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## TWENTY INTERNATIONAL CRIMEAN CONFERENCES “MICROWAVE & TELECOMMUNICATION TECHNOLOGY” (CriMiCo)

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The International Crimean Microwave Conference (CriMiCo) is convened in Sevastopol since 1991. 20 years saw this conference become the flagship venue for far reaching research into theoretical, experimental, manufacturing, applied and historical aspects of microwave engineering and telecommunication technology. Solely in 2010 over 500 reports were delivered by scientists and experts from 208 universities and 17 countries: Belarus, Belgium, Bosnia and Herzegovina, Germany, Israel, Iran, Kazakhstan, Canada, China, Korea, Lithuania, Moldova, Poland, Russia, USA, Ukraine and the Republic of South Africa.

Conference proceedings are annually issued before the conference commencement. Over 5000 reports were published in 20 years. Conference papers are indexed and abstracted by such authoritative databases as Inspec IET (IEE) [1, 2], Thomson ISI [3–6], Scopus, Google Scholar, VINITI (Russia) abstract journals. Full-length conference papers submitted since 1999 are hosted in the IEEE Xplore resource as well as in the abovementioned international abstract databases.

It should be emphasized that 35 Ukrainian scientific publications (from more than 1400 approved by the State Commission for Academic Degrees and Titles) and solely CriMiCo papers are indexed by Scopus [7].

Key outcomes of the first decade of the conference were elucidated in [8–9]. Further we will mostly highlight the outcomes of the second decade.

### A brief overview of the first decade

No less important here is the conference background [9]: “...the conference didn’t come out of nowhere — its solid basis was laid at the seminars covering specific research directions of the field (microwave radio metering, design automation of microwave devices, three-dimensional microwave integrated circuits, satellite reception, and so forth). They were held in 1980s under the auspices of the Sevastopol branch of the Ukrainian Republican house of economic and science and technology proliferation”. We participated in these seminars and also worked in the organizing committees.

However, in the late 1980s an acute economic situation at the universities and other agencies of the military sector proved that some joint actions had to be taken. Hence in 1990 the decision to pioneer and to hold a new

annual international conference since 1991 was made at the seminar on the satellite reception. The key idea behind this initiative which was somewhat similar to the European Microwave Conference was to integrate under the umbrella of one conference principal research avenues of microwave engineering and its applications.

To put it briefly, that was how the conference was run. The second part of its title used to emphasize and still stresses the most significant applications of microwave engineering. It was slightly altered several times. In 1991–1995 the conference was named “Microwave Engineering and Satellite Reception” and “Microwave Engineering and Satellite Telecommunication Technology” that was relevant since many research teams at that time were dealing with this research direction and were developing some field-specific devices. The satellite technology was considered to be promising to address telecommunication problems. But life set its own priorities, and not only satellite systems gained a wide spread in the microwave range. Since 1996 and up to now the conference is titled “Microwave & Telecommunication Technology”. The conference was also entitled Crimean Microwave Conference or CriMiCo in an abbreviated form. This title as well as its acronym became the conference distinctive sign.

During the first decade eight research directions covering scientific and professional interests of the members of the organizing and program committees were outlined. It was attempted to present a range of key terms of every research direction in [9], notwithstanding the fact that this handy approach doesn’t allow estimating research results revealed in published papers. Only experts have enough expertise to estimate the re-

sults. Thus, the 20th conference represented some reviews of research directions of the conference. The electronic version of papers featuring all 20 conferences to be issued in 2011 will also make materials available for the wide public.

### **Broadening of the research agenda**

The research agenda of the conference was expanded from 8 to 16 research directions. They are, of course, included not randomly, but are jointly discussed by the members of the organizing and program committees. Since 2010 the research agenda has encompassed the following directions:

1. Solid State Devices;
2. Vacuum & Microvacuum SHF Devices;
3. Microwave Communications, Broadcasting & Navigation Systems;
4. Antennas & Antenna Elements;
5. Passive Components;
6. Very High Power Microwave Electronics & Effects;
7. Microwave Measurements;
8. Microwave Applications;

Novel research directions and dates when they were included in the conference program in the second decade:

- 1a. CAD/CAM of Solid State Devices (2005);
- 3a. Information Technologies in Telecommunications (2010);
- 5a. Materials & Technology of Microwave Devices (2005);
- 5b. Nanoelectronics & Nanotechnology (2007), since 2005 in the direction 5a;
- 6a. Resistance to Radiation & Electromagnetic-Pulse Damages (2007);
- 8a. Medical & Ecological Applications (2005);
9. Radioastronomy, Remote Sensing & Waves Propagation (2002).
10. History of Radioengineering & Telecommunication (Fedotov's Readings) (2003). In 2009 this research direction was also named Fedotov's Readings to honor a prominent scientist in radio engineering, a member of the program committee of the conference E. A. Fedotov (1926–2009).

Of importance is the fact that the index balance between the names of section meetings and research directions can be achieved when one meeting is held. However, if two or more meetings are convened, each of them bears its own name (38 meetings were run at the CriMiCo'2010 conference [10]).

### **Seminars and special sections within the conference**

In 2001–2010 seminars and special sections gained a wide popularity. Special sections usually present the

speakers' reports of one company. In 2001–2010 there were three special sections: "Beta TV Com" (Donetsk, 2006, 2007), the Institute of Radiotechnology and Electronics of the Russian Academy of Sciences (Moscow, Fryazino, 2010).

A seminar is generally considered to be a more specific way of the conference development. In case of its urgency and relevancy it can become a research direction. Special sections are run on proposal of companies backing up the conference or authoritative research teams. The decision to conduct special sections is also jointly made by the organizing and program committees.

### **Conference initiatives**

The 20-year history of the conference spawned a plethora of initiatives, notably hosting the annual conference for young scientists "Problems of Radiotechnology and Telecommunications" under the aegis of the Sevastopol National Technical University. The core group of the CriMiCo organizing and program committees also actively participates in this conference. The program of the 7th conference to take place in April 11–15, 2011 encompasses 425 reports by speakers from 6 countries. Relying on recommendations of the CriMiCo program committee as well as under the auspices of the Institute of Telecommunication Systems of the National Technical University of Ukraine "KPI", a novel international research journal "Telecommunication Sciences" is issued in December, 2010.

### **Conference Committees**

Since the conference program committee is headed by noted and reputable scientists, it is considered to be highly prestigious in the field. Among heads of the program committee are the Rector of Belarus State University of Informatics and Radio Electronics, Doctor of Science, Professor M. P. Batura; the Vice-Rector of the Moscow Aviation Institute, Doctor of Science, Professor V. F. Shevtsov; the Vice-Rector for Scientific Research of the National Technical University of Ukraine "Kyiv Polytechnic Institute", Corresponding Member of National Academy of Sciences of Ukraine, Doctor of Science, Professor M. Yu. Ilchenko.

103 experts have been involved in the conference committees for 20 years. Personal profiles of the most active members of the committees from Belarus and Ukraine were described in [11–12], whilst profiles of members from Russia will be presented in conference proceedings, 2011. Specifically, personal profiles of foreign scientists and experts who actively participated in the conference holding are revealed in this issue.

An emphasis should be laid on the special format of hosting conference meetings. Before 1996 the program

committee was not gathered in full session in Kyiv, Moscow, Kharkov. Since 1997 the full committee was convened (in Kyiv, 1997—1998; in Minsk, 1999—2000; in Taganrog, 2001—2002). Since 2003 meetings of the organizing and program committees are regularly con-

vened in Minsk, Kyiv and Moscow (Moscow Region). Thus, in 2011 the conference meetings will be held in Yaropolets. Photos below depict the program committee meetings in Fryazino (2008), Minsk (2009) and Kyiv (2010).



A meeting of the CriMiCo program committee. Fryazino, “Istok” Research and Production Enterprise, June 3, 2008



A meeting of the CriMiCo program committee. Minsk, National Library of Belarus, June 2, 2009



A meeting of the CriMiCo program committee. Kyiv, NTUU “KPI”, May 31, 2010

### **Participation of foreign scientists and experts in the conference holding**

Among the speakers of the twenty conferences were representatives of 722 universities and enterprises of 43

countries. There were totally 772 participating universities and enterprises from all over the world in 1996—2010.

These experts and scientists from various countries were actively involved in the conference management.

Amitava Dutta-Roy, born in 1933, is an expert in the area of telecommunications. He has been teaching at a number of universities in “last mile” communication speciality. He has authored or coauthored scientific papers published in the USA and in other countries, as well as in the “IEEE Communications Magazine” and “IEEE Spectrum”. He is a member of the Editorial Board of the journal “Multiservice Networks of Cable TV” (2001–2003). He received the Bachelor’s degree in natural sciences and Ph.D. degree in electronic engineering at the Imperial College (London University). He is Fellow of London and New York departments of IEEE. He was a member of the CriMiCo program committee in 2002.

Józef Modelski was born on March 25, 1949. He is Professor, Director of the Institute of Radioelectronics at the Warsaw University of Technology. He obtained his M.Sc. (1973), Ph.D. (1978), and D.Sc. (1987) degrees at the Faculty of Electronics of the Warsaw University of Technology. He has been on numerous research internships to European telecommunications firms and universities in United Kingdom, Italy, Belgium, Portugal and Germany. His scientific interests are centered on microwave technology, radiocommunications and television. In recent years his research interests have mainly focused on the analysis of ferroelectric and smart antennas. He is the author and co-author of about 300 publications, 9 patents and 4 monographs. He is Associated Member of the National Academy of Sciences of Ukraine, a member of a wide range of foreign and national conferences on electronics and telecommunications. Since 2008 he is the Director of Region 8 of the Institute of Electronics and Electrical Engineers. He was the member of the CriMiCo organizing committee in 1996–2001 and in 2009–2010.

Trinogga Lothar Alfred, born in 1940, is Professor of the London Metropolitan University, the author of monographs “Satellite Broadcasting Systems Planning and Design” and “Practical Microstrip Circuit Design” (Ellis Horwood Ltd., 1985 and 1991). He was a member of the CriMiCo organizing committee in 1996.

Kees Van’t Klooster, born on June 3, 1952, is the senior antenna engineer of the European Space Agency (ESA). He graduated from the Eindhoven University of Technology in Antenna Theory and Design (thesis about elimination of cross-polarization in offset antennas) as well as from the Delft University of Technology in Space System Engineering. Since 1984 he has been working in the ESA after filling the position of antenna engineer in the Netherlands laboratory of physics for a couple of years (phased array antennas, near-field antenna testing). His research primarily deals with the antenna area, re-

lated to remote sensing and scientific satellite applications. He worked in Moscow Space Center. He is ESA representative in the Radio-Astron RISC research group. He has over 100 publications, several patents. He is a coordinator of IEEE Benelux section, an IEEE Senior Member (Antennas and Propagation Society), a member of the CriMiCo organizing committee since 2004.

Young-Soo You was born in the South Korea in 1943. In 1962 he graduated from the Seoul National University. He studied and worked in the USA. In 1979 he received his Ph.D. degree at the Berkley University, California. His area of expertise encompasses electron materials science, including chemistry, physics and polymer technology. In 1982–1996 he worked in the Hewlett-Packard Company and was involved in developing electronic materials and devices. He was also teaching at the Northeast University of California. He is a member of the Council of International Institute of Investors in the Silicon Valley, a member of the Council of the Korea University of Industry and Technology, counsellor of Hyundai Electronics. He was awarded the title of the Honorary Member of the Academy of Engineering Sciences of Ukraine for his active collaboration. He was also a member of the CriMiCo organizing committee in 1997–2000.

#### **“Non-traditional” sections in the conference proceedings**

Various non-traditional sections of the conference proceedings, notably extended personal profiles of the committee members (since 2000) and “Chronicles” section (since 2006) confirm its maturity. These sections highlight some data on awards to young scientists and experts, as well as anniversary notes and obituaries in honor of members of the organizing and program committees.

#### **Conference honors**

Since 2006 the best reports of young scientists and experts have been awarded prizes and diplomas. Among awarded foreign members were Jordan Janeiro and Josef Spillner (Dresden Technical University, Germany, 2009 and 2010) and D. Bondar (University of Westminster, London, 2008)

#### **Conference recognition**

Welcoming addresses of B. E. Paton, President of the National Academy of Sciences of Ukraine and D. V. Tabachnik, Minister of Education and Science of Ukraine to the members of the 20th conference prove that the conference has gained a wide recognition.

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