The session
devoted to celebration of the 90th anniversary of CCIR/ITU-R Study Groups and 45 years of digital TV/HDTV studies in ITU-R

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MAIN RESULTS AND NEW TASKS OF ITU

1. I was lucky to be involved in the ITU activity in the spring of 1947 during the preparation of the USSR delegation to the Conferences in Atlantic City, where decisions were taken to improve the CCIR work.

According to those decisions, Vth Plenary Assembly of the CCIR (Stockholm, 1948) established the new SG 11 on TV broadcasting with Mr. E. Esping, Sweden, as the Chairman. Already its first meeting adopted the main provisions for TV standards (Recommendation 29).

SG 11 Recommendations, adopted during 1950s and 1960s, essentially contributed to the beginning of mass TV broadcasting in the world, production of TV equipment, international market of TV programmes and etc.

2. SG 11 meeting in July 1972 was the first to proceed to international standardization of digital TV broadcasting, and begin studies on HDTV according to the proposal from Japan (Fig.1).

In 2000, the ITU-R SG 6 became a successor of the ITU-R SG 11 and continued its activities.

3. The CCIR/ITU-R, starting from the Conferences in Atlantic City in 1947 and until now, appears not only as a recognized initiator of international standardization in the crucial areas of TV broadcasting, but the first originator of key Recommendations shaping the history of the establishment and development of this critically important area.

The CCIR/ITU-R succeeded in joining efforts of experts from many countries. As a result, more than 150 Recommendations at the international level were collectively developed for TV centers, terrestrial and satellite TV broadcasting, receive TV networks, etc. Digital TV broadcasting is the exclusive high bitrate service that is not only widely implemented without additional frequency bands, but provided substantial digital dividend for development of mobile and other services.

4. Now it is time to force studies on the quality of broadcasting involving the whole chain, including signal processing and presentation of TV and sound programs at the receiving side (Fig. 2).

Along with ongoing studies it is necessary to find forms for expanding the ITU-R SG 6 participation within new emerging conditions.

- Currently, we have a multitude of screen sizes (multiscreen) when we are receiving TV programs delivered through many routes – starting from small screen in a helmet, or smartphone and up to a large external screen of Video Information System. We shall decide which transmitted broadcasting signals and which their

processing in such environment would facilitate optimal perception of the transmitted content.

- Many effects of different types of reality, immersion in the sound field and others are simulated at the receiving side practically with sufficient approximation even when using existing standard signals of digital TV broadcasting.

Immersion effect is created by compact sound reproduction devices ultimately intended for their mass usage. There are means to adapt modes of broadcasting signal reproduction to the conditions of their perception, and a recipient could control the degree and nature of such effects.

- It is time to identify the strategy for studies related to prospects of holographic TV. It seems that a priority attention will be paid to signal coding and compression, just as successful participation of SG 11 in the development of MPEG standards in the 1990s.

- It is important to search ways for widening the use of TV and sound broadcasting for the development of Digital Economy taking into account the following.

5. Digital TV broadcasting is the first meaningful result of digital transformation in a wide multifunctional environment of Digital Economy. It represents unique features such as high demand, ubiquity and mass scale of the provided services. The implementation of such features became a major task for digital transformation in many other fields (Annex 1 to Doc. 6/94 Rev. 1, 17.03.2017 – Summary record of the 2nd meeting of ITU-R Study Group 6, 28.10.2016).

A fundamental contribution of the CCIR/ITU-R to the creation of the digital TV broadcasting as a new dominant mass media and substantial outcome of the ITU activity has received high worldwide appreciation.

A vital role in the achievement of these results is played by a global approach to international standardization and harmonization of interests of participants, which formed a basis for ITU-R SG 6 and its predecessor – CCIR/ITU-R SG 11 to develop a number of key Recommendations.

6. It could be supposed that taking into account this experience in using global approach to digital transformation, a multitude of digital systems in various industries would be built, which will take into account the specific features and will be interfaced with each other and with world community. So, each country would have a comprehensive digital system.

Creation of such systems is a sustainable vector of evolution. Therefore, a real interest was demonstrated to the digital transformation and its dominant application – Digital Economy – being the main drivers of progress. Mass-scale introduction of this area requires development of efficient computing systems and software, modern telecommunication network, innovative approaches to the mobile communications and to a huge frequency supply. The critical role in assisting the worldwide advance of this task depends largely on the ITU-R activity. Eventually it is possible to expect the emergence of comprehensive digital system as the main worldwide digital infrastructure, and there is no visible alternative to this approach. When forcing

standardization of the digital transformation in other fields, it is useful to be aware of the strategy and experience as well as additional capacity of the broadcasting.

TV broadcasting currently covers not only mass media but has much more wide scale and contributes to the digital economy. Currently there are many interesting applications, for example, transmission through a TV channel (off-screen) of digital streams containing information facilitating Digital Economy and other objectives.

It may be useful to find convenient form of the study and possible applications of this problem. The transmission of additional data is interesting also for developing countries, taking into account the decisions of the World Telecommunication Development Conference, Buenos Aires, Argentina, 9-20 October 2017.

7. Probably it could be worth holding the first ITU WORLD TELECOM - DIGITAL ECONOMY in the nearest time devoted to comprehensive consideration of the challenge from the standpoint of global approach to it. Thus, as never before, the new ITU's historical role would be confirmed in providing infocommunication supply for Digital Economy worldwide.

Effectiveness of such events is proven based on the experience of the first ITU WORLD INTERACTIVE TELECOM in 1997 (Fig. 3).

8. The strenuous work and significant personal creative contribution of SG 6 Chairmen and of course Working Parties Chairmen should be highly appreciated (Fig. 4).

9. Finally I will try to reflect a common opinion that our industry was very fortunate, because Directors of CCIR/ITU-R always attentively and insistently led the activity of broadcasting Study Groups (Fig. 5). I was happy to work during each their guidance. I had the pleasure to meet the first CCIR Director, the prominent Dr. van der Pol during the VII Plenary Assembly of the CCIR in London in 1953 (Fig. 6).

Today we see two ITU-R Directors.

Significant contribution of Dr. Valery Timofeev to the success of the Regional Radio Conference 2004/2006 should be particularly noted. It was him who identified its objectives and proposed the strategy for preparation and organization of the Conference. The Conference provided frequency resource to begin terrestrial digital TV broadcasting in 119 countries. He continues to share his valuable advices with mass media regarding the developments in this field, as the Special Adviser to the Secretary General of ITU.

Mr. François Rancy quite successfully organized and held the ITU International Symposium on the Digital Switchover in the 2015 anniversary year, which not only summarized the outcomes of the ITU Regional Agreement GE-06 but also outlined the long-term objectives. On his initiative, WP 6A established two new Rapporteur Groups on WRC-19 issues and development of planning parameters for frequency coordination activities for countries in Central America and Caribbean as requested by the BR. It is evident that the complex tasks facilitating global development of the Digital Economy will be successfully solved under his guidance.

10. Thus, over the years a multitude of substantial outcomes were achieved and highly appreciated, a demand for the ITU is significantly increased, and bright prospects are ahead.

One of the most important achievements is the worldwide recognition of the historical fact that digital TV broadcasting was attributed to the ancestors and pioneers of digital economy. It really confirms for the first time the advantages of complex digitalization that solved great information and economic tasks. It becomes the convincing world example and stimulus for all other industries that are included into digital economy, relying on the experience and the results of digital TV broadcasting.

So, the contribution of CCIR/ITU-R expands far from the broadcasting. And ITU, leading and forming the infocommunication supply of the digital economy, plays the role of an important core element around witch many industrial digital systems are joined, taking into account its harmonization, safety, international integration.

I wish you success!