

## **“Indian Technology Contributions to the International Mega-Science Projects”**

by Dr. B. Satyanarayna (Scientific Officer (H), TIFR,) on line lecture held on  
3<sup>rd</sup> September 2020, 4.30 PM

*During the webinar Dr.B.Satyanarayna,TIFR, shared his thoughts and Experiences on “**Indian technology contributions to the international mega-science projects.**” In this talk Dr.B.Satyanarayan explained the eight Mega Science Projects and contribution of Indian Technology for the same . He also explained how theses Mega Projects have reached **mega and giga scales in terms of size and complexity** of the experiments as well as their costs and collaborations. The experiments not only thrive on the **state-of-the-art technologies** in the areas of detectors, electronics, instrumentation, software and so on but quite often seek inventions in these areas. **The resultant spinoffs and applications benefit the mankind at large.***

### **Introduction**

India is making its mark in fundamental science by contributing cutting -edge technology for world MEGA Science Projects. Being one of the Founder-Member Country of these projects, India is contributing more than 1Bn USD for the same. The session began with a unique short summary of Dr. Satyanarayan introduction, his work engagements, and his association with prestigious institutions like CERN, LEGO, ION, to name a few. His introduction to those projects laid the foundation of the talk. He presented all projects with captive visual images and explaining its impact on science and society at large. Talk was followed by engaging interactive Q & A Session. Some of the Key takeaways of the talk are as follow.

### **Marvel of Engineering**

All eight Mega Science Projects are marvel of engineering. All these projects are built with state-of the art technologies. In many cases these projects have led to invent new technologies in the area of Electronics, Instrumentations, Software's, Cloud Computing, and Data Storing, just no name a few. All projects are pinnacle of Engineering and Collaborative efforts from scientific community across the globe. These projects are mega and giga scales in terms of size and complexity of the experiments as well as their costs and collaborations.

### **Capabilities of Engineers**

These projects show the important and capabilities of Engineers in turning idea of a scientist's experiment into reality. These experiments are not just large in scale but also extremely complex in nature. Without the contribution of engineers these experiments and projects are incomplete. These projects are perfect examples of collaborative work between scientists and Engineers which can creates wonders!

### **Contribution of India**

The contributions of India in these Mega Projects are not just limited to finance but in designing various experiments, instruments and writing software's. Our Indian Students, Engineers, and Scientists contributions are highly appreciated and gain good reputation of their Intellectual capabilities. Many research scholars and scientists are trained under different exchange programs. India is known for its contribution in designing detectors at CERN. These technologies have not just helped in conducting experiments but also in spinning off technologies for industries.