Ministry of Electronics & IT

Year End Review 2022: Ministry of Electronics and Information Technology (MeitY)

UIDAI starts 88 Aadhaar SevaKendras in 72 cities across the country

5.49 lakh Common Services Centres are functional out of which, 4.37 lakh CSCs are functional at Gram Panchayat level

DigiLocker provides a dedicated cloud-based platform as a personal space to residents for storage, sharing, verification of documents & certificates

AarogyaSetu App is now transformed into National Health App, bringing a whole plethora of digital health services powered by Ayushman Bharat Digital Mission

Remarkable growth in digital transactions is seen for FY 2018-19, FY 2019-20 & FY20-21 where we have achieved 3134 crore, 4572 crore & 5554 Crore respectively

India has witnessed a big leap in Electronic Manufacturing with schemes like Production Linked Incentives, Promotion of Manufacturing of Electronic Components & Semiconductors

Domestic production of Electronic Goods has increased substantially from ₹ 3,17,331 crore in 2016-17 to ₹ 6,40,810 crore in 2021-22 growi

India's digital story is one of an ICT - led development by use of technology that is affordable, inclusive and transformative. 'Digital India' programme aims at transforming India into a digitally empowered society and knowledge-based economy by ensuring ease of access, digital inclusion and participation. The strength of digital infrastructure and digital services has already proved its resilience during the pandemic times. India is among the top countries that have experienced the fast digital adoption. This has been achieved due to a focused approach of the Government and the implementation of innovative initiatives. These initiatives have not only eased the life of citizens but have also created a favorable ecosystem for startups, industries and electronics manufacturing with an aim to make India an "*AtmaNirbhar*" nation. Following are the major initiatives and the achievements during this year:

Digital Infrastructure

i. Digital Identity: Aadhaar

- Aadhaar is world's largest digital identity programme that provides biometric and demographic based unique digital identity that can be authenticated anytime, anywhere and also eliminates duplicate & fake identities. It provides an identity infrastructure for delivery of various social welfare programmes. As on 31st November, 2022, 129.41 crore [Live] Aadhaar has been issued.
- For providing convenient Aadhaar enrolment and update services to the people, UIDAI has started 88 Aadhaar SevaKendras (ASKs) in 72 cities across the country.
- UIDAI has launched Face Authentication modality by which an Aadhaar number holder's identity can be verified with Aadhaar authentication. Presently, 21 Entities have been permitted to use Face authentication in production environment. The total number of Face Authentication transaction since 15th October 2021 to 30th November 2022 is 1.15 crore.

Digital Delivery of   Services

i. **Common Services Centres (CSCs):** CSCs are the world's largest digital service delivery network, with wide reach in rural areas up to Gram Panchayat & Block level. These information and communication technology enabled kiosks with broadband connectivity has been providing various governments, private and social services to the citizens. As on date, 5.49 lakh CSCs are functional (*including urban & rural*) out of which, 4.37 lakh CSCs are functional at Gram Panchayat level.

ii. **Meri Pehchaan, a National Single Sign-On (NSSO)**was launched on July 4, 2022 by the Hon'ble Prime Minister, is a user authentication service wherein single set of credentials can provide access to multiple online applications or services. Currently, 5057 services of various Ministries/States integrated with NSSO.

iii. **MyScheme** was launched on July 4, 2022 by the Hon'ble Prime Minister, is a schemes eMarketplace, where citizens can discover eligible schemes based on his/her demography. More than 180 schemes of the 27 Central and State/UT Governments across 13 diverse categories have been added.

iv. **DigiLocker** has provided a dedicated cloud-based platform as a personal space to residents for storage, sharing, verification of documents & certificates, thus it is helping in eliminating use of physical documents. Over 13.5 crore users are registered with DigiLocker and over 562 crore documents are accessible via DigiLocker.

v. **UMANG (Unified Mobile Application for New-age Governance)** has been developed as a unified platform to deliver major Government services through Mobile. So far, 1,658 services from Central/State Govt. along with 20,197 Bharat Bill Payment Services (BBPS) have been on-boarded on UMANG

vi. **India Stack Global** has been initiated to showcase the India Stack and its building blocks globally. At present, 12 key projects/platforms namely Aadhaar, UPI, Co-Win, API Setu, DigiLocker, AarogyaSetu, GeM, UMANG, Diksha, E-Sanjeevani, E-Hospital, and E-Office are made available at the portal of India Stack Global available in all UN languages.

vii. **API Setu**: MeitY had notified the 'Policy on Open Application Programming Interfaces (APIs)' in 2015. The policy intended to promote efficient sharing of data among data owners and inter-and-intra Governmental agencies to achieve the objective of interoperable systems in order to deliver services in an integrated manner. Hence, API Setuproject intends to facilitate implementation of this policy. The portal has published around 2,118 APIs provided by many Central and State Government departments on NDH gateway. Currently, there are 1047 Publishers and 330 Consumers.

viii. **eSign** provides easy, efficient, and secure signing of electronic documents by an Aadhaar holder. so far, 34.41 crore eSigns have been issued. Out of these, e-Sign issued by CDAC (i.e. under e-Hastakshar project) is 8.22 crore.

ix. **National AI Portal** has been developed to provide all information related to Artificial Intelligence to all stakeholders at a single place and promote awareness and communication on AI in the country. As on 31 October 2022, it has published 1520 articles, 799 news, 262 videos, 114 research reports and 120 government initiatives, all related to AI.

x. **AarogyaSetu:** It is a mobile application launched by the Government of India on 2nd April, 2020, to aid the COVID-19 efforts of the Government. The App works based on contact tracing method and helps the Government in identifying, monitoring and mitigating the spread of COVID-19 across the country. The App is now transformed into National Health App, brining a whole plethora of digital health services powered by Ayushman Bharat Digital Mission (ABDM). Using Aarogyasetu, citizens can now register for Ayushman Bharat Health Account (i.e., Digital Health ID) and leverage it for interaction with participating healthcare providers

xi. **GST Prime:** GST-Prime is a product to help the tax administrators to analyze and monitor the tax collection and compliance within their jurisdiction. GST-Prime improves the GST compliance, increase the tax collection, increase the tax base, detect the tax evasion and fraud and predict the effect of policy change.

xii. **e-Taal 3.0 (Electronic Transaction Aggregation & Analysis Layer):** eTaalprovides a real-time aggregated view of volume of eServices being delivered across different agencies of the Central, State and local Governments in India. eTaal dashboard displays the number of 'end-to-end electronic transactions' as the indicator for measuring the performance of G2C, and C e-Services. Since Jan, 2022 to 7th Dec, 22, around**13,89** crore e-transactions been

recorded and **20 additional e-Services** have been integrated with platform. Making the total of 4033 eServices integrated.

xiii. **Vehicle Location Tracking System (VLTS)**is designed to track and monitor public vehicles with the help of GPS-based tracking devices which gets fitted in Vehicles. The System also has a provision to send panic alert which triggers emergency response procedure to support passenger in distress with the help of effective monitoring using Command Control Centre.

xiv. **eChallan:** A comprehensive traffic management solution using a mobile-based app and complimentary web application which is Integrated with CCTV/ ANPR (Automatic Number Plate Reading) Cameras, RLVD/OSVD (Red Light/ Over Speed Violation) Devices, Later Guns etc for issuance of challan/ notices.

xv. **Electronic Human Resource Management System (eHRMS):** eHRMS application is responsible for the maintenance of employee record in electronic form, from hiring to retiring. The project includes scanning/digitization of service book to capture the legacy data and provision of numerous online services through various modules; namely Service Book, Leave, LTC, Personal Information, Reimbursements, Advances, Tour, Helpdesk, etc

xvi. **ServicePlus:** It is a Meta Data Based e-Service Delivery Framework which helps in making all Government services accessible to the common man in his locality through common service delivery outlets. Presently, the framework is successfully running in **33** States/UTs facilitating more than**2,791**Services of Central, State and Local Government**.**

xvii. **Open Government Data (OGD 2.0):** The OGD Platform (https://data.gov.in) has been set-up to provide proactive access to Government owned shareable data, along with its usage information in open/machine readable format, periodically, within the framework of various related policies, rules and acts of the Government. From 1st January 2022 to 7th December 2022, OGD platform have **66,000 dataset resources**, **876 catalogs** contributed by **571 Ministry/Departments**, over, **210 Visualizations** created, **44,704 Application Programming Interfaces** (APIs) created. Till date, datasets have **32.22 lakh times viewed** and **94.7 lakh times downloaded** on OGD Platform.

xviii. **Global Indices (E-Government Development Index):** MeitY is the nodal ministry for E-Government Development Index (EGDI) along with two-line Ministries/ Departmentsviz. Department of Higher Education and Department of School Education and Literacy (DHE and DoSEL). The EGDI is a composite measure of three important dimensions of e-government, namely: Online Service Index, Telecommunication Infrastructure Index and the Human Capital Index.

The latest E-Government Development Index (EGDI) 2022 edition indicates the e-government development status of all 193 United Nations Member States. India has ranked 105th in EGDI 2022.

Accessability of Internet domains and the Websites:

i. **Domain Names to Educational & Research Institutions:** ERNET is the exclusive registrar forproviding domains under ac.in, res.in, edu.in &विद्या.भारत, शिक्षा॰भारत,शोध॰भारत. More than 16000 domains are being supported by ERNET at present.

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providing barrier free and inclusivity in accessing Digital information to the citizens, has been developing / enhancing State Government websites across the country to make them easy to use and accessible to all sections of the society especially divyangjan. More than **600** websites have been developed conforming to the International Web Content Accessibility Guidelines (WCAG).

Legal enablement for recognition of expanded list of Electronic records

As part of Ministry's initiatives of Ease of Doing Business (EoDB), Ease of Living (EOL) for citizens MeitY has expanded the scope of validity of Electronic records and contracts by amending the First Schedule (Entries 1, 2 and 5) of the Information Technology Act, 2000 ("IT Act")in October, 2022.

The said notification for amending the First Schedule of the IT Act may be accessed at https://upload.indiacode.nic.in/showfile?actid=AC_CEN_45_76_00001_200021_1517807324077& type=notification&filename=notification.pdf

Digital Skilling

i. **Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA):** PMDISHA aim to provide digital literacy in rural India by covering 6 crore rural households (one person per household) by 31.03.2022. As on date, a total of around 6.6 crore candidates have been enrolled and 5.68 crore have been trained, out of which, 4.22 crore candidates have been certified under the PMGDISHA Scheme.

ii. **Fee-reimbursement programme:** under the programme free of cost training is being provided to the SC/ST candidates in various formal, non-formal and IT literacy courses at NIELIT. In FY 2021-2022, total 14,756 SC/ST candidates were trained.

iii. **Future Skill PRIME:** MeitY and NASSCOM have jointly conceived a programme titled "FutureSkills PRIME (Programme for Re-skilling/Up-skilling of IT Manpower for Employability)". The Programme is envisaged to provide re-skilling/ up-skilling opportunities for B2C beneficiaries in 10 emerging technologies viz. Internet of Things, Big Data Analytics, Artificial Intelligence, Robotic Process Automation, Additive Manufacturing/ 3D Printing, Cloud Computing, Social & Mobile, Cyber Security, Augmented Reality/Virtual Reality, and Blockchain. Under the programme, so far, 9.67 lakh candidates have signed-up and around 4.28 lakh candidates have got enrolled in various courses, out of which, 1.47 lakh candidates have completed the courses. Also, the Resource Centres (Lead/ Co-Lead Centres), have trained 7107 Government Officials (GoT) and 606 Trainers (ToT).

iv. **Visvesvaraya PhD Scheme for Electronics & IT** was initiated with an objective to enhance the number of PhDs in Electronics System Design & Manufacturing (ESDM) and IT/IT Enabled Services (IT/ITES) sectors.

- The scheme has supported 1019 Full-time and 330 Part-time PhD candidates at 97 institutions (IITs, NITs, Central &State Universities etc.) in 25 States and 4 Union Territories.
- 673 PhD candidates have completed PhD/submitted their theses. 545 PhD candidates are pursuing PhD under the scheme across the country.

Patents have been filed by PhD Candidates & YFRF awardees

- 5,416 Research Papers have been published by the research scholars
- Phase-II of the Scheme has been initiated to support additional 1000 Full-time PhD Candidates and 150 Part-time PhD Candidates.

v. In FY 2021-2022, a total of 8.54 Lakh candidates have been trained and 4.42 Lakh candidates have been certified by **National Institute of Electronics & Information Technology (NIELIT), MeitY** under various formal/non formal/digital literacy courses (including online / distant training mode).

Digital Payments

Creating a digital payment ecosystem has been identified as one of the thrust areas by the government. During, FY 2017-18 banks had achieved a collective target of 2071 crore digital transactions against the target of 2500 Cr and had 106% year on year growth as compared to FY 2016-17. Similarly, remarkable growth in digital transactions is seen for FY 2018-19, FY 2019-20& FY20-21 where we have achieved 3134 crore, 4572 crore & 5554 Crore respectively. In FY 2021-22, 8840 Cr digital transaction target have been achieved against a target of 6,000 Cr with YoY growth rate of 59%. Our indigenously developed UPI is driving the growth of digital payments and clocked 730 crore digital transactions during October 2022.

Promotion of Electronics Manufacturing

India has witnessed an unprecedented growth in electronics manufacturing sector. New Policies and Schemes, such as, Production Linked Incentives (PLI) for Large Scale Electronics Manufacturing and IT Hardware, Scheme for Promotion of Manufacturing of Electronic Components & Semiconductors (SPECS), Modified Electronics Manufacturing Clusters (EMC 2.0) etc has created a conducive environment for domestic electronics ecosystem to flourish by providing fiscal incentives to industry. As a result, the domestic production of **electronic goods** has increased substantially from ₹ 3,17,331 crore in 2016-17 to **₹ 6,40,810 crore** in 2021-22 growing at a Compound Annual Growth Rate (CAGR) of **15%.** In volume terms, India is the **2nd largest manufacturer of mobile handsets** in the world. The production value of Mobile phones has grown from ₹ 90,000 crore in 2016-17 to ₹ 2,75,000 crore in FY 21-22 with a **Compound Annual Growth Rate (CAGR) of 25%.**

i. **Modified Special Incentives Package Scheme**

- The scheme provides 20-25% subsidy for investments in capital expenditure for setting up of new electronic manufacturing facility or expansion of the existing electronic manufacturing facility. The Scheme was closed to receive new application on 31 December, 2018.
- As on 30 Nov, 2022, 315 applications with proposed investment of approximately Rs. 86,904 crore have been approved. The incentives of Rs. 1917.09 crore have been released to 121 applicants.

ii. **PLI for Large Scale Electronics Manufacturing**

- 16 applications have been approved in the first round
- 16 companies have been approved under the second round

iii. **PLI for IT Hardware:**

Production Linked Incentive Scheme (PLI) for IT Hardware notified vide Gazette Notification No. CG-DL-E-03032021-225613dated March 03, 2021 offers a production linked incentive to boost domestic manufacturing and attract large investments in the value chain.

14 companies have been approved under the PLI Scheme for IT Hardware.

iv. **Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS)**

As on 30th November 2022, thirty-two (32) applications have been approved with total **proposed investment** of INR11,131 crore and **committed incentives** of INR 1,519 crore. The total **employment generation** potential of the approved applications is 32,547.

v. **Modified Electronics Manufacturing Clusters (EMC 2.0) Scheme**

- 3 applications for setting up of EMCs in Haryana, Andhra Pradesh and Maharashtrahave been approved with total financial assistance Rs. 889 crore from MeitY.

vi. **Development of Semiconductors and Display Manufacturing Ecosystem in India:**

In order to widen and deepen the electronic manufacturing and ensure development of a robust and sustainable Semiconductor and Display ecosystem in the country, the Union Cabinet approved the Programme for Development of Semiconductors and Display Manufacturing ecosystem in India with an outlay of INR 76,000 crore on 15.12.2021.

The applications were invited till 15.02.2022 for establishment of Semiconductor and Display Fabs. Despite aggressive timelines for submission of applications in this Greenfield segment of semiconductor and Display manufacturing, the scheme has elicited good response.

India Semiconductor Mission, which has been set up as a dedicated institution for Semicon India Programme, has received 5 applications for Semiconductor and Display Fabs with total investment to the tune of USD 20.5 Bn (INR 153,750 crore).

Further, the Union Cabinet has approved the following modifications on 21.09.2022 in the Programme for development of semiconductors and display manufacturing ecosystem in India:

i. Fiscal support of 50% of Project Cost on pari-passu basis for all technology nodes under Scheme for Setting up of Semiconductor Fabs in India.

ii. Fiscal support of 50% of Project Cost on pari-passu basis under Scheme for Setting up of Display Fabs.

iii. Fiscal support of 50% of Capital Expenditure on pari-passu basis under Scheme for Setting up of Compound Semiconductors / Silicon Photonics / Sensors Fab and Semiconductor Assembly, Testing, Marking and Packaging (ATMP) /OSAT facilities in India. Additionally, target technologies under the Scheme will include Discrete Semiconductor Fabs.

Promotion of IT/IT enabled Services

i. **Next Generation Incubation Scheme (NGIS)** aims to support the domestic software product ecosystem and address significant objectives of National Policy on Software Product (NPSP). NGIS is launched with focus on 12 Tier-II locations i.e. Agartala, Bhilai, Bhopal, Bhubaneswar, Dehradun, Guwahati, Jaipur, Mohali, Patna, Vijayawada, Lucknow & Prayagraj. NGIS has total budget outlay of Rs. 95.03 crores and aims to support 300 Tech Start-ups from these locations over a period of 3 years.

Till date, fourteen Start-up Challenges under NGIS, CHUNAUTI (*Challenge Hunt Under NGIS for Advanced Uninhibited Technology Intervention*) has been launched. Total 266 start-ups has been selected out of which stipend is extended to 179 start-ups and after the due diligence, seed fund is extended to 63 Start-ups.

Market Development Initiative in Nordics & Africa Region: MeitY has initiated the project to have a comprehensive and sustained approach for IT/ITES Market Development in high potential and under penetrated markets - Africa and Nordics Region to increase the global footprint of Indian IT/ITES Industry particularly Small and Medium Enterprises (SMEs) and Start-ups through NASSCOM.

ii. **BPO Promotion Schemes:**

MeitY had initiated India BPO Promotion Scheme (IBPS) and North East BPO Promotion Scheme (NEBPS) to create employment opportunities and dispersal of IT/ITES industry in small cities and towns by incentivizing setting up of 53,300 seats BPO/ITES operations by providing financial support up to Rs. 1 lakh per seat in the form of viability gap funding towards capital and operational expenditure along with special incentives. The duration of IBPS and NEBPS was up to 31.03.2019 and 31.03.2020 respectively however disbursement of financial support may go beyond this period. The disbursement of financial support under these schemes is on reimbursement basis directly linked with the objective i.e. employment generation by the units.

Currently, around 246 BPO/ITES units are either operational or have completed their tenure under NEBPS and IBPS providing direct employment to around 51,521 persons.

iii. **Export promotion Schemes**

For the promotion of Software exports from the country, **Software Technology Parks of India (STPI)** was set up in 1991 as an Autonomous Society under the MeitY. STPI acts as 'single-window' in providing services to the software exporters. The STP scheme allows software companies to set up operations in convenient and inexpensive locations and plan their investment and growth driven by business needs.

There are many benefits under STP scheme like duty free import of capital goods which are also IGST exempted, capital goods purchased from DTA are entitled for refund of GST, 100% FDI is permitted, Sales in the DTA is permissible, 100% depreciation on capital goods over a period of 5 years etc.

The Electronics Hardware Technology Park (EHTP) Scheme is an export-oriented scheme for undertaking manufacturing of electronic goods.

Status

STPI has set-up a total of 63 STPI operational centres/ Sub-centres across the country, out of which 55 centres are in Tier II and Tier III cities with an objective to disperse the IT/ITES/ESDM Industry in smaller cities for the balanced regional growth.

Exports (tentative) for the Financial Year 2021-22 as reported by units registered under STP/EHTP schemes is Rs. 6.28 Lakh crore.

Innovation and Startups

i. **MeitY Startup Hub (MSH):** MSH is a dynamic, singular and collaborative platform for tech startup community towards building meaningful synergies in the Indian startup space. MSH's quick value additions to domestic tech startups in terms of improving scalability, market outreach and domestic value addition and setting up innovative partnerships with various stakeholders has been a key differentiator in MSH's efforts to catapult the tech startup ecosystem in the country. MSH has seen a consolidation of over 3330 startups, 475 incubators, 420 mentors and 22 state of the art Centres of Excellence (CoEs), successfully conducted/ being conducted 143 challenges in different technology areas encouraging development of innovative products / services to address current and pressing challenges.

ii. **TIDE (Technology Innovation Development for Entrepreneurs) 2.0** – MeitY is engaged in promoting tech entrepreneurship through TIDE 2.0 Scheme, which include financial and technical support to incubators engaged in supporting ICT startups using emerging technologies such as IoT, AI, Block-chain, Robotics etc. The Scheme is being implemented through 51 incubators through a three-tiered structure with an overarching objective to promote incubation activities at institutes of higher learning and premier R&D organisations. The scheme with outlay of Rs. 264 Crore over a period of five years is expected to provide incubation support to approximately 2000 tech start-ups. Under the scheme, more than, 780 startups have been onboarded across 51 Incubation Centres of which 74 startups are having customers, 128 products developed, 155 IPR created, 2100 employments created and 54 awards/ prizes/ recognitions received by the startups.

iii. **Electronic system and design manufacturing Entrepreneur Parks:** To bring innovation led have been established through STPI New Delhi, Makers Village in Cochin Kerala, IIT Patna and Government of Bihar on Medical Electronics and Fabless chip design incubation centre at IIT Hyderabad. Around 250 startups have been supported many of which are engaged in and are in process of productisation.

iv. **Domain Specific Centres of Excellence (CoE):** The vision is to create 20 domain specific CoEs in diverse areas such as fintech, Medtech, IoT, Automotive Electronics among others to stimulate technological innovation and generate infrastructural excellence. So far, 19 CoEs has been setup. These domains specific CoEs are act as enablers and aid in making India an innovation hub in emerging through democratisation of innovation and realisation of prototypes.

v. **Fab Lab at STPI Bhubaneswar, Odisha:** STPI has come-up with 1st Fab Lab at Bhubaneswar with support from Fab Foundation, USA and Government of Odisha. The Lab mainly comprises inventories such as Laser Cutter, Large Scale CNC Mill, Mini CNC Mill, 3D printers, Vinyl Cutter, Sand Blaster, Electronic Components &Tools, Moulding & Casting Tools, and Electronics Test Equipment etc.

vi. **MeitY –Center of Excellence (CoE) for Internet of Things (IoT):** The centre is funded on Public Private Partnership (PPP) model. [50:50 (MeitY: Industry) for Bangalore through ERNET and 47:40:13 (MeitY: State: Industry) for other 3 centres].

These centres have a number of start-ups incubated and getting uninterrupted access to advanced equipment funded by MeitY in a facility provided by state governments. Bangalore is a hub for the other 3 centres (spokes) at Gurugram, Gandhinagar and Vizag.

Research and Development

In the recent past, the Electronics & IT industry has emerged as a major contributor to the industry revenue as well as employment opportunity provider in the country. The country is becoming an R&D hub of multinational companies. The Electronics & IT sector are key player in the economy and one of the most globalised industries in the world. Several India-based multinational giants also have set up their R&D and innovation centres in India. The Government views R&D as essential for the implementation of new initiatives such as Digital India, Make in India and Startup India and has launched new schemes in R&D.

The major R&D initiatives undertaken are National Language Technology Mission , National Super Computing Mission (NSM), National Mission on Power Electronics Technology (NaMPET), Intelligent Transportation Systems (ITS) technology, Automation Systems Technology Centre (ASTeC), Deployment of Automation technologies in process industries, Development of medical linear accelerator and its linked accessories, MRI, E-waste management, Development of super-capacitors, Special Manpower Development Programme (SMDP) for chip to system design, Centre of Excellence in Analog Design, Centres of Excellence in Nanoelectronics , Indian Nanoelectronics User Program (INUP), Quantum Technologies, Blockchain, Data Analytics, IoT, Perception Engineering, Application of Artificial Intelligence etc. Some of the major achievements in this year are as follows:

i. **Bhashini, the National Language Technology Mission (NLTM),** was launched by the Hon'ble Prime Minister in July 2022 to provide Artificial Intelligence (AI) and Natural Language Processing (NLP) based open-source language technology solutions for speech and text translation through the Bhashini platform to bridge the language barriers leveraging startup-academia ecosystem. These technologies would enable organizations to create innovative and artificial intelligence-based multilingual interfaces including voice-based interfaces in their websites and apps to provide better citizen services and digital resources. As on date, 289 pre-trained AI models for language translation in 10 Indian languages have been made available on the Bhashini platform.

ii. **Quantum Computing:** A "Quantum Computer Simulator" has been developed to help research in quantum computing, facilitate testing of quantum computing algorithms/ programmes and hands-on training. The simulator has been ported on HPC infrastructure like PARAM Shavak and PARAM Siddhi.

iii. **Centre of Excellence in Quantum Technologies:** A multi-institutional (IISc, CDAC and RRI) project initiated to creat infrastructure, capacity and capability building in Quantum Technologies. The objective of the project includes the development of an 4 Qbit indigenous quantum processor, development of quantum communication hardware, development of quantum sensor & quantum algorithms and etc.

iv. **National Supercomputing Mission (NSM):** C-DAC has commissioned 11 new supercomputers of various capacities (50TF, 833TF, 1.66PF, 3.33PF) at academic institutes. Manufacturing of 6000 Rudra server nodes for building the Phase-3 systems has been initiated. HPC Applications development are in advanced stages. More than 4000 manpower has been trained in HPC areas.

v. **Microprocessor Development Programme (MDP):** A family of 32-bit/ 64-bit Microprocessors and associated software tool-chain & IP Cores are being indigenously designed using Open-Source ISA (Instruction Set Architecture) and fabricated at SCL foundry and foundries abroad for meeting the strategic and commercial requirements. Under MDP:

- 32-bit/ 64-bit SHAKTI Processor designed by IIT Madras and fabricated them using 180nm, SCL Mohali and 22nm, Intel foundry.
- 64-bit Single/ Dual/ Quad-Core variants of VEGA processors have been designed by C-DAC. 32-bit/ 64-bit Single-core VEGA Processor fabricated at 130nm, Silterra foundry and sent for fabrication at 180nm, SCL foundry.
- 64-bit Quad-Core AJIT processor designed by IIT Bombay.

    Digital India RISC-V (DIR-V) Program announced by Hon'ble MoS (MeitY) to achieve commercial-grade silicon and design wins of DIR-V VEGA and DIR-V SHAKTI processors by December'2023.

vi. **Sector Specific Self-Sustaining R&D Centers:** The vision is to create sector specific self-sustainable centers in areas of Optoelectronics materials, components and recycling to boost industry led research, R&D as service and R&D Export*.* So far, 12 such centress has been setup in the areas such as Quantum Material, Additive Manufacturing, Silicon Photonics, Graphene, E-waste, Li-ion/Na-ion Battery cell, IIoT etc.

vii. **National Mission on Power Electronics Technology (Phase-III**): NaMPET-III program is ongoing with an objective to strengthen the power electronics technology base in the country. Various activities like Technology development & deployment, technology transfer, Awareness creation and strengthening the industry interactions with R&D and academic institutes through collaborative research are in progress. Development of Wide Band Gap Device based magnetic field / Current sensor, design & development of planar magnetic, Low Voltage Direct Current (LVDC) based power pack deployment in house boat, electrical vehicles charging system, reless Charger f ght Electric Veh deployment of -grid, Interconn of

micro-grids are progressing at different stages. Twelve short term courses on specialized applications of power electronics have been conducted in different parts of the country

Two products i.e 3.**3KW AC Charger for electric Vehicle** and **Low Voltage Direct Current (LVDC) powering for Houseboat** hotel load were developed and ready for Transfer of Technology.

viii. **AgriEnIcs: National Programme on Electronics and ICT Applications in Agriculture and Environment:** A national level programme is initiated to reform the agriculture and environment sectors with the interventions of IoT, ICT, machine learning and robotics technology. The objective of this umbrella programme is to encompass the industry, users, academia, R&D institutes working in the allied domains of the thematic areas to make user friendly and market viable technology.

First version of AQ-AIMS: AI based Air Quality Monitoring System monitoring environmental pollutants PM1, PM2.5, PM 10 SO2, NO2, CO, O3, ambient temperature, and relative humidity has been developed, field trial has been completed and ready for Transfer of Technology.

ix. **Development of Electric Vehicles (EVs) Sub System**: A program on "Development of Electric Vehicles (EVs) Sub System has been initiated with broad objective to develop the Electric Vehicle sub- systems in the areas of Electric motor, controller, converters Chargers etc., ranging from small to large vehicles etc., indigenously. The expected outcome of the technology/product has to be cost effective, quality competitive and ready for commercialization. The EV sub-systems development is being taken up in consortium mode consisting of Government institutes/ R&D organization for design and development, industry to commercialize it and vehicle manufacturers to use the developed product in the manufacturing. Currently development of technologies of Motor/Controller/ Converter/ Chargers for EV are progressing.

Technology of 1.2 KW Motor/controller for e-rickshaw, 5KW Motor/controller for e Auto and 1KW BLDC motor/controller for e-rickshaw has been developed, tested and the technology transferred to industries for commercialization.

Cyber Security

i. **Cyber Surakshit Bharat (CSB):** It was initiated in partnership with Industry consortium in Public Private Partnership (PPP) mode with the objective to educate & enable the Chief Information Security Officers (CISOs) & broader IT community of Central/State Governments, Banks and PSUs to address the challenges of cyber security. The training was conducted in 6 cities to train and enable around 1200 officials. As on November'2022, 31 batches (18 in physical and 13 in online mode) of deep dive training were organised and 1266 CISOs/IT icials from Gove   at, PSUs, Banks   overnment organ   ns have been trai

ii. **Cyber SecurityGrand Challenge for Start-ups:** It was launched in January 2020 to develop cyber security product on 6 identified unique problem statement(s) most relevant to the current challenges faced in the cyber space ecosystem. The Grand Challenge had three stages namely Ideation stage, Minimum viable product (MVP) stage and final stage. In the ideation stage, based on the concept, approach proposed to build solution/product based on the 6 problems, the jury shortlisted 12 teams and each team were given a sum of Rs. 5 lakh and mentorship support. In MVP stage, based on their approach, USPs and value proposition, deployability and product market fit, jury shortlisted 6 teams who were given Rs. 10 lakh each. The final result was announced on 18th November 2021 and winner got cash prize of Rs. 1 crore. The 1st runners-up got first cash prize of Rs. 60 lakh and the 2nd runner-up got cash prize of Rs. 40 lakh.

Process has been initiated to conduct **Cyber Security Grand Challenge (CSGC) 2.0** and Administrative Approval has been issued for Data Security Council of India (DSCI) to conduct CSGC 2.0.

iii. **Online cyber security training of officers of Central Government Ministries/Depts.:**

- Generic Online Training in Cyber Security (Awareness training) of about 6-8 hrs duration for all the officers/staff of Government of India: 40 batches have been completed by covering 12279 government officials from 76 Ministries / Departments as on 31st November, 2022
- Online Foundation Training (Advance Level) in Cyber Security (60 Hours Theory + 40 Hours labs) for technically qualified or with requisite aptitude in Cyber Security / IT: 11 batches have been completed by covering 656 government officials from 76 Ministries / Departments as on 30th November, 2022

iv. **National Centre of Excellence in Cyber Security (NCoE):**

Under Cyber Security R&D Programme. National Centre of Excellence (NCoE) in Cyber Security has been set-up in collaboration with Data Security Council of India under project funded from Ministry of Electronics & Information Technology. The above initiative is an endeavor to build a sustainable cyber security technology and industry development momentum across the country. The major objectives of the Centre are: (i) Building ecosystem of Cyber Security Technology Development and Entrepreneurship (ii) Translating R&D to Security Products (iii) Making Technology Stack of Security Products Contemporary & Cutting Edge and (iv) Market Adoption of Developed Products in various domains of Cyber Security including Financial Sectors. So far 55 start-ups under NCoE have been incubated for developing products/ solutions in various key domains of Cyber Security. 20 More start-ups are in process of mentoring.

v. **Capacity Building for Cyber Security in North-East Region**

Development of Cyber Forensic Training cum Investigation Labs in North-Eastern States and Cloud based Centralized Cyber Forensics Lab Infrastructure: Under this project, Cyber Forensics Training cum Investigation Labs in 8 NIELIT Centre of North Eastern states. So far 1692 ...onnel have been ...ed under this p...mme. In additio... ...oud based Infra...ure

hosted at NIELIT Kohima is use for sharing of cyber forensic tools, content delivery & cloud based Virtual Training on cyber forensics for LEAs of all eight north eastern states.

vi. **Notification of Forensic labs as 'Examiner of Electronic Evidence' under Section 79A of the Information Technology Act 2000**

Section 79A of the Information Technology Act 2000 mandates Central Government to notify Examiner of Electronic Evidence for the purposes of providing expert opinion on electronic form evidence before any court or other authority. For identification and selection of Examiner of Electronic Evidence, MeitY has designed and developed a scheme, initially to access and notify Examiner of Electronic Evidence on the pilot basis. Till now, **twelve** Cyber Forensics Labs have been notified by MeitY.

vii. **Indian Computer Emergency Response Team (CERT-In):** CERT-In has been designated to serve as National agency for incident response under Section 70B of the Information Technology Act, 2000. CERT-In operates 24x7 incident response Help Desk for providing timely response to reported cyber security incidents. CERT-In provides Incident Prevention and Response services as well as Security Quality Management Services.

- In 2022, up to November, a total of 6,207 officials from Government, critical sectors, public and private sector have been trained in 21 Trainings/workshops/online sessions in the area of Cyber Security.

- In 2022, 32 Advisories, 463 Vulnerability Notes and 599 Security alerts (total 1094) were issued during the year 2022 (up to November) by CERT-In to enable organizations and users to secure their systems and data.

- Cyber Security Exercise "Synergy"- Table Top Exercise "Synergy" was successfully conducted in collaboration with Cyber Security Agency of Singapore (CSA) on 31st August 2022 for 13 countries as part of International Counter Ransomware Initiative. The theme of the exercise was "Building network resiliency to counter ransomware attacks". The exercise was hosted by CERT-In on its exercise simulation platform

- A two-day joint Webinar on "Cyber Threat Hunting" was conducted by CERT-In and ASEAN-Singapore Cybersecurity Centre of Excellence (ASCCE), Singapore for 48 cyber security professionals from ASEAN Member states on 15th and 16th November 2022.

- CERT-In conducted a webinar on "Cyber Threat Hunting" for 22 cyber security professionals from IBSA (India, Brazil, South Africa) Member states on 3rd November 2022.

- CERT-In is Accredited Member of Task Force for Computer Security Incident Response Teams / Trusted Introducer (TF-CSIRT/TI) from 13th September 2022. The TI's stamp of approval allows other parties to assume with confidence that a CERT has reached a certain level of maturity and functionality, which is important to building trust throughout the CERT community.

- CERT-In running Cyber Swachhata Kendra (CSK), Threat Intelligence sharing Platform and National Cyber Coordination Centre (NCCC). Currently, CSK is covering ~94% of the subscriber base for notifications about botnet/malware infection. Organizations are being benefited by using the services which include organizations from Telecom (ISPs) sector, Government, Finance, Healthcare, IT &IT, Transport, Energy, academia, Utilities, and Industries& Manufacturing.

- CERT-In has empaneled **150** Information Security Auditing organizations, on the basis of stringent qualifying criteria, to carry out information security audit, including the vulnerability assessment and penetration test of the networked infrastructure of government and critical sector organizations. This list of CERT-In empaneled auditing organizations is being consulted frequently by the entities in government and critical sectors for their auditing requirements.
- CERT-In has organized different awareness programs for different sectors including Ministries, Government Organizations, Industry and Academia in 2022 covering 10,665 participants.
- CERT-In observed the National Cyber Security Awareness Month during October 2022 (NCSAM2022) by organising various events and activities for citizens as well as the technical cyber community in India with a theme of **"See Yourself in Cyber"**. During NCSAM 2022, CERT-In conducted various technical training programs for technical cyber community through technical sessions and hands-on demonstrations by CERT-In experts, collaboration partners and Industry. The total outreach of National Cyber Security Awareness Month October 2022 is 71,16,57,905.

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RKJ/BK

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