India Mobile Congress (IMC) positions India distinctly on global telecom map

New Delhi, 16th October, 2019: The India Mobile Congress 2019, the largest digital technology forum in South Asia, which is jointly organised by the Department of Telecommunications, Government of India and COAI today concluded with over 75000 visitors from 40 plus countries attending the third edition of South Asia's biggest telecom, Internet, and technology event.

The inauguration ceremony on first day was attended by more than 3000 people was graced by the presence of Hon'ble Telecom Minister, Shri Ravi Shankar Prasad, along with Shri Anshu Prakash, Chairman, DCC and Secretary (T) and other national and international delegates including Mr. Kumar Mangalam Birla, Chairman, Aditya Birla Group, Mr. Malcolm Johnson, Deputy Secretary General, ITU; Mr. Jim Whitehurst, Global President and CEO, Red Hat, Mr. Rakesh Bharti Mittal, Managing Director and Co-Vice Chairman, Bharti Enterprises Ltd, Mr. Jay Chen, CEO, Huawei India. Other delegates who attended the three days event includes Mr. Ajit Mohan, CEO, Facebook India, Mr. Rajen Vagadia, VP & President, Qualcomm, Prof. Adrian Park, Professor and Chairman, Depart of Surgery, John Hopkins University; Dr Ganesh Kathiresan, VP, Digital Healthcare, Reliance JIO, Dr. Devi Shetty, Chairman, Narayana Health, Mr. Ankit Tripathi, Additional Director, Centre of Health Informatics, Ministry of Health and family Welfare, Mr. Varin Jhaveri, OSD and Lead Innovation Strategy, National Health Authority.

The prestigious event saw 250+ speakers and 300+ exhibitors showcasing cutting edge products and services across 60,000 sq. ft. of exhibition space. That apart, 5,000 CXO-level delegates, 150 national and international buyers as well as sellers, made IMC 2019 a vibrant opportunity for business transactions. Make in India and Startup India was also well received by the visitors where 250 statups participated.

Third edition of India Mobile Congress witnessed various live demonstrations of 5G use cases. The exhibition stalls covered a variety of interesting possibilities hinged around 5G, Internet of Things, Augmented and Virtual Reality, Artificial Intelligence, Robotics, Smart City Solutions, Fintech, mhealth, and Cyber Security, amongst others.

To encourage the young talent and innovation, the event also saw the IMC Digital Communications Awards. Nine of the IMC awards were sponsored by ZTE and three IMC & Aegis Graham Bell Awards. Along with that IMC organised Grand Innovation Challenge Awards where winners were felicitated by Shri Anshu Prakash, Telecom Secretary.

At IMC Hon'ble Telecom Minister, Shri Ravi Shankar Prasad, reiterated the Government's commitment to create a favourable atmosphere for telecom companies to operate and is well aware of the problems and challenges faced by the industry. The Government has already come out with enabling policies in areas like electronic manufacturing, communications, open source technology and also reforms in domains such as spectrum trading, sharing and harmonisation, assuring the industry of the requisite support.

IMC with the Knowledge Partner, KPMG in India, launched a report on the TMT sector titled 'Imagine a new connected world: Intelligent, Immersive, Inventive.' The report takes a deep dive into the digital ecosystem enabled through 5G, blockchain technology, IoT, AI, cognitive computing, machine learning and AR/VR to name a few. While the current investment and focus is on creating an enriched omni-channel experience for customers, it is the use of bots and blockchain that are going to be game changers in enhancing customer experience over the next five years, as per the report.

Key Announcements during India Mobile Congress 2019

Vodafone Idea Ltd and Nokia

- Vodafone Idea Business Services (VIBS), the enterprise arm of Vodafone Idea Ltd., the country's leading telecom operator, today announced its partnership with Nokia to roll out software-defined networking in a wide area network (SD-WAN) services for start-ups and enterprises. Through SD-WAN deployment, VIBS will offer advanced networking and connectivity solutions and enable enterprises to dramatically increase the speed of deployment, flexibility and control. It is a software-defined network for digital business to securely access applications in a multi-cloud environment.

Huawei India

- Huawei India Enterprise showcased 5G Powered India-Centric Solutions at India Mobile Congress 2019 today. Introduced the Wi-Fi 6 technology to accelerate Indian Enterprise into the New Digital Era. Committed to the vision of a New India, Huawei India Enterprise business featured a comprehensive range of the 5G powered ICT products for varied industries such as 5G + smart city, 5G + safe city, 5G + airport (boarding gate) and 5G + education (and remote classroom) aimed at a 5G accelerated Digital India. Bringing the next generation of wireless connections to India, Huawei introduced the enterprise grade Wi-Fi 6, powered by Huawei 5G, for high-scale commercial use of enterprises in India. Together with alliances and solution partners, Huawei demonstrated some of its solutions and use cases for multiple vertical sectors relating to smart cities, transportation, education and smart campus solutions at IMC 2019.

Qualcomm – NavIC

- **Qualcomm – NavIC:** Qualcomm announced support for India's Regional Navigation Satellite System (IRNSS), Navigation with Indian Constellation (NavIC), in select chipset platforms across the Company's upcoming portfolio. The initiative will help accelerate the adoption of NavIC and enhance the geolocation capabilities of mobile, automotive and the Internet of Things (IoT) solutions in the region – with the backing of engineering talent in India. The collaboration delivered the first-ever NavIC demonstration using the Qualcomm® Snapdragon™ Mobile Platforms on September 19th in Bangalore and showcased the solution again at India Mobile Congress, October 14-16 in New Delhi.

- **L2Pro:** Qualcomm Incorporated in collaboration with the Cell for IPR Promotion and Management (CIPAM) of the Department for Promotion of Industry and Internal Trade (DPIIT), Government of India and the Centre for Innovation, Intellectual Property and Competition (CIIPC) at National Law University Delhi (NLUD), today announced the launch of the L2Pro India IP e-learning Platform. The L2Pro platform – designed to enable Micro, Small and Medium Enterprises (MSMEs), university students, and startups in India to bring their innovations quickly to market – will aid in deeper understanding of the intellectual property (IP) domain, how to protect innovations with patents, use copyrights to protect software, develop trademarks, integrate IP considerations into company business models, and obtain value from research and development (R&D) efforts.

- Ericsson and Qualcomm successfully complete first ever Live 5G video call in India on mmWave spectrum at India Mobile Congress. The call was made using smartphones based on the flagship Qualcomm® Snapdragon™ 855 Mobile Platform with Snapdragon X50 5G Modem-RF System and Ericsson's 5G platform including 5G NR radio, RAN Compute products and 5G Evolved Packet Core. The achievement is a significant milestone in the country as India gets ready for 5G. For mobile networks, mmWave spectrum will be an important capacity layer for both 4G and 5G. As part of the

demonstration, Nunzio Mirtillo Head of Market Area South East Asia, Oceania and India at Ericsson, made a video call at the Ericsson booth to Rajen Vagadia , Vice President , Qualcomm India Private Limited on site at IMC 2019. The companies have already worked closely to create several 5G technology milestones.

Himachal Futuristic Communications Ltd.

- After the successful launch of the next generation Wi-Fi technology products and solutions under its brand IO by HFCL on day 2 at IMC 2019 comprised of in-depth business meetings and product showcase of the newly launched product category. HFCL has displayed its globally benchmarked products and solutions under the brand IO; including Access Points (APs), Unlicensed Band Radios (UBRs), Wireless LAN Controller (WLC), Element Management System (EMS) and Cloud Network Management System (CNMS) at IMC 2019. HFCL also showcased their tri-radio 4X4:4 Outdoor Access Point compliant to the latest Wi-Fi standard Wi-Fi 6 with integrated/external antennae (ion12/ion12e) option, which is a top-of-the-line Outdoor Access Point with tri-radio concurrent operation in 2.4 and 5 GHz bands and peak throughput up to 5 Gbps. The product is WFA certified for Hotspot 2.0 and can cover wide range of indoor and outdoor deployment scenarios.

- HFCL announced the launch of Next Generation Wi-Fi Technology products and solutions under its Brand - IO that shall meet the enormous global and Indian Wi-Fi network demand. IO Networks are globally benchmarked with features of Next-Gen technologies across all products that include Access Points (AP), Unlicensed Band Radio (UBR), Wireless LAN Controller (WLC), Element Management System (EMS), Cloud Network Management System (CNMS). IO is a platform that aims to bring in efficiency and intelligence to mobility and assist global citizens to use the most advanced Wi-Fi technology products & solutions while keeping a sharp focus on security and safety.

Sterlite Technologies

- **Stellar-Fibre Launch**

STL launched Stellar Fibre, a path-breaking solution that will power the next-gen ultra-high definition future. The leading-edge innovation from STL's optical design solutions guarantees best-in-class data transfer, negligible data loss even with high fibre bends, and compatibility with all fibres in use today.

- **MantraPODS launch:** STL launched MantraPODS, a programmable open disaggregated solution for networking that completes the fully integrated FTTxMantra solution. FTTx MANTRA is an end-to-end FTTx-as-a-service solution that enables swift roll-out of Fibre-to-the-Point (FTTx) networks. With Programmability at the core of the network, PODS brings more flexibility and service excellence to data networks.
- **LEAD 360° 2.0:** STL unveiled its second generation of Hyperscale Network Modernisation solution – LEAD 360° 2.0 which comes with special features like robotics cable blowing and AI bots and further accelerates the deployment of smarter networks of tomorrow. LEAD 360° 2.0 combines the potential of cutting-edge service engineering and highly orchestrated fibre roll-outs to deliver smart networks of tomorrow.

- **SENSRON+:** STL's Sensron+ is an industry first, end-to-end solution for critical infrastructure security. It leverages the power of hybrid sensing technologies like Fibre, Radar, Lidar, Sonar, combined with Big data and analytics and the most advanced Command and Control Centre to deliver 360-degree solutional awareness and an unparallel "threats to response" mechanism.

- The company unveiled, 5G Edge Mantra, an advanced 5G data hub technology, in presence of Shri Anshu Prakash, Secretary, DoT. The solution is designed to meet the growing mobile broadband demands, supporting multiple access technologies while providing enterprise-grade service reliability, security, bandwidth, intelligence and latency to end-users.

Infinera

- Infinera, a global networking solutions provider, brings to India Mobile Congress cutting-edge technology advances that are powering network transformation and enabling a new generation of services, including 5G. From Instant Bandwidth and Auto-Lambda to cognitive intelligence and disaggregated edge routing, Infinera's end-to-end solutions deliver industry-leading economics and performance in long-haul, subsea, data center interconnect and metro transport applications. Experience their innovations and see how they are laying the foundation for the **The Infinite Network** – extending high-bandwidth solutions everywhere, providing an infinite pool of always-available connectivity, and enabling service activation instantly.

VVDN

- **Fronthaul with ORAN over eCPRI (7-2** splitup **option):** VVDN is demonstrating 5G fronthaul termination solution based on Xilinx FPGA. The solution is O-RAN 7-2x compliant split up transporter over eCPRI. Each fronthaul can support upto 8 layer uncompressed IQ data. Each layer is 100 MHz bandwidth. This allows telcos to leverage the bandwidth of the fronthaul making it as catalyst, which would help, build robust 5G network infrastructure.

- **Vermeo Card:** VVDN is showcasing its Vermeo card which is a dual FPGA solution architecture: RFSoc and MPSoc. The Vermeo Card is targeted for Telco Application. Below are the uses cases supported:

    - Layer 1 High Phy + Fronthaul with ORAN over eCPRI (7-2 splitup option)
    - Layer 1 High Phy + Layer 1 Low Phy + Fronthaul with ORAN over eCPRI (7-2 and 8 splitup option)

- **SmallCell:** VVDN and Xilinx are showcasing L1 Solution for 5G small cell using Zynq UltraScale+ RFSoC with integrated DFE and L1 stack in the same device. The solution will support 4T4R making it ideal for typical small cell deployment. The solution is targeted to accelerate operator's time to market for 5G Small Cell solution.

- Xilinx Announces Vitis - a Unified Software Platform Unlocking a New Design Experience for All Developers. Vitis empowers software developers with adaptable hardware, while accelerating productivity for hardware designers. Rather than imposing a proprietary development environment, the Vitis platform plugs into common software developer tools and utilizes a rich set of optimized open source libraries, enabling developers to focus on their algorithms. Vitis is separate to the Vivado® Design Suite, which will still be supported for those who want to program using hardware code, but Vitis can also boost the productivity of hardware developers by packaging hardware modules as software-callable functions.

- Xilinx Expands Alveo Portfolio with Industry's First Adaptable Compute, Network and Storage Accelerator Card Built for Any Server, Any Cloud, the Alveo U50. First low-profile PCIe Gen 4 card delivers dramatic improvements in throughput, latency and power efficiency for critical data center workloads and uniquely designed to supercharge a broad range of critical compute, network and storage workloads, all on one reconfigurable platform.The 8GB of HBM2 delivers over 400 Gbps data transfer speeds and the QSFP ports provide up to 100 Gbps network connectivity. The high-speed

networking I/O also supports advanced applications like NVMe-oF™ solutions (NVM Express over Fabrics™), disaggregated computational storage and specialized financial services applications.

Whale Cloud Technology Co., Ltd

- Whale Cloud, a subsidiary company of Alibaba Group and a global leader in digital transformation, unveils 5G Operation Map at this year's India Mobile Congress 2019. 5G is the catalyst to accelerate the digital society transformation. In the 5G era, operators will be the technical center of the whole society's digital transformation. Whale Cloud has developed the 5G Operation Map to guide CSPs to better operate the 5G network and business, speed up the returns of 5G investments, and improve core competence. The 5G Operation Map is designed to support operators in different stages of the 5G network deployment. The map contains four key capabilities required for successful 5G monetization:
    - **Center of intelligence** can provide advanced data analytics and AI technology; help operators build intelligence capability for network and business operation.
    - **Center of Operation** focuses on comprehensive 5G network management including planning, orchestration, network slicing and operation management; also provides the API platform to open IT& Network capability to ecosystem partners.
    - **Center of Ecology** builds a digital ecosystem for various industrial customers from business onboarding, marketplace to revenue management support.
    - **Center of Value** maximizes the value of ecosystem partners online and offline channels and customers by using digital technologies and innovative business model.

In addition to the 5G operation map, Whale Cloud also presented its digital telco transformation approach Digital Telco Maturity Map (DTMM), case-proven AI and big-data platforms for the telco industry, innovative Telco New Retail and Digital Sales Channels Management solution, and smart city solutions empowered by the Alibaba technologies and practices.

Huawei

- Huawei has announced the first in India deployment of Artificial Intelligence (AI) based Massive MIMO optimization technology in the Vodafone Idea network. AI enabled Massive MIMO enables Vodafone Idea to add automation capabilities to its network, greatly improving optimization efficiency, boosting cell capacity and enhancing end-user experience of the network.

- Huawei also showcased Innovative & Inclusive 5G for India at IMC 2019, said we would like to go beyond 5G which is 5G + AI. Huawei demonstrated 5G + AI applications to empower operators and industries to lead in the 5G era and boost Digital India. Keeping 5G at the forefront and center of its showcase, Huawei at the India Mobile Congress 2019, demonstrated the potential power of a 5G enabled future with live 5G use-case applications. Huawei along with key partners showcased a variety of 5G-enabled applications not just in the telecommunications sector but beyond in vertical industries, with new applications in 5G + safe city, 5G + smart city, 5G + virtual reality (VR), 5G + airport (boarding gate) and 5G + education (smart classroom).

Intel

- As the Intelligent Edge partner at India Mobile Congress, Intel showcased a wide gamut of solutions on telco cloud, smart space, intelligent traffic management, 5G Radio Access Network (RAN) based on Intel® architecture. Mr. Rajesh Gadiyar, Vice President, Data Center Group, and CTO, Network & Custom Logic Group for Intel participated in a panel discussion on '*Global Strides in 5G Deployment: Roadblocks and Best Practices'*, to discuss the status of global 5G deployment, the roadblocks being faced by countries that are nearing 5G implementation and the progress so far. Intel also shared insights on the most impactful transformations enabled by 5G, the role played by AI and IoT in enabling seamless connectivity across sectors and how software-defined networking (SDN) and network functions virtualisation (NFV) are bringing network transformation to meet bandwidth-intensive requirements for the future.

VVDN

- VVDN is working to deliver the next generation 5G acceleration solutions that will not only implement the complex modules of 5G infrastructure but also position VVDN well ahead in 5G network solution space. VVDN has partnered with Xilinx to accelerate the above solutions in FPGA and this enables VVDN to develop 5G Acceleration IP's along with the hardware. VVDN showcased its solution with live demos which would enable key partnerships with 5G equipment vendors, telecom operators and system integrators.

Bharti Airtel

- Bharti Airtel showcased a range of exciting digital solutions for businesses and consumers at the India Mobile Congress 2019. Airtel demonstrated a wide range of use cases and applications for a world on connected things that leverage 5G and pre-5G network technologies.
- **Cloud Based Immersive Gaming:** Airtel showcased immersive cloud-based gaming experience between multiple users over ultra-fast low latency Airtel 5G.
- **Secure Mining:** Using 5G and a secure private network Airtel demonstrated how digital voice communication and broadcasting of emergency messages, contributes to improved safety conditions and work environment in mines.
- **Smart Factory:** Airtel showcased how Network slicing can help build multiple logical networks for smart factories of the future. These network slices, are completely separated and independent to the extent that if something goes wrong in one slice it will not affect the other slices. These sliced networks with ultra-low latency power manufacturing floor robots in smart factories and send real time data and analytics, allowing managers to send back real time instructions to the robots and optimize the manufacturing process.
- **Remote Healthcare:** With extremely high throughput and low latency, 5G networks enable communication through the sense of touch using augmented reality technologies. Airtel demonstrated the next level of remote communication in a healthcare, allowing a doctor to maneuver a robot arm in real-time and examine medical patients in remote locations.
- **Smart Street Lighting Poles:** Airtel's smart pole platform are designed for energy efficient lighting and also offer other features such as surveillance cameras, and public address systems. The solution can be operated and managed remotely through a smart cloud based web platform.

- **Smart Charger:** It is India's first smart power bank rental service. The power bank provides fast charging and has inbuilt cables with all pin types. Solution has built an Internet of Things (IoT) platform to facilitate the shared economy use cases and to render a scalable, affordable, efficient and clean solution with a great user-experience.

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