

Agenda Item-10: Spin-off benefits of space technology: review of current status

Mr. Chairman and Distinguished delegates,

The Indian Space Research Organization (ISRO) has been providing technology solutions to the social problems. India felt that mass communication is the way to reach-out to larger masses for promoting various applications like education, medicine etc. In this regard, ISRO has developed a very strong Industry eco system through hand-holding and utilizing their expertise through a vibrant technology transfer program, wherein technical know-how is transferred to competent industries.

The program has paved way towards technological self-reliance, industrial growth and national development through spin-off benefits. Many of the technologies developed for space applications have been transferred to the industries for extending the benefits to other fields such as health, medicine, environment, safety, communication and transport.

Indian delegation had briefed this committee earlier on some such spin-offs including Medical Oxygen Concentrator and three types of medical ventilators (SVASTA, PRANA and VaU) which were quite timely, given the extraordinary circumstances caused by the COVID-19 pandemic, besides IRNSS receiver, Burst Demodulator, second generation Distress Alert Transmitter using messaging system for fishermen community, etc.

Mr Chairman,

The delegation would like to highlight some of the recent spin-offs that are being adopted in other areas benefiting the society.

During last two years, despite the setbacks caused by the global pandemic, many technologies were licensed by ISRO to Indian industries for societal application, commercialization and regular production. Some of the notable technologies are benzoxazine polymer, Low density EPDM based thermal insulation, Rocasin, Silica aerogel powder & composite sheets, etc.

For easing in the commercial participation of industries in space sector, it was decided to engage the NewSpace India Limited, the public sector unit under Department of Space to directly interact with industry and academia on single

window basis. NSIL will act as a vital catalyst to bring forth a synergetic approach to technology transfer across country.

Some of the notable technologies transferred to NSIL include IMS-1 satellite bus for production small satellites, Ceramic Servo Accelerometer (CSA) - a high accuracy navigation grade accelerometer used for guidance, navigation and control purpose in aerospace sector, ISRO Laser Gyro (ILG) - a class of optical rate sensor widely used in aerospace industries for inertial navigation applications, etc.

Further, know-how transfer of materials like Nitinol based shape memory alloy, porous Silicon Carbide, hot pressed Silicon Carbide, etc are having variety applications in aerospace industry. The revised mechanism of technology transfer through NSIL has created immense interest across industrial sectors with close to 25 technologies in pipeline, including but not limited to IMS-1 satellite bus, Li-ion battery cell, Ceramic Servo Accelerometer (CSA), MEMS acoustic sensor, etc.

Efforts are being made for the development of technologies in human health and medical areas such as microprocessor controlled prosthetic knee and foot, left ventricle assist device for human heart, etc. Another technology on anvil is TRISP - an innovative power module which utilises solar, AC and DC power with in-built UPS function to power Desktop PCs and other electronic gadgets.

Mr Chairman,

The Indian delegation would like to reiterate that the contribution of the Indian Space Programme extends to several other areas, and the technologies originally developed for space applications now find wide-spread use in diverse fields across the nation.

Thank you Mr. Chairman and distinguished delegates.