

**GOVERNMENT OF INDIA  
MINISTRY OF COMMUNICATIONS  
DEPARTMENT OF TELECOMMUNICATIONS  
LOK SABHA  
UNSTARRED QUESTION NO.953  
TO BE ANSWERED ON 8<sup>TH</sup> FEBRUARY, 2017**

**R&D IN TELECOM**

953. SHRI RAM MOHAN NAIDU KINJARAPU:

Will the Minister of COMMUNICATIONS be pleased to state:

- (a) whether the Government promotes or proposes to promote research studies in the area of telecom and relevant technology;
- (b) if so, the details thereof;
- (c) whether educational institutions and other research institutes in the country are also involved in R&D in the sector; and
- (d) if so, the details thereof and the results achieved thereof so far?

**ANSWER**

**THE MINISTER OF STATE (IC) OF THE MINISTRY OF COMMUNICATIONS &  
MINISTER OF STATE IN THE MINISTRY OF RAILWAYS  
(SHRI MANOJ SINHA)**

(a) & (b): Madam, apart from Centre for Development of Telematics (C-DoT) which is the Telecom Technology Development Centre of DoT under Government of India, eight Telecom Centres of Excellence (TCOEs) have been established by bringing together Academic Institutions, Telecom Service Providers and Government with the objective of promoting development of new technologies to position India as a global leader in telecom innovation and a hub of telecom equipment manufacturing. Telecom Engineering Centre (TEC) an attached office of DoT has been entrusted with the functions of preparing fundamental technical plans and specification of common standards with regard to Telecom network equipment, services & interoperability. Moreover, Telecom Standards Development Society of India (TSDSI) has also been formed to contribute to development of next generation telecom standards and drive Intellectual Protection Rights (IPR) creation.

(c) C-DOT constantly interacts with user industry sectors like Defence, IT, Telecom etc. to understand their emerging technology requirements and also interfaces / engages with other research institutions, premier academic institutions for joint development. Apart from C-DoT, the Department through TCOEs has organized four innovation meets by bringing together the government, industry/associations, academic institutions, Venture Capitalists and entrepreneurs. These TCOEs have been co-located at 6 IITs ( Mumbai, Delhi, Madras, Kanpur, Kharagpur and Roorkee), IISc Bangalore and IIM Ahmedabad to facilitate constant interaction with the Educational Institutes.

(d) C-DoT has developed and transferred the technology for the products like Terabit Router, Giga-bit Passive Optical Network (GPON) and 100 Gbps Optical Transport Network (OTN) to be manufactured in the country. The TCOEs are involved in 89 R&D projects, out of which 42 have been completed and 5 start-ups incubated. TCOEs have produced 80 technologies out of which four have been commercialized. TCOE India has also initiated a venture capitalist supported programme called Innovation in Mobile Application Development Ecosystem. TSDSI members have submitted India Specific requirements resulting in technical contributions to 3<sup>rd</sup> Generation Partnership Project (3GPP) which are being discussed in the framework of 4G and Narrow Band Internet of Things (NB-IoT) standards for possible adoption.

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