11h30 - 13h | Aug. 24, 2017 – Thursday | ROOM 12

TECHNOLOGY FOR TV AND RADIO

INVENTING THE FUTURE – RESEARCH & DEVELOPMENT – R&D

Chair: CRISTIANO AKAMINE - Researcher and Professor - UNIVERSIDADE MACKENZIE/ SET

Let's travel back in time and see what will happen in the future? Futuristic technologies begin with research developed in the laboratories of universities and research centers. This panel presents the prominent studies conducted by various research institutions.

- **THE TREND OF BROADCASTING TECHNOLOGY -AN INTRODUCTION OF NHK STRL OPEN HOUSE 2017**

Speaker: Kenichi MURAYAMA Senior Research Engineer Advanced Transmission Systems Research Division Science & Technology Research Laboratories NHK

NHK STRL's annual event "Open House 2017" was held this May and attracted more than 20,000 visitors. This year, it exhibited 30 topics including AI and IoT as well as 8K technologies. Some technologies targeting for the 2020 Tokyo Olympic and Paralympic Games were also demonstrated. This presentation will explain some highlights demonstrated at Open House 2017 and overview the trend of broadcasting technology.

NAB PILOT

Speaker: Skip Pizzi - Vice President, Technology Education and Outreach (NAB)

The NAB's PILOT initiative is a coalition of innovators, educators and advocates dedicated to advancing broadcast technologies and cultivating new media opportunities via research, development, incubation, investment and education. A successor to the earlier "NAB Labs," PILOT was formed in early 2016, and it brings together the broadcaster members of NAB with a new class of other stakeholder members sharing broadcasters' passion and dedication to innovation. These PILOT members collaborate with broadcasters across the value chain to drive new opportunities in the industry.

- **RESEARCH AND DEVELOPMENT OF THE LABORATORY OF VISUAL COMMUNICATIONS OF UNICAMP**

Speaker: Diego Arturo Pajuelo Castro - researcher - UNICAMP

In 1994, Prof. Yuzo Iano founded the LCV (Visual Communication Laboratory). Since then, the laboratory aims to provide academic research with solid results and solving very specific industrial technical problems. The LCV is a laboratory dedicated to developing state-of-the-art advances in technology through innovation and technological research for the benefit of humanity and the world's technical society. Nowadays, in the area of TV and Radio technologies the following research has been developed: Performance of broadcasting services, Data compression, Video encoding, Digital image processing, Facial recognition, Artificial intelligence and Energy efficiency.

- **RESEARCH AND DEVELOPMENT OF THE MACKENZIE DIGITAL TV LAB**

Speaker: Julio Omi – Visiting Professor at the Digital TV Laboratory - Mackenzie Presbyterian University

The Digital TV Research Laboratory (LPTVD) of the School of Electrical Engineering of Mackenzie Presbyterian University conducts research and development dedicated to the broadcasting sector. LPTVD contributed to the development of several Brazilian Digital TV System Intellectual Properties and currently is carrying out academic research that may contribute to the definition of the next Brazilian digital TV system. This presentation mainly introduces the ISDB-T LDM, ATSC 3.0 modulator, laboratory/field tests, and technologies transferred to the productive sector.

CRISTIANO AKAMINE - Researcher and Professor - UNIVERSIDADE MACKENZIE/ SET

He holds a degree in Electrical Engineering from Mackenzie Presbyterian University (1999), a master's degree and a Ph.D. in Electrical Engineering from the State University of Campinas (2004/2011). He is a researcher at Mackenzie's Digital TV Research Laboratory since 1998. He took an internship at NHK Laboratories for Research in Science and Technology (STRL) and was Visiting Specialist Professor at Unicamp's Faculty of Technology. Currently, he is a professor in Electrical Engineering and the Post-Graduate Program in Electrical and Computer Engineering (PPGEEC) of Mackenzie Presbyterian University and Coordinator of Mackenzie's Digital TV Research Laboratory. He has a scientific grant of Productivity and Technological Development and Innovative Extension - Level 2 from National Counsel of Technological and Scientific Development (CNPq). He is also a member of the Board of the Brazilian Digital Terrestrial Television (SBTVD) Forum. He has several patents and several articles published and has experience in the area of Electrical Engineering, with emphasis on digital TV, digital communication, channel coding, embedded systems, reconfigurable logic and software defined radio

Kenichi MURAYAMA Senior Research Engineer Advanced Transmission Systems Research Division Science & Technology Research Laboratories NHK

Kenichi Murayama joined NHK (Japan Broadcasting Corporation) in 2002. From 2002 to 2008, he has worked at the NHK Engineering Administration Department / Transmission & Audience Reception Engineering Center. From 2008 to 2013, he has worked at the Advanced Transmission Systems Research Division in NHK Science and Technology Research Laboratories (STRL) and has been engaged in research and development related to next generation of digital terrestrial broadcasting.

Skip Pizzi - Vice President, Technology Education and Outreach (NAB)

Skip Pizzi is Vice President, Technology Education and Outreach, at the National Association of Broadcasters (NAB) in Washington, DC, USA. His career has spanned the broadcast and digital media industries, working in audio engineering at NPR, and in audio production, media standards and technical policy at Microsoft. He was also an editor at Broadcast Engineering magazine, and a columnist for several other international industry publications. He remains a technology journalist, editor, author and trainer today. His most recent book is A Broadcast Engineering Tutorial for Non-Engineers, 4th edition, published by Focal Press. He is currently Associate Editor on the NAB Engineering Handbook, 11th edition, which will be published later this year. Skip serves as Vice-Chair of the Advanced Television Standards Committee (ATSC) Technology Group 3 (TG3), which is developing the ATSC 3.0 standard. He is also a member of the Board of Directors of the Ultra HD Forum. Skip is a graduate of Georgetown University, where he studied Electrical Engineering, International Economics and Fine Arts..

Diego Arturo Pajuelo Castro - researcher - UNICAMP

Diego Arturo Pajuelo Castro is a doctoral student at the Department of Communications (DECOM) of the Faculty of Electrical Engineering and Computation (FEEC) of the State University of Campinas (Unicamp) and works as a researcher at the Visual Communications Laboratory (LCV). He worked for a number of years at one of Peru's leading Network Operations Centers (NOC), Telefonica, which provides digital television services to the Latin American Region. Currently, his research interests are in the area of new technologies for television and multimedia systems and as part of the master's dissertation he has presented a Video Encoding Proposal for High Dynamic Range (HDR) Television System

Julio Omi – Visiting Professor at the Digital TV Laboratory - Mackenzie Presbyterian University

Graduated in electronic engineering from the Polytechnic School at USP, and has a Master's in Engineering from the University of Tokyo. He was Engineering Manager of the Radio Department at NEC do Brasil, and took part in the ITU-R, in the TG-8/1 and WP-8F Groups handling the IMT-2000 systems, and also at CITELE. He was a member of the Brazilian delegation to the Radio Communication Conferences in 1995, 1997 and 2000. Took part in work at the Digital TV Laboratory of Mackenzie University, on the SBTVD project. He is Visiting Professor at the Digital TV Laboratory of the Mackenzie Presbyterian University.

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