Industry Talks

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RAN-WiserTM - A methodology to design portable RAN Modems and DSP applications
By
Anindya Saha
Date & Time: 30th July 2021 (1400-1430 hours)

ABSTRACT:
In 5G networks, the concepts of "disaggregation" and "virtualization" make the telco networks look like IT cloud networks. The scaling benefits accrued in an IT cloud network are thus being brought to the telco cloud simplifying deployment, provisioning, and automation. Specifically, the disaggregation in the DU landscape has propelled the separation of the DU hardware and software. DU High PHY has adopted a software-defined approach executing on COTS hardware. Consequently, there is a diverse ecosystem of DU Independent Software Vendors (ISV). However, the independent hardware vendor (IHV) ecosystem for DU is still very niche and results in vendor lock-in. The talk describes a new methodology to design and develop portable RAN Modems in a hardware-agnostic manner. The proposed method focuses on optimizing a "virtualized RAN" architecture deployed by telecom operators and could be used for any DSP application. The solution allows mobile network operators to work with custom RAN hardware without sacrificing COTS solution benefits, allowing the operators to move across multiple hardware vendors. Along with portability, the dynamic and optimum utilization of the underlying compute resources is a crucial requirement addressed by this methodology. The proposed method is thus an essential step in the development of a Truly Open Virtualized RAN.
SPEAKER:

Anindya Saha is Chief Technology Officer (CTO) at Saankhya Labs with approximately 25 years of experience. He is an expert on Software Defined Radios and leading the design and development of the Baseband and RF subsystems for Saankhya's products in wireless communication, including Radio development for 5G. He has been instrumental in SDR Platform development and holds several fundamental patents and publications in this domain.

He is a Senior Member, IEEE and participates in standardization activities in TSDSI, O-RAN, and 3GPP. Anindya is also a Governing Council member, TSDSI, which is the Indian Standards Development Organization. He holds 30+ approved US and India patents related to Wireless Radios, RF/Baseband design, VLIW CPU architectures, and SDR Platforms. He has authored 5 IEEE publications and co-authored a chapter titled "IEEE 802.22/802.22.3 Cognitive Radio Standards: Theory to Implementation" in the Handbook of Cognitive Radio, published by Springer. Anindya has a Master's degree in Electrical Communication Engg from IISC, Bangalore (1994-1996) and a Bachelor's degree in Electrical Communication Engg from IIT-BHU, Varanasi (1989-1993), where he was the recipient of the Gold Medal in Graduate Studies. His profile is available at https://in.linkedin.com/in/anindyasaha

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Role of AI in Beyond-5G Terminals & Networks
By
Ratnakar Rao
Date & Time: 30th July 2021 (1720-1750 hours) Indian Standard Time

ABSTRACT:

With advances in computation capabilities, we have seen how AI has taken over various fields. It is time for wireless systems to take advantage of AI, spanning various facets of wireless ranging from RF to transport protocols. Trends like Network feature virtualization and Multi-access edge computing can only accelerate the adoption of AI. We talk on how AI is transforming fundamental aspects of wireless networks and terminals eventually paving a new path for Beyond-5G systems.

Ratnakar Rao is Senior Director, Engineering at Samsung R&D Institute in Bangalore, where he leads the Beyond 5G Communication R&D team. He has over 20 years of experience in telecommunication industry . He specializes in Wireless protocols and played a key role in the launch of Samsung's 5G mmWave and Standalone smartphones in world-wide markets. He is a Senior Member, IEEE and has 20+ International patent grants. His current areas of interest include AI-in-Wireless and Next generation communication systems. Ratnakar holds a Master's degree in Telecommunication Systems Engineering from IIT, Kharagpur. He is a TEDx speaker and has delivered several invited talks and podcasts on technological advances. His profile is available at www.linkedin.com/in/ratnakar-rayavarapu

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Industry Interaction: Samsung
By
Uma Kishore
Date & Time: 30th July 2021 (1750-1810 hours) Indian Standard Time

SPEAKER:

Uma Kishore Umakishore has more than 20 years of experience in Wireless Communications R&D (Mobile and Network). He heads Advanced Modem Development group in Samsung R&D Institute, Bangalore with major focus on 5G modem development for both macro and virtualized systems.

He holds Master's Degree in Signal Processing from Indian Institute of Science and Pursuing PhD From IIT Madras. He holds more than 30 patents in wireless communications area. He received more than 20 awards in SRIB and also from Samsung Electronics HQ. He is awarded with "Samsung Electronics Employee of the Year (2020)" He is Samsung certified Software Architect. His main research interests are in signal processing & communications, and modem design for next generation wireless systems.