National Institute of Telecommunications – International Partnership: Yesterday, Today and Tomorrow

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The ITU 2010 Plenipotentiary Conference in Guadalajara, Mexico, is top policy-making body focused on future role of the organization in coming years. This meeting of the delegates from the countries all-over the world, creates an excellent opportunity for the exchange of experiences. In Poland there is a hot public discussion on-going on the future challenges related to the implementation of new information and communication technologies (ICT) and services. People are expecting fast modernization of their living, economic growth and social promotion. New governmental projects such as "Digital Poland" or "Terrestrial Digital Television" have been launched facing these challenges. The Digital Poland project covers innovative initiatives in education sector (ICT skills), full digitalization of National Archives, Art and Historic Collections, e-government, and support for new e-services providers and telecommunication infrastructure builders. Although the goals of those projects are of common agreement, details of their realization ways are of public discussions. These projects required the legislative and regulatory structure to be reviewed and modified where necessary, see the accompanying paper of Magdalena Gaj. Experience of other countries in similar projects and the best practice cases are monitored and followed carefully by social partners, organizations, involved business and administration.

The National Institute of Telecommunications, NIT, a 75-years old research institution based in Warszawa (with branches in two other cities, Gdańsk and Wrocław) is deeply involved in all those undertakings. With our highly qualified staff of 250 R&D employees, we are a significant partner in most of those projects. Being a public institution, we serve as an independent Research Center working for business partners as well as for the Administration. Let me present a short selection of our recent projects:

- frequency planning for digital TV broadcasting, in many variants of single and multiple frequency plans. Those projects have been done for the Administration and for individual broadcasters;
- electromagnetic compatibility studies and spectrum management proposals, for the National Regulator (Office of Electronic Communication) and for business partners;
- broadband development strategies proposals for Regional Governments;
- information data base system development for telecommunication broadband networks inventory in Poland (on-going project);
- telecommunication services quality measurement system (automatic, for PSTN and GSM networks) for inspection service of the National Regulator;
- data mines and telecommunication decisions support systems for various telecom operators;
- reports, studies and expertise on numbering plans, signalization systems, data retention, billing systems, telecommunication frauds, market and regulatory analysis for governmental agencies and business partners;
- conformance tests and authorized laboratories certificates for equipment suppliers and producers.

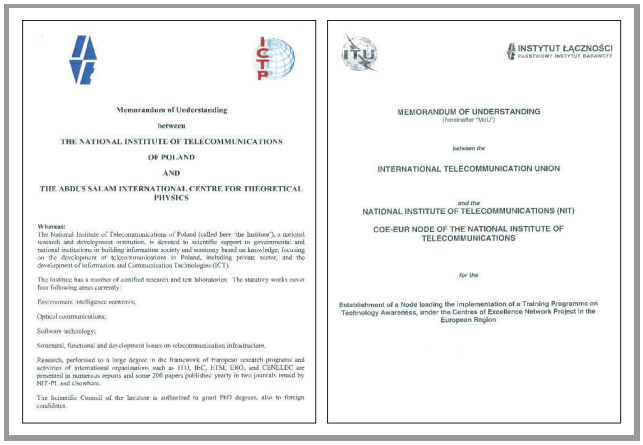
We have developed close co-operation with many partners in the framework of a number of scientific and industrial consortiums. Our main partners in Poland are Technical Universities in Warszawa, Gdańsk, Wrocław, Poznań, Kraków as well as R&D units of telecommunication operators, broadcasters, producers (e.g., Orange Labs, Poland) and independent consulting companies. A number of our research projects have been awarded grants by the Ministry of Science and Higher Education. Of this type, gained in public concurs, are "New Generation Services and Networks" (2008–2010) and "Future Internet Engineering" (2010–2012), both projects.

The National Institute of Telecommunications has developed also international co-operation in three areas:

1) scientific and technical projects,
2) international conferences, and
3) training/education.

As concerns the first area, NIT participates actively in a number of European Projects, funded from EU Regional and Scientific Funds, such as Framework Projects (NEMO, BReATH, CRUISE), InterReg (EfficienSea) and COST (Actions 270, 291, 299, MP0702, 2100). In the second area, NIT organizes and co-organizes a number of international conferences. Examples are the International Conference on Transparent Optical Networks (ICTON) and

the conference on Decision Support for Telecommunication and Information Society (DSTIS). In 1972, NIT co-founded the Wrocław International Symposium on EMC that continues until now, and in 2010 was held under the auspices of Dr. Hamadoun Touré, Secretary General of ITU. It has been awarded the Special Symposium Recognition Award by the IEEE Electromagnetic Compatibility Society: "*In recognition of the vision and contribution of the founders of the Wrocław International Symposium and Exhibition on Electromagnetic Compatibility [. . .] Held for the first time September 14 to 16, 1972 [. . .] it was the first regular International Symposium and Exhibition on Electromagnetic Compatibility held in Europe.*" The IEEE is the world's largest professional association dedicated to advancing technological innovation and excellence for the benefit of humanity. Its grants and recognitions honor endeavors that have made a lasting impact on humanity, technology, and the profession. In 2010, the Wrocław EMC symposium has been transformed into "EMC Europe".



Memorandum of Understanding
between
THE NATIONAL INSTITUTE OF TELECOMMUNICATIONS
OF POLAND
AND
THE ABDUS SALAM INTERNATIONAL CENTRE FOR THEORETICAL PHYSICS

Whereas:
The National Institute of Telecommunications of Poland (called here 'the Institute'), a national research and development institution, is devoted to scientific support to governmental and national institutions in building information society and economy based on knowledge, focusing on the development of telecommunications in Poland, including private sector, and the development of Information and Communication Technologies (ICT).

The Institute has a number of certified research and test laboratories. The statutory works cover four following areas currently:

Environment; intelligence networks;

Optical communications;

Software technology;

Semantic, functional and development issues on telecommunication infrastructure.

Research, performed to a large degree in the framework of European research programs and activities of international organizations such as ITU, IEC, ETSI, ERO, and CENELEC are presented in numerous reports and some 200 papers published yearly in two journals issued by NIT-PI and elsewhere.

The Scientific Council of the Institute is authorized to grant PhD degrees, also to foreign candidates.

INSTYTUT ŁĄCZNOŚCI
PAŃSTWOWY INSTYTUT BADAWCZY

MEMORANDUM OF UNDERSTANDING
(hereinafter "MoU")

between the

INTERNATIONAL TELECOMMUNICATION UNION

and the

NATIONAL INSTITUTE OF TELECOMMUNICATIONS (NIT)

COE-EUR NODE OF THE NATIONAL INSTITUTE OF TELECOMMUNICATIONS

for the

Establishment of a Node leading the implementation of a Training Programme on Technology Awareness, under the Centres of Excellence Network Project in the European Region

Fig. 1. Memorandums of Understanding: NIT-ICTP and NIT-ITU.

Our international co-operation is organized within framework agreements, such as Letter of Intent or Memorandum of Understanding (MoU). In that form we co-operate with a number of well-known international and national institutions. Among international ones are International Institute for Applied Systems Analysis (IIASA) in Luxemburg, Austria, and the Abdus Salam International Center for Theoretical Physics (ICTP) in Trieste, Italy. The list of our national partners abroad contains the Japan Advanced Institute of Science and Technology (JAIST) in Nomi, Japan, Instituto de Estudos Sócios-Econômicos (INECS-Coimbra) in Coimbra, Portugal, University Stellnbosch in Republic of South Africa and others. The co-operation agreements define the scope of common studies, conferences, workshops, and seminars as well the exchange of the staff, etc.

As an example, NIT cooperates with ICTP in organizing the ICTP ITU/BDT schools, workshops, and awareness conferences for young scientists. Each year, some 25 young scientists, mostly from the developing countries, participate in these activities that usually are lasting for a few weeks. It that way NIT contributes to the advancement of

Fig. 2. The lesson of antenna measurements.

human resources and research and development capabilities in the developing countries in the field of radio science and technology. These activities, held in the ICTP in Trieste, are often complemented by activities and projects abroad. For instance, two young scientists from Technical University of Malawi spent in 2008 3 months in Poland, in the frame of the NIT-ICTP MoU. They were finishing their Advanced Research Studies on Low-Cost Antennas for Wireless Networking in Developing Countries in the NIT EMC&Antenna Laboratories in Wrocław. This was made possible thanks to the grant offered them by the ICTP.

Since its very beginning NIT maintains special relations with the ITU. Most of contributions submitted to ITU on behalf of our country have been based on the works done in NIT and/or authored by our staff. Many of them have been included in final texts of several official ITU documents. Our staff members have participated in technical and stan-

THE NATIONAL INSTITUTE OF TELECOMMUNICATIONS
Department of Electromagnetic Compatibility
Wroclaw, Poland

This is to certify that

Timothy CHADZA

participated in and completed the

Advanced Research Studies on Low-Cost Antennas for Wireless Networking in Developing Countries
in collaboration with the International Centre for Theoretical Physics, Trieste, Italy

10 March 2008 – 8 May 2008, Wroclaw, Poland

Head of the Department
Dr Inż. Janusz Sobolewski

Scientific Advisor
Prof. Dr Ryszard Struzak

Wroclaw, 8 May 2008.

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Department of Electromagnetic Compatibility
Wroclaw, Poland

This is to certify that

Mayamiko NKOLOMA

participated in and completed the

Advanced Research Studies on Low-Cost Antennas for Wireless Networking in Developing Countries
in collaboration with the International Centre for Theoretical Physics, Trieste, Italy

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Fig. 3. The certificates of completed studies in Electromagnetic Compatibility Department of NIT in Wrocław of Mr. Timothy Chadza and Mr. Mayamiko Nkoloma, scientists from Malawi.

Fig. 4. The group of students of Advanced Research Studies on Low-Cost Antennas for Wireless Networking in ICTP, Trieste.

dardization works of selected Study Groups in ITU-T and ITU-R sectors. Some of them served as Working/Study Group Raporteurs, V-Chairs and/or Chairs. In the past, for instance, the ITU/CCIR Plenary Assembly New Delhi 1974 elected Ryszard Strużak for the post of V-Chair of CCIR Study Group on Spectrum Management and Monitoring. He resigned in 1985, and left NIT to serve further the ITU community with his knowledge in a high post in the Geneva Headquarters. Earlier, Jerzy Rutkowski, also our staff member, served successfully at that post for several years. There is no place here to list all our staff members, who contributed to various activities, including ITU Expert Missions. Myself, I was as an ITU expert working on an ITU project in Burundi. From among our NIT colleagues, perhaps Ryszard Strużak and Władysław Moroń have gained the widest recognition within the ITU serving for many years as the elected members of the Radio Regulation Board.

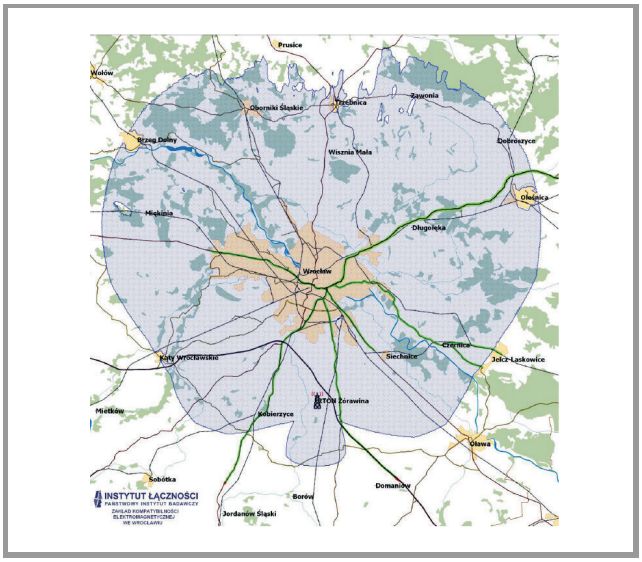

Fig. 5. Example of the coverage map of the first in Poland trials of the mobile DAB+ system.

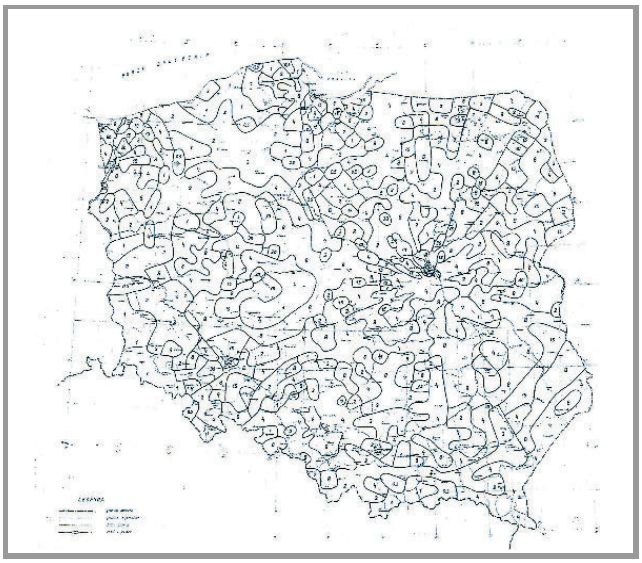

Fig. 6. Ground Conductivity Map of Poland.

More recently, the NIT's experts have prepared also our in-kind contribution for ITU-R SG III: reports on experimental tests of Digital Radio Broadcasting DAB+ emissions in Wrocław region as well as the updated Map of Ground Conductivity of Poland. With the support from ITU-D, we have organized seminars and workshops, i.e., the 2007 ITU Workshop and National Conference on New Generation Networks in close cooperation with the experts from Canada. We co-operate also with countries of Central and Eastern Europe, within the framework of ITU regional activities. In February this year NIT has established a Node of the Centers of Excellence Network Project in the European Region, after signing the Memorandum of Understanding with Sami Al Bashir Al Morshid, Director of Telecommunication Development Bureau (BDT). In this connection we are organizing later this year two workshops on Long Term Evolution (LTE) systems and on Future Internet technologies. We invite all interested participants to join us at these events.

We believe our co-operation with international partners adds a significant "networking" value and is beneficial to all parties involved. The benefits are of different nature, from sharing (i.e., reducing) the costs of common endeavors, to gaining new knowledge, skills, and experiences, invaluable in today's rapid changes of telecommunication technologies, services and applications.

Wojciech Hałka, born in 1949, graduated from Warsaw University of Technology (1971, BScEE), postgraduate studies CITCOM in Ecole Supérieure d'Electricité, Antenne de Renes (1978) and European Studies MATRA in Universiteit Maastricht (1978). He worked as researcher in National Institute of Telecommunications in Warsaw, Poland, till 1991, at Spie Batignoles (FR) for National Power Center in Egypt (1986–1987) and as ITU expert in Burundi (1991). In 1991–1998 he worked in the Ministry of Communications, as director of Regulatory and Development Department. He was a delegate of Polish administration in Kyoto ITU Plenipotentiary Conference (1994) and in WTO, CEPT, ECTRA conferences. Next, till 2003 at Netia Telekom S.A. responsible for data transmission network and interconnections agreements. In 2003–2005 at the Ministry of Infrastructure, as Under-Secretary of State responsible for telecommunication and postal sectors he implemented the 2nd EU Regulatory Package into Polish Telecommunication Act. In March 2006 he joint back the NIT, as deputy director for development, and then in July 2009 he was appointed as General Director of the NIT.