Learning of Science via Standards

- In March 2023, BIS announced the launch of ‘Learning Science via Standards’, a unique initiative for students to learn science via standards.
- Focuses on a series of lesson plans aimed to use scientific concepts, principles, and laws
- Help students understand their practical applications in manufacturing, functioning, and testing of quality characteristics of different products as stated in the relevant Indian Standards.
- Serve as a means to appreciate the significance of quality and standards and empower them to boldly face the real-life situations in any of their future endeavors.
- ‘Standards Clubs’ to be established in educational institutions across India.
- Over 4200 such *Clubs* have already been formed with over one lakh student members.
- To initiate the activities under these Clubs, more than 3400 science teachers have been trained to act as Mentors

R&D Projects for Formulation and Review of Standards

BIS has developed 22000+ Indian standards. Action research and R&D projects have always contributed to standardization processes. It need a large network of domain area experts

Objectives

Support and Commission R&D projects to generate knowledge, empirical data, and insights to facilitate/improve the formulation of new standards and updations/upgradation of the existing Indian standards

Expand the network of domain experts to carry out R&D projects in areas related to standardization and conformity assessment

Enrich the research ecosystem in educational institutions by imparting technical and professional education.

Upper limit of funding is 10 lakh only with a maximum duration of 6 months.

Indian National Strategy for Standardization

Focus on standardization, technical regulations, quality infrastructure, and related activities to advance the interests and well-being of Indians in a global economy.

Suggested strategies

- Positioning **standards as a key driver** of all economic activities relating to goods and services.
- Developing a **comprehensive ecosystem for standards development** to cover diverse interests and expertise available.
- Using standards for providing a **level playing field to domestic industry** and enhancing the competitiveness of Indian goods and services in domestic and international markets.
- **Adopting best practices** in standardization, conformity assessment and accreditation, technical regulations, and creating an integrated infrastructure, roadmaps, and institutions for effective management.
- Playing an active role and **taking leadership positions in apex international bodies** in related areas.
- Creating a **responsive mechanism to global developments** on standards, technical regulations, and conformity assessment that impact market access to Indian goods and services.
- **Aligning the strategy with other national policies** on trade/industry, consumers, and the environment.

Intellectual Property Rights Policy Management framework
Creative India; Innovative India (NIPR Policy 2016, scheme for IPR awareness)

Policy Initiatives

Funding Schemes

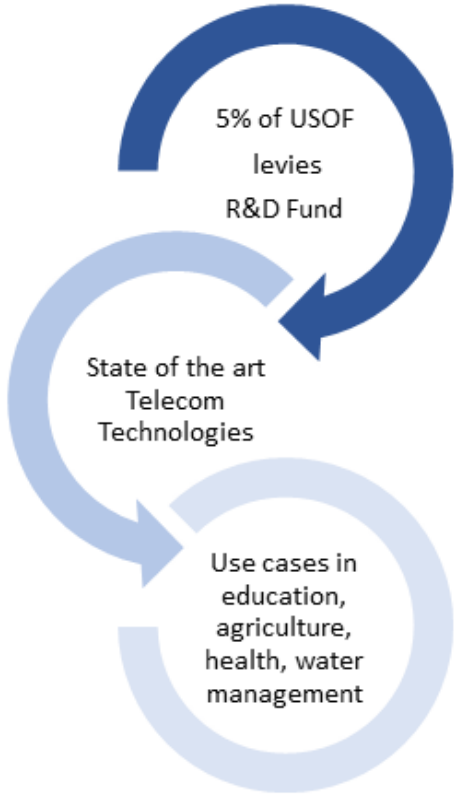
Policy Initiatives Experimental and Technology Trial License	Technology Development & Investment Promotion (TDIP) scheme	Champion Service Sector Scheme	PLI/DLI
• Spectrum license through self-declaration in all bands (Radiated Power < 100 mW) • Includes the necessary import permission for wireless products • NDCP 2018 • 5G High-Level Forum • Setting up of Indigenous 5G test bed (Rs. 224 crore) • 5G Hackathon and Identification of 56 Use Cases • The Telecommunications Act 2023	• TDIP scheme funds activities related to technology development like R&D and IPR generation and also for promoting manufacturing and export of telecom equipment and services.	• Provision for promotion of innovation and incubation of future technologies • Digital Communication Innovation Square is one of the sub-schemes DCIS 2021 (17), DCIS 2022 (43), DCIS 2023 (66) Approved 100+ crore Released 60+ crore	• PLI Scheme launched by DoT on 14th October 2021 with total outlay of ₹ 12,195 crore to realize the Prime Minister's vision of Atmanirbhar Bharat. • Investment – 2963 Crore, Sales 42554 Crore • Incentivizing design-led manufacturing to build a strong ecosystem for 5G as part of the Production Linked Incentive Scheme.

Telecom Technology Development Fund - Building state-of-the-art technologies to enable affordable broadband and mobile services in rural/remote areas

C-DoT Collaborative Research Program - Co-create indigenous solutions with Indian Industry players, research institutions, and academic bodies.

Telecom Technology Development Fund

- *Ease of doing R&D*
- *Minimum Compliance*
- *Spectrum facilitation*
- *Large funding*
- *Mentoring*
- *Prototyping to Commercialization*
- *Pilots*
- *High Impact Projects*
- *Consortium Projects*



To build state-of-the-art telecom technologies and enable the proliferation of affordable broadband and mobile services in rural and remote areas

- 5G development under 'India 5G Stack'
- 6G & Beyond technology development
- IoT& one M2M development
- Other Telecom Technologies under various research program
- Entrepreneurship Cell (for early-stage Start-ups)
- Research Scholarship program

400+ proposals in TTDF 2022
12 assigned to IAs

City - Bengaluru

Project ID	Project Name/WP No.	WP Description	Consortium Members	Address
417	AOC/WP1	Development of retimer chip for QSFP transceiver	Signalchip Innovations	4C-116, 4th Cross, Above HDFC Bank`, OMBR Layout, Banaswadi, Bengaluru, Karnataka 560043
417	AOC/WP2	Development of Transceivers	Signaltron Systems Pvt. Ltd	4C-116, 3rd floor, 4th Cross, Above HDFC Bank, OMBR Layout, Banaswadi, Bengaluru, Karnataka 560043
417	AOC/WP9	26GHz RFoF WDM Transceiver for Aerial fibre tests	SASMOS HET Technologies Ltd	Plot No. 311, Survey No. 197, Block GA, NPR Complex, (Opp. Prestige Gate 1) Hoody village, K.R. Hobli, Bengaluru-5600
417	AOC/WP16	SiN Parametric Amplifier and Homodyne Detector	Quanfluence Pvt Ltd	No 302 Sharada, 3rd & 4th floors, 60 ft road, AECS layout, Kundalahalli, Bengaluru – 560037

City - Delhi

417	AOC/WP10	Reconfigurable optical filter	IIT Delhi	Hauz Khas New Delhi – 110016
417	AOC/WP11	Optical frequency comb technology	IIT Delhi	Hauz Khas New Delhi – 110016
417	AOC/WP12	Fully Hybrid Optical communication link	IIT Delhi	Hauz Khas New Delhi – 110016
417	AOC/WP14	AI-enabled pre-emptive network control in Multiband Optical Networks	IIIT Delhi	Okhla Industrial Estate, Phase III, New Delhi – 110020
417	AOC/WP17	LiFi Network	IIT Delhi	Hauz Khas New Delhi – 110016
417	AOC/WP18	Turbulence resilient high data rate FSO system	IIT Delhi	Hauz Khas New Delhi – 110016

City – Chennai

417	AOC/WP3	Hybrid integration of QSFP transceiver	IIT Madras	Indian Institute of Madras, Sardar Patel Road, Chennai -600036, TN
417	AOC/WP5	Establishment of multicore fibre filed testbed	IIT Madras	Indian Institute of Madras, Sardar Patel Road, Chennai -600036, TN
417	AOC/WP6	Fan In Fan Out device-Process development	IIT Madras	Indian Institute of Madras, Sardar Patel Road, Chennai -600036, TN
417	AOC/WP8	Hybrid RFoF link between DU-RU for generation and transport of mm-wave signals	IIT Madras	Indian Institute of Madras, Sardar Patel Road, Chennai -600036, TN
417	AOC/WP13	Capacity scaling in Single mode fibres, BharatNet	IIT Madras	Indian Institute of Madras, Sardar Patel Road, Chennai -600036, TN

417	AOC/WP19	Outreach	IIT Madras	Indian Institute of Madras, Sardar Patel Road, Chennai -600036, TN
417	AOC/WP15	Network Security	ERNET India	As per agreement: Block-I, A-wing, 5th floor, DMRC IT park, Shastri Park, Delhi – 110053 As per proposal: ERNET India, IIT Madras Research Park, Chennai - 600113
302	6G/_	Baseband System for OAM in THz and full duplex technology in 6G Communication	IIT Madras	IIT Madras, Chennai, TN - 600036

Other Cities

417	AOC/WP4	Multicore fibre field testbed-4 core fibre field installation	Sterlite technologies Ltd	4th floor, Godrej Millennium, Koregaon road, 9, STS 12/1, Pune, Maharashtra -411001
417	AOC/WP7	Fan In Fan Out device-Product development	SFO Technologies Pvt. Ltd	As per agreement: Stone house Market road, Aluva, Ernakulam, Kerala - 683101 As per proposal: Plot #43, Cochin Special Economic Zone, Kakkanad, Cochin, 682037
302	6G/_	THz Antennas, OAM and RF systems	SAMEER	PL: SAMEER, R&D lab of Ministry of Electronics and Information technology, GoI, IIT campus, Powai, Mumbai – 76 PI: SAMEER-Kolkata Centre, Plot L2, Block-GP ,Salt Lake Electronics Complex, Sec-V, Kolkata, West Bengal 700091
302	6G/_	IRS development at 270GHz	IIT Patna	Dept. EEE, IIT Guwahati, Assam - 781039
302	6G/_	Sub-Terahertz CMOS transceiver and Reconfigurable Band-pass filters for 6G	IIT Guwahati	IIT Patna, Bihta-801106, Bihar, India

TTDF Phase-2.0 Proposals (2023)

- Category of applications invited