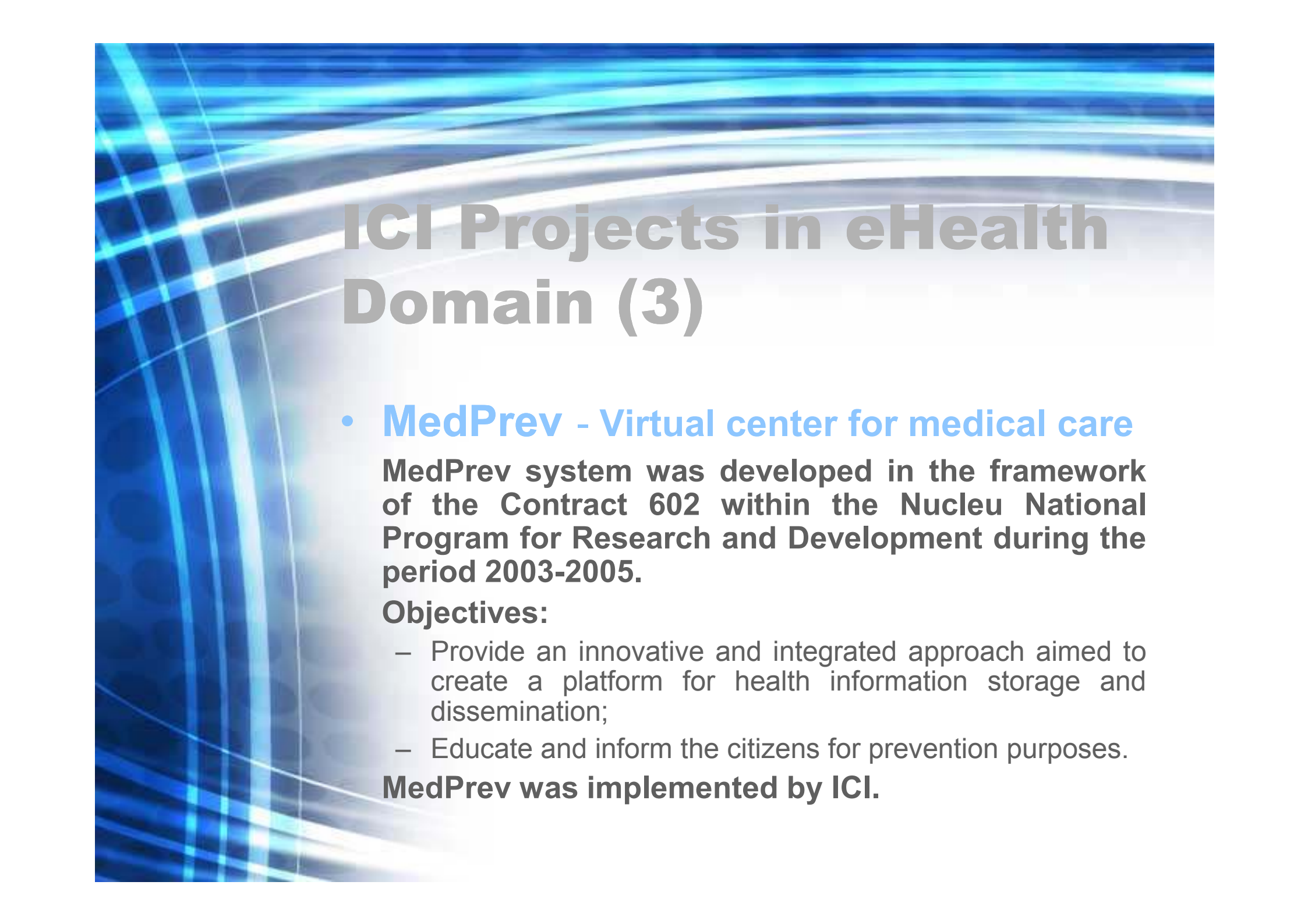
- **TELE-CIS - Cooperation among some branches of health domain, using ICT**

TELE-CIS system was developed in the framework of the Contract 1252 within the RELANSIN National Program for Research and Development during the period 2001-2003.

TELE-CIS aims to promote and to facilitate the evolution and the convergence of the Romanian information systems in the health domain towards new organizational and technological demands by allowing the integration and interoperability of the ICT systems.

The main goal of this application consists in the achievement and implementation of an integrated set of ICT tools and telematic services that support the cooperation among some branches in the health domain. This includes the collection, transcription, checking and reporting of data, as well as the analysis of the medical information.

TELE-CIS is a cooperation between ICI, „Ștefan S. Nicolau” Virology Institute and Health Military Research Centre.



ICI Projects in eHealth Domain (3)

- **MedPrev - Virtual center for medical care**

MedPrev system was developed in the framework of the Contract 602 within the Nucleu National Program for Research and Development during the period 2003-2005.

Objectives:

- Provide an innovative and integrated approach aimed to create a platform for health information storage and dissemination;
- Educate and inform the citizens for prevention purposes.

MedPrev was implemented by ICI.

ICI Projects in eHealth Domain (4)

- **MONDIS - An Integrated, Distributed Information System on Disability**

MONDIS system was developed in the framework of the Contract 604 within the Nucleu National Program for Research and Development during the period 2003-2005. MONDIS is an integrated, distributed information system for monitoring disable persons, at national level.

Objectives:

- recording information on the functioning and disability of the persons bearing a disability certificate;
- decision support capabilities (statistical reports, On-line Analytical Processing – OLAP and data mining facilities) and a multimedia end-user web interface.

MONDIS is a cooperation between ICI and “Lucian Blaga” University of Sibiu.

ICI Projects in eHealth Domain (5)

- **EDUSAN - A Complex Integrated System for Health Education and Disease Prevention**

EDUSAN system will be developed in the framework of the Contract 81 within the CEEEX National Program for Excellence in Research during 2005-2008 period.

The principal objectives are:

- to facilitate an early diagnosis;
- to realize health information space for knowledge discovery;
- to improve the capacity of preventing diseases, by the use of information technologies as an extraordinary means to promote education in the public health domain.

EDUSAN is a cooperation between ICI, Valahia University of Targoviste, Software ITC, “Carol Davila” University of Medicine and Pharmacy and NetClip.

ICI Projects in eHealth Domain (6)

- **PRO-INCLUSIV - Methods and tools to create multimodal interfaces for the development of inclusive information systems, with high degree of accessibility**

PRO-INCLUSIV system will be developed in the framework of the Contract 111 within the CEEEX National Program for Excellence in Research during 2005-2008 period.

Objectives:

- Social and economic integration of people with (different degrees) of visual impairment by the development of multimodal interfaces and implementation in information systems.
- Improvement of interactive systems design practice through the promotion and development of user centered design methods, under the “universal design” or design-for-all paradigms, with the purpose to render the information technology usable for as many people as possible and with reduced costs.

PRO-INCLUSIV is a cooperation between ICI, Academy of Economic Studies and National Institute for Prevention and of Social Exclusion of Disabled People.

ICI Projects in eHealth Domain (7)

- **GENOPACT – The study of gene expression profiles and biomarkers correlated with clinico-pathological parameters in pancreatic cancer**

GENOPACT system will be developed in the framework of the Contract 56 within the CEEEX National Program for Excellence in Research during 2005-2008 period.

Objectives:

- Consolidation of neoplasm bank.
- Complete genomic investigation of pancreatic neoplasm.
- Identification and validation of biomarkers.
- Improve strategy of track down of the pancreas cancer.
- Improve medical care of pancreas cancer.
- Promoting new technologies and medical staff, scientific and industrial capitalization.

GENOPACT is a cooperation between the Artificial Intelligence group within ICI and the Fundeni Clinic Hospital.

ICI Projects in eHealth Domain (8)

- **BIOINFO – Advanced Bioinformatics Techniques for the Systemic Analysis at the Molecular Level of Complex Diseases**

BIOINFO system will be developed in the framework of the Contract 32 within the CEEX National Program for Excellence in Research during 2005-2008 period.

Objectives:

- The development of bioinformatics and artificial intelligence tools for understanding the mechanisms of complex diseases (such as colon cancer and type 2 diabetes) at a molecular level, with strong focus on the biological interpretation, validation and even testing of the results obtained.
- Performing a complex multidisciplinary research, guided by advanced bioinformatics techniques and involving highly experienced partners from the biological, biochemical and medical communities.
- Dealing with large real-life genetic networks involved in complex diseases such as cancer and type 2 diabetes (presently, the genetic networks and pathways involved in these diseases are not known in enough detail, while the primary causes of these diseases are still elusive to a large extent).
- The integration of multiple bioinformatics resources in the processes of analysis and data mining

BIOINFO is a cooperation between the Artificial Intelligence group within ICI, the Fundeni Clinic and the Biology Faculty of the Bucharest University.

eHealth Projects in INFOSOC Research Programme (2001-2005) (1)

No.	Project title	Project Coordinator	Partners
1	Studies and solutions concerning the use of telemedicine in Romania	INSCC Bucharest	
2	Development of a Knowledge-based System for Education in Risk Management over Human Factor	INCDPM Bucharest	"St. S. Nicolau" Virology Institute HYPERION University
3	Virtual Center for biomaterial selection	UPB – CEMS	Colentina Hospital
4	Informatic system on three levels of complexity for prospective pursuit of diabetic patients	SOFTWARE ITC SA Bucharest	"Prof. Dr. N. C. Paulescu" Institute for Diabetes , Nutrition and Metabolic Diseases
5	INFOMED – Expert system for administration of the hospital resources	SC ROM CONNECT SA	Dual Man

eHealth Projects in INFOSOC Research Programme (2001-2005) (2)

6	System for capturing the radiological images, processing and analyses of the acquired, stored and rendered information	SC OPTOELECTRONICA 2001	INCDMF-CEFIN INFOSIT
7	Development of an information and dissemination network for information in the security and occupational health area	INCDPM	UPB, Tc. Inf. Galati
8	An ambiental modern system to support families through primary care services	SC SOFTWARE ITC SA	Center for health statistics, informatics and medical documentations
9	Telemonitoring system based on mobile communication networks, with applications in telemedicine	INSCC	QUICK WEB INFO SRL
10	Management and development of an multimedia integrated support for persons with locomotor disabilities	UPB - Department of Bioengineering and Biotechnologies	SC ROMHANDICAP SA

eHealth Projects in INFOSOC Research Programme (2001-2005) (3)

11	Virtual simulator in mini-invasive surgery (laparoscopic) "SIVILAP1"	ICPE SA	BEST SOFT EXPERT
12	Interactive system for continuous learning for person with visual disabilities - INTERBLY	"Iuliu Hațieganu" University of Medicine and Pharmacy Cluj Napoca	SC IPA SA Cluj
13	Wireless solutions, of wideband, for complex system for acquisition of medical data	INSCC	SC QuikWeb Info SRL
14	Multimedia platform for implementing complex medical teleservices - TELMES	National Institute for Studies and Research in Communications	
15	CoopUrg – Telematic system with mobile cooperative intervention units applied in emergency and catastrophe medicine	SC IPA SA Bucharest	

eHealth Projects in INFOSOC Research Programme (2001-2005) (4)

16	Integrated microfluidic system for in vitro analysis of biologic fluids with applications in diagnosis and medical treatment (MICRO-DIAG)	<i>National Institute for Research and Development in Microtechnologies Bucharest</i>	
17	Intelligent therapeutic decision support system for patients with prostate cancer	<i>Technical University of Cluj-Napoca</i>	
18	Multifunctional platform for optimization of diagnosis and decision methods in medical services – PROMED	<i>SC IPA SA Bucharest</i>	

Surveys (1)

Here are some suggestions from Romanian surveys concerning future research domains for the period 2007-2013:

- Systems and applications in medical assistance field;
- eHealth systems for family doctors;
- Development of new diagnostic and treatment methods using advanced knowledge and medical information processing techniques;
- System for medical examination, analyses tele-treatment using the Internet for providing the access of all citizens to advanced technologies;

Surveys (2)

- IT systems for diagnostic assistance;
- Development of a virtual space for knowledge / information / medical data;
- Distributed IT system for patient monitoring for the whole Romanian medical system;
- Development of medical para-networks (collaboration between medical, health assurance, Health Ministry members, etc.);
- Intelligent systems for monitoring the patients during ambulatoriu treatment.



Key targets for the near future

- **eHealth can support provision of good care within and across borders;**
- **Developing Citizen Empowerment and Support through eHealth;**
- **Delivering Safe and Efficient Healthcare through eHealth.**



i2010: European Information Society

The new initiative:

- promotes a clear, stable and competitive environment for electronic communications and digital services - a European information space;
- increased research and innovation in information and communication technologies;
- an Information Society dedicated to inclusion and quality of life.

Hence, it will support European citizens through creation of a safe, reliable, efficient and accessible eHealth infrastructure which not only meets the demands of national health strategies, but also develops a European-wide preparedness to address transborder health challenges and crises.

Conclusions

- **eHealth is a fantastic challenge for the future in benefit of citizens;**
- **Requires cooperation and coordination at all possible levels in order to exchange ideas, experiences, procedures;**
- **Involving people and specialist worldwide over the world;**
- **Networking is vital.**

The background features a dynamic, abstract design. On the left side, there is a vertical grid of blue lines. From this grid, several bright, glowing blue and white lines curve across the frame towards the right. The overall color palette is dominated by various shades of blue, from deep navy to bright cyan, set against a white background that fades into a light blue gradient.

Thank you!