

GOVERNMENT OF INDIA  
MINISTRY OF DEFENCE  
DEFENCE RESEARCH & DEVELOPMENT ORGANISATION

**LOK SABHA**

**UNSTARRED QUESTION NO.313**  
TO BE ANSWERED ON 3<sup>rd</sup> February, 2021

**QUANTUM BASED TECHNOLOGY**

313. SHRI P.V. MIDHUN REDDY:  
SHRI LAVU SRI KRISHNA DEVARAYALU:  
SHRI MAGUNTA SREENIVASULU REDDY:  
SHRI POCHA BRAHMANANDA REDDY:

Will the Minister of DEFENCE be pleased to state:

- (a) whether DRDO has developed Quantum based technology for Random Number Generation;
- (b) if so, the details thereof;
- (c) the significant advantages of such technology;
- (d) the details of the countries in the world apart from India having such technology; and
- (e) whether the Government plans on exporting the technology to other nations and if so, the details thereof?

**A N S W E R**

MINISTER OF STATE  
IN THE MINISTRY OF DEFENCE

(SHRI SHRIPAD NAIK)

- (a) Yes, Sir. DRDO Young Scientist Lab (DYSL)- Quantum Technology (QT) has developed Quantum based technology for Random Number Generation.
- (b) DRDO has developed a fibre-optic branch path-based experimental prototype of Quantum Random Number Generator (QRNG). It uses a Continuous Wave (CW) laser source which emits light that is attenuated to a level which can be detected by single photon detectors. The post process data obtained by QRNG at raw speed of around 150kbps has passed the global standard. Efforts are being made to enhance the speed of QRNG.
- (c) Quantum Random Generators would be essential in several security applications.
- (d) There are countries like US, Switzerland, China, Germany, Canada, Spain, Australia etc. who have developed the QRNG technology.
- (e) At present prototype is demonstrated. Plan is on to mature it as a finished product.

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