ANNUAL REPORT

April 2019 to March 2020

Information and Library Network Centre
Gandhinagar
https://www.inflibnet.ac.in

Annual Report

(April 2019 to March 2020)

Information and Library Network Centre
Gandhinagar

From the Director's Desk

Prof J P Singh Joorel
Director

I am pleased to present the Annual Report of the Information and Library Network (INFLIBNET) Centre from April 2019 to March 2020 to the academic community in India. During the period under the report, the Centre undertook many new initiatives & projects, and expanded its existing services & activities to manifold. "India Rankings 2019" under National Institutional Ranking Framework (NIRF), Atal Ranking of Institutions on Innovation Achievements (ARIIA 2019), ShodhSuddhi (PDS), and 12th International CALIBER 2019 at KIIT University, Bhubaneswar were the flagship activities of INFLIBNET Centre among others.

The INFLIBNET Centre is playing a pivotal role in the ranking of institutions in the country since the first launch of NIRF in 2016. It has become one of its major activities. On 8th April 2019 Hon'ble President of India, Shri Ramnath Kovind released the India Rankings 2019 in the presence of Prof D P Singh, UGC Chairman; Prof Anil D Sahasrabudhe, AICTE Chairman; R. Subrahmanyam, Secretary MHRD; Prof K K Aggarwal, NBA Chairman and all the stakeholders. The key role played by the Centre was duly acknowledged by both the NBA, New Delhi and the Ministry of Human Resource Development (MHRD), Government of India. Also, the Centre successfully executed the 1st year exercise of Atal Ranking of Institutions on Innovation Achievements (ARIIA) framework which was launched by Hon'ble President of India on 08th April 2019. The Centre is technical partner of ARIIA project and have signed MoU with AICTE for the same. The work related to India Rankings 2020 under National Institutional Ranking Framework (NIRF), and ARIIA 2020 started during the period under report.

During the period, the Centre was awarded a new challenging project called 'Plagiarism Detection Software' (PDS) funded by MHRD, Government of India. Later, it was relaunched as "Shodhsuddhi" by Hon'ble HRD Minister Sh. Ramesh Pokhriyal 'Nishank' at Vigyan Bhawan, New Delhi on 21st September 2019 during the Special Meeting of the Central Advisory Board of Education (CABE). The MHRD through this initiative called ShodhSuddhi provides access to Plagiarism Detection Software (URKUND) to all universities including Central, State, Deemed and Private as well as Centrally funded Technical Institutions (CFTIs) in India through Central funding to enhance Academic Integrity in Academic Institutions and to curb plagiarism w.e.f. 01st September, 2019. This program is being executed by INFLIBNET Centre Gandhinagar. The Plagiarism Detection Software, i.e. URKUND was selected based on the Global Tender Process.

The 12th International CALIBER 2019 was organized by INFLIBNET Centre, Gandhinagar in collaboration with KIIT University, Bhubaneswar at KIIT University, Bhubaneswar from 28th to 30th

November 2019. The main theme of the CALIBER 2019 was "Library 2030: Moving Towards Smart Technologies, Services and Resources". Further, the main theme was divided into four sub-themes, i.e. Cutting Edge Technologies for Library; Next Generation Library Services; and Resources and Capacity Building in the Assessment of Research and Best Practices, Services and Challenges for Library 2030. The Convention was a huge success with more than 350 delegates from different corners of India along with international invited speakers from other countries attended and participated including 21 publishers who took part in the exhibition arranged as part of the Convention. The proceedings of the convention published 42 papers and 4 theme papers were selected for presentation and 17 papers were selected for poster presentations out of 95 submissions. Prof. Karisiddappa, Former Professor, Department of Library and Information Science, Karnatak University, Dharwad was the Conference Director for the convention.

Under its Human Resource Development & Consultancy programme, during the reported period, the Centre organized INFLIBNET Regional Training Programme on Library Automation (IRTPLA) at Shri Guru Teg Bahadur Khalsa College, Anandpur Sahib, Rupnagar, Punjab. The Centre conducted its 149th (08th - 13th July 2019), 150th (26th - 31st August 2019), 151st (14th – 19th October 2019), 152nd (2nd - 7th December 2019), and 153rd (20th – 25th January 2020) Training Programmes on SOUL 2.0 at the Centre. The Centre conducted two SOUL User Meets (One-day) 2020 at Mumbai, Maharashtra on 25th February and Bhopal, Madhya Pradesh on 2nd March 2020 respectively.

The Centre conducted eleven training programs on the topics, i.e. "Research Data and Statistical Analysis using R Programming" and "Metadata Management and Open Source Discovery Systems for Libraries", "Creation and Management of Digital Library using Open Source", "Bibliometric and Research Output Analysis", and "eResources Access, Management and Usage Analysis" at the INFLIBNET Centre.

I am happy to share that INFLIBNET Centre is the first Indian institute to become a member of euroCRIS, an international not-for-profit association, that brings together experts on research information in general and research information systems (CRIS) in particular. The Centre conducted One-day Workshop on IRINS: Adoption & Promotion in its campus at the Centre, Gandhinagar on 20th August 2019. Further, the Centre conducted 04 One-day Regional Workshops on IRINS: Adoption & Promotion in Varanasi, Hyderabad, Karaikudi, and Gandhinagar respectively.

During this report period, six regional awareness programmes were conducted across the country on Plagiarism Detection Software (PDS) at Chandigarh, Kolkata, Shillong, Cochin, Mumbai, and Indore respectively. A three-day Advanced Training Programme on Shodhganga and Plagiarism was organized during 11th - 13th December 2019 at INFLIBNET Centre, Gandhinagar. Apart from this, the Centre organized a user awareness programme on Plagiarism Detection Software (PDS) under ShodhSuddhi in collaboration with Indian Institute of Management Lucknow on 18th January 2020.

The Centre established an in-house Media Processing Lab which was inaugurated by Prof. Yogesh Singh, Chairman, Governing Board, INFLIBNET Centre and Vice-Chancellor, Delhi Technological University on the occasion. The main objective of this lab is to facilitate video lectures recording, e-content generations, video processing, etc.

For the first time, the Centre observed the 5th "International YOGA Day" at its premises. All the staff members of the Centre actively participated in the programme and learnt the basics of YOGA, performed by the well-trained yoga trainers. The Centre also observed the "73rd India's Independence

Day Celebration" on 15th August 2019 with all its staff members and their family. On 06th December 2019, Goddess Saraswati Pooja was performed, followed by the installation of the new idol of Goddess Saraswati in the lawns of the Centre. The first lecture on "Women at Work: An Overview of Legislative and Judicial Trends Vis-a-Vis Sexual Harassment" was organized on 5th March 2020 by INFLIBNET Centre in its Lecture Series on Sexual Harassment of Woman at Workplace (Prevention, Prohibition and Redressal) Act 2013. The Centre celebrated the 71th Republic Day on 26th January 2020 and Holi the festival of colours, on 10th March 2020, at the Centre with all its staff members and their family.

I am sure that the services of the Centre were delivered to the users in universities and colleges more efficiently and effectively during the year. The Centre is, however, open to receive suggestions and comments from our user community. I assure you that the team at INFLIBNET Centre will remain focused on providing its excellent services & support to our academic community as always.

Date: 31st July 2020

(Prof J P Singh Joorel)

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Part - I

Introduction, Aims & Objectives, Governing Structure and Human Resources

Introduction

The Information and Library Network (INFLIBNET) Centre, set up in May 1996, is an autonomous Inter-University Centre (IUC) of the University Grants Commission (UGC) located at Infocity, Gandhinagar. Major activities and services of the Centre are geared towards modernization of academic libraries and information centres, to promote information transfer and access, to support scholarship, learning and academic pursuits. The Centre acts as a nodal agency for networking of libraries and information centres in universities, institutions of higher learning and R & D institutions in India.

Mission and Vision

☐ Leveraging on the latest technology, create a virtual network of people and resources in academic institutions with an aim to provide effective and efficient access to knowledge through perseverance, innovation and collaboration;

☐ Provide seamless, reliable and ubiquitous access to scholarly, peer-reviewed electronic resources to the academic community in all educational institutions with a focus on services and tools, processes and practices that support its effective use and increase the value of this information;

☐ Build and strengthen ICT infrastructure in educational institutions with value-added services;

☐ Develop tools, techniques and procedures for secure and convenient access management enabling users to access information in electronic format from anywhere, anytime;

☐ Develop resource selection guides and online tutorials for effective delivery and usage of e-resources; and

☐ Facilitate the creation of open-access digital repositories in every educational institution for hosting educational and research content created by these institutions.

Aims and Objectives

The objectives of the Centre, as per the Memorandum of Association (MoA), are as follows:

a. to promote and establish communication facilities to improve capability in information transfer and access that provide support to scholarship, learning, research and academic pursuits through cooperation and involvement of concerned agencies;

b. to establish information and library network - a computer communication network for linking libraries and information centres in universities, deemed to be universities, colleges, UGC information centres, institutions of national importance and R&D institutions, etc. avoiding duplication of efforts;

☐ to promote and implement computerization of operations and services in the libraries and information centres of the country following uniform standards;

☐ to evolve standards and uniform guidelines in techniques, methods, procedures, computer hardware and software, services and promote their adoption in actual practice by all libraries, in order to facilitate pooling, sharing and exchange of information towards optimal use of resources and facilities;

☐ to evolve a national network interconnecting various libraries and information centres in the country and to improve capability in information handling and services;

☐ to provide reliable access to document collection of libraries by creating online union catalogue of serials, theses/dissertations, books, monographs and non-book materials (manuscripts, audio-visuals, computer data, multimedia, etc.) in various libraries in India;

☐ to develop new methods and techniques for archiving of valuable information available as manuscripts and information documents in different Indian languages, in the form of digital images using high-density storage media;

☐ to optimize information resource utilization through shared cataloguing, inter-library loan service, catalogue production, collection development and thus avoiding duplication in acquisition to the extent possible;

☐ to enable the users dispersed all over the country, irrespective of location and distance, to have access to information regarding serials, theses/dissertation, books, monographic and non-book materials by locating the sources wherever available and to obtain it through the facilities of the INFLIBNET and union catalogues of documents;

☐ to create databases of projects, institutions, specialists, etc. for providing online information services;

☐ to encourage cooperation among libraries, documentation centres and information centres in the country, so that the resources can be pooled for the benefit of helping the weaker resource centres by stronger ones; and

☐ to train and develop human resources in the field of computerized library operations and networking to establish, manage and sustain INFLIBNET.

c. to facilitate academic communication amongst scientists, engineers, social scientists, academicians, faculty, researchers and students through electronic mail, file transfer, computer/audio/video conferencing, etc.;

d. to undertake system design and studies in the field of communications, computer networking, information handling and data management;

e. to establish appropriate control and monitoring system for the communication network and organize maintenance;

f. to collaborate with institutions, libraries, information centres and other organizations in India and abroad in the field relevant to the objectives of the Centre;

g. to promote R&D and develop necessary facilities and to create technical positions for realizing the objectives of the Centre;

h. to generate revenue by providing consultancies and information services; and

i. to do all other such things as may be necessary, incidental or conducive to the attainment of all or any of the above-mentioned objectives.

Governance

The Centre is governed by its Governing Board and Governing Council. The Finance Committee, a subcommittee of the Governing Board, looks after the financial aspects of the Centre. Constitution and major responsibilities of these three committees are mentioned below:

1.1.   Council

The Council is an apex body of the Centre chaired by its President, ex-officio Chairman of the UGC. The Council has six ex-officio members and three nominated members. The members of the Governing Board are also members of the Council. As such, a total number of members of the Council is twenty-one. The nominated members of the Council serve for a term of 3 years. The Director, INFLIBNET is the Member-Secretary of the Council. The Council meets once in a year. The present members of the Governing Council are listed in **Appendix I**.

1.2.   Governing Board

Governing Board (GB) manages, administers, directs and controls the affairs of the Centre as per Rules and Bye-laws of the Centre. The Governing Board is headed by a Chairperson, who is an eminent academician in the areas of relevance to the Centre and is appointed by the President of the Council. The Governing Board has five ex-officio members and seven nominated members who are nominated by the Chairman, UGC. The Director, INFLIBNET is the Member Secretary of the Board. The Governing Board meets at least twice in a year. The current members of the Governing Board are listed in **Appendix II.**

1.3. Finance Committee

The Finance Committee (FC) is a sub-committee of the Governing Board and consists of seven members. It has four ex-officio members and two nominated members. The Chairman of the Governing Board is also the Chairman of the Finance Committee. The Administrative / Accounts Officer of the Centre is the Non-member Secretary of the Committee. The Finance Committee makes recommendations to the Governing Board on i) Budget proposals of the Centre; ii) Scrutiny of the Audited Accounts and replies to the annual Audited Report; iii) Approval of sanctioned and additional positions; and iv) any other matter on which the Board seeks its recommendations. The Finance Committee meets at least once a year. The minutes of the Committee, after approval by the Governing Board forwarded to the UGC for examination, approval and release of grants to the Centre. The members of the current Finance Committee are listed in **Appendix III**.

Human Resources

The Centre employs administrative, scientific and technical personnel for achieving its defined objectives. The technical personnel are mostly qualified in library, information and computer sciences. A list of technical, administrative and supporting staff of the Centre as on 31st March 2020 is given in **Appendix V**.

1.4. Functional Group@ INFLIBNET Centre

The scientific and technical manpower available in the Centre is clustered into the following working groups based on functional requirements of the Centre.

1.4.1. Database Management and R & D Group: The Database Management Group has developed suitable software and search interfaces for managing and updating a large number of bibliographic records available in Union Catalogues. The IndCat contains bibliographic description, location and holdings information for books, journals and theses in all subject areas available in different university libraries across the country.

1.4.2. Software R&D: The objective of this group is to develop software for the academic community in India with focus on software for library automation, union catalogue and software tools to facilitate data interchange and exchange. This group is also involved in supporting all other activities of the Centre by providing adequate software support from time to time. The mission of this group is to provide technological and software support for all activities of the Centre using the latest technologies and available development tools. The group also promotes and supports open-source software movement within the Centre as well as in the entire higher education community in India.

1.4.3. HRD: Imparting training to manpower working in the university and college libraries in the use of IT is an important objective of the Centre and has been given due priority. INFLIBNET Regional Training Programme for Library Automation (IRTPLA) and User Awareness Training Programme was conducted across the country in collaboration with the universities. National and International Conventions called PLANNER in North-Eastern Regions and International CALIBER in various states of India are being organized in the alternate year as part of the human resource development activities. Besides, training programmes on various specialized topics are being organized around the year at INFLIBNET Centre as well as in academic institutions around the country.

1.4.4. E-Resource Management Group: Major objectives of the group is to provide current as well as archival access to e-resources to faculty, researchers and students in colleges and universities at a highly discounted rates of subscription and at the best terms and conditions using consortia approach. The group also evaluates the impact of access to peer-reviewed scholarly content on research productivity of the institutions both in terms of quality and in terms of quantity of publications in colleges and universities.   E-resource Management Group is responsible for all consortium related activities including e-ShodhSindhu and NLIST.

1.4.5. Open Access R&D Group: The open-access has emerged as a promising alternative to the publisher-driven model of scholarly publishing that provides free access to scientific information to its users. The open-access publishing model offers access to full-text of journals free of charge to users through well-organized and professionally-managed web interfaces. The essential premise of the open access movement is that the scientific community and society in general benefits from the open exchange of ideas and information unaffected and unencumbered from the limitations of subscription costs, licensing arrangements and copyright inherent to the traditional model of commercial journal publishing. Open access journals and institutional repositories are two routes of open access publishing systems.

1.4.6. e-Learning and e-Content Development: The Centre has a dedicated group of people who are working on e-Learning and e-Content development. The objective of this group is to create content in open access with the help of SMEs, provide innovative technology to academicians to develop/host the content. Currently, the Centre has a number of e-Content projects including e-PG Pathshala, Vidya-Mitra, SWAYAM and SWAYAM-Prabha.

1.4.7. Web Services R&D Group: Major objective of the Group is to provide organized and structured access to services and resources offered by the Centre to the user community through the Centre's Website. The Group ensures that the Website of the Centre functions as an integrated interface for all services and resources accessible to the user community in the universities. The Group designs innovative web-based interfaces for effective and efficient delivery of services using the latest web-based tools and technologies. The Group undertakes all activities related to selection, organization and presentation of services and resources in a meaningful way for the benefit of the user community.

1.4.8. Access Management Group: Access Management Group is responsible for examining and evaluating tools and technologies, including Web proxies, Shibboleth, Referring URL, Kerberos, etc. that are in vogue for authenticating users to access and operate upon digital materials irrespective of their login location. The Group works on access management technologies, especially using open source software, with an aim to help universities to adopt authentication technologies to facilitate access to e-resources to the off-campus community. The Group also works on other aspects of access management in light of the fact that Centre is involved in the process of building digital repositories of electronic theses and dissertations (Shodhganga), e-prints, preprints, manuscripts, etc.

Major R&D and human resource development activities are undertaken according to the requirements of the library and academic community including students, faculty and research scholars. Major scientific and technical activities undertaken by these functional groups during the period under report are given in **Part II** of this report.

Physical Infrastructure

The Centre is housed in its new institutional building constructed on land measuring 10,000 Sq. Mtrs in Infocity, Gandhinagar. It is located amidst reputed institutions such as NID, DA-IICT and NIFT. The building, consisting of Administrative, Academic and Residential Blocks, is designed by internationally acclaimed architect and renowned academician Dr Balkrishna V Doshi of Vastu-Shilpa in consultation with other experts in the field of sustainable, eco-friendly and energy-efficient building. The building is furnished tastefully by M/s Godrej. It is partially air-conditioned and partially air-cooled following tenets of a green building. The current composition of the Building Committee is given in **Appendix IV**.

Major Initiatives

Technology is a driving force in the contemporary education system, the Centre has taken up a number of initiatives for the benefit of the academic community in India. These initiatives can be broadly grouped into 12 categories as follows:

1.1.   Automation of University Libraries

The Centre proactively helps universities to automate their libraries by various means. The INFLIBNET Centre signed MoU with 166 universities for library automation, which provides for universities to contribute their bibliographic records of documents available in their libraries to the IndCat: Union Catalogue of the INFLIBNET Centre.

1.2.   IndCat: Union Catalogue of Indian Universities

IndCat consists of a union catalogue of Books, Serials and PhD theses available in university libraries. It contains bibliographic records of 95,575,37 books from 191 university libraries, 35,234 unique journals having holding information for 229 universities and 4,39,144 bibliographic records of theses from 443 universities.

1.3.   Software Development: SOUL 2.0: Integrated Library Automation Software

SOUL 2.0: INFLIBNET Centre contributes towards the automation of libraries through in-house developed SOUL software. SOUL has 3, 738 installations across the country.

1.4.   Open Access and Open Data Initiatives

1.4.1. Shodhganga: Launched in January 2010, Shodhganga, a reservoir of Indian Theses, at present hosts 2,70,00 full-text theses contributed from 512 institutes. During the period under report, 46,778 full-text theses from 60 universities have been added. The initiative got momentum when eligible universities were provided access to plagiarism detection software and at present 1032 institutions are availing subscription for plagiarism detection software.

1.4.2. Shodhgangotri: Initiated in 2013, Shodhgangotri is a repository of research in progress that hosts a total 7,652 synopses contributed by 76 institutes.

1.4.3. ICSSR Data Service - Indian Social Science Data Repository: The project assigned to the INFLIBNET Centre in 2015 by the ICSSR, hosts 140 datasets from MoSPI on the platform customized using NADA software. Currently, there are 3347 registered users in the Repository. This has been quite popular in the research community and having over 41 lakh+ resource downloads.

1.5.   Library Consortium and its By-products

1.5.1. e-ShodhSindhu: Launched in 2015, e-ShodhSindhu provides access to more than 7,200+ e-journals and 30 lakh+ e-books (through NDLI) to more than 389 institutions that includes universities, centrally-funded technical institutions. National Library and Information Services Infrastructure for Scholarly Content (N-LIST) which is a college component of e-ShodhSindhu that provides access to 6,150 electronic journals and 31,64,309 e-books to more than 5.95 lakh users spanned across 3,295 colleges.

1.5.2. INFLIBNET Access Management Federation (INFED): Started in a full-fledged manner during 2017, INFED provides off-campus access to e-resources to users in institutes covered under e-ShodhSindhu. Currently, 120 institutions have joined INFED, and 39 publishers have joined in it.

1.5.3. InfiStat: InfiStats, a by-product of e-ShodhSindhu launched in 2015 facilitates monitoring and evaluation of usage statistics of subscribed e-resources made accessible to the member institutes under e-ShodhSindhu.

1.5.4. ShodhShuddhi - Plagiarism Detection Software (PDS): Ministry of HRD, Govt. of India was to provide Plagiarism Detection Software (PDS) to all Indian Universities/Institutions including Central Universities, State Universities, Deemed to be Universities, Private Universities, Centrally Funded Technical Institutions (CFTIs), Institute of National importance (INIs), Inter-University Centres of UGC (IUCs). The INFLIBNET Centre is a nodal agency to execute the project/initiative under the aegis of MHRD. The anti-plagiarism software facilitates to compare submitted documents with multiple databases of documents. It covers subscription-based resources, current & archived Internet web pages & web documents, open-access resources from primary publishers and aggregators, student papers database, etc. ShodhShuddhi regional programmes were conducted in 6 regions across the country where 939 participants participated.

1.6. E-learning, Content Development and MOOCs

1.6.1. e-PG-Pathshala: Initiated in 2012, e-PG Pathshala picked-up momentum from 2014 onwards. INFLIBNET coordinates development of e-content in 70 subjects across all disciplines. Presently, it hosts 23,000 modules contributed by 3200+ experts.

1.6.2. Vidya-mitra: Project assigned to the INFLIBNET Centre in May 2014, Vidya-mitra is an online learning portal for all the e-content projects developed under the NME-ICT, MHRD. Vidya-mitra hosts 66,000+ Video (Self-learning / e-Tutorial) and 44,000+ e-Text.

1.6.3. SWAYAM: Massive Open Online Courses (for PG Courses): Launched on July 9, 2017, the INFLIBNET Centre is a nodal agency for coordinating MOOCs for PG courses. More than 80 courses are being prepared for the MOOCs and 60 non-technical PG courses were offered on SWAYAM platform during the year under report. The INFLIBNET Centre is also the nodal agency for offering 07 courses in library and information science on SWAYAM Platform. These seven courses in LIS, launched on SWAYAM platform in the month of November 2017 have been successfully completed in March 2018. These seven courses have also been approved for re-run during 2019 on popular demand.

1.6.4. SWAYAM-PRABHA: Launched on July 9, 2017, the INFLIBNET Centre has developed a portal for SWAYAM-PRABHA, and is hosting & archiving videos for 32 DTH channels devoted to telecasting of high-quality educational programmes. During the period under report, INFLIBNET was exclusively assigned Channel No. 29 (PG Subjects & YOGA) for management.

1.6.5. FASSAI'S FSKAN: A System of the network of organizations with the aim to facilitate a scientific cooperation framework by the coordination of activities, the exchange of information, the

development and implementation of joint projects within the Food Authority's responsibility. FSSAI has established the Food Safety Knowledge Assimilation Network (FSKAN).

1.7. Ranking of Institutions and Accreditation Work for NBA and NAAC

1.7.1. India Ranking 2016, 2017, 2018, 2019 and 2020 (NIRF): Launched in September 2015, the first edition of India Rankings was launched in 2016. The INFLIBNET Centre developed a portal to capture data required for ranking of institutes. The Centre also provided data on publications, citations and patents for all applicants' institutes.

1.7.2. e-NBA: National Board of Accreditation (NBA) has assigned the task of developing a full-fledged online platform for accreditation workflow management system for technical institutes since December 2017.

1.7.3. ARIIA: ARIIA is an initiative of MHRD to systematically rank all major higher educational institutions and universities in India on indicators related to "Innovation and Entrepreneurship Development" amongst the students and faculties. INFLIBNET is a technical partner.

1.7.4. NAAC: NAAC has assigned the job of providing publications, citations, H-index and other related bibliometric data to NAAC for institutions that are to be accredited since November 2017.

1.8. VIDWAN and Indian Research Information Management System (IRINS)

1.8.1. VIDWAN: Project assigned to the INFLIBNET Centre in May 2014 by NMEICT. VIDWAN consists of detailed profiles of more than 55150+ Indian scientists and faculty members working in 6500+ academic institutions.

1.8.2. Indian Research Information Network System (IRINS): Project proposal was accepted by MHRD and assigned to the INFLIBNET Centre in December 2018 under NMEICT Phase II. IRINS is a web-based Research Information Management (RIM) service that facilitates the academic, R&D organisations and faculty members, scientists to collect, curate and showcase the scholarly communication activities and provide an opportunity to create the scholarly network. IRINS instances have been created for 194 institutions to date.

1.9. Website Development and Maintenance

The Centre maintains a comprehensive website in English and Hindi for all its activities. RSS (Really Simple Syndication) technology is used to facilitate users and bloggers to harvest recent updates from the Centre's website. Web 2.0 features and functionalities including Wiki, Blog, Chat and Discussion Forum, RSS feed, etc. have been incorporated in the Website.

1.10. Web Portals on Various Government Initiatives (on behest of MHRD in the year 2019 - 2020)

1.10.1. Study in India: Study in India is a web portal designed for foreign students seeking to study in India. It provides all the information one needs on Indian education institutions in India, how to plan their studies, how and where to stay in India, what kind of events are planned, application processes, etc. The core part of the portal is the institute login (where institutes can define their seats to the foreign students) and student login (where a registered student can participate in the choice filling, including mock counselling and final counselling).

1.10.2. Ek Bharat Shreshta Bharat (EBSB): A portal hosts details of events being organized by different states. Events include a cultural programme, academic programme, etc. EBSB is designed to promote the spirit of national integration through a deep and structured engagement between all Indian States and Union Territories through a year-long planned engagement between States.

1.10.3. Unnat Bharat Abhiyan (UBA) for Institutes: A platform cum database of all institutes who are participating in UBA 2.0.

1.10.4. PanditMadan Mohan Malviya National Mission on Teachers and Teaching (PMMMNMTT): PMMMNMTT is a Scheme launched by the Ministry of Human Resource Development, Government of India. The aim of the scheme to improve the quality of the school and higher education by addressing comprehensively all issues related to more than 1,00,000 college and university teachers, teaching, teacher preparation, professional development, Curriculum Design, Designing and Developing Assessment. INFLIBNET Centre is providing web and technical development support.

1.10.5. Scheme for Higher Education Youth for Apprenticeship and Skills (SHREYAS): SHREYAS is a programme conceived for students in degree courses, primarily non-technical, with a view to introduce employable skills into their learning, promote apprenticeship as integral to education and also amalgamate employment facilitating efforts of the Government into the education system so that clear pathways towards employment opportunities are available to students during and after their graduation. INFLIBNET Centre provides web technology and development support.

1.10.6. National Testing Agency (NTA): INFLIBNET Centre provides website development and technical support to NTA. The portal facilitates a platform which automates the complete administration and management process of "Exam Observer", "Training Practice Centre", Mobile-app, etc.

1.11. UGC Website and e-Governance @ UGC

1.11.1. The UGC assigned the responsibility for the development and maintenance of its website to INFLIBNET, that include automation of its various schemes, Grant Management System and e-Scholarship-Fellowship Award Registration Tracking System (e-SARTS) etc.

1.11.2. e-Governance @ UGC-Schemes: INFLIBNET Centre has developed more than 30 web services for UGC for its scholarship, fellowships, travel assistance, General Development Assistance, Women's Hostel, Autonomous and Heritage institutions, Distance Education, etc.

1.12. Capacity Building Programme

Since its establishment INFLIBNET Centre has actively involved in various capacity building programmes, i.e. in-house and off-site workshops, conferences, seminars, specialized training programs etc. Till date, the Centre has trained 62,772 professionals through 826 such programmes. During the period under the report, the Centre conducted 28 training programmes, workshops and other events that were attended by 2064 participants.

CALIBER: The Convention on Automation of Libraries in Education and Research Institutions (CALIBER) 2019, a bi-annual convention, organized by the INFLIBNET Centre in different parts of the country in collaboration with universities, was initiated in 1994. The convention provides a unique forum to the library and information professionals, teachers, IT professionals, consultants and users involved in automation and networking of libraries as well as information providers to come together and interact on the subjects of mutual interest. The 12th edition of International CALIBER 2019 was held at KIIT University, Bhubaneswar during 28th-30th November 2019.The theme of the CALIBER 2019 was "Library 2030: Moving Towards Smart Technologies, Services and Resources". More than 350 delegates from different corners of India along with international invited speakers from other countries attended and participated in the convention. A total of Tutorials (03); Invited Talks (09) Papers (38) Abstracts (09) and Commercial Presentations (04) were presented.

Part - II

Activities and Major Services of the INFLIBNET Centre

INFLIBNET Activities at a Glance

Sl. No.	Activities, Services and Projects	Year of Commencement	Number of	
			Univ.	Cumulative No. of Records
1	**IndCat: Union Catalogue of Books, Serials and Theses in university libraries**	1991		
	No. of contributing Universities / No. of Books		189	95,06,847
	No. of contributing Universities / No. of Serials		229	35,234
	No. of contributing Universities / No. of Theses		443	4,39,101
	Access: **Available in Open Access to the worldwide community**			
2	**IR@INFLIBNET: Institutional Repository**	2004		1859
	Access: **Available in open access to the worldwide academic community**			
	Usage: Collection Views			32,306
3	**Training and Workshops (including IRTPLA, e-Resource Awareness, DSpace, Shodhganga, Bibliometrics, Other Specialized Programmes)**	1991		826
	Total No. of Programmes Conducted by INFLIBNET Centre			130
	Total No. of Participants/Delegates			62772
	CALIBER - International Convention by INFLIBNET Centre	1995		12 International 09 National
	No of Delegates/Participants attended CALIBERs			7475
	PLANNERs - Special Programme designed for North East Region	2003		11
	No of Delegates/Participants attended PLANNERs			2630
	PDS - No. of Programmes **(Regional Programmes)**	2019		7
	PDS - No. of Participants			1000+
4	**SOUL 2.0: Library Automation Software / No. of Installations**	2009		3740
	SOUL Advanced Training programme conducted	2000		153
	Participants trained in SOUL			3210
5	**Shodhganga: A Reservoir of Indian Theses**	2010		
	MoUs Signed in the period mentioned			60
	Total MoUs s Signed till 31st March 2020			512
	No. of Theses Received (2019-2020)			46,778
	Total Number of Theses in Shodhganga			2,69,000
	No. of Contributing Universities/ Institutes			439

6	E-PG Pathshala: e-Content for PG Courses	2011	
	No. of Subjects		70
	No. of Modules (e-text)		23000
	No. of Modules (video)		23000
	No. of Experts		3200+
	Access: **Available in open access to the worldwide academic community**		
	Usage: Pageviews (Vidya-mitra and e-PG Pathshala)		61,895,562
7	**Shodhgangotri: Repository of Approved Synopsis for Doctoral Dissertation Thesis**	2013	
	No. of Synopsis/MRPs/PDFs/Fellowships		7000
	No. of Contributing Institutions		76
	Access: **Available in open access to the worldwide academic community**		
8	**VIDWAN: Database of Experts with their Research Publications**	2013	
	No. of Expert's Profiles		55150+
	No. of Contributing Institutions		6500+
	Access: **Available in open access to the worldwide academic community**		
9	**IRINS: Indian Research Information Network System**	2018	
	IRINS Instances:		
	Total Instances		194
	MHRD funded Institutions		126
	Access: **Available in open access to the worldwide academic community**		
10	**Vidya-mitra: Integrated Repository of all e-Content Project Repository of all MHRD e-Content project funded by the MHRD**	2013	
	No. of e-Text		44,450
	No. of e-Tutorials		66,174
	Other e-Materials		37,827
	Access: **Available in open access to the worldwide academic community**		
	Usage: Pageviews (Vidya-mitra and e-PG Pathshala)		1,02,70,740
11	**India Rankings (NIRF)**	2015	
	No. of Institutes participated for India Rankings 2020		4401
	Total nos. of submission for all disciplines (India Ranking 2020)		5056
12	**ICSSR Data Service: Platform to host Datasets from MoSPI**	2015	
	No. of Datasets		140
	Access: **Available in open access to the Indian academic community**		

	Usage: Total number of resources downloads		41,09,991
	Total number of views		1,51,12,863
	Total registered users		3347
13	**E-ShodhSindhu: Access to e-Resources (e-Journals, e-Books and databases) to Indian Institutes**	December 1, 2015 (2016)	
	No. of Core Members (CFTIs)		97
	No. of Core Members (Universities)		217
	No. of Technical Institutes (AICTE)		75
	No. of e-Journals		7200+
	No. of Bibliographic Databases		04
	No. of e-Books (through NDLI)		30,00,000+
	Usage: No. of full-text downloads (Jan-Dec 2019)		1,18,58,027
	N-LIST: e-Resources to Colleges		
	No. of 12(B) Colleges		3295
	No. of e-Journals		6150
	No. of e-Books		31,64,309
	Usage: No. of User ID Created for Access		5.95 lakhs
14	**Shodh Shuddhi: Plagiarism Detection Software: No of Institutions Covered**	2019	
	No. of Universities given access to anti-plagiarism software URKUND under ShodhShuddhi		1032
	Number of documents scanned for plagiarism check under MHRD scheme ShodhShuddhi		334265
	Number of Users created		78204
	Access: **Available in open access to the Indian Universities**		
15	**SWAYAM: Massive Open Online Courses**	2016	
	No. of Courses Offered by INFLIBNET in LIS as Anchor Inst.		7
	Access: **Available in open access to the worldwide academic community**		
16	**SWAYAM Prabha: 32 Academic DTH Channels**	2017	
	No. of Channels		32
	No. video lectures		50000
	Access: **Available in open access to the worldwide academic community**		
17	**INFLIBNET Access Management Federation (INFED): Off-campus Access to e-Resources**	2017	
	No. of Institutes joined INFED		120
	On Production		45
	No. of Publishers		39

New Projects @ INFLIBNET Centre

❖ **Recruitment System for Children University**

The INFLIBNET Centre was given a project on developing a web-based application for Recruitment system for Children University, Gandhinagar.

❖ **Recruitment System for Sardar Patel University**

The INFLIBNET Centre was given a project on developing a web-based application for the Recruitment system for Sardar Patel University, Vallabh Vidyanagar.

❖ **Online Payment System for Association of Indian Universities (AIU)**

The INFLIBNET Centre was given a project on developing a web-based application for Online Payment system for Association of Indian Universities, Delhi.

❖ **Portal Development Work of Children University**

The INFLIBNET Centre was assigned a project for the web-based portal development work of Children University, Gandhinagar, Gujarat.

❖ **Kendriya Vidyalaya Sangathan Module for HRM Office, MHRD**

The INFLIBNET Centre was given a project on developing Kendriya Vidyalaya Sangathan Module for HRM Office, Ministry of Human Resource Development (MHRD), New Delhi.

❖ **Automation of Equivalence System for Association of Indian Universities, New Delhi**

The INFLIBNET Centre was given a project on developing a web-based application for Automation of Equivalence System for Association of Indian Universities, New Delhi.

❖ **National Fellowship for Persons with Disabilities (2018-2020)**

The UGC has given the responsibility to INFLIBNET Centre for development and maintenance of e-Scholarship-Fellowship Award Registration Tracking System (eSART). National Fellowship for Persons with Disabilities application started to invite the applications for the year 2018-2020.

❖ **FIT India: MHRD vertical for Academic**

The INFLIBNET Centre was given a project on developing a web-based application for FIT India: MHRD vertical for Academic under the MHRD major Initiatives project, New Delhi.

1.   Automation of University Libraries

The University Grants Commission, on the recommendation of the INFLIBNET Centre, had supported 142 universities during IX Plan period and 24 universities during XI/XII Plan periods for automation of their libraries with software and training support from the INFLIBNET Centre. The total funds allocated to 24 universities for automation of their libraries during the XI/XII Plan period was Rs. 195.60 lakhs including Rs. 6.50 lakhs for purchase of equipment (PCs, servers, accessories, scanner, etc.) and Rs 1.65 lakhs recurring grant for five years for each of the 24 universities. The Centre proactively helped these universities to automate their libraries. The INFLIBNET Centre signed an MoU with all the 166 universities (142 IX/X Plan Period+ 24 XII Plan Period) on library automation which provides for universities to contribute their bibliographic records of documents available in their libraries to the IndCat: Union Catalogue of the INFLIBET Centre.

2.   IndCat: Union Catalogue of Indian Universities and Databases (https://indcat.inflibnet.ac.in/)

Union Catalogue of Indian Universities (IndCat) is a by-product of the library automation of the INFLIBNET Centre wherein universities that are signatory to the MoU on library automation contribute the bibliographic records of documents that are available in their libraries. The scope of the IndCat has now been extended to invite contributions from universities and other institutions that have not signed MoU with INFLIBNET Centre on library automation.

A brief description of three components of the union catalogue i.e. books, theses and serials maintained by the Centre is given below. Fig. 1 depicts the current interface of the IndCat.
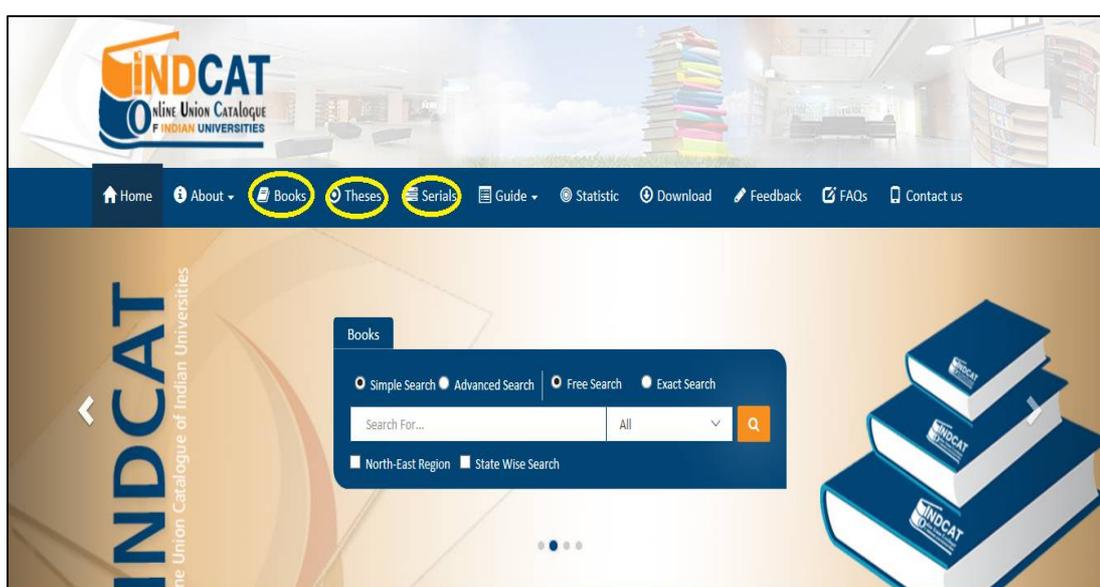

Fig. 1: Interface of IndCat: Union Catalogue of Indian Universities

2.1. Union Catalogue of Books

The Union Catalogue of Book Database covers bibliographic records of books available in the libraries of universities in India. The book database contains 95 lakhs unique records of books available in 189 universities/institutes in various disciplines. The book database contains textbooks, reference books, conferences, proceedings, monographs, etc. The book database can be searched by different search elements i.e. title, author, ISBN, subject, publisher, Place, etc. Fig. 2 depicts the Search Interface for Books.
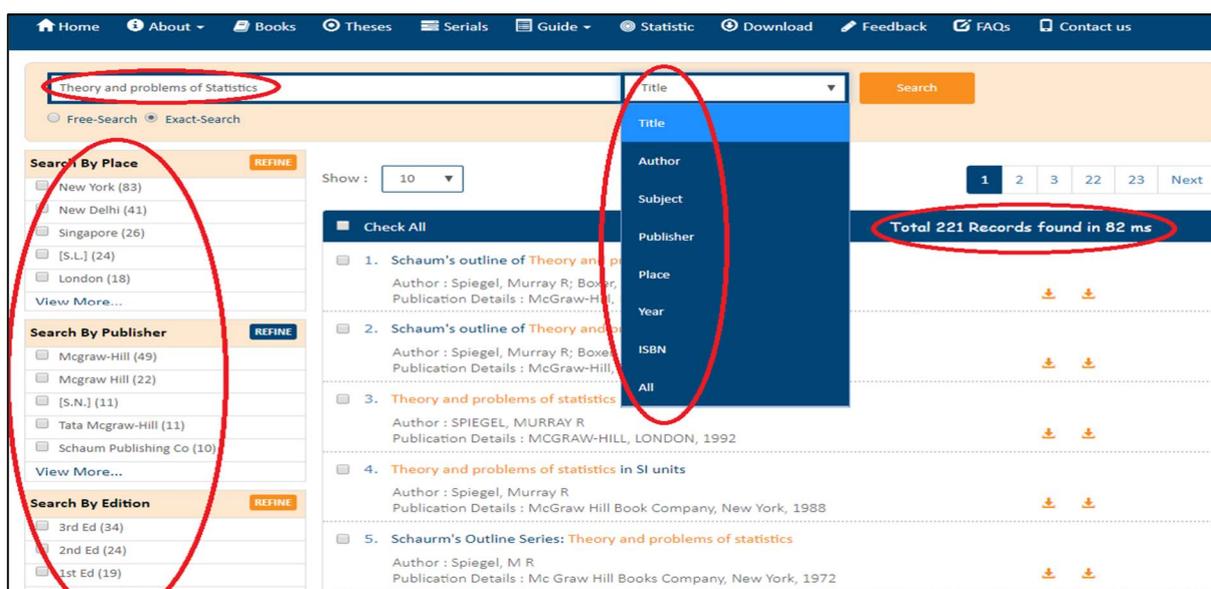
Fig. 2: Search Interface for Books

2.1.1. Process for Building IndCat

Process of building IndCat commences with the creation of bibliographic records in participating university libraries and their receipt at the INFLIBNET Centre. Steps involved in the building of IndCat database is as follows:

Step 1. INFLIBNET Centre receives bibliographic records from Indian universities in MARC or MARCXML format from different library softwares, such as Soul 2.0, KOHA, Libsys, VTLS etc.

Step 2. Checking the Data Quality as per the AACR-II Rules and LoC MARC standard. For that using MARCEdit Software and the following fields are mandatory for book database, i.e. Title, Author, Place, Publisher, Year, Edition, ISBN, Pages, Class No., Subject, and Accession.

Step 3. Importing the MARC File converted into CSV format using UCMS 2.0 Application.

Step 4. Importing CSV file into university database using UCMS 2.0 Application and using the following steps:

- Importing CSV file into Database;
- Creating DDString;
- Fetching Holding Details;
- Checking for Duplicate Records within University; and
- Mass Insert from Temp to Main Table.

Step 5. All records go under the process of authentication, using Union Catalogue management System (UCMS 2.0) Application for editing typographical errors in various fields such as place, publisher, edition, year of publication, etc.

Step 6. Lock Data before Matching and Merging

Step 7. Matching and Merging into IndCat.

Step 8. SOLR Indexing of Merging records

2.1.2. Web interface for Book Database of IndCat

Web interface for Book Database of IndCat facilitates its users to conduct searches on the title, words in title, author, subject, ISBN, location, place and publisher. The IndCat interface facilitates restricting the search to collections available within an individual university as well as for expanding the search to universities in a given state. By default, the interface searches all bibliographic records of documents available in IndCat for all the participating universities. The search results retrieved from the IndCat can be displayed in the following two formats:

Brief: By default, retrieved records are displayed in brief. A brief bibliographic record contains the title, authors, place, publisher and year of publication.

Descriptive: A detailed descriptive record contains complete bibliographic details of a book including its location. It is a second-level display that appears when a user clicks at the brief record. The descriptive record also provides the option of ILL request. Fig. 3 depicts the bibliographic details of searched records.

Fig. 3: Bibliographic Details of a Searched Record

2.1.3. Functions and Features of IndCat

i)   Restrict Search within a University / State

Searches in Union Catalogue, by default, is conducted on the entire database containing records of documents from all universities. Users can restrict their searches to the records of documents available within their own university on different search parameters like Title, Subjects, Authors, Place, Publisher, etc.

State-wise Search: Users can search the book database within a State by Title, Authors, ISBNs, etc.

Advanced Search: Advanced search facilitates the use of Boolean operators i.e. AND, OR, NOT with different search parameters i.e. Title, Authors, Corporate Body, Place & Publisher, Year, Subjects, Notes, ISBN, etc.

ii)   Copy Cataloguing

The copy cataloguing feature of the IndCat facilitates downloading of bibliographic records in MARC21 and Plain Text format. The downloaded bibliographic records can be imported to any library management software compliant to MARC21 bibliographic format including SOUL 2.0. Effectively, librarians/cataloguers can copy catalogue bibliographic records of books instead of creating a new record which is a time-consuming and cost-intensive process. Fig. 4 depicts copy cataloguing of a searched record and importing in SOUL 2.0
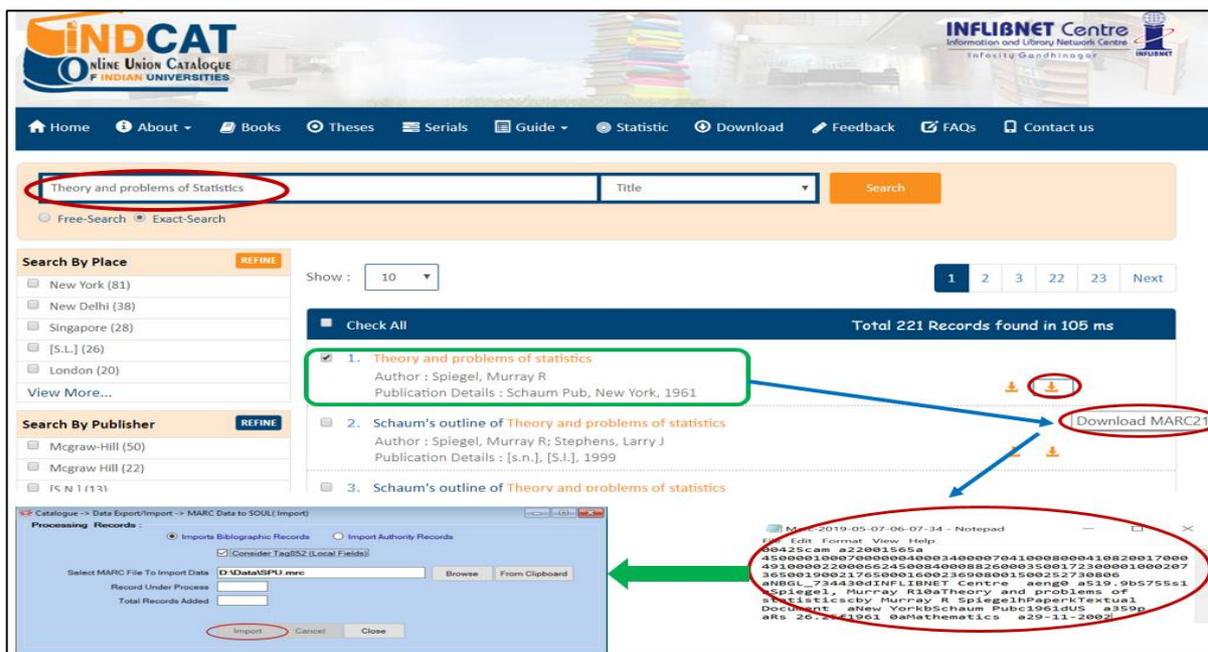
Fig. 4: Copy Cataloguing of a Searched Record and Importing in SOUL 2.0

iii) Union Catalogue of Books: Subsets

The union catalogue of books has two subsets namely GujCat and NERCat that are separately designed on demand of the concerned geographic regions:

The **GujCat**, a subset of IndCat, is a unified online library catalogue of books available in major college/institute/university libraries within Gujarat state. GujCat contains bibliographic description, location and holding information of books available in libraries in Gujarat. A separate dedicated web-based interface is designed to provide easy-access to the merged catalogues of libraries in Gujarat. GujCat is a major source of bibliographic information that can be used for inter-library loan, collection development as well as for copy cataloguing and retro-conversion of bibliographic records within Gujarat.

The **NERCat**, an online catalogue of books in universities in North-Eastern Region, is another subset of IndCat. NERCat is designed and implemented to restrict searching of bibliographic records to university libraries in North-Eastern region, to promote resource sharing amongst university libraries in North-Eastern region.

2.1.4. Bibliographical Records for Books Added during Year 2019-2020

Following Twenty Universities data have been checked, authenticated, matched and merged with INFLIBNET`s Online Union Catalogue of Indian Universities (IndCat) using UCMS 2.0 software. Details are given below in Table 1:

Sr. No.	Name of the Universities	Imported Records	*Duplicate Records	#Matched Records	^Merged Records
1	Pandit Deendayal Petroleum University (PDPU), Raisan, Gandhinagar (Gujarat)	25,670	1,146	2,366	22,158
2	Alliance University, Bangalore (Karnataka)	31,068	2,297	2,484	22,963
3	Parul University, Baroda (Gujarat)	55,261	7934	1143	46,167
4	Krantiguru Shyamji Krishna Verma Kachchh University, Bhuj-Kutch (Gujarat)	14,929	114	426	14,389
5	Nalanda University, Rajgir (Bihar)	11,512	220	659	10633
6	University of Petroleum and Energy Studies (UPES), Deharadun (Uttarakhand)	72,938	48334	569	24035
7	Indian Institute of Management Ahmedabad, Ahmedabad (Gujarat)	1,41,403	5908	18945	115119
8	Central University of Gujarat, Gandhinagar (Gujarat)	36,102	2151	1528	32422
9	University of Kota, Kota (Rajasthan)	13,209	501	11	12696
10	Avinashilingam University for Women, Coimbatore (Tamil Nadu) (2nd Lot)	18,869	3304	1156	14407
11	Delhi Technological University, Delhi (Delhi)	85,798	1412	569	83,817
12	Tripura University, Agartala (Tripura) (2nd Lot)	30,116	277	4396	25,129
13	University of North Bengal, Siliguri (West Bengal) (2nd & 3rd Lot)	1,62,451	7341	6476	1,46,982
14	Maharshi Dayanand University Rohtak (Haryana)	2,20,604	7252	31094	1,70,124
15	Sardar Patel University, Vallabh Vidhyanagar (Gujarat)(2nd & 3rd Lot)	2,38,842	24,898	4,298	2,09,646
16	Central University of South Bihar, Gaya (Bihar)	10,713	310	1,247	9,154
17	Ganpat University, Mehsana (Gujarat)	85,700	33,868	1,034	48,882
18	Maharaja Sayajirao University of Baroda (Gujarat) (Updated Records)		95,802	62,751	3,32,778

| 19 | Veer Narmad South Gujarat University, Surat (Gujarat) (Updated Records) | 2,13,749 | 27,041 | 6,256 | 1,80,452 |
| 20 | Saurashtra University, Rajkot (Gujarat) (Updated Records) | 62,614 | 4,121 | 5,019 | 53,474 |

Table 1: Twenty Universities Bibliographic Records Merged with IndCat

2.1.5. Growth of Union Catalogue of Books

Building and maintaining a union catalogue is an ongoing activity involving the collaboration of all participating libraries. The Union Catalogue of Books is essentially an outcome of financial and logistic support that was extended to the participating universities by the Centre for creating bibliographic records of their library collections. With initial financial incentives backed-up with logistic support in terms of training on integrated library management software including SOUL, the Union Catalogue of Books has witnessed rapid growth. The union catalogue of books has grown from 2.7 lakh records in 1999 to 95 lakh records in 2020 as depicted in Table 2 and Fig. 5 given below:

Year	Processed Records (in lakhs)
1999	2.7
2003	5.8
2007	30.3
2011	61.8
2013	73
2015	75.7
2017	83
2019	84.19
2020	95

Table 2: Growth in No. of Bibliographic Records in IndCat from 1999 to 2020
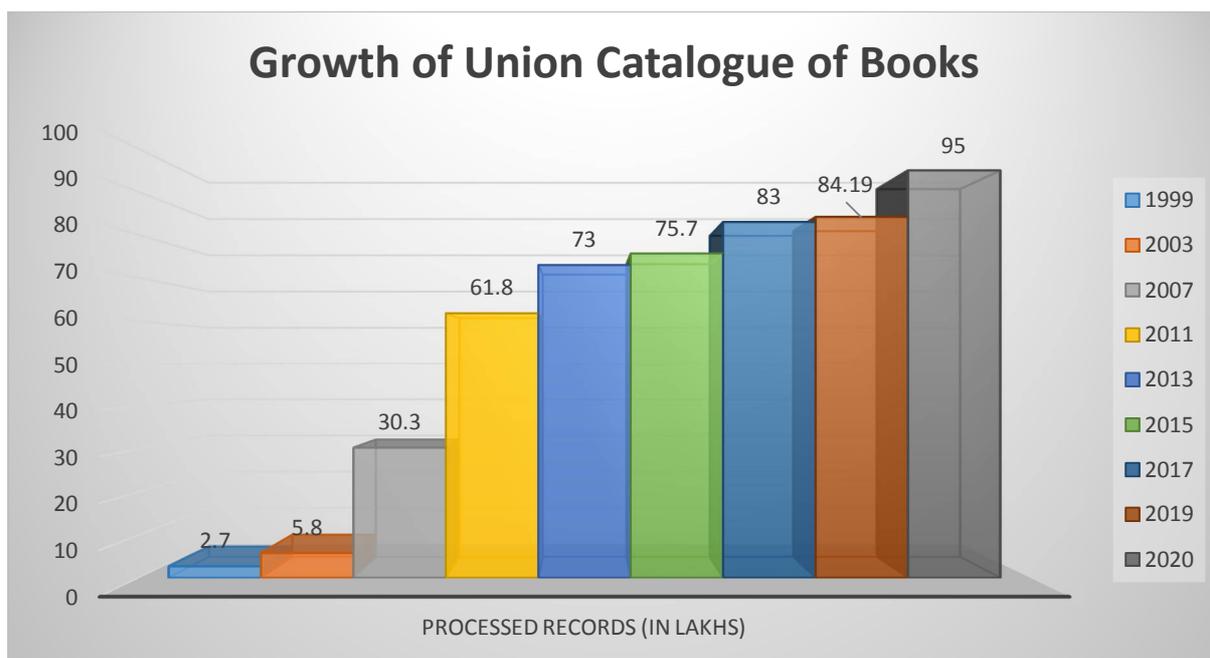
Fig. 5: Growth of Union Catalogue of Books

The union catalogue of books has bibliographic records of documents available in libraries of 189 contributing universities. Category wise participating universities are given in Table 3 and depicted in Fig. 6.

Categories-wise University List	No. of Universities
12 (B) / 2 (f) State Universities	113
Central Universities	25
Deemed Universities (Receiving Plan Grants from UGC)	19
Centrally Funded Technological Institute	8
2 (f) State Universities	6
Deemed Universities	4
Open University	1
Private Universities	7
Others	6
Total Participated Universities	**189**

Table 3: Category-wise Participating Universities
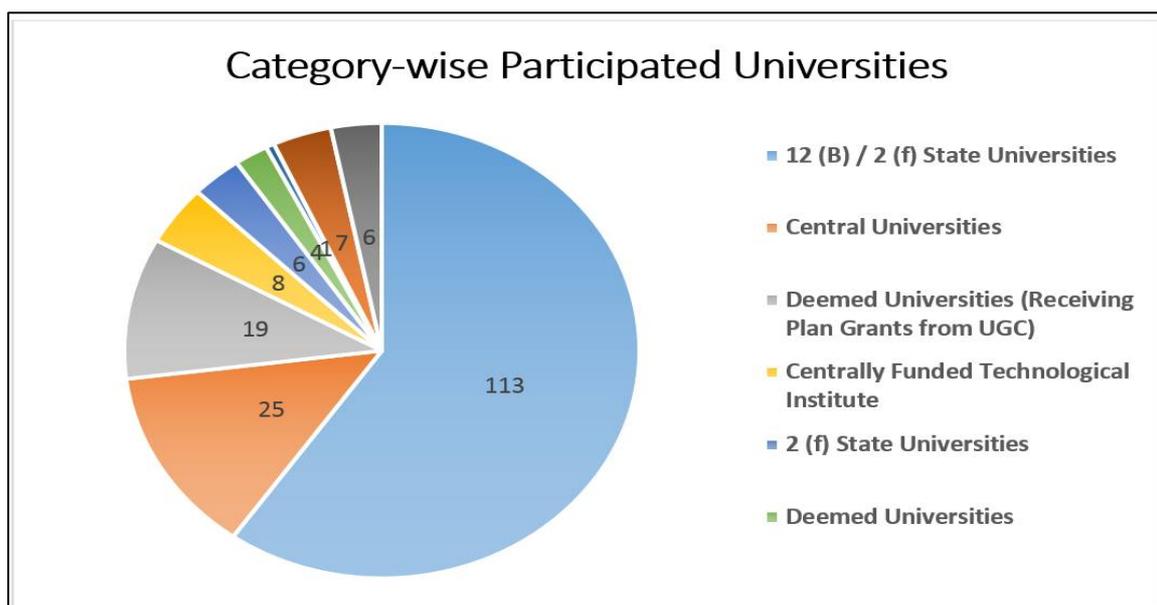
Fig. 6: Category-wise Participating Universities

The union catalogue of books (IndCat) has bibliographic records of documents available in libraries of 189 contributing universities. State-wise participating universities are given in Table 4 and depicted in Fig. 7

Sl. No.	Name of the States	No. of University
1	Andhra Pradesh	17
2	Arunachal Pradesh	1
3	Assam	5
4	Bihar	4
5	Chandigarh	1
6	Chhattisgarh	3
7	Delhi	6
8	Goa	1
9	Gujarat	22
10	Haryana	5
11	Himachal Pradesh	4
12	Jammu and Kashmir	5
13	Jharkhand	1
14	Karnataka	13
15	Kerala	9
16	Madhya Pradesh	7
17	Maharashtra	17
18	Manipur	1

19	Meghalaya	1
20	Mizoram	1
21	Nagaland	1
22	Odisha	3
23	Puducherry	1
24	Punjab	5
25	Rajasthan	9
26	Tamil Nadu	13
27	Telangana	2
28	Tripura	1
29	Uttar Pradesh	14
30	Uttarakhand	6
31	West Bengal	10
Total Universities		**189**

Table 4: State-wise Participating Universities
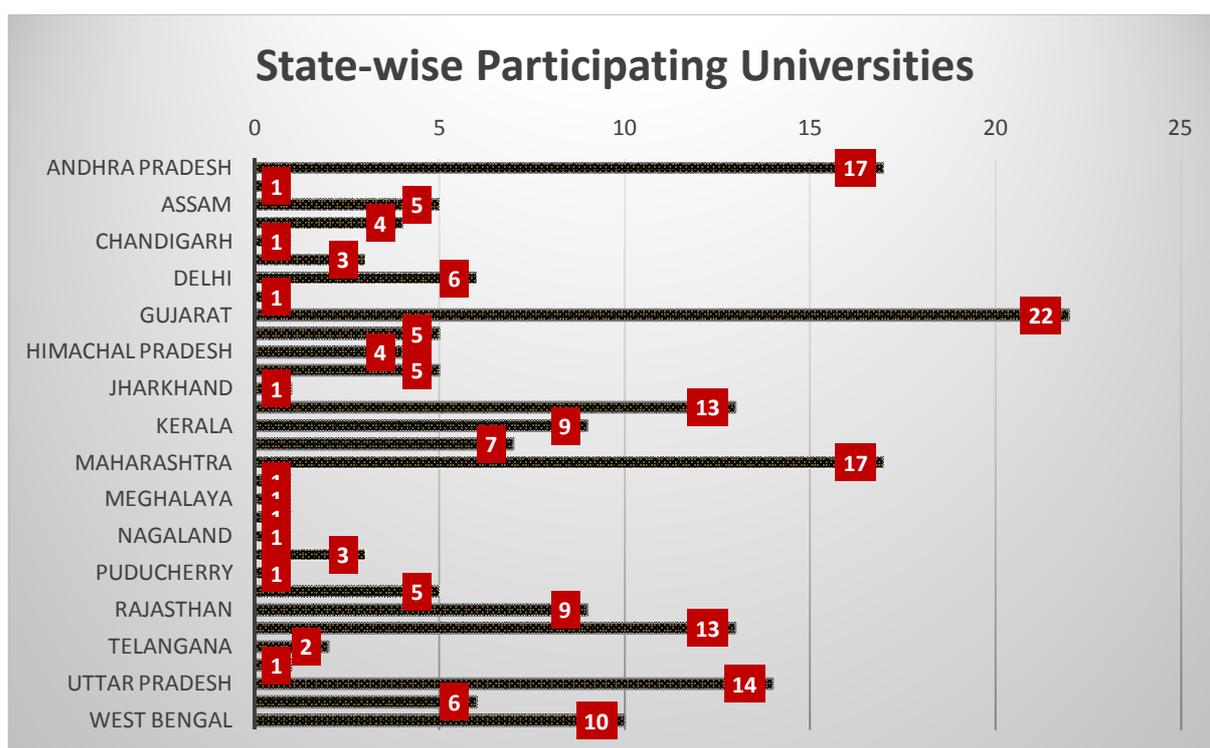
Fig. 7: State-wise Participating Universities

2.1.6. Online Copy-Catalogue System (OCS 2.0)

The Centre has developed application software called "**Online Copy-Catalogue System"** (OCS 2.0) to promote cooperative cataloguing and avoid duplication of efforts. The interface called "Online

Copy Catalogue System (OCS 2.0)" that facilitates libraries to interact with the Union Catalogue of Books (IndCat) and catalogue their new acquisitions online.

2.1.6.1 Objectives of OCS 2.0:

- To contribute maximum bibliographic records for the INFLIBNET`s Union Catalogue (IndCat) through Online mode
- Frequency of use and usefulness of OCS Application among the SOUL Users of Indian Universities
- To promote resource sharing activity
- Further enhancements for the INFLIBNET`s Union Catalogue (IndCat)

2.1.6.2 Major Features of OCS 2.0:

- OCS 2.0 is a Window based application, which communicate directly to IndCat
- Currently, it is fully compatible with SOUL 2.0. In future we will develop for KOHA also.
- It is a very useful application for all university libraries who want to contribute their bibliographic data to INFLIBNET Centre for the Online Union Catalogue (IndCat).
- It gives simultaneously effect with online mode in Soul 2.0 database and IndCat Server (So, no need to send offline records frequently to us)
- It provides Searching, Browsing, Copying, Editing and Creating bibliographic records of books from IndCat.
- It provides six main metadata/fields to check with your record i.e. Title, Authors, Place, Publisher, Year and Edition
- It supports multilingual feature
- It supports with Deduplicate (Matched) and Merging Records

2.1.6.3 Main Menus of OCS 2.0:

- Login to OCS
- Search from IndCat & Copy to SOUL
- Copy as a New (Found the record, but required editing in any field)
- Copy (Found the record, but not required editing)
- Create a New Catalogue (Not found record in IndCat)
- SOUL Acquisition/Gratis Items
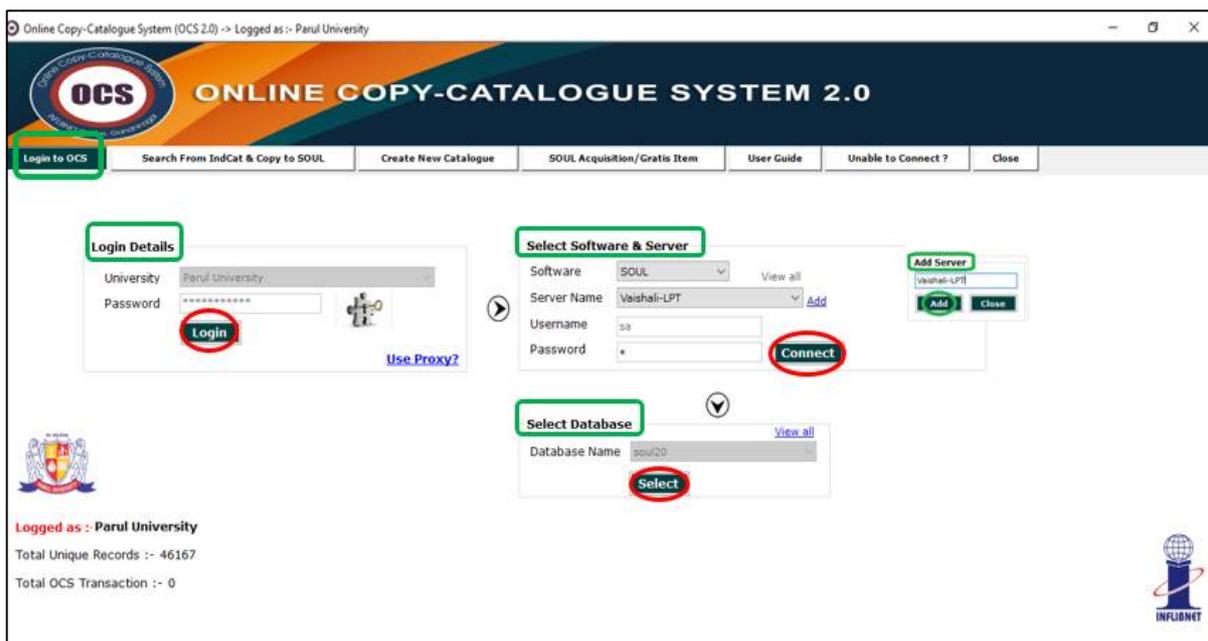
Fig. 8: Main Screen of OCS 2.0

More details on OCS are available at: https://indcat.inflibnet.ac.in/files/pdf/OCS_UserManual.pdf

2.1.7. Union Catalogue Management System 2.0 (UCMS 2.0)

The Centre has developed an in-house application called Union Catalogue Management System 2.0 (UCMS 2.0). It is purely used for the development of Union Catalogue Database. It allows you to build and manage bibliographic records of Indian universities libraries. It supports Unicode multilingual Data and MARC ISO 2709 Structure. It is a windows desktop application which is developed on the Microsoft platform. For both front end as well as back end used community versions which are free for developers.

2.1.7.1. Main Screen of UCMS 2.0 with Main and Sub Menus
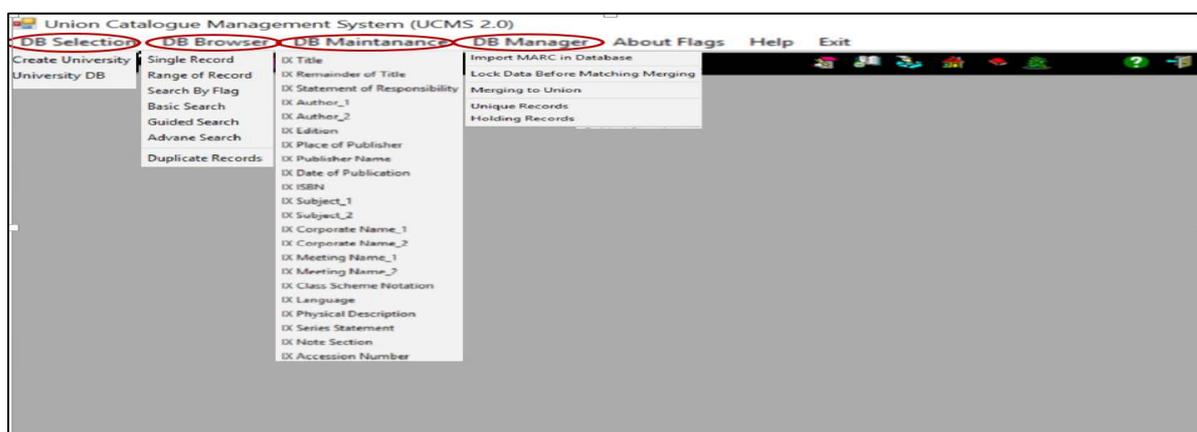
Fig. 9: Main Screen of UCMS 2.0 with Main and Sub Menus

2.1.7.2. Features and Functionalities of UCMS 2.0:

- Data Import: UCMS 2.0 provides the facility to Import the Data. Data should be available in MARC format. DDString is being generated at the time of importing the data. Here, total of 7 fields considered in DD String i.e., Title, SubTitle, Author, Place, Publisher, Year and Edition.

- Duplicate Check: It checks duplicate records within the university. If found then it gives the flag "D" and Accession No. is to add in the original record.

- Duplicate Accession Nos.: It checks duplicate Accession Numbers also. If found then it gives the flag "DA" and that record is not considered for the next process.

- Field Browsing: It provides browsing feature of all the fields i.e. Title (245$a), Author (100$a), Author (700$a), Place (260$a), Publisher (260$b), Year (260$c), Edition (250$a), ISBN (020$a), Class No. (082$a), Subject (650$a), Accession No. (852$p) etc.

- Authentication of data (Editing of Typo Errors Globally and Swapping the Values Field to Field)

- De-Duplicate/Matching Data Process: It checks the DDString with existing university data. If found the same DDString then it gives the flag "DD". It means that DD record already matched with an existing record. So, it takes only local holdings details i.e. University Name with Code and Accession No.

- Merging Process: If not found the data with existing university records then it gives the flag "M". It means data has been merged with IndCat.

- Data Indexing: After completion of the above process university wise data is to be indexed. We used SOLR for data indexing. Indexing process is mainly used for search and retrieval of the data.

- Available at IndCat: After completion of above process data available on IndCat Web site.

- It provides the flag wise reports, i.e. D, DA, DD, M (D – Duplicate Records, DA – Duplicate Accession No., DD – De-Duplicate Records, M – Merged Records).

- It provides the process of Phase wise (Updated) Data.

2.1.8. Major Works during Financial Year 2019-2020

- 20 universities data have been checked, authenticated, matched and merged with INFLIBNET`s Online Union Catalogue of Indian Universities (IndCat);
- Online Copy Catalogue System (OCS 2.0) is developed as per the MARC Standard. It provides simultaneously online effect in IndCat Server as well as in University Soul Server at the time of entering the data;

- The Centre launched a new version of "Books, Theses and Serials Databases" on a new platform to facilitate faster access and enhanced users preference including faceted search and filtered search on different parameters, i.e. university-wise, department-wise, subject-wise, publisher-wise, etc. and combination of these parameters. The Centre launched a beta version of union catalogue on a new platform which includes all databases i.e. book, theses, serial and CEC's Video records. Through this version, universities may update their records directly by login into system; and
- UCMS 2.0 Application is developed as per the MARC Standard. Significant improvements were made in the process of importing, duplicating, browsing, editing, generating ddstring, matching, merging and SOLR indexing.

2.2. Union Catalogue of Serials

The INFLIBNET Centre maintains a union database of serials that provides bibliographic information of journals subscribed in various universities and maintains the information in three categories, namely; i) Serials Holdings ii) Current Serials and iii)e-journals.

"Serials Holdings" provides data on library holdings, i.e. backfiles of journals and their availability in various university libraries, ii) "Current Serials" provides titles of the serials that are currently subscribed by the universities in print format and iii) "e-journals" that are: a) currently subscribed by the participating universities in electronic formats; b) journals subscribed under the e-ShodhSindhu in electronic format and c) e-journals available in open access mode.

The Serials Database includes bibliographic information of serials (including journals, periodicals, annuals and serials) available in 229 universities/institute libraries along with its holdings information (includes available and missing volumes of the journals) in participating libraries. The serial database has over 35,234 unique titles with holdings information for 229 universities. Each bibliographic record for serials contains the title, publisher, frequency, year of publication, homepage URL and subject headings along with holdings details and names of the universities.

2.3. Union Catalogue of Theses

The Union Catalogue of Theses consists of bibliographic records of doctoral theses submitted to the universities in India. The database contains 4,39,101 unique bibliographic records of the theses awarded by 443 Indian universities/institutions of higher learning in all disciplines. The bibliographic records of theses are contributed by participating universities. Besides, records in the database have also been collected from other reliable sources such as notification from universities, University News and Records submitted by the individual researchers.

The compilation of Union Catalogue of Theses commenced in 1995 with 52,000 bibliographic records of theses from 82 universities. The database has grown to 4,39,101 records of theses as on 31st March 2020 from 443universities over a period of 25 years.

The Centre receives a copy of the notification on the award of PhD theses from different universities across the country. Table 5 and Fig. 10, given below depict the growth of theses database from 1995 to March 2020. The numbers of universities have decreased from 456 to 443 due to duplicate AISHE Codes for the same institutes.

Year	No. of Universities	No. of Records	Year	No. of Universities	No. of Records
1995	82	52,000	2008	237	2,20,206
1996	95	65,000	2009	237	2,20,206
1997	110	72,000	2010	237	2,37,393
1998	134	90,000	2011	245	2,38,475
1999	149	1,15,000	2012	270	2,44,927
2000	160	1,28,000	2013	286	2,52,885
2001	172	1,35,000	2014	298	2,64,628
2002	189	1,42,000	2015	301	2,65,727
2003	198	1,48,000	2016	315	2,69,195
2004	209	1,52,000	2017	315	2,71,581
2005	211	1,71,176	2018	317	2,74,622
2006	213	1,75,206	2019	456	4,37,627
2007	213	1,75,206	2020	443	4,39,101

Table 5: Growth in Number of Records in Theses Database: 1995 – 2020
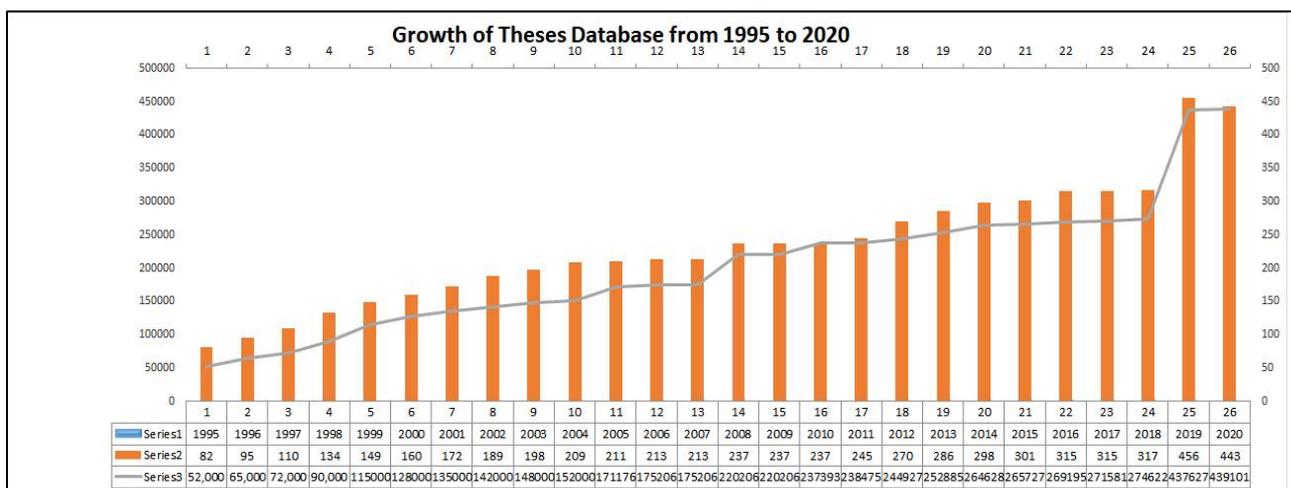
Fig.10: Year-wise Growth of Theses Database

The number of records and participating universities has increased manifold as new records from the Shodhganga have been imported directly.

Theses database can be searched through the IndCat interface by title, researcher, research supervisor, university, department, year of submission, keywords, etc. Bibliographic records of theses are linked to full-text records in "Shodhganga", if available.

2.4. Research Projects Database (http://www.inflibnet.ac.in/researchproject/)

The Research Project Database provides details of completed and ongoing projects carried out by faculty members working in universities and institutions across the country. As on 31st March 2020, 39 records were added in the database which has increased the total records in the database up to 15,602. The Centre gets project details along with the project reports in print/digital formats from the project investigators of Minor Research Projects (MRP) funded by the UGC. The softcopy and print copy of the project reports are available at the INFLIBNET Centre for walk-in users. Project Investigators of the UGC-funded Minor Research Projects (MRP) were requested to submit softcopies and print copies of their project reports. Project Investigators, whose project reports were received, are acknowledged and their project details were added into the database available at (http://www.inflibnet.ac.in/researchproject/).

3. SOUL 2.0 (http://www.inflibnet.ac.in/soul/)

The SOUL 2.0 (Software for University Libraries) is state-of-the-art integrated library management software designed and developed by the INFLIBNET Centre based on requirements of colleges, universities and other academic libraries. It is user-friendly software developed to work under a client-server environment. The software is compliant to international standards for bibliographic formats and circulation protocols. After a comprehensive study, discussions and deliberations with the senior library professionals of the country, the software was designed to automate all house-keeping operations in a library. The software is suitable for the academic libraries as well as for all kinds of other libraries. SOUL 2.0 is compliant to international standards such as MARC 21 for the bibliographic format, Unicode based Universal Character Sets for multilingual bibliographic records and NCIP 2.0 and SIP 2 based protocols for RFID, electronic surveillance and control.

The SOUL 2.0 was released in January 2009 and was well received by the academic libraries in India. During the year under report, several minor enhancements were made in reporting and other functionalities. New updates of the software are made available through the SOUL 2.0 website at no additional cost to existing users. As on 31st March 2020, the software was supplied to 3740 institutions across the country.

SOUL 2.0 was adopted by the Directorate of Libraries for all their public libraries as well as by the Department of Technical Education, Government of Gujarat. State Governments of Madhya Pradesh, Haryana and Andhra Pradesh have also adopted SOUL 2.0 software for automating their public and academic libraries.
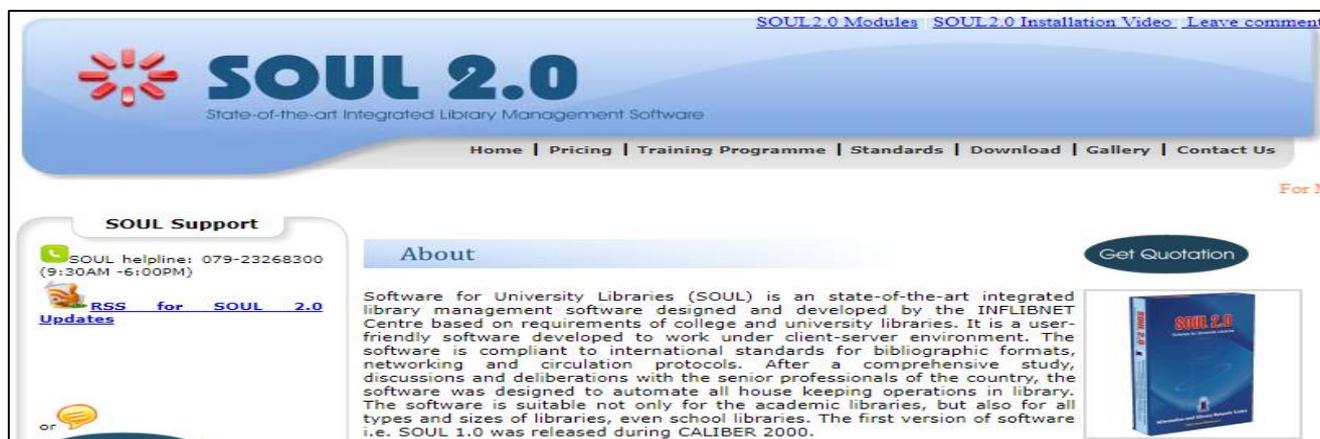
Fig. 11: Website for SOUL 2.0

A separate website, shown in Figure 11, is maintained by the Centre that provides detailed information about SOUL 2.0 along with the updates of software.

Technologies: Visual Studio.Net 2005, Microsoft SQL Server 2005, Microsoft Server Platform

3.1. Customization of SOUL 2.0, Data Conversion and Transfer

Customization of the SOUL 2.0 software is offered on payment basis as per the requirement of libraries. Under this offer, SOUL 2.0 can be customized according to the requirements of a library. The Centre has customized SOUL software for many institutes including major universities namely, Sri Guru Teg Bahadur Khalsa College, Sri Anandpur Sahib, Punjab, Vasavi College of Engineering, Hyderabad etc.

The Centre provides SMS Server application that facilitates libraries to send SMS through SOUL 2.0 application using SMS Gateway on payment basis. So far 33 institutions have started using SMS Server application services integrated with SOUL 2.0 as a customised option. The Centre has started to provide SMS Server at free of cost to the institutions.

The Centre also undertakes jobs for converting client's existing data from any format to MARC21 format for importing it into SOUL 2.0 on payment basis. During the year under report, the Centre has converted data from different format i.e. MS Excel, MS Access, MS SQL, PostgreSQL, ISO / LibSys, etc. to MARC21. About 2.7+ lakh bibliographic records from 25+ different institutes were processed and converted into MARC21 format.

The Centre also offers data conversion service to new users of SOUL, free-of-cost, if the data volume is less than 10,000 records.

Technologies: Visual Studio.Net, Microsoft SQL Server 2005, Microsoft Office

3.2.   SOUL 3.0 (New Version For Latest Microsoft Windows)

The Centre has started working on a new version of SOUL software using the latest technologies. The new version of SOUL for Microsoft Windows 8 and above would be compatible with Microsoft.Net Framework 4.5 and Microsoft SQL Server 2014 or later version. The software has the state-of-the-art Graphical User Interface wherein the user can create or choose the theme for his / her account. Users would be able to change the font size, language and other parameters as per their requirement for better visual and performance experience. Inclusion menu in Hindi language was incorporated with extensive help from Librarian, Banaras Hindu University. The new version has a built-in facility of sending SMS / email for each circulation transaction along with several enhancements. The new version of SOUL is responsive. As such, it will be compatible with touch screen laptops/tablets.

During the period under the report, all the modules of SOUL 3.0 application were developed including various utilities such as NCIP 2.0 Server, SIP2 Server, SMS Server, SOUL Server with index creation, Web Services and Web OPAC using Material Design. Many features were integrated with the application including dashboard, webcam integration, exporting Accession Register, quick retrieval of information from index, sending Email/SMS, multiple language support, exporting report in PDF, Excel and Word etc.

Each and every functionality of the software has been evaluated by an internal core committee specially constituted for the purpose during its multiple meetings, and all the suggestions have been incorporated and verified by the committee.
The SOUL 3.0 application was also deployed for testing at various institutions including major universities i.e., Banaras Hindu University-Varanasi, Maharaja Sayajirao University-Vadodara, Gujarat University-Ahmedabad and Lalbaba College – Howrah West Bengal. Suggestions/ feedback received from various institutions in the test report were implemented in this version of SOUL.

Technologies: Microsoft Visual Studio 2017, WPF, MS SQL 2014, Microsoft Platform

3.3.   SOUL-Web Edition

The Centre is in the process of developing a web-based version of SOUL based on the requirement collected from the user community. The web edition of SOUL would be platform-independent that would run on any operating system (i.e. Linux, Windows). Any browser could be used as a client so that users can work on any device independently e.g. desktop, laptop, mobile, tablet, etc. Moreover,

SOUL web edition could be hosted on a cloud platform. SOUL (Web edition) is based on Representational State Transfer (REST) protocol, which relies on a stateless, client-server, cacheable communication protocol and in virtually all cases, the HTTP protocol is used. Web-based SOUL can be configured in any language for performing housekeeping operations.

During the period under the report, web OPAC has been developed using Solr. Solr is an open-source enterprise-search platform used for full-text search, hit highlighting, faceted search, real-time indexing, dynamic clustering, database integration, NoSQL features and rich document handling. Maven is a project management and comprehension tool that provides developers a complete build life-cycle framework. The responsive design of the interface of the client including multi-language and theme support was designed using HTML, JavaScript and CSS. During the period, client application migration to new interface design was started.

Technologies: Java, JSP, MySQL, REST protocol (JAX-RS), Apache Tomcat, Visual SVN, HTML, CSS, JS, JQuery

3.4. SOUL Software Sold and Upgraded for Existing Users

As depicted in Fig.12, a total number of 91 copies of SOUL Software were sold during the year under report, which includes 72 copies of Limited Edition and 19 copies of Full Edition. 15 copies of SOUL 2.0 Software were offered free-of-cost to the users of SOUL 1.0, which includes 3 copies of Limited Edition and 12 copies of Full Edition.
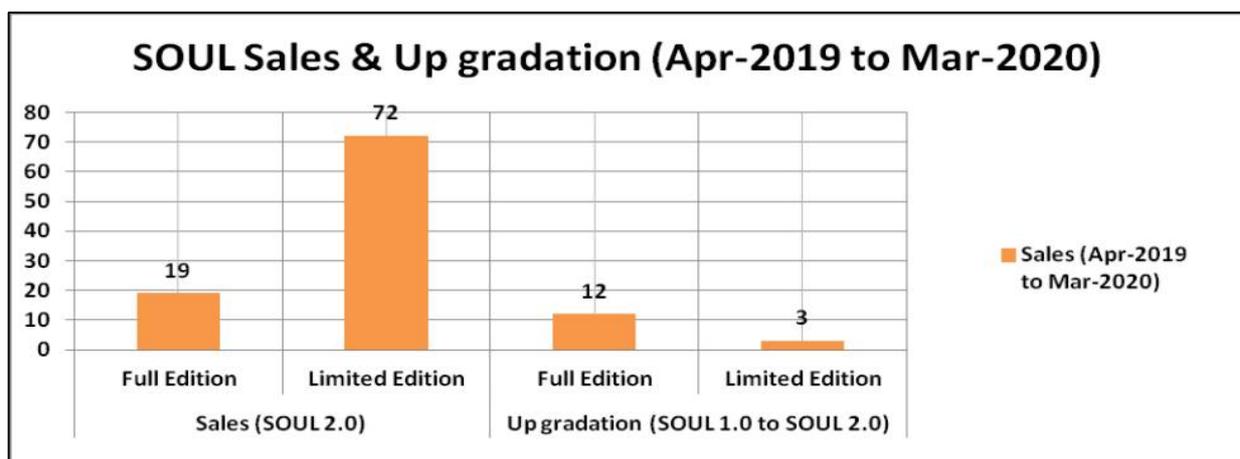
Fig. 12: SOUL 2.0 Software Sold and Upgraded for Existing Users

3.5. SOUL Support Services

SOUL Support Cell is a joint activity of Software Development Group and Human Resource Development Group. The SOUL Support Cell helps in handling queries and troubleshooting pertaining to SOUL software, its installation and usage for a user base of 3740 across the country as per the details

given in Appendix VI. The SOUL Support Cell coordinates with the SOUL users and SOUL developers for resolving queries regarding SOUL software and customization issues raised by them. The SOUL Support Cell consists of staff members with library and computer science background. The tools used for handling queries are mentioned below and depicted in Fig. 13.
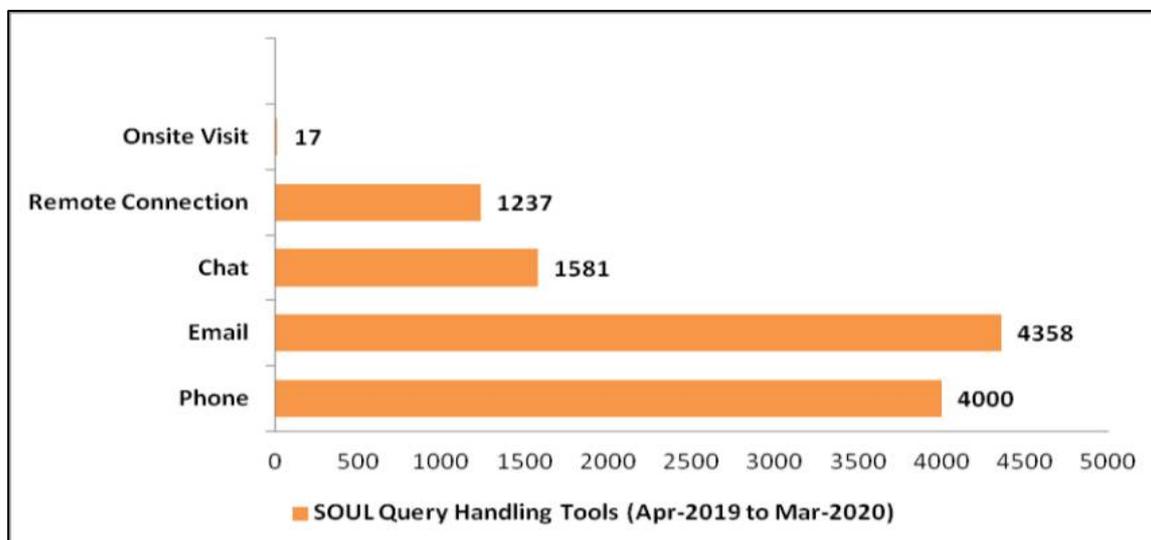
Fig. 13: SOUL Query Handled by SOUL Technical Assistants

Telephone Helpline: The Centre has a dedicated telephone line (079-23268300) for handling queries from SOUL users.

Instant Messaging: The Centre has created a Google email ID (soulhelp0007@gmail.com) to provide support to SOUL users through Gmail and Google Talk.

Remote Connection: SOUL Support Cell uses software such as AnyDesk, Teamviewer, ShowMyPC, etc. to remotely connect the User's SOUL server to view and solve the problems in real-time. This method is used for fixing the problem when all other methods of solving the problems do not provide desired results.

Onsite Visit: Besides all above methods of solving queries, SOUL Support staff also visits the Institutes of SOUL users in case every other method could not resolve the problem and also if the user wants SOUL Technicians to install and upgrade the SOUL at their Institute.

Frequently Asked Questions (FAQs): FAQs were developed based on the prolonged experience of SOUL Technicians. FAQs are answered with screenshot and step-wise solutions to the queries that are being asked frequently. These FAQs are available on SOUL Web site at: www.inflibnet.ac.in/soul/faq.htm.

Soul Query Management System (SQMS): The Centre has developed new software called "Soul Query Management System (SQMS)" that helps to keep track of problems and queries from all active users of SOUL Software. This software helps to serve the users more efficiently by keeping a record of the queries, its status and solution offered, which can also help to solve queries from other users.

Documentation and Updates: Users can download flow charts for every SOUL 2.0 module and e-book version of User Manual to learn the operations of SOUL 2.0 on their own from the SOUL Software website. Users can also download SOUL 2.0 Demo Version (up to 500 entries) and can practice on SOUL 2.0. Besides, minor updates of SOUL 2.0 can also be downloaded from the website free-of-cost which facilitates users to keep their SOUL2.0 software updated.

4. Open Access and Open Data Initiatives

The current system of scholarly communication inhibits rather than promotes access to scholarly information at a time when technology can enable vast improvement in access, speed of publication and save the cost of publication. The open-access has emerged as a promising alternative to the current model of scholarly publishing that provides free access to scientific information to its users. The essential premise of the open access movement is that the scientific community and society in general benefits from the open exchange of ideas and information unaffected and unencumbered from the limitations of subscription costs, licensing arrangements and copyright inherent to the traditional model of commercial journal publishing. Open access journals and institutional repositories are two routes of open access publishing systems.

The open-access initiatives at the INFLIBNET Centre are launched with an aim to spread open access movement in universities and institutions of higher learning. The Centre continued all the initiatives that were started in the previous years. These initiatives as described below:

4.1. Shodhganga: A Reservoir of Indian Theses & Dissertations
(http://shodhganga.inflibnet.ac.in)

Shodhganga is a digital repository set-up for submission of electronic versions of theses and dissertations by students / research scholars in universities in India and make them available in open access to the world-wide academic community in response to the UGC Notification (Minimum Standards & Procedure for Award of M.Phil. / Ph.D Degree, Regulation, 2009 and amendment made in 2016) where-in the responsibility of maintaining the digital repository of Electronic Theses and Dissertations (ETDs) is assigned to the INFLIBNET Centre. Shodhganga is set-up in 2010 using DSpace, an open-source software that uses internationally recognized protocols and interoperability standards. The repository provides a platform to research scholars in universities to deposit, re-use and share their theses and dissertations. Fig. 14 depicts the homepage of Shodhganga website.

Fig.14: Home Page of Shodhganga

The organisation of theses in Shodhganga reflects the academic structure of every university in the country which offers PhD programmes to facilitate the scholars to submit their theses in the respective Departments / Centres / Colleges of their Universities. The Ingestion interface of DSpace was customized to meet the specific requirements and make the process of submission easy. The customized ingestion interface is simple to use and involves a lesser number of steps in comparison to the default submission interface of DSpace developed by HP and MIT. The interface facilitates submission of theses either by university administrators, university representatives or researchers. The interface also facilitates self-registration of scholars wherein the user gets email alerts and notifications at different stages of the workflow. The Shodhganga website provides information that is helpful to the researchers, research supervisors and university authorities with regard to ETDs including their responsibilities, access policies, submission process, metadata structure, a guideline for submission, tutorial, manual, etc.

Shodhganga provides four types of searches in its homepage vis-à-vis simple search, advanced search, Google search and subject search. Besides default search and browse options provided by the DSpace, a subject-based browse and search interface is embedded into Shodhganga consisting of six 6 major subject categories at the first level and 28 subject categories at the second level. The major six subject categories are Arts and Humanities, Clinical, Pre-Clinical and Health, Engineering and Technology, Life Sciences, Physical Sciences and Social Sciences. The subjects are extended to micro-level using Web of Science 260 Categories. Fig. 15 depicts a subject search interface of Shodhganga.
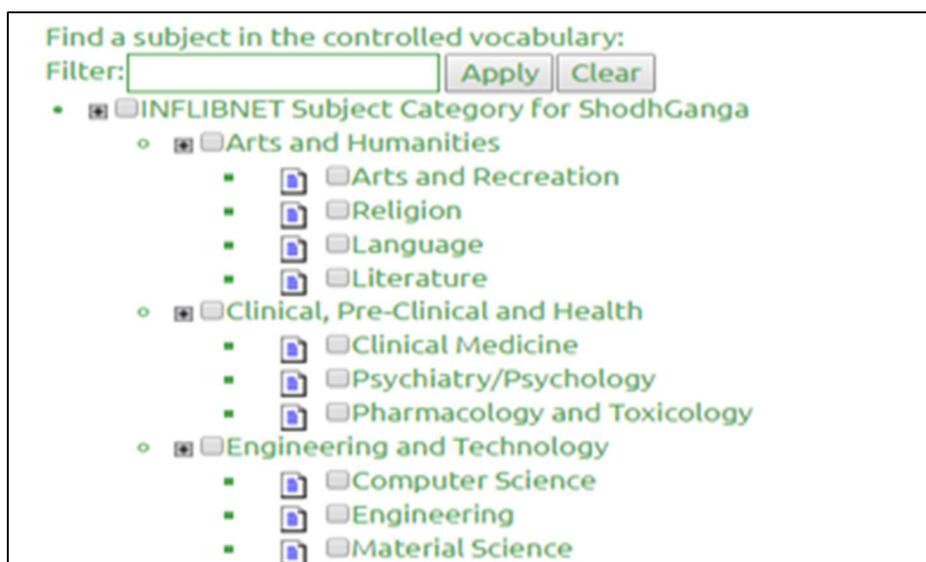
Fig. 15: Subject Search Interface of Shodhganga

4.1.1. New Feature added to the Dashboard in 2019-2020

Restricted Dashboard and Subject Portal is released in January 2020 with searching and browsing facilities including various search options like University type wise, Subject wise, Language wise, Department wise, and Year Wise etc. Sample screenshot is given below in Figure 16:

Chemistry (22869)	Engineering (14727)	Physics (14008)	Education (13613)
Commerce (12212)	Botany (9885)	Zoology (9159)	Economic (9140)
English (8759)	Management (8627)	Hindi (8540)	Mathematics (7263)
History (6597)	Computer science (4798)	Sanskrit (4747)	Biotechnology (4629
Sociology (4315)	Political science (4176)	Psychology (4035)	Geography (3846)
Biology (3671)	Business (3060)	Tamil (2872)	Humanities (2548)
Social Science (2333)	Microbiology (2303)	Philosophy (2271)	Law (2235)
Statistics (2218)	Library (1931)	Pharmacy (1785)	Arts (1768)
Environmental Science (1746)	Life Science (1678)	Geology (1613)	Bengali (1609)
Marathi (1515)	Agriculture (1356)	Medical (1334)	Anthropology (1160)
Public Administration (1153)	Home Science (963)	Gujarati (863)	Marine (715)
Malayalam (389)	Health Science (333)	Anatomy (110)	

Fig. 16: Restricted Dashboard and Subject Portal

Similarly Language theses are also listed separately, mentioned in below Figure 17:
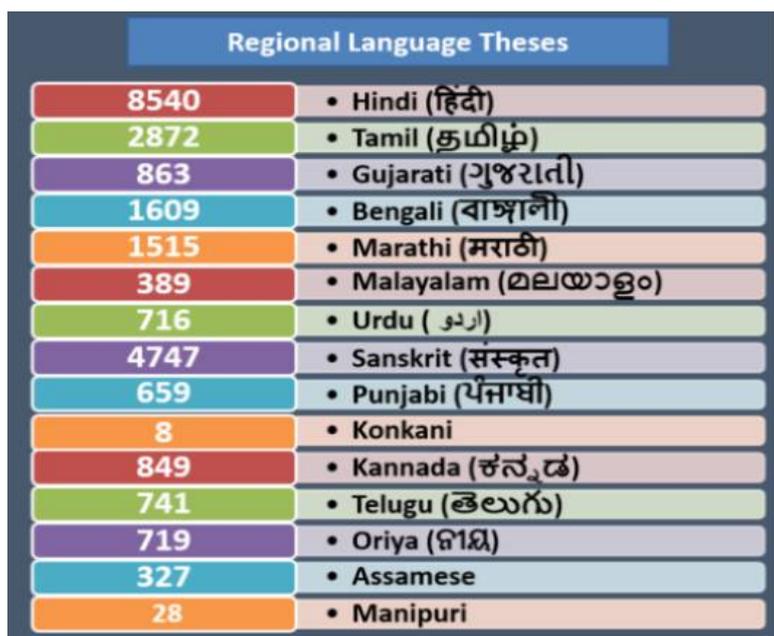
Fig.17: Regional Language Theses

Out of 2,50,000 theses analysed, Chemistry has the largest number of theses with 22870 theses, followed by Engineering with 14700 theses, Physics with 14000 theses. 20 top subjects theses during Jan-Feb appeared in Shodhganga is given below Figure 18 which also shows Chemistry is leading in research in India:
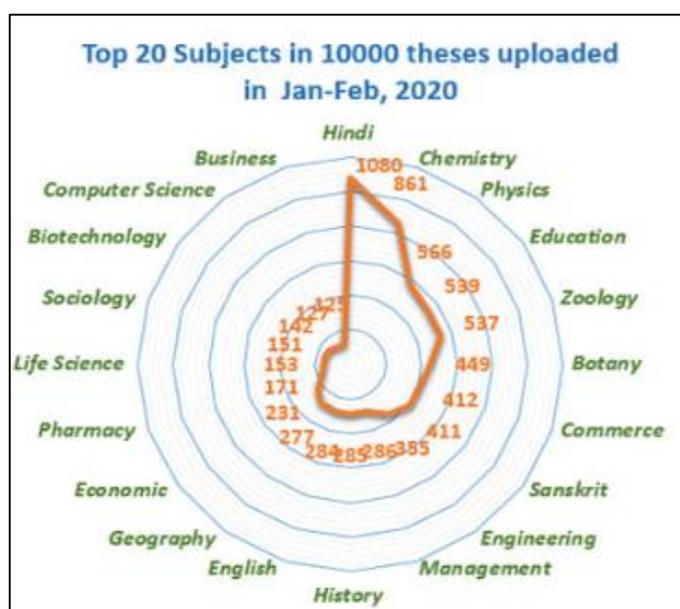
Fig. 18: Top 20 Subjects in 10000 theses uploaded in Jan-Feb, 2020

Considering the fact that the process of adaptation of the UGC Notification may take time for universities, research students are also encouraged to submit an electronic version of their PhD theses into the Shodhganga on a voluntary basis. As such, students from different universities (who have not signed the MoU) are submitting an electronic version of their theses into the repository on a voluntary

basis. However, once a university mandates the submission of theses, it can monitor the process of submission of theses and ensure that correct and final versions of all the theses are submitted into the Repository. Universities, while signing MoU with INFLIBNET Centre, are granting non-exclusive rights under INFLIBNET Centre for hosting their ETDs in Shodhganga Creative Commons Licence Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) . As on 31st March 2020, 512 universities have signed MoU with the INFLIBNET Centre which include 60 **universities** during the year under report. List of universities who have signed MoU with the INFLIBNET Centre on Shodhganga is available at http://shodhganga.inflibnet.ac.in/annual_report/mou2019_2020.pdf

439 universities have started contributing their theses into Shodhganga repository as per the UGC Notification. Without signing MoU also, **33 universities** contributed their theses into Shodhganga during the year under report is available at http://shodhganga.inflibnet.ac.in/annual_report/contributing_wo_mou.pdf

A total number of theses submitted into the repository has grown to 2,69,000 as on 31stMarch 2020. Figure 19 depicts year-wise theses submission into Shodhganga.
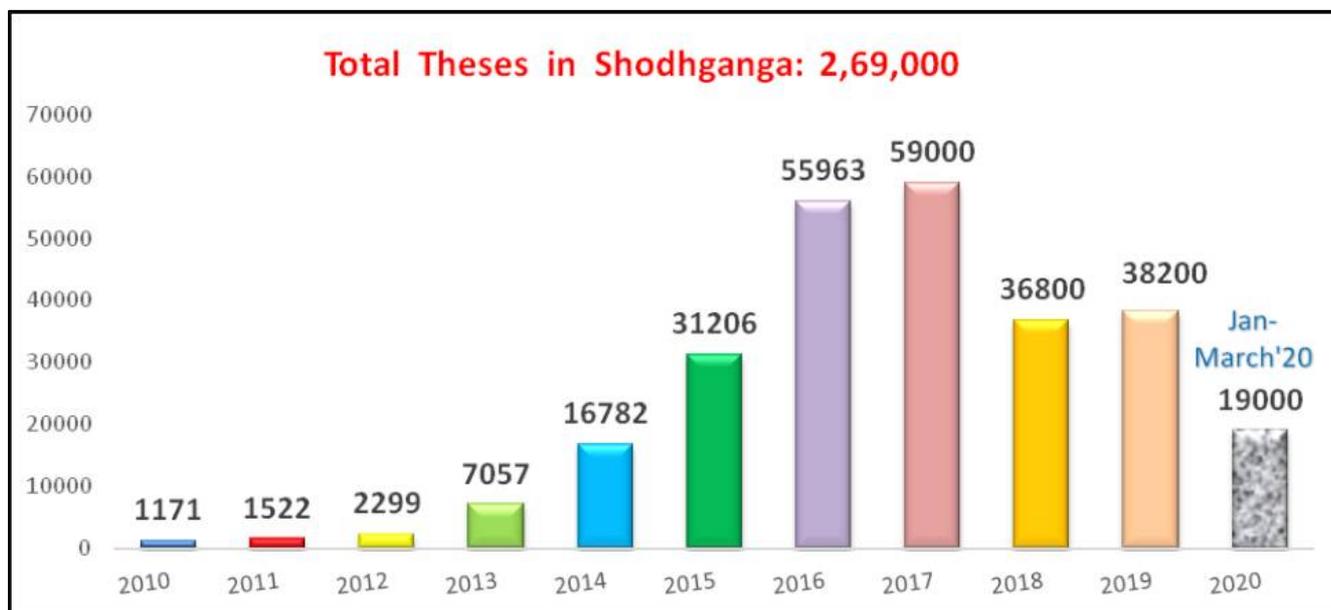
Fig. 19: Year-wise Theses Submission into Shodhganga

Fig. 20 depicts Month-wise submissions into Shodhganga during the period under report. The Month of March witnessed exponential additions even though there was a lockdown for a few days.
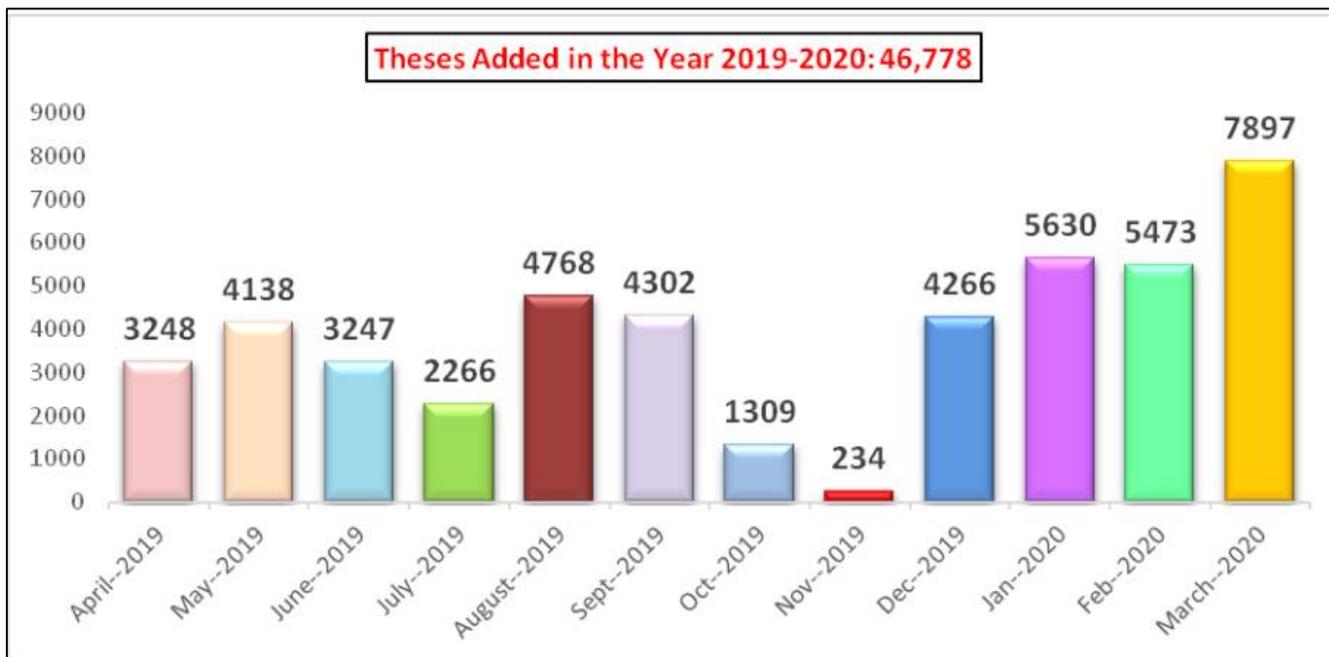
Fig 20: Month-wise Theses Submissions into Shodhganga

4.1.2. Funds Released to the Universities and to the INFLIBNET Centre under Shodhganga Scheme

The INFLIBNET Centre recommended release of Rs 14.00 crores (approx.) to 96 universities who have signed MoU on Shodhganga. The UGC has released Rs 11.42 crores to 80 eligible universities till 15th March 2017 for the digitization of backlist of theses as well as for setting-up of ETD Laboratories in their respective universities. Release of Rs 2.57 crores is pending for 16 eligible universities.

Initially 1.73 Crore was released to INFLIBNET Centre which includes subscription to Anti Plagiarism software. In addition, the UGC released Rs. 1.40 Crore to the INFLIBNET Centre during FY 2016-17 and Rs. 1.50 Crore released on 30th Jan 2019 for the FY 2018-19 for subscription to plagiarism detection software for universities and 1.65 Crore in Dec 2019. Total funds received for Shodhganga since its inception to Universities as well INFLIBNET Centre is Rs.17.7 Cr.

4.1.3. Usage Statistics of Theses from Shodhganga

Usage of theses hosted in Shodhganga repository by the academic community across the world is monitored by the Centre with an aim to measure its usage as well as for load balancing of the server. General statistics of Shodhganga including month-wise page views, theses views, department views, university views and website views are shown below in Table 6. The usage has considerably increased with the hosting of the repository on robust infrastructure. Yearly usage summary for Shodhganga for FY 2019 – 20 is given in Fig.21.

Table 6: Month-wise Usage Shodhganga

Views in Lakhs	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Total
Page Views	137.87	124.39	117.77	132.23	85.857	116.57	92.288	96.111	133.19	301.01	282.72	305.09	1925.096
Theses Views	10.11	9.21	10.13	12.75	8.37	10.65	8.08	8.23	12.47	34.05	19.94	21.11	165.10
Dept. Views	3.36	3.29	3.31	4.76	2.76	3.71	2.77	2.38	3.74	7.54	5.60	6.49	49.70
Univ. Views	1.44	1.37	1.28	1.63	1.05	1.26	87,113	91,088	1.37	2.65	2.22	2.46	18.50
Searches	9.27	5.94	5.59	9.68	4.27	5.02	3.53	3.77	13.73	20.30	14.25	16.95	112.31
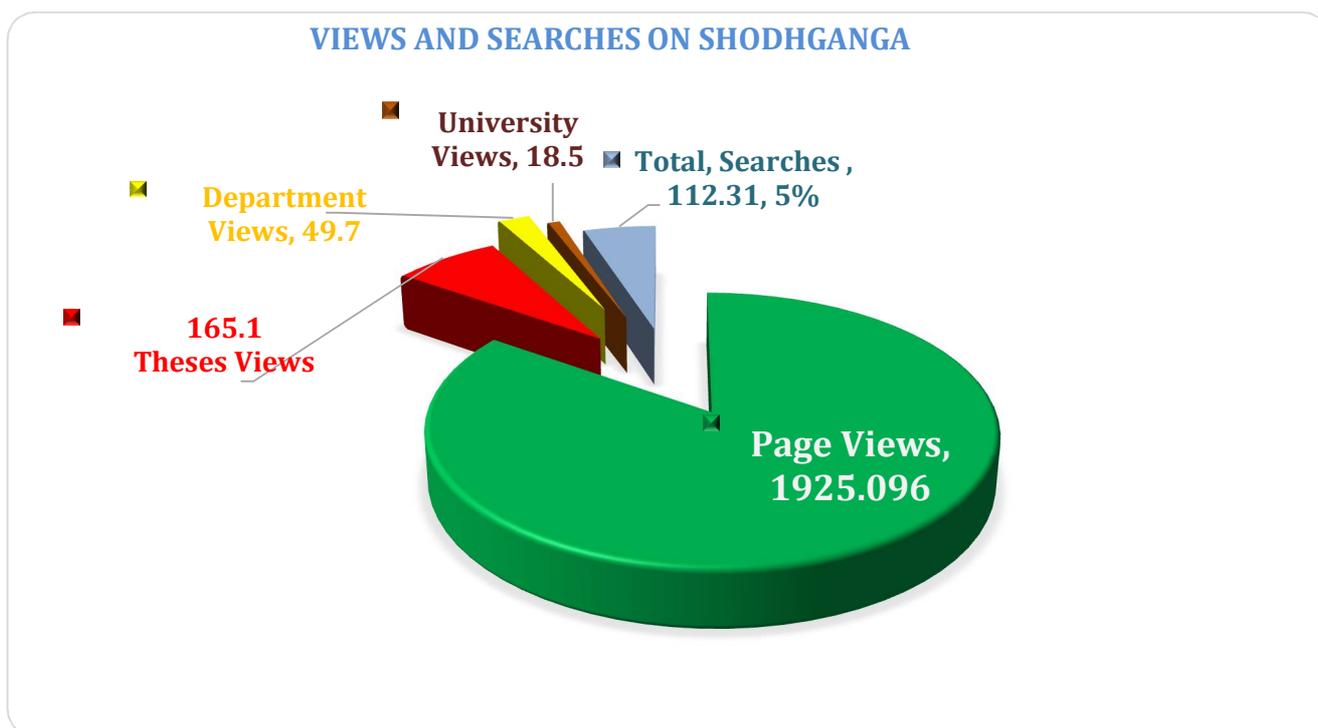
Fig. 21: Views and Searches on Shodhganga for FY 2019-2020

4.1.3.1. Views and Searches during Lockdown

MHRD has listed Shodhganga as one of the links to be used during Lockdown in their home page. The highest visits among all links listed in MHRD is Shodhganga on an average of 2 lakhs pages viewed per day during the lockdown period as depicted in Table 7 and Figure 22. The number of users per day average is 8046, i.e. average 22-25 chapter/pages visited per user.

Date	User Visit	Page views
23.3.2020	7439	180349
24.3.2020	6918	175710
25.3.2020	6772	180568
26.3.2020	8756	224557
27.3.2020	9916	235173
28.3.2020	8387	210666
29.3.2020	7889	204558
30.3.2020	8637	207107
31.3.2020	7701	232292
Average	**8046**	**205664**

Table 7: Usage during Lockdown Period
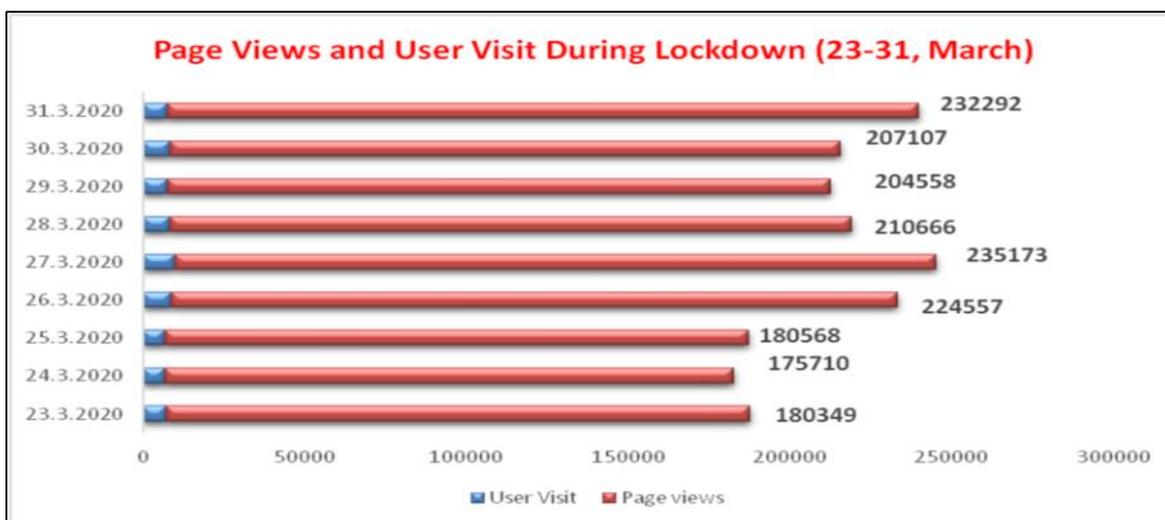
Figure 22: Page Views and User Visit during Lockdown

4.1.4. **Top 10 Theses Viewed Highest Number of Times in Shodhganga**

The Top 10 theses that were viewed the highest number of times for the FY 2019-20 given below in Table.8

Sl. No.	Title and Its Unique URL	No. of Views
1	Humour in Malayalam short stories ഹാസ്യംമലയാളളചെറുകഥയില് (http://shodhganga.inflibnet.ac.in/handle/ 10603/7650)	17509
2	Synopsis of Thesis submitted to Bharathidasan University for the award of the Degree of PhD (http://shodhganga.inflibnet.ac.in/handle/10603/30248)	17004

3	Intelligent Techniques for securing web applications from SQL injections and XSS attacks (http://shodhganga.inflibnet.ac.in/handle/10603/13663)	14968
4	Women freedom fighters in Tamil Nadu *(http://shodhganga.inflibnet.ac.in/handle/10603/14211)*	13515
5	Students attitude towards entrepreneurship a study of MBA students of management institutes in Pune district (http://shodhganga.inflibnet.ac.in/handle/10603/95837)	13478
6	Urdu mein Khaka Nigari ka Tanqeedi Mutala اردو میں کهکا ناری کا تنقید متلا*(http://shodhganga.inflibnet.ac.in/handle/10603/9203)*	10728
7	Some topics in operations research *(http://shodhganga.inflibnet.ac.in/handle/10603/74490)*	10651
8	Energy Efficient Data Aggregation And Fusion In Wireless Sensor Networks *(http://shodhganga.inflibnet.ac.in/handle/10603/10603)*	9500
9	A project report on Hotel Management system *(http://shodhganga.inflibnet.ac.in/handle/10603/98932)*	9229
10	Gujarati sonet kavitana sthityataro: ek adhyayan ગુજરાતીસોનેટકવિતાનાસ્થિત્યાન્તારોઃ એકઅધ્યયન *(http://shodhganga.inflibnet.ac.in/handle/10603/9687)*	8583

Table 8: Top 10 Theses Viewed in Shodhganga

4.2. Shodhgangotri: Repository of Indian Research in Progress details (Synopses/ Research Proposals for PhD programme with MRPs/PDFs/ Emeritus Fellowship)
(http://shodhgangotri.inflibnet.ac.in/)

Under this initiative, research scholars/research supervisors in universities could deposit an electronic version of approved synopsis submitted by research scholars to the universities for registering themselves under the PhD programme with MRPs/PDFs/ Emeritus Fellowship). Synopses in Shodhgangotri would later be mapped to full-text thesis in Shodhganga. As such, once the full-text thesis is submitted for a synopsis, a link from the synopsis in Shodhgangotri to the full-text theses in Shodhganga will be provided. During the year under report, 76 universities contributed their synopses into Shodhgangotri. A total number of synopses submitted into the repository grew to 7000+, awaiting its migration to cloud platform from its present server for better performance.

4.3. Plagiarism Detection Software (URKUND) under ShodhSuddhi. An Initiative of MHRD, Govt of India

The MHRD through its initiative ShodhSuddhi provides access to Plagiarism Detection Software (URKUND) to all universities including Central, State, Deemed and Private as well as Centrally funded Technical Institutions (CFTIs) in India through Central funding to enhance Academic Integrity in Academic Institutions and to curb plagiarism w.e.f September 01, 2019. This program is being

executed by INFLIBNET Centre Gandhinagar. The Plagiarism Detection Software ie URKUND has been selected based on Global Tender Process. The access to this online software system is based on userId and Password. The software has been implemented in all identified 1024 Universities/Institutions by creating user ID and Password for University Coordinator (UC) with admin rights. The University/Institutions Coordinators are responsible for creating login credentials for their faculty, Research Scholars of their respective University/Intuitions. The current status of PDS implementation are given below Table 9:

University Type	No. of Universities	No. of Documents submitted	No. of Users (Receivers)
Central Open University	1	1658	583
Central University	49	36079	7128
Deemed University-Government	36	2443	893
Deemed University-Government Aided	10	4777	599
Deemed University-Private	80	29783	9839
Institute of National Importance (CFTI)	138	12584	11645
Institute under State Legislature Act	5	104	100
IUCs of UGC	9	1447	203
State Open University	14	945	388
State Private Open University	1	0	0
State Private University	322	36429	14760
State Public University	367	208016	32066
Total	**1032**	**334265**	**78204**

Table 9: Status of PDS (URKUND) under ShodhSuddhi as on 31st March 2020

4.4. IR @ INFLIBNET (https://ir.inflibnet.ac.in/)

The Centre has established an institutional repository called IR@INFLBNET using DSpace, open-source software accessible at http://ir.inflibnet.ac.in/. The papers published in the proceedings of the CALIBER and PLANNER are uploaded into the repository. The Repository also includes course materials, newspaper clippings, etc. The repository has 1,858 full-text articles.

Some of the new functionality such as REST Reports (experimental), Social Media sharing plugin, SSL, reCAPTCHA has been implemented during the year under report. The routine tasks performed are periodic statistics generation and maintenance of the website.

Usage Statistics Apr 2019 to March 2020	
Bitstream Views	5,41,793
Item Views	3,40,331
Collection Views	32,306
Community Views	9,311
Searches Performed	7,25,703

Table 10: Usage Statistics

4.4.1. Institutional Repositories Customizations and Support

The INFLIBNET Centre is assisting institutions of higher learning in the process of creation and maintenance of institutional repositories. The Centre is using self-developed expertise in open source software like DSpace, Linux, Perl, Java, Apache Tomcat, PostgreSQL, MySQL etc. Under this initiative, the Centre has installed, configured, customized and hosted institutional repositories for various institutions. During the year under report, the Centre has provided help and support to the institutes given below in Table 11 and Table 12.

Sl. No.	Name of Institute	Services Provided
1	Shivaji University, Kolhapur	DSpace Installation, Basic Customization, Maintenance, Backup, Statistics generation, Log maintenance, Routine trouble-shooting
2	University of Kashmir, Srinagar	DSpace Installation, Basic Customization, Hosting
3	ARAI, Pune	Maintenance Service (Renewed) DSpace version upgrade, Backup, Statistics generation, Log maintenance, Routine trouble-shooting
4	Gujarat University, Ahmedabad (Sampada Repository)	Hosting Service (Renewed), Routine trouble-shooting
5	Nirma University, Ahmedabad	Maintenance Service (Renewed) DSpace version upgrade, Backup, Statistics generation, Log maintenance, SSL Implementation
6	Krishna Kanta Handiqui State Open University, Guwahati	Hosting Service (Renewed)
7	Mizoram University, Aizawl, Mizoram	Hosting Service (Renewed)

Table 11: Institutions and DSpace Customization Services Provided by the INFLIBNET Centre

Besides, the Centre also provides proactive help, support to some of the institutions over the phone, email or via remote login to manage and maintain their repositories by their own.

Sl. No.	Name of Institute	Help Provided
1	NASDO, Indian Navy, Goa	Resolved internal server error generated due to various reasons, reconfigure database connection properties, checked tomcat and DSpace log and resolved the errors.
2	Indian Institute of Advanced Study, Shimla	Provided solution of Email Configuration through SMTP, metadata import

Table 12: Institutions and DSpace Customization help provided over the phone, email or via remote login by the INFLIBNET Centre

This group is also responsible for supporting and maintaining INFLIBNET Centre's Institutional Repositories as well as other open access initiatives like Shodhganga and Shodhgangotri. During the year under report, the group also involved in setting up the entire Shodhganga site on a new advanced server having higher configuration in terms of speed and storage. The task involved installation, customization and configuration of DSpace with all prerequisites and Submission Interface, database restore, index generation, handle server setup, altmetric setup etc. The other regular and routine tasks performed are, index generation, periodic statistics generation, log maintenance, database backup and syncing data with mirror site at defined frequency, database restore and indexing on mirror site, updating of Shodhganga, Shodhgangotri main website when required, metadata export, fetching list of duplicate records etc. The Centre has also prepared material related to Institutional Repository to help Library Professionals to establish the IR by their own. The Centre has also explored some of the new features of DSpace.

4.5. InfoPort: A Subject Gateway to Indian Scholarly Internet Resources (http://infoport.inflibnet.ac.in/)

INFOPORT: INFLIBNET Subject Gateway for Indian Electronic Resources is designed to facilitate registering of an Internet resource into the portal and extending its access to users. INFOPORT supports browsing of Internet resources by Dewey Decimal Classification (DDC) Scheme. The main functional parts of INFOPORT are:

- Dewey Decimal Classification (DDC) Search;
- Search Cloud;
- Free-Text Search;
- Alphabetical Search;

- Resource Type Search; and
- Intute Search

During the year under report, a number of features and functionalities of the subject gateway were enhanced based on feedback from users and additional Internet resources were added to the portal. The interface is populated with more than 1,740 e-resources.

4.6. ICSSR Data Service: Indian Social Science Data Repository

The INFLIBNET Centre was given a project for setting-up a Data Repository for Social Science by Indian Council of Social Science Research, New Delhi. ICSSR Data Service was set-up using NADA (National Data Archive) - open-source data repository software developed by IHSN (International Household Survey Network). NADA uses the Data Documentation Initiative (DDI) metadata standard for describing datasets. NADA facilitates importing of existing datasets in DDI format. Figure 23 depicts the website of ICSSR Data Service.

Fig. 23: ICSSR Data Service's Website

Unit level data for each dataset have been converted to SPSS format (*.sav), STATA format (*.dta) and Tab Separated Value format (*.dat) and uploaded with the original datasets on the portal. These datasets have been categorised, described and documented according to DDI Standards. Registered users can download any dataset and do further analysis as per their requirement.

During the period under the report, handled user's queries and resolved the issues they were facing. User activation was being handled by the Centre as depicted in Table 13.

No. of Datasets	143 (93 NSS, 44 ASI, 1 Time use Survey, 2 Economic Census)
Total Registered Users	3,347
Total Number of Downloads	41,09,991
Total Number of Views	1,51,12,863

Table 13: Queries Handled by the INFLIBNET Centre

4.6.1. ICSSR Data Analytic Tool

The Centre has developed a "ICSSR Data Analytic Tool" that facilitates users to explore unit-level data available in datasets online. Beta version of the tool is available at http://www.icssrdataservice.in/shiny/analytictool/ as shown in Figure 24. This tool is developed using the "R" language to facilitate advance analysis and visualization of datasets. Various operations (like maintaining the uniform key variable name, removing duplicate fields) were performed on each block of the dataset for making ICSSR Data Analytic Tool functional. Users can perform a number of analytical operations by using this tool such as univariate analysis, data transformation, cross-tabulation and pivot analysis. Users can visualize the resultant data using various charts like histogram, bar plot, stacked chart, column chart, heat map, etc. Apart from this, the user can generate a map of state-wise data derived through analysis.

Fig. 24: ICSSR Data Analytic Tool

5. Library Consortium and its By-product: E-ShodhSindhu and InfiStat, J Gate+ and INFED

The Centre is responsible for executing consortia, namely e-ShodhSindhu including its college component called "National Library and Information Services infrastructure for Scholarly Contents (N-LIST)" with an aim to extend access to e-resources to CFTIs, universities and colleges in India. Two

separate entities within the umbrella of e-ShodhSindhu were maintained not only to cater to the diverse needs of two sets of institutions, namely CFTIs & universities and colleges, but also to satisfy the requirements of different economic models of these two consortia.

For the year 2020, the consortium subscribed to the existing 17 resources available through central funding for eligible institutions during 2019. The total number of resources to be made available through central funding includes 7038+ journals and four databases. e-ShodhSindhu continued to provide current as well as archival access to these 7038+ core and peer-reviewed journals including four bibliographic and citation databases in different disciplines from a number of publishers and aggregators to its core member institutions including centrally-funded technical institutions, universities and colleges that are covered under 12(B) and 2(f) Sections of the UGC Act.

5.1.1. Governance

The MHRD has constituted three national committees consisting of MHRD officials, representatives of member institutions and experts in the library and information science. Composition of these three committees and their role and responsibilities are given below.

5.1.2. National Advisory Committee

National Advisory Committee for e-ShodhSindhu is constituted by the MHRD to advise and guide the Consortium on rates of subscription negotiated by it as well as on collaborative services between MHRD-funded institutions. The current composition of the National Advisory Committee is given in Appendix VII.

5.1.3. National Steering Committee

e-ShodhSindhu is being operated by the INFLIBNET Centre under the overall guidance of a National Steering Committee that guides and steers the activities of the Consortium. The current composition of the National Steering Committee is given in Appendix VIII.

5.1.4. Joint Negotiation Committee

The Joint Negotiation Committee is constituted by the MHRD for negotiating rates of subscription to e-resources. The current composition of the Joint Negotiation Committee is given in Appendix IX.

5.2. Member Institutions

Access to e-resources is being provided to different categories of institutions through central funding as mentioned below in Table 14:

Sl. No.	Category	No. of Institutions
1	12 (B) / 2 (f) State Universities	137
2	Central Universities	40
3	Deemed Universities (UGC funded)	22
4	IUCs of UGC	6
5	National Law Schools/Universities	12
	Universities	**217**
6	IITs & IISc	24
7	NITs, SLIET & NERIST	32
8	IIMs	20
9	IISERs	7
10	SPAs	3
11	IIITs, IIEST, NITIE, NIFFT and NITTTR	11
	CFTIs (Total CFTIs)	**97**
	Total	**314**

Table 14: Different Categories of Institutions that are Getting Access to e-Resources through Central Funding

In addition, access to three e-resources (ASCE, ASME, Bentham Pharmacy) to 75 institutions including Government engineering colleges and universities is provided with funding from the AICTE. The Consortium also provides access to 6500+ journals and 31,50,000+ eBooks to 3295 colleges under the NLIST programme, the college component of e-ShodhSindhu described at 5.9. The list of institutions included in various categories of institutions given in Table 15 and list of colleges are listed at http://nlist.inflibnet.ac.in/collegelist.pdf.

Other Higher Education Institutions can join the Consortium through an online portal available on the Consortium website and subscribe to e-resources required by them on the rates negotiated by the Consortium.

5.3. Current Status: Services and Activities

The INFLIBNET Centre acts as a nodal agency for implementation, monitoring and execution of the e-ShodhSindhu through Committees mentioned above. It coordinates all activities concerned like negotiation, renewal of the subscription to e-resources and subsequent troubleshooting on behalf of the member institutions. e-ShodhSindhu also promotes cooperation amongst member institutions and facilitates better terms of references for the use and preservation of subscribed electronic resources.

5.3.1. Coordination, Negotiation and Licensing of e-Resources

The consortium coordinates the meeting of various committees of the consortium, negotiates rates of subscription to e-resources and terms and conditions of access to e-resources. The INFLIBNET Centre has also developed a Model License Agreement for the subscription of e-resources. The INFLIBNET Centre also signs a license agreement with the publishers on behalf of the member institutions of e-ShodhSindhu.

5.3.2. Mode of Access to e-Resources

The Consortium coordinates with the member institutions and publishers for smooth access to e-resources through static IP addresses of member institutes. Since most colleges do not have static IP addresses, access to e-resources to the registered colleges is provided through EZ-Proxy & Shibboleth IDP set-up at the INFLIBNET Centre. The authorized users from colleges can access e-resources and download articles required by them directly from the publisher's website once they are duly authenticated as authorized users through the NLIST Programme. The Consortium has developed an online interface for creation, updating and modification of valid users of the colleges by the respective college administrators. The consortium also attends to the problems faced by member institutions and liaises with publishers to resolve such problems.

5.3.3. Maintain and Update Consortium Website

The INFLIBNET Centre maintains a comprehensive website of e-ShodhSindhu programme for providing detailed information about subscribed e-resources and member institutions. Tutorials and promotion materials have been developed for imparting training and technical support to member institutions. The e-ShodhSindhu website provides options to searching and browsing subscribed journals, searching for member institutions and viewing the e-resources subscribed for them by the consortium. The member institutions can also download a list of journals available under various e-resources in xls format, which in turn, can be used for updating their local library systems. Figure 25 depicts the home page of e-ShodhSindhu website.
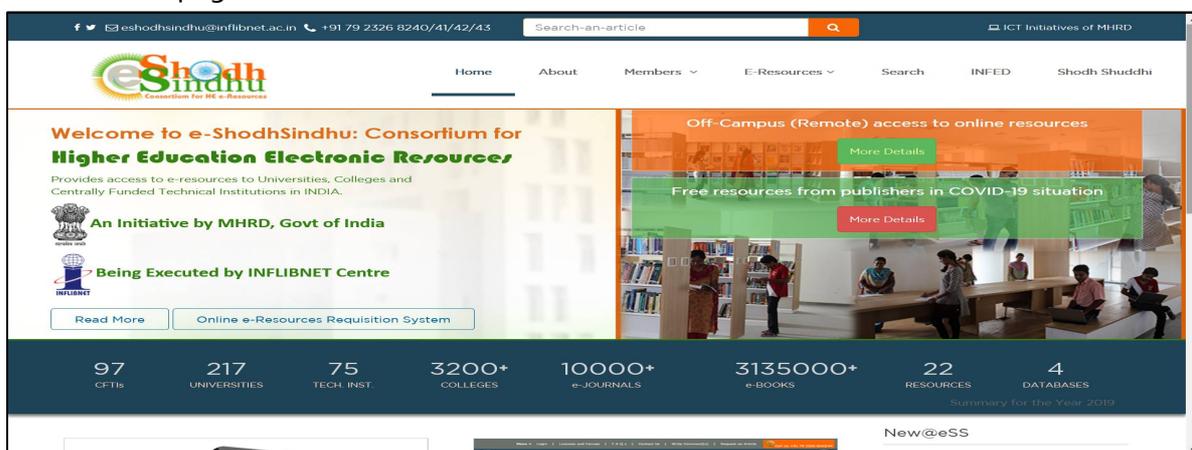
Fig. 25: e-ShodhSindhu Website

5.3.4. InfiStats: Monitoring of Usage of e-Resources

The Consortium evaluates and monitors the usage of subscribed e-resources using a software called InfiStats developed in-house. The Centre has developed a software called InfiStats, for monitoring the usage statistics of various e-resources made accessible to the member institutions. The InfiStats uses "Standardized Usage Statistics Harvesting Initiative (SUSHI)" Protocol (ANSI/NISO Standard No. Z39.93-2007) that defines an automated request and response model for harvesting of usage data for electronic resources using Web services framework. The InfiStats portal imports the usage data from the publisher's website automatically and stores it in a database on InfiStats platform. The InfiStats interface provides title-level COUNTER-compliant reports to member institutions. The member institutions can also log-on to this portal for monitoring the usage of their respective e-resources. Figure 26 depicts the home page of InfiStats website. The Consortium is maintaining only COUNTER R5 usage for member institutions from January 2020. For the year 2019, both COUNTER 4 and COUNTER 5 data are maintained as available from the publishers.

Fig. 26: InfiStats Website

5.3.5. Off-Campus Access to e-Resources

While IP-based access is the most convenient, safe and hassle-free authentication mechanism for publishers as well as for subscribing institutions, it has its limitations. One of the most serious limitations of IP-filtered access to e-resources is that the users can access e-resources only when they are on the Institute campus. Ideally, an authorized user should be able to access e-resources irrespective of their physical location at any time as long as he has access to the Internet. In order to overcome this limitation, the INFLIBNET Access Management Federation (INFED) was set-up which uses Shibboleth, a standard-based open source software, for authenticating authorized users from colleges and universities and providing them seamless access to e-resources from anywhere, anytime. More details about INFED is available in 5.10.

5.4. Electronic Resources

The Consortium has negotiated rates of subscription for several electronic resources covering all major subject disciplines being taught in CFTIs, universities and colleges. It includes a wide variety of materials including e-journals, bibliographic databases, factual databases, state-of-the-art reviews published by scholarly societies, university presses, institutions, commercial publishers and aggregators. While 17 e-resources are subscribed with central funding, remaining 68 e-resources can be subscribed by member institutions with their own funding. The member institutions are provided differential access to these 17 e-resources based on their e-resource requirements registered on the Online e-Resource Requirement Portal developed for this purpose.

5.5. Major Achievements of e-ShodhSindhu

The number of colleges in the NLIST Programme increased to 3295:

Sl.No.	Name of Resource	No. of Titles	Category of Institutions 2019 & 2020
1	JSTOR	3000+	Univ. + CFTIs + Colleges
2	EPW	1	Univ. + CFTIs + Colleges
3	JGate Plus (JCCC)	DB	Univ. + CFTIs
4	Oxford University Press	262	Univ. + CFTIs + Colleges
5	ASME Journals Online	29	CFTIs
6	ASCE Journals Online	36	CFTIs
7	ACM Digital Library	140	CFTIs
8	AIP - eSS Collection	19	Univ. + CFTIs + Colleges
9	APS - eSS Collection	13	Univ. + CFTIs
10	ISID Database	DB	All
11	Web of Science/LA	DB	Univ. + CFTIs
12	Annual Reviews	43	Univ. + CFTIs + Colleges
13	Project Muse	670	Univ. + CFTIs
14	MathSciNet	DB	Univ. + CFTIs
15	Springer Link + Nature journal	1724	Univ. + CFTIs
16	Taylor and Francis	1076	Univ.
17	American Chemical Society	49	Univ.
18	Royal Society of Chemistry	23	Colleges
19	Institute of Physics	46	Colleges
20	H W Wilson	3000+	Colleges
21	eBrary e-Books	1.50 Lakhs	Colleges

22	Indian Journals.com	180+	Colleges
23	WEL (For NDL)	30.00 lakhs	All
24	South Asia Archives		All

Table 15: e-Resources Made Accessible to Eligible Member Institutions

Univ: 12(B)/Central/Funded Deemed Universities, **Colleges:** Eligible NLIST Colleges
CFTIs: Centrally funded Technical Institutions (IISc, IITs, NITs, IIMs, IISERs, IIITs etc)

The Negotiation Committee of e-ShodhSindhu negotiated rates of subscription for 141 e-resources collections from 51 publishers/vendors and to get the lowest rates of subscription; the consortium renewed the 2020 subscription for existing resources for existing number of institutions as subscribed in 2019.

5.6. Funds Released

The Consortium received Rs. 227.66 crores during FY 2019-20 for subscription to e-Resources for Universities/CFTIs, colleges under NLIST Programme. The details of funds released to e-ShodhSindhu during FY 2019-20 are given below in Table 16:

Sl. No.	Funds Released	Rupees
1	Funds released in May 2019 (*Vide Letter no F.16-23/2014-TEL, dated 13th May 2019*)	806,600,000.00
2	Funds released for September 2019 (*Vide Letter no F.16-23/2014-TEL, dated 26th Sep 2019*)	1,470,000,000.00
	Total (FY 2019-2020)	**2,276,600,000.00**

Table 16: Funds Released to e-ShodhSindhu during Financial Year 2019-2020

5.7. Usage of e-Resources: Analysis

Most publishers maintain detailed usage statistics for resources made accessible to subscribing institutions. The publishers provide username and password to subscribing institutions for accessing the usage statistics for their resources for monitoring purposes. The Consortium analyses the usage on various parameters as mentioned below.

5.7.1. Average Cost of an Article

The average cost per download represents the average cost of each access event to a full-text article and is calculated by dividing the subscription cost of a resource by the number of articles downloaded. Table 17 given below, provides the cost per download of an article. The cost per download is lowest

for JSTOR (Rs. 8.96) and the highest for Project Muse (Rs.827.38), whereas the Consortium average is Rs. 85.94. In the case of databases the cost per search for MathSciNet is Rs. 22.21, for Web of Science Rs.158.70 and cost per hit for JGate is Rs. 20.20.

Sl No	Resource Name	No of Institution subscribed	Downloads	Cost per download/search
1	ACM Digital Library	61	180167	⏀179.91
2	American Chemical Society	109	1170570	⏀88.95
3	American Institute of Physics	128	586490	⏀187.19
4	American Physical Society	126	711116	⏀84.58
5	Annual Reviews	113	90882	⏀321.12
6	ASCE Journals Online	50	173982	⏀155.91
7	ASME Journals Online	56	127958	⏀187.64
8	JSTOR	209	3146391	⏀8.96
9	Oxford University Press	163	471105	⏀95.78
10	Project Muse	101	63371	⏀827.38
11	Springer Link + Nature	200	4629934	⏀85.88
12	Taylor and Francis	129	506061	⏀171.94
	Total For FT Resources		**11858027**	**⏀85.94**
13	JGate Plus (JCCC)	194	968904	⏀20.20
14	MathSciNet	90	1224118	⏀22.21
15	Web of Science/LA	150	899813	⏀158.70

Table 17: Cost per Download for Full-Text e-Resources for the Year 2019

Note: Usage for ISID & EPW not available and cost per download not computed. Usage in COUNTER 4 for ACM, APS, ASME, JCCC, Nature-Springer and WOS. All other in COUNTER 5. Usage statistics for JCCC in proprietary format and not COUNTER complaints.

5.8.   Document Delivery through J-Gate Plus@e-ShodhSindhu

The J-Gate Plus@e-ShodhSindhu is a virtual library of journal literature created as a customized e-journal articles access gateway and database solution for member institutions of e-ShodhSindhu. It provides article-level access to e-journals subscribed under the Consortium as well as e-journals subscribed by 25 university libraries designated as ILL Centres of the INFLIBNET Centre. Moreover, an increasing number of CFTIs are now contributing their journal subscription details in the J-Gate Plus. It acts as a gateway to search 51,000+ journals including 25,000+ journals subscribed by the Consortium as well as universities designated as ILL Centres. The J-Gate Plus interface facilitates

triggering of an email request for articles that are not accessible online and are available only in universities designated as ILL Centres.

During the period under report, 41 ILL requests were received from member universities to the INFLIBNET Centre out of which 36 requests were fulfilled. Details of numbers of article requests received from member universities are given below in Table 18:

Sl. No.	Requested By	DDR-DU	DDR-F	DDR-P	DDR-UF	Total
1	Dr. B.R. Ambedkar Memorial Library - Acharya Nagarjuna University	0	3	0	0	3
2	Gulbarga University	0	0	0	3	3
3	The National Law School of India	0	3	0	0	3
4	Central University of Gujarat	0	2	0	0	2
5	Dayalbagh Educational Institute	0	2	0	0	2
6	Guru Ghasidas University	0	2	0	0	2
7	Indian Institute of Management, Shillong	0	2	0	0	2
8	Kannur University	0	2	0	0	2
9	University of Mysore	0	2	0	0	2
10	Babasaheb Bhimrao Ambedkar University	0	1	0	0	1
11	Bundelkhand University	0	1	0	0	1
12	Indian Institute of Management - Bangalore	0	1	0	0	1
13	Indian Institute of Technology (Banaras Hindu University) Varanasi	0	1	0	0	1
14	Indian Institute of Technology - Roorkee	0	1	0	0	1
15	Islamic University of Science and Technology	0	1	0	0	1
16	Jawaharlal Nehru Technological University	0	1	0	0	1
17	Jiwaji University Gwalior	0	1	0	0	1
18	Malaviya National Institute of Technology – Jaipur	0	1	0	0	1
19	Maulana Azad National Urdu University	0	0	0	1	1
20	Mother Teresa Women's University	0	1	0	0	1

21	National Institute of Technology – Jamshedpur	0	1	0	0	1
22	National Institute of Technology – Kurukshetra	0	1	0	0	1
23	National Institute of Technology - Rourkela	0	1	0	0	1
24	Patna University	0	1	0	0	1
25	Other Universities	1	4	0	0	5
	Total Requested	1	36	0	4	41

$DDR-DU: Document Delivery Request-Delay,   *DDR-F: Document Delivery Request – Fulfilled
+DDR-P: Document Delivery Request - Pending,   #DDR-UF: Document Delivery Request – Unfulfilled

Table 18: Document Delivery Requests made by Different Universities

During the period under report, a total number of 718 requests were received by the 25 ILL Centres and by the INFLIBNET from all the member universities, out of which 321 were fulfilled as per the details are given below in Table 19.

Sl. No.	University Name	DDR-DU	DDR-F	DDR-P	DDR-UF	Total	% of Fulfilled
1	Aligarh Muslim University	10	88	3	107	208	42.31
2	Annamalai University	0	5	1	0	6	83.33
3	Assam University	0	0	1	0	1	0.00
4	Banaras Hindu University	0	3	4	14	21	14.29
5	Banasthali University	2	17	2	6	27	62.96
6	Bangalore University	0	0	7	0	7	0.00
7	Jadavpur University	0	0	0	0	0	NA
8	Jawaharlal Nehru University	0	0	8	0	8	0.00
9	Kurukshetra University	0	0	5	0	5	0.00
10	Mangalore University	0	0	66	0	66	0.00
11	North Eastern Hill University	0	1	0	0	1	100.00
12	Pondicherry University	0	11	0	9	20	55.00
13	Pt. Ravishankar Maharaj Shukla University	0	0	0	0	0	NA
14	Punjab University	0	29	0	6	35	82.86
15	Punjabi University	0	0	0	0	0	NA
16	Rashtrasant Tukadoji Maharaj University	0	0	0	0	0	NA
17	Sardar Patel University	0	0	4	0	4	0.00
18	Tata Institute of Social Science	0	40	7	10	57	70.18

19	The Maharaja Sayajirao University	0	0	11	3	14	0.00
20	University of Calcutta	0	0	1	54	55	0.00
21	University of Delhi	0	9	0	6	15	60.00
22	University of Hyderabad	7	77	1	22	107	71.96
23	University of Madras	0	1	0	2	3	33.33
24	University of Pune	0	4	1	12	17	23.53
25	University of Rajasthan	0	0	0	0	0	NA
26	INFLIBNET	1	36	0	4	41	87.80
	Total	**20**	**321**	**122**	**255**	**718**	**44.71**

$DDR-DU: Document Delivery Request-Delay,   *DDR-F: Document Delivery Request – Fulfilled
+DDR-P: Document Delivery Request - Pending,   #DDR-UF: Document Delivery Request – Unfulfilled
Table 19: Document Delivery Requests Received by 25 ILL Centres and INFLIBNET Centre

Figure 27 depicts comparison between DDR-Fulfilled and total number of DDR received by each ILL Centre.
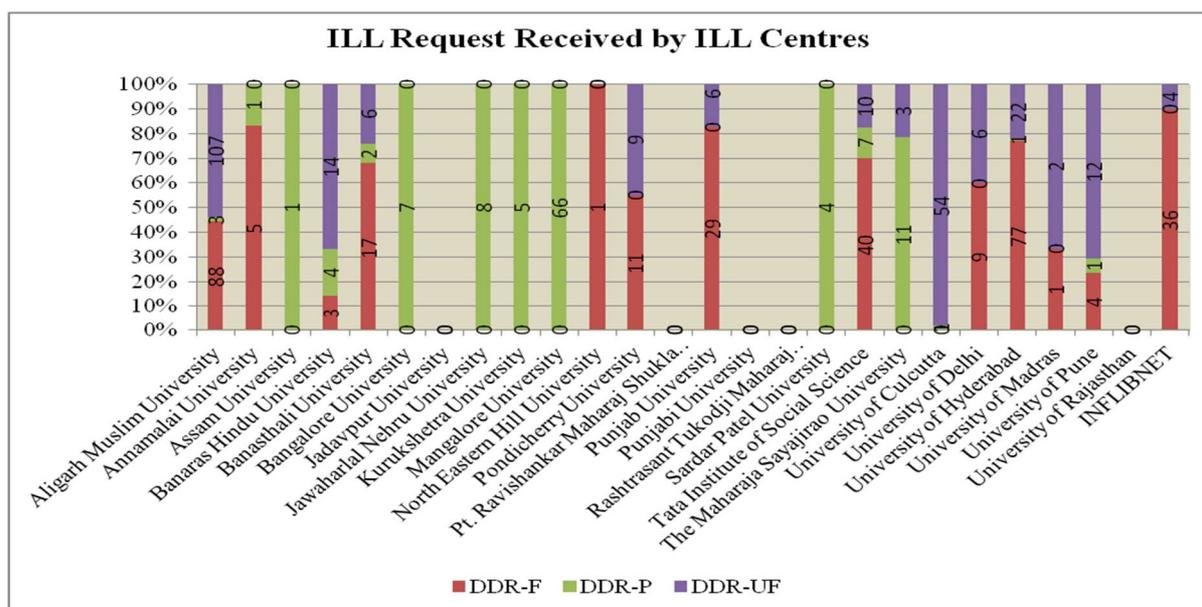
Fig. 27. Document Delivery Requests Received (DDR-R) Vs Full-filled (DDR-F) by 26 ILL Centres

5.9.   N-LIST (National Library and Information Services Infrastructure for Scholarly Content)

The "National Library and Information Services Infrastructure for Scholarly Content (N-LIST)", is part of e-ShodhSindhu: Consortia for Higher Education E-Resources as college component, provides access to 6,150 e-journals and 31,64,309 e-books to all Govt. Govt.-aided as well as non-aided colleges through a proxy server installed at the INFLIBNET Centre. Electronic resources subscribed under NLIST project covers all relevant areas taught in colleges such as arts & humanities, social sciences, physical and chemical sciences, life sciences, computer sciences, political sciences, library and information science, law, business, mathematics, statistics, etc.

5.9.1. Current Status

As on March 31, 2020, a total number of 3295 member colleges are getting access to resources subscribed under the N-LIST programme. Log-in IDs and passwords have been issued to more than 5.95 lakhs faculty members, students and researchers after obtaining a list of authorized users from these 3295 registered colleges.

5.9.2. Number of Colleges

Figure 28 given below reflects the year wise number of colleges who joined the NLIST Programme during the year 2010 to 2020. Due to changes in eligibility criteria of membership, there was a slight decrease in total number of registered colleges in 2018. However, a slight increase in total number of registered colleges has been observed in 2019 and 2020.
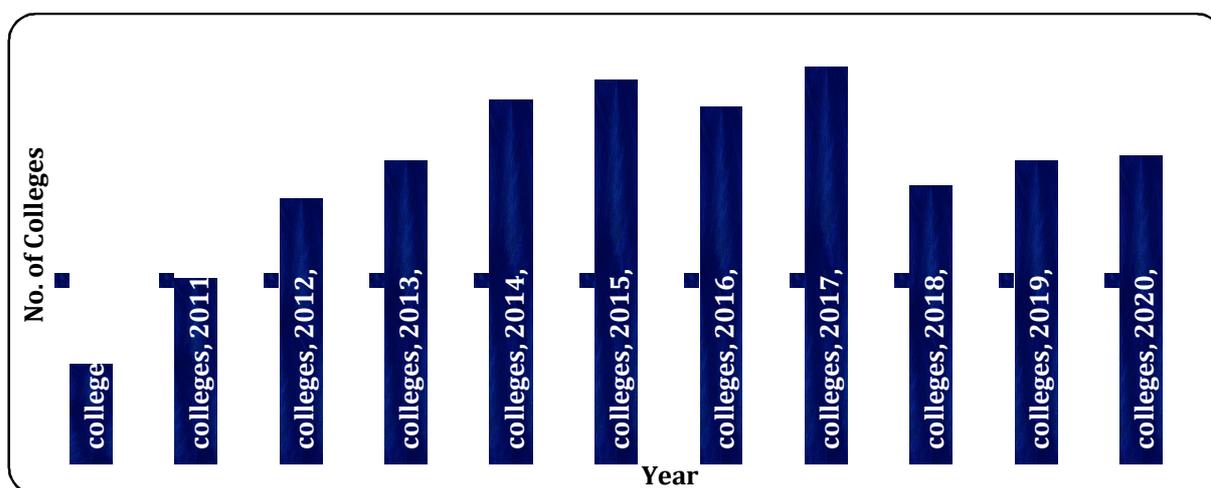
Fig. 28: Year wise Registration of Colleges

5.9.3. Electronic Resources Subscribed under the N-LIST Programme

5.9.3.1.   Full-text Electronic Resources

Full-text electronic resources contain complete articles along with their bibliographic details. The N-LIST programme subscribes to full-text e-resources from scholarly societies, commercial publishers and aggregators like American Institute of Physics, American Physical Society, Oxford University Press, Royal Society of Chemistry, H W Wilson, etc. All full-text resources subscribed under the N-LIST programme contain electronic journals as revealed in the Table 20 given below:

Sl. No.	E-resources	Publishing Country	No. of Journals	Backfiles from
1	American Institute of Physics	USA	18	Ten yrs.
2	Annual Reviews	USA	33	Ten yrs.
3	Economic and Political Weekly (EPW)	India	1	1966+
4	Indian Journals	India	186	2007+
5	Institute of Physics	UK	46	Vol. 1+
6	JSTOR	USA	2500	Vol. 1+
7	Oxford University Press	UK	262	1996+
8	Royal Society of Chemistry	UK	29	Ten yrs.
9	H. W. Wilson	USA	3,075	1982+
	Total		6150	

Table 20: Full-text Electronic Resources

5.9.3.2.   Electronic Books

Electronic books are either subscribed on an annual subscription basis as in case of ebrary or are purchased on one-time payment and perpetual access basis as in case of all remaining publishers listed below. Total number of electronic books accessible to colleges under the N-LIST programme exceeds 1,64,309 as revealed below in Table 21.

Sl. No	E-book Name	Publishing Country	Purchased Books
1	ProQuest Academic Collection (formerly known as E-brary)	USA	1,50,000+
2	Cambridge Books Online	UK	1,800
3	EBSCO Host-Net Library	USA	936
4	Hindustan Book Agency	India	65
5	Institute of SouthEast Asian Studies(ISEAS) Books	India	382
6	Oxford Scholarship Online	UK	1,402
7	Springer eBooks	Germany	2,300
8	Taylor & Francis eBooks	UK	1,800
9	Myilibrary-McGraw Hill	USA	1,124
10	Sage Publication eBooks	UK	1,000
11	Open Access (Net Library)		3,500
	Total	4,93,334	1,64,309

Table 21: Electronic Book

5.9.4. E-Resources Available through National Subscription

Access to South Asia Archives (SAA) and World E-Book Library (WEL), subscribed by e-ShodhSindhu on behalf of National Digital Library (NDL), are made available to member colleges of NLIST Programme through proxy server set up at INFLIBNET Centre. The World e-Book Library includes 3 million (30,00,000) primary sources spanning the past 1,000 years of world history in more than 320 different languagesas mentioned in Table 22. The South Asia Archive contains more than 4.5 million pages spanning the period of 18th and mid-20th century from documents across the Indian subcontinent, including India, Pakistan, Burma, Afghanistan and Bangladesh.

Sl. No.	Name of Collection	No. of Titles
1	World eBook Library	30,00,000
2	South Asia Archive	4.5 million pages

Table 22: E-Resources Available through National Subscription

5.9.5. Mode of Access

The INFLIBNET Centre has implemented EZ-Proxy from OCLC for authenticating registered users. Individual users from colleges can directly access and download articles from journals and chapters from books directly from publisher's website once they are duly authenticated as authorized users through the authentication mechanism deployed at the INFLIBNET Centre. The Centre has also implemented Shibboleth based authentication of authorised NLIST users for off-Campus access to American Institute of Physics, Annual Reviews, Institute of Physics, Royal Society of Chemistry, Springer eBooks, Cambridge eBooks, and Taylor & Francis.

5.9.6. Cost-effectiveness of the N-LIST Programme
The cost-effectiveness of N-LIST programme can be judged by factors such as number of beneficiary colleges, full-time potential users in these colleges, cost of e-resources subscribed and expenditure on e-resources per college and per potential user. The N-LIST programme is a cost-effective proposition because of the large number of colleges with larger numbers of potential users and potential for growth. These factors are discussed below in detail.

5.9.7. Analysis of Usage

It is important to ensure that the resources offered to the colleges are being used optimally and steps are taken to promote usage of e-resources wherever required. A brief analysis of usage of e-resources by the beneficiary college is given below.

5.9.7.1. Publisher wise Usage of E-journals

Figure 29, given below, shows the number of articles downloaded by the users from different publishers during the financial year 2019-2020. It can be observed that JSTOR is highly used resource followed by Indian Journals and H. W. Wilson. The usage of EPW could not be analysed due to lack of usage data from the publisher. For JSTOR and IoP, usage report of COUNTER 5 were considered.
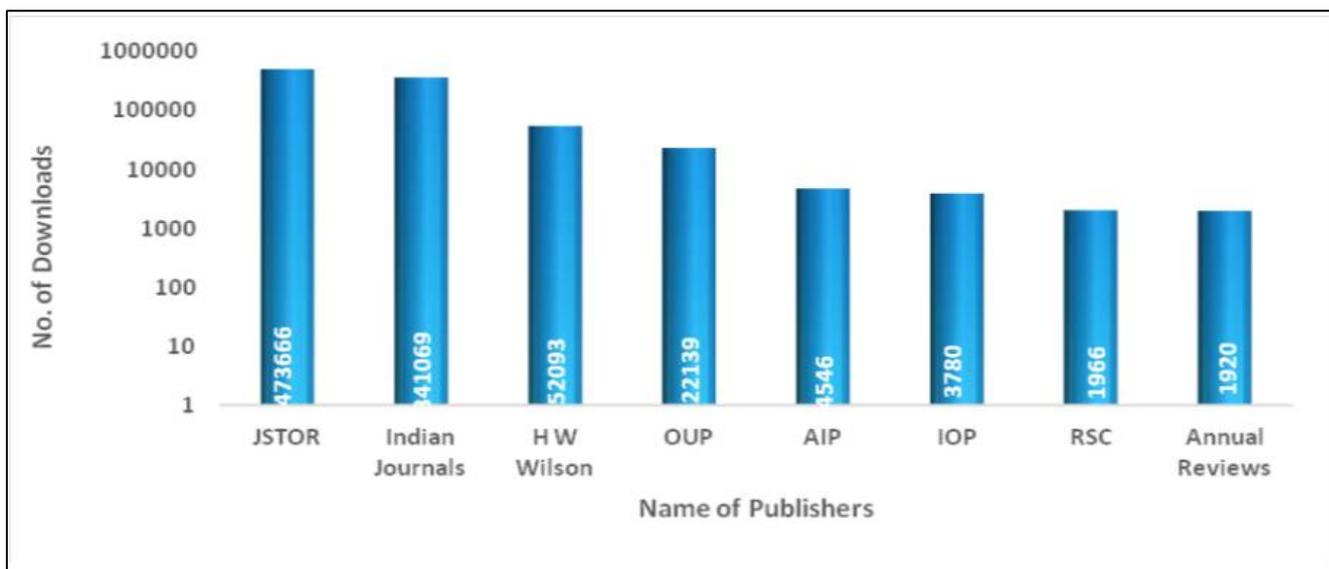
Fig.29: Publisher wise Usage of E-Journals 2019-2020

5.9.7.2.   Publisher wise Usage of E-Books

Figure 30, given below, shows publisher wise usage of ebooks during the financial year 2019- 2020. It can be observed that Ebrary is highly used resource followed by Springer and Sage e-books. The usage of NetLibrary could not be analysed due to lack of usage data from the publisher.
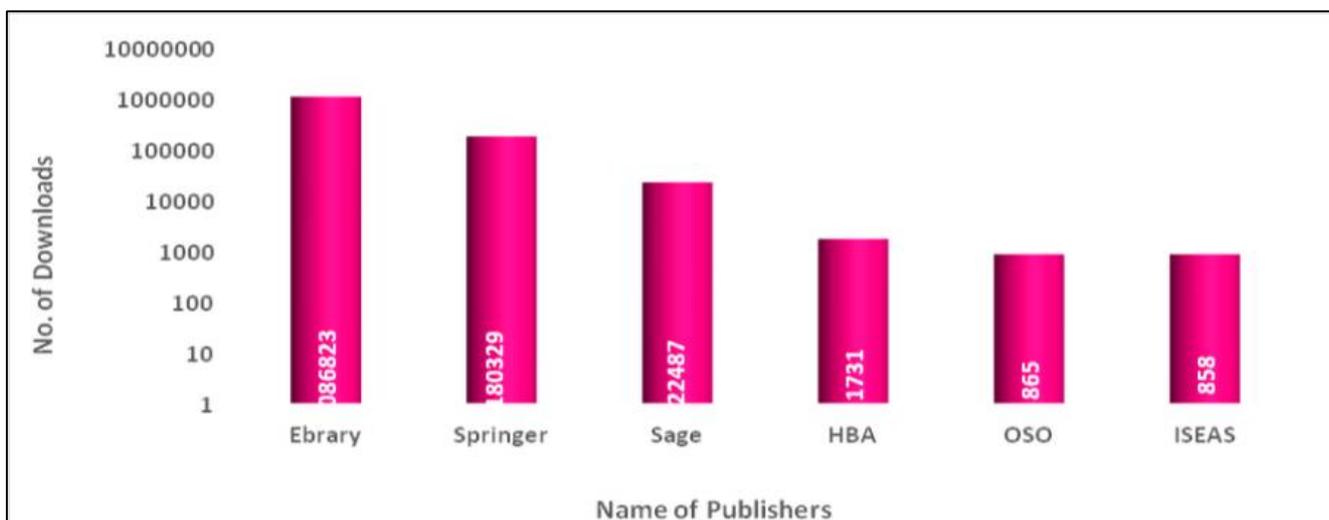
Fig.30: Publisher wise Usage of E-Books 2019-2020

5.9.7.3. Month wise Usage of E-Resources

Figure 31 given below reflects month wise usage of e-journals and e-books for the period April 2019 to March 2020.

	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20
■ E-Journals	47347	31169	24143	38095	43571	52503	53452	86205	116146	134834	157461	116253
■ E-Books	47046	35156	39968	68120	70924	133730	77760	255052	201400	96528	147813	119743
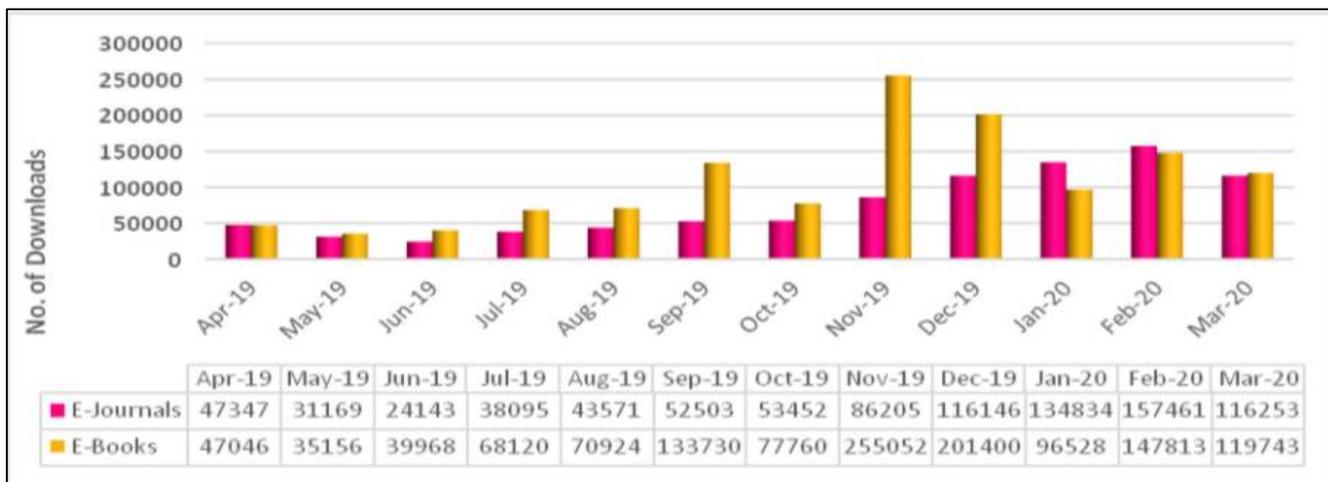
Fig.31: Month wise Usage of E-resources for 2019-2020

Note: Due to implementation of Shibboleth based authentication mechanism for few resources which resulted in decrease in usage.

5.9.7.4. Month wise Unique Visitors

Since the access of e-resources is provided through a proxy server set up at the INFLIBNET Centre, it is difficult to analyse usage of e-resources by a given college. The Centre is using AW stats, a powerful open source tool that generates statistics from the local proxy server. The Centre has used this tool to analyze log files of N-LIST Proxy Server. Figure 32 given below shows month wise unique visitors to N-LIST resources. The graph shows an average 49798 monthly users from 3295 member colleges. There is a 20% increase in average monthly users comparing to 2018-2019.
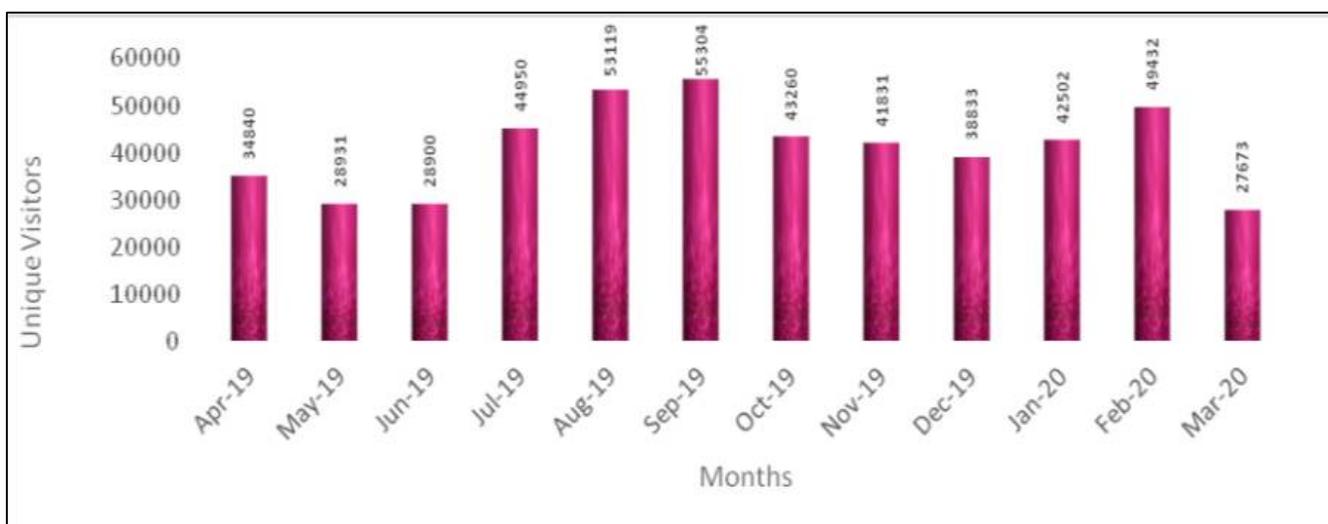
Fig. 32: Month wise Unique Visitors of the N-LIST Programme 2019-2020

5.9.7.5. Month wise Pages Viewed

A total number of 2,18,42,943 pages were viewed by the users in member colleges from the subscribed e-resources. Figure 33 given below depicts month wise number of pages viewed by the users in member colleges.
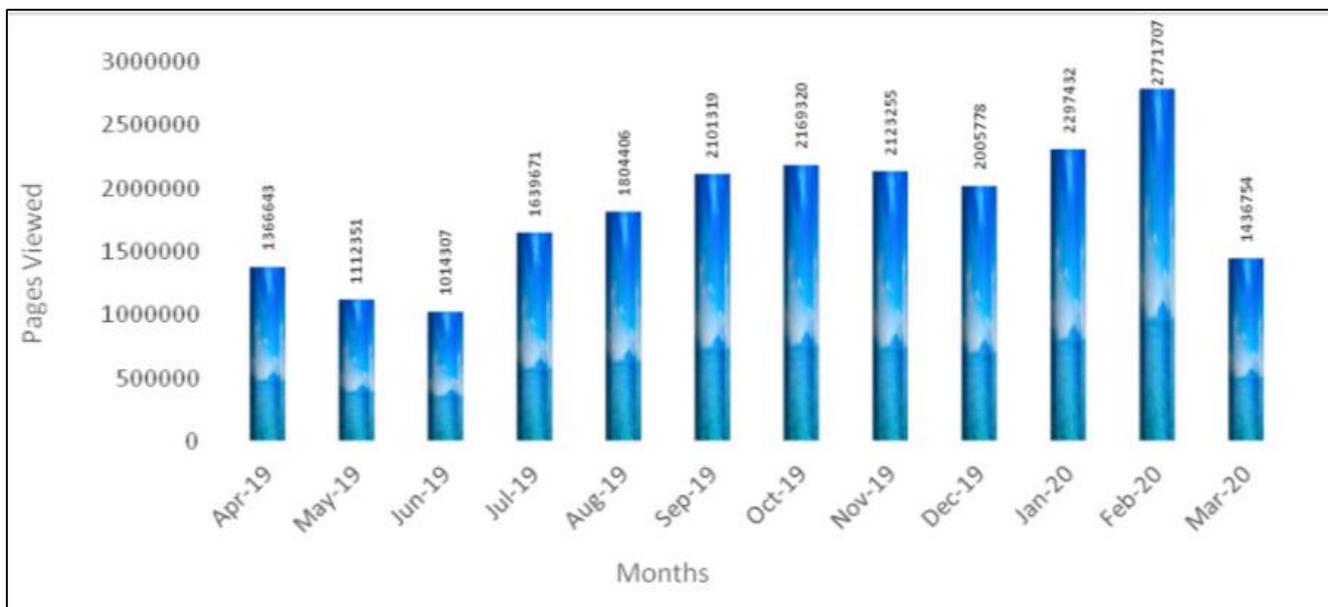
Fig. 33: Month wise Pages Viewed 2019-2020

5.9.8. Economics of N-LIST Programme

Cost recovery, cost avoidance and (lower) rates of subscription are factors that determine economic viability and cost-effectiveness of consortia-based subscription to e-resources. These factors are discussed below briefly.

5.9.8.1. Cost Recovery

The recovery of cost incurred on e-resources subscribed through the N-LIST Programme can be judged in terms of intensity of use of resources. The cost recovery is calculated on the presumption that if the electronic resources were not available through the N-LIST programme, articles downloaded from these resources by the member colleges would have been sourced on inter-library loan or through document delivery services at a cost of US $ 15.00 per article. (Average cost of article taken from a study conducted by the American Research Libraries (ARL). As is evident from the figure 34 given below that the N-LIST Programme has recovered the cost incurred on subscription for all e-resources.

The total cost that has been recovered for the year 2019 amounts to Rs. 208.74 crores as against the total expenditure of Rs. 6.79 crores with Rs. 201.95 crores as the cost of articles downloaded in excess.
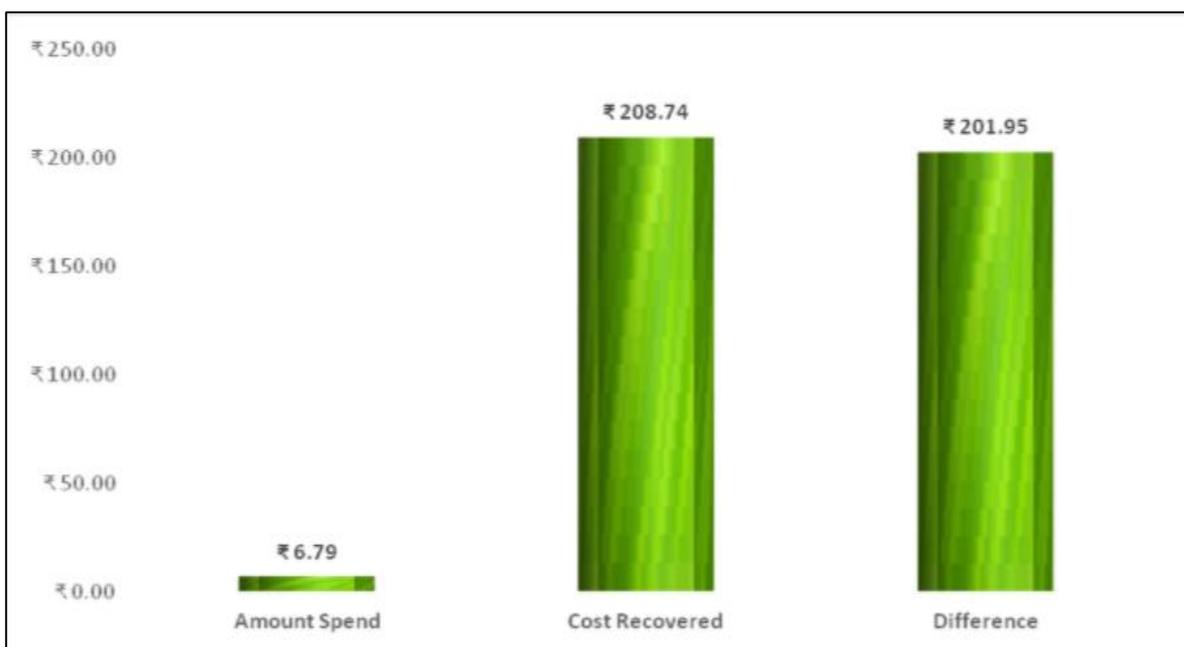
Fig.34: Cost Recovery Factor of e-Journals Subscribed under the N-LIST Programme for 2019

5.9.8.2. Lower Rates of Subscription

The N-LIST Programme has used a highly innovative pricing model for subscription to e-resources wherein one subscription (equivalent to one subscription paid for a university in the UGC-INFONET Digital Library Consortium) is paid for a set of 200 colleges given the fact that extending the prevalent pricing models to college would have been highly expensive, unaffordable and impractical for the college component of the N-LIST Programme. As such, a total number of 16 subscriptions (on a pro rata basis) were paid for 3,200 colleges during the financial year under report.

5.9.8.3. Annual Increase in Rates of Subscription

Annual increase in rates of subscription is restricted from 0 to 5% as against the usual increase in price of e-resources from 10 to 15%.

5.9.9. Average Cost of E-resources Subscribed under the N-LIST Programme

5.9.9.1. Average Cost of Journals per College

The N-LIST programme subscribes to a total number of 6,150 journals for its member colleges. The cost of subscription to e-resources comes down with the increase in the number of colleges. As such, the average cost of a single journal per college computes to Rs. 2.51 in the year 2019 when only 3295 colleges were enrolled for the scheme.

E-resources	No. of colleges	No. Res	Price per College per Title in Rs
AIP	2000	18	₹318.71
Annual Reviews	3200	33	₹37.64
EPW	3200	1	₹850.00
Indian Journals	3200	186	₹8.60
IOP	2000	46	₹42.93
JSTOR	3200	2500	₹0.37
OUP	3200	262	₹6.09
RSC	2000	29	₹109.75
H.W. Wilson	3200	3075	₹0.78

Table 23: Average Cost of Journals per College

5.9.9.2. Average Cost of E-books

Most of the e-books under the N-LIST programme had already been purchased for all existing 3295 colleges on "one-time purchase basis or perpetual access basis". In 2019-2020, only Ebrary was subscribed on an annual subscription basis for 3200 colleges. Average cost per book per college of Ebrary was Rs. 0.04.

E-resources	No. of colleges	No. Res	Price per College per Title in Rs.
ProQuest Academic Collection (formerly known as E-brary)	3200	150000	₹0.04

Table 24: Average Cost of E-books per College per Title

5.10. INFLIBNET Access Management Federation (INFED) (http://parichay.inflibnet.ac.in/)

The INFLIBNET Access Management Federation (INFED), the first and only access management federation in India, based on Shibboleth, standard-based open source software, for authenticating authorized users from colleges, universities and other institutes in India. The federation, set-up with permission of the Governing Board, INFLIBNET Centre provides seamless access to e-resources from anywhere, anytime. INFED is a member of eduGAIN.

As on 31st March 2020, 94 institutes have joined INFED as per the details are given below in Table 25 (a). The INFED is working with 36 publishers that are providing access to e-resources to e-ShodhSindhu as per the details are given below in Table 25(b). Moreover, 10 publishers have formally signed membership(^) of INFED as per the details are given below. While three institutes have set-up

their own IDPs,**(*)** the Centre has set up and established IDPs on behalf of 35 institutes as per the details are given below in Table 25 (a) & (b).

Institutes Members of INFED	
Acharya Nagarjuna University	Maharaja Krishnakumarsinhji Bhavnagar University
Alagappa University(*)	MaharshiDayanand University, Rohtak
Alliance University, Karnataka(*)	Mahatma Gandhi University, Kerala
Ambedkar University Delhi(*)	Manipal University Jaipur(*)
Anil Neerukonda Institute of Technology and Sciences	Mar Baselios College of Engineering and Technology
Assam University	MazharulUloom College
Avinashilingam University(*)	MKSSS's Cummins College of Engineering for Women, Pune
B.S.Abdur Rahman Crescent Institute of Science and Technology(*)	Nagaland University
Bharathiar University	National Brain Research Centre, Haryana
Bharathidasan University(*)	National Institute for Research in Tuberculosis(*)
BharatiVidyapeeth Deemed University, Pune(*)	National Institute of Design(*)
BPS MahilaVishwavidyalaya	National Institute of Technology, Hamirpur(*)
Central University of Kashmir	National Law School of India University, Bangalore
Central University of Kerala	National Law University, Odisha(*)
Central University of Punjab(*)	NIT Rourkela
Central University of Rajasthan	NITTTR Chennai
Central University of Tamilnadu(*)	Periyar University
Christ University	PES University,Bangalore
Deccan College Post-Graduate and Research Institute,Pune	Prin. L. N. Welingkar Institute of Management Development & Research(*)
E.G.S Pillay Engineering College, Tamil Nadu	Priyadarshini Engineering College, Tamil Nadu
Gandhigram Rural Institute(*)	Pune Institute of Business Management
Government College of Engineering,Jalgaon	Punjab University
Government Engineering College, Bhuj	Ramaiah Institute of Technology, Bangalore
Government Engineering College, Modasa	Regional Centre for Biotechnology(*)
Government Engineering College, Palanpur	Shantilal Shah Engineering College,Bhavnagar
Government Engineering College, Valsad(*)	Shivaji University, Kolhapur(*)
Government Engineering College,Dahod(*)	Sikkim University(*)
GurunanakDev University	South Asian University(*)

IIMA(*)	Sri Padmavathi Mahila Visvavidyalayam
IISER Pune	Sri Venkateswara University, Tirupati
IISER Tirupati	Srinivas University, Mangaluru
IIT Guwahati(*)	St Joseph Engineering College Mangalore(*)
IIT-BBS	Tamil Nadu Veterinary and Animal Sciences University(*)
Indian Institute of Technology Madras(*)	Tamilnadu Physical Education and Sports University(*)
Indira Group of Institutes, Pune	Techno India University, West Bengal
INTEGRAL UNIVERSITY	Terna Public Charitable Trust's College of Engineering Osmanabad
ISEC(Institute for Social and Economic Change)(*)	Thapar Institute of Engineering and Technology(*)
Jawaharlal Nehru University	Tumkur University
JSS Academy of Higher Education & Research	University of Calicut
K. K. Wagh Institute of Engineering Education & Research	University of Delhi(*)
Kameshwar Singh Darbhanga Sanskrit University	University Of Kota,Rajasthan
KavikulaguruKalidas Sanskrit University	University of Petroleum and Energy Studies
Kuvempu University	Veer SurendraSai University of Technology
L.E. College,Morbi(*)	Vidyasagar University(*)
LIGO-India Scientific Collaboration(*)	VIGNAN's Foundation for Science, Technology & Research(*)
M S University	Vinayaka Missions Research(*)
Madurai Kamaraj University(*)	Zeal College of Engineering and Research(*)

Table 25 (a): Institutes

(*) IDP setup done by INFLIBNET

Publishers Members of INFED	
ACM Digital Library (^)	MathSciNet (^)
American Chemical Society (^)	Mathworks(^)
American Institute of Physics (^)	Nature (^)
American Physical Society	Optical Society of America (^)
Annual Reviews (^)	Oxford University Press (^)
ASCE Journals Online (^)	Palgrave (^)
ASME Journals Online (^)	Portland Press
ASTM Standards Digital Library	Project Euclid(^)
Cambridge University Press (^)	Project Muse (^)

Capitaline (^)	Proquest (^)
CRIS INFAC Industrial Information	Royal Society of Chemistry (^)
Ebsco (^)	ScienceDirect
Emerald Publishing (^)	SciFinder Scholar
Euromonitor Passport (^)	SheerIDInc (^)
Faculti Media Limited (^)	Springer Link (^)
IEEE Electronic Library Online (^)	Taylor and Francis (^)
Institute of Physics (^)	Web of Science (^)
JSTOR (^)	Wiley Blackwell Publishing (^)

(^) Formally signed membership
Table 25 (b): Publishers

The Centre has developed the minimal operating system (β) for the installation of Shibboleth Identity Provider and INFEDStat (β) to track the logged in users for the institutes.

6.   e-Learning and e-Content Development

6.1.   e-PG Pathshala: Production of Courseware E-content for Postgraduate Subjects
http://epgp.inflibnet.ac.in/

The Centre has successfully completed the e-PG Pathshala, an MHRD initiative under its National Mission on Education through ICT (NME-ICT), executed by the UGC. The Centre is now maintaining the website as well as strengthening its by-products.

Fig. 35: Website of e-PG Pathshala

The outcomes of e-PG Pathshala are as follows:

- Develop e-content in 70 subject areas at PG level drawing expertise from subject experts in colleges and universities;
- 24000+ e-modules for PG courses
- Modules are in four-quadrant (e-Text, video, self-assessment, learn more)
- Make e-content available to students and peers using different delivery modes to impart formal and informal education and for supplementing and complementing the process of teaching and learning in higher education
- Satisfactory usage of e-content amongst students and peers; and
- By-product: **e-Adhyayan & e-Pathya**

6.2. e-Adhyayan: e-Book for Post-Graduate Subjects (http://epgpbooks.inflibnet.ac.in/)

e-Adhyayan is a repository of e-Books for the Post-Graduate courses. The e-Books are derived from the e-text of e-PG Pathshala course materials. e-PG Pathshala is an OER which has been developed and maintained by INFLIBNET Centre. The project is initiated by the UGC/MHRD. The author/course coordinator of books is Indian experts. Currently, e-Adhyayan has more than 350 e-Books in Sociology, Library & Information Science, Computer Science & IT, etc. It is available in open access under CC BY NC. The platform of e-Books is powered by "pressbook" which is open source. It has been deployed and customised by the INFLIBNET Centre. It also facilitates e-book publishing off-line, where the author can write and publish his/her own book.

7. Ranking of Institutions and Accreditation Work

7.1. National Institutional Ranking Framework (NIRF): India Rankings 2019-2020

The Centre has continued the project NIRF and completed its 4th exercise of "National Institutional Ranking Framework (NIRF): India Rankings 2019". The INFLIBNET Centre was responsible for the development of NIRF Web Portal including data capturing system, perception capturing system, the feedback mechanism and the ranking platform. The Centre also provided and verified data on publications, citations, patents and highly cited papers. The Centre has also deployed a technical help desk at its premises.

"India Rankings 2019" using National Institutional Ranking Framework (NIRF) released on 8th April 2019 by the Hon'ble President of India at Vigyan Bhawan, New Delhi. The Centre created a ranking module for NIRF 2019 and ranked institute's details are available at www.nirfindia.org

Fig. 36: India Rankings 2019

The Centre worked on the 5th exercise of India Rankings i.e. India Rankings 2020. The centre is developing the different web interfaces as per framework wherever new features / parameters are added.

7.2. e-NBA: Accreditation Workflow Management System (AWMS)

The project, called "Accreditation Workflow Management System (AWMS)" is related to accreditation of technical institution's programme being done at NBA. The Centre has started this project in 2018 and executed the following modules mentioned in below Table:

Sl. No.	Modules	Descriptions	End User / Current Status
1			
1.1	New Institute Registration	Institutions seeking accreditation for the first time will register with eNBA. i. Fills the registration form and uploads the Approval letters of the Competent Authority ii. Pay the Fee iii. Account gets created, i.e., Now the institution is ready to apply for accreditation.	
1.2	Application for Accreditation	Institution applies for accreditation	

		i. Selects the Discipline, Level and Programs from the drop down. ii. Approval letters of the Competent Authority as uploaded at the time of registration will reflect with the application for each programme.	Institute / Completed and under Maintenance
1.3	Pre-Qualifier (PQ) Submission (This involves filling of automated PQ)	Institution fills the PQ for all the programs to be accredited. i. After filling each PQ, based on the data submitted the compliance gets generated.	
1.4	Payment of 10% Accreditation Fee	i. Institution pays the 10% of the Accreditation Fee towards the processing of Pre-Qualifier. ii. Payment will be through Payment Gateway only. iii. After successful submission of the 10% Accreditation Fee, Application ID gets generated.	
1.5	Approval of Application	i. Application gets submitted to the Accreditation Bureau for approval along with payment and PQ details. ii. The application reflects all the program(s) applied for accreditation with specific PQ status (approve/reject). iii. Accreditation bureau either approves or refers back to the application for certain corrections.	Accreditation Bureau/ Completed and under Maintenance
1.6	Submission of SAR, Submission of Visit Dates and Payment of 90% Accreditation Fee	Institution fills the SAR, submits the visit dates and pays 90% Fee: i. Institution pays the 90% of the Accreditation Fee only for those programs who meet all the essential Pre-Qualifiers, i.e., Compliance Report contains all "Yes". ii. Payment will be through Credit/Debit or Net Banking.	Institute/ Completed and under Maintenance
1.7	Processing of SAR for Visit Team Composition	The Accreditation Bureau reviews the Visit Dates and processes the application for Team Composition.	Accreditation Bureau/ Completed and under

			Testing of NBA
2	**Automated Team Composition**		
2.1	Team Composition	Once the Visit Date is received by the Accreditation Bureau, it sends the application for Team Composition to NBA Visit. One integrated system is required to manage all the task allotment work among experts.	NBA Visit Team Composition Bureau. Expert Database (In Process)
3	**Evaluator Workflow Management**		
3.1	Evaluator Registration	Existing experts of NBA will receive a link in their registered mail ID to get registered with eNBA. On clicking the link, Expert can verify his/her details and submit it to complete the registration. The NBA maintains a separate list of Chairpersons and Expert members, i.e., the roles are fixed. Each expert, on submission of registration receives login details to access eNBA.	Experts / In Process (Completed for Engineering Discipline and Under Testing of NBA)
3.2	Evaluator as Chairman/Expert	Once a Visit team is fixed the Chairman and Expert of a particular team receives the Pre-Qualifiers and SAR as submitted by the institution. a. Chairman of the team receives Pre-Qualifiers and SAR for all the programs alongwith the Visit Documents. b. Expert receives the Pre-Qualifiers and SAR of the respective program alongwith the Visit Documents.	

		Visit Documents contains the following: a. Evaluation Guidelines (PDF) b. Evaluation Report - Part A (to be automated) c. Evaluation Worksheet - Part B (to be automated) d. Declaration and Feedback Form – Part C (to be automated). Visiting team conducts the visit and fills the Visit Documents and submits the report at the end of the visit to NBA. For every Visit the PDF of all the reports gets generated.	
3.3	Processing of Report	Once a Visit is complete, the reports in PDF are visible at Report Section of NBA in a printable form to process further.	NBA Report Bureau

Table 26: Accreditation Workflow Management System (AWMS) Modules

8. Study Webs of Active Learning for Young Aspiring Minds (SWAYAM): UGC-MOOCs

The INFLIBNET is executing this project with the guidance of UGC. The major role of INFLIBNET is fund disbursement to all course coordinators, the web interface of course proposal and a dedicated portal for UGC-MOOCs. Portal provides a dashboard for SWAYAM coordinators, mentors, information on PG-courses update, workshop details, etc. The Centre has continued all the said activities for the year 2019-2020.

Fig. 37: Home page of UGC-MOOCs

The invitation of proposal has been done by the dedicated portal (https://ugcmoocs.inflibnet.ac.in). All the new courses under said national coordinator have been identified through the portal. The portal also facilitates a dashboard to UGC for the administrative task and relevant information of UGC-MOOCs.

9. SWAYAM PRABHA

The INFLIBNET Centre has continued the task of developing portal of SWAYAM PRABHA and its hosting including archiving of videos for all the channel during the 2019-2020. The platform provides for uploading of programme schedule by the channel coordinators, display of programme schedule (current, upcoming and archives), searching of e-content/videos using different kinds of filters such as channel-wise search and subject-wise search; and dashboard for MHRD, BISAG and admin view. The portal would also provide for playing of archival videos that have already been telecasted on the channels.

The SWAYAM PRABHA, an MHRD project under NME-ICT, is conceived as a group of 32 DTH channels devoted to telecasting of high-quality educational programmes on 24X7 basis using the GSAT-15 transponders. New content for at least four hours are being telecasted that would be repeated 5 more times in a day, allowing the student to choose the time slot as per their convenience.

Additional Mode for Source of Content / Learning

There are several platforms are being used to reach at learners door apart from the DTH. Viewers / learners can view the content from following additional source of learning platform:

- Portal (Video -Archive): Learners can learn through the portal of SWAYAM PRABHA which is storing all the telecasted videos and streamed it through video streaming server using Youtube.
- Mobile-App: Learner can install the mobile-app (android) and view all the video content. Mobile-app is being incorporated with Govt app UMANG.
- Jio-TV: Learners can view the content through JIO-TV (live) as well as archived content of last 7 days.

9.1. SWAYAM PRABHA: Channel Coordinator for Channel-29

The INFLIBNET Centre has assigned another responsibility as a channel coordinator for channel-29. The Centre has provided the content under channel-29. The content was taken from e-PG pathshala. **Availability of Content:** The Centre has content of PG courses on below mentioned subject in Table 31. Such courses are not being telecasted at SWAYAM PRABHA. However, UG level courses are being telecasted through CEC channels.

At a Glance:

No of subject	**59**
No of Courses	**641**
No of Hour (Video content)	**1143**

Table 27: Contents for Telecasting PG Courses

10. VIDWAN and Indian Research Information Network System (IRINS)

10.1. VIDWAN: Expert Database National Researcher's Network
(http://vidwan.inflibnet.ac.in)

VIDWAN: Expert Database and National Researcher's Network is the premier database of profiles of scientists and faculty members working in leading academic institutions and other R & D organizations in India and abroad. The principal objectives of this database are i) provide information about experts to peers, prospective collaborators, funding agencies, policymakers and research scholars in the country; ii) to establish communication between subject experts and research scholars; iii) to identify peer reviewers for reviewing articles and research proposals; iv) to create information exchanges and networking opportunities among scientists; and v) to discover prospective collaborators for on-going research projects.

A persistent URL, username and password are issued to each expert facilitating them to edit and update their profile information. Data ingest dashboard was developed to import the profile information as the administrator. Solr based faceted search interface was incorporated to search the database on various parameters such as name, designation, area of expertise, organization, organization type, state, etc. with filters to narrow down the search. The profiles of an expert can also be browsed by Web of Science Subject Categories and organization categories. As on 31st March 2020, the database contained 49,885 profiles from more than 5,794 institutions including academic and R&D organizations in India and abroad. Also, VIDWAN database contains more than 7,57,925 bibliographic records which can potentially bring greater visibility to the research contributions of an expert through VIDWAN database. Fig. 38 depicts a screenshot of website of VIDWAN: Expert Profile with Co-author Network. Total page views for VIDWAN expert database are 6,57,332.
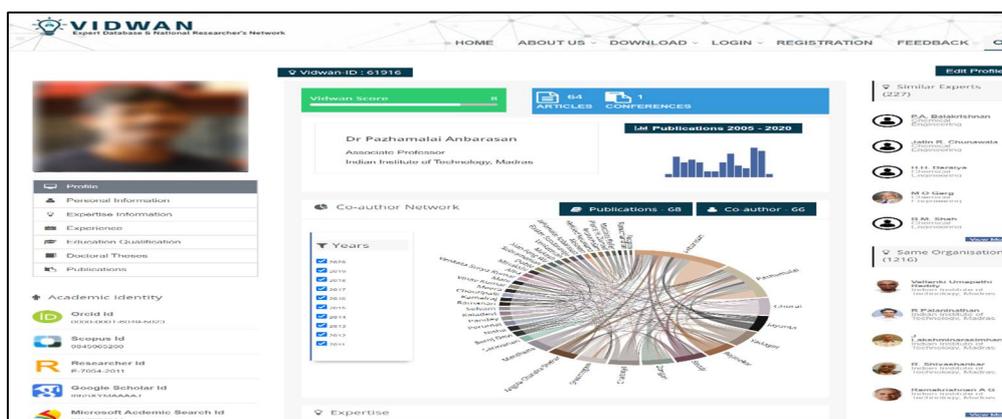
Fig.38: VIDWAN: Expert Profile with Co-author Network

10.1.1. Progress Made During the Year 2019-2020

During the period under report, all experts were communicated through email to update their respective profiles. About 4,000+ new expert profiles were added into the database and existing profiles were updated with scholarly articles and academic identities, etc. Graphical visualization was added to the expert profiles to enhance the visibility such as Co-author Network with filter for years and cumulative citation from Scopus and Crossref. Admin interface was improved with the feature for profile import as CSV file. Fig. 39 depicts several experts in eight Web of Science Subject Categories. Fig. 40 depicts the number of experts and their organization categories.
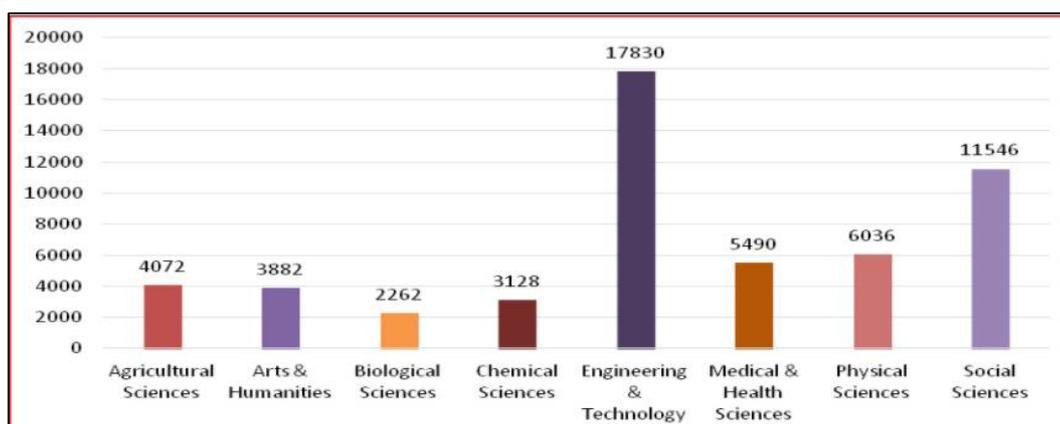
Fig. 39: Number of Experts Available in VIDWAN database under Web of Science Subject Categories
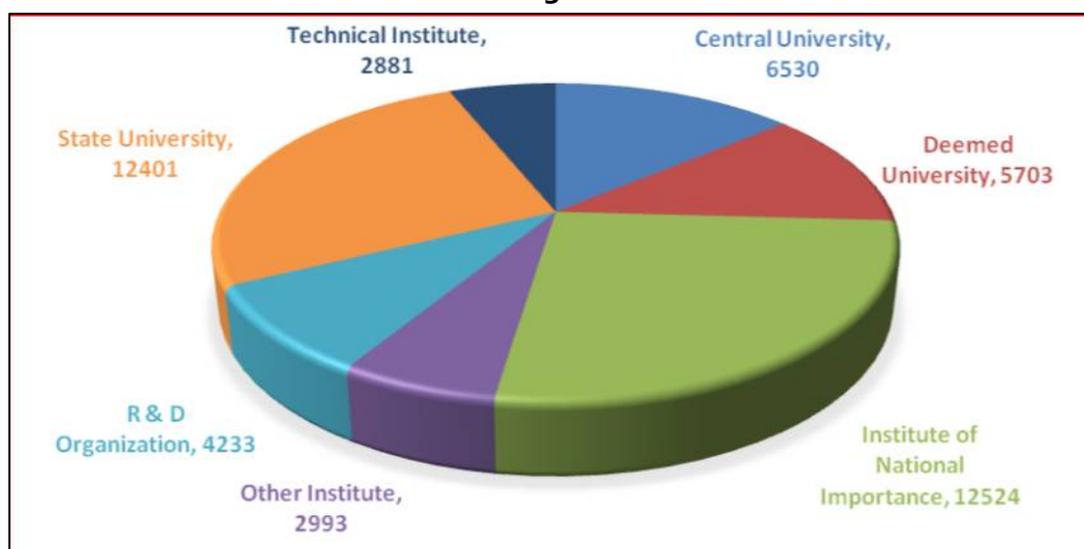
Fig. 40: Number Experts and their Organization Categories in VIDWAN Database

10.1.2. Features of New Interface of VIDWAN

The features and functionality of the web interface of VIDWAN database were enhanced to enrich the user experience and to make the website accessible from different devices. The new interface supports the following features:

- Responsive user-friendly interface to access the site from a mobile, tablet as well as desktop;

- Generation of automatic VIDWAN Score for the expert based on completion of the profile in different parameters such as the area of expertise, academic identity, projects, experience, publication, honours & awards received and other academic contributions;

- Import publications in a standard format (BibTeX);

- Import project works, honours and awards from the pre-defined CSV files;

- Import publications using academic identities such as ORCID, Microsoft Academic Search ID, Google Scholar ID, Researcher ID and Scopus ID;

- Data indexed using Apache Solr for fast retrieval and access; and

- API to harvest citation information from various external sources.

10.2. Indian Research Information Network System (IRINS) (http://irins.inflibnet.ac.in)

New initiative taken-up on behest of MHRD in 2017, IRINS is web-based Research Information Management (RIM) service that facilitates the academic, R&D organisations and faculty members, scientists to collect, curate and showcase the scholarly communication activities and provide an opportunity to create the scholarly network. In continuation with the profiling (including research output) of experts and department of the institutes, the Centre has proposed "Indian Research Information Management System (IRINS)" to MHRD. Currently, the Centre has developed a platform for the same and the project has been approved by MHRD under NME-ICT Phase-II to be implemented for 150 Centrally funded Higher Educational institutions.

IRINS is a web-based Research Information Management (RIM) service provided by the Centre in collaboration with Central University of Punjab, Bathinda to organize the research related information at the institute level. The portal facilitates the academic, R&D organizations and faculty members, scientists to collect, curate and showcase the scholarly communication activities and provide an opportunity to create the scholarly network. The IRINS is available as free software-as-service to the academic and R&D organizations in India. The IRINS supports the integration of existing research repositories with open and commercial citation databases, scholarly publishers, etc. It is integrated with academic identity such as ORCID ID, Scopus ID, Research ID, Microsoft Academic ID, Google Scholar ID for ingesting scholarly contributions.
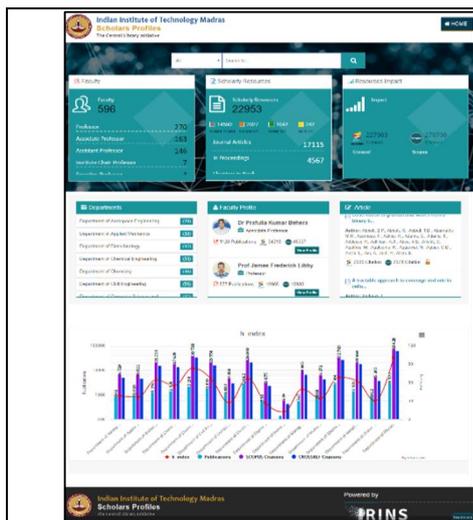
| Fig. 41: IRINS Institute Home page with Department wise h-index graph | Fig. 42: IRINS Faculty Profiles with various Metrics |
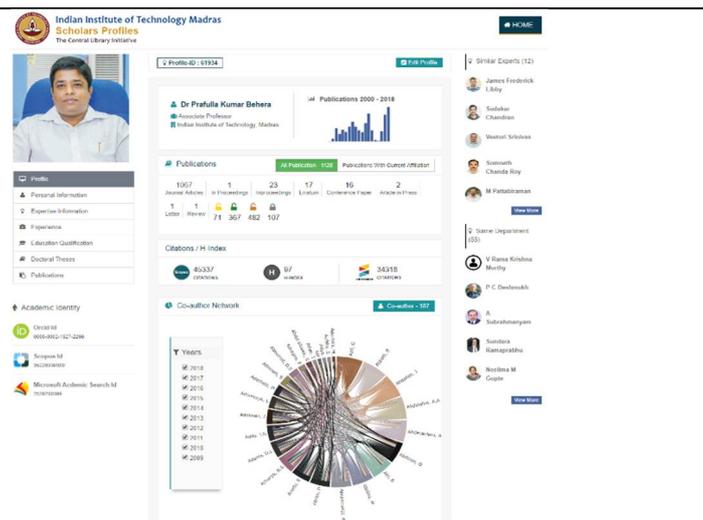
10.2.1. Key Features and Functionalities of IRINS

Key features and functionalities of IRINS are as follows:

- Graphical representation on research progress of departments and faculty members;
- Faceted search facility with many filters to find experts for the collaborative research project and project proposal review;
- Networking of faculty through co-author network, and discovery of scholarly article;
- Metrics from social media and citations from Scopus, CrossRef, h-index of faculty and department;
- BASE API to link the open-access article and colour code to each article based on the publication venue such as closed access, green open access, brown open access and gold open access; and
- Harvest cumulative citation for the whole institute, department, faculty members from Scopus and CrossRef.

10.2.2. IRINS: Instances

The IRINS is being offered as "software-as-service" during the year under report 137 instances were created, Table 28 depicts the number of IRINS active instances setup across India. Implementation correspondence has been circulated to all the institutions of national importance, centrally funded technological institutions to come forward in providing the institute's fraternity data for successful implementation of IRINS.

Centrally funded institutes		College, State, Private Universities & Technological Institutes	
NIT's	22	State Universities	18
Central Universities	21	Private Universities	13
IIM's	18	Technological Institutions	5
IIT's	18	College's	4
IIIT's and IIITDM's	6		
IISER's	4		
IGNTU, IIEST, NIPER & NITTTR	4		
SPA's	3		
ICAR	1		

Table 28: Number of IRINS instances

11. Website Development and Maintenance

The Centre uses web technology to provide organized and structured access to its services and resources to the academic community through the Centre's Website as well as through websites of its individual services and products. The Centre's Website is designed to work as an integrated interface for all services and resources accessible to the academic community in the universities and colleges. The Web Development Team has especially been set-up for designing innovative web-based interfaces for effective and efficient delivery of services using the latest web-based tools and technologies. The Group undertakes all activities related to selection, organisation and presentation of services and resources in a meaningful way for the benefit of the user community.

Technology Used:

> **Development Tools**: PHP, HTML, DTML, JSP, JavaScript
> **Database**: MySQL Server, Postgres SQL Server and MS SQL Server
> **Operating Systems:** Red Hat Linux Enterprise Server 4.0, Fedora 8.0/9.0
> **Open Source Software**: phpChat, MediaWiki, phpBB, DSpace and WordPress

11.1 INFLIBNET Centre's Main Website (http://www.inflibnet.ac.in/)

The Centre maintains a comprehensive Website in English and Hindi as shown in Fig. 44. Several new additions were made to the new version of the Institute's website. RSS (Really Simple Syndication) technology is used to facilitate users and bloggers to harvest recent updates from the Centre's website. Web 2.0 features and functionalities, including Wiki, Blog, Chat and Discussion Forum, RSS feed, etc. were incorporated in the Website. The new website of the Centre has the following main features:

- Powerful search and browse interface;
- Dynamic calendar;
- Recent and new events;
- Download forms and documents;
- Online feedback mechanism;
- Mailing list, video gallery, webmail, etc.;
- Latest news, jobs, tenders, etc.; and
- Wiki, weblog, RSS feeds and online chat.
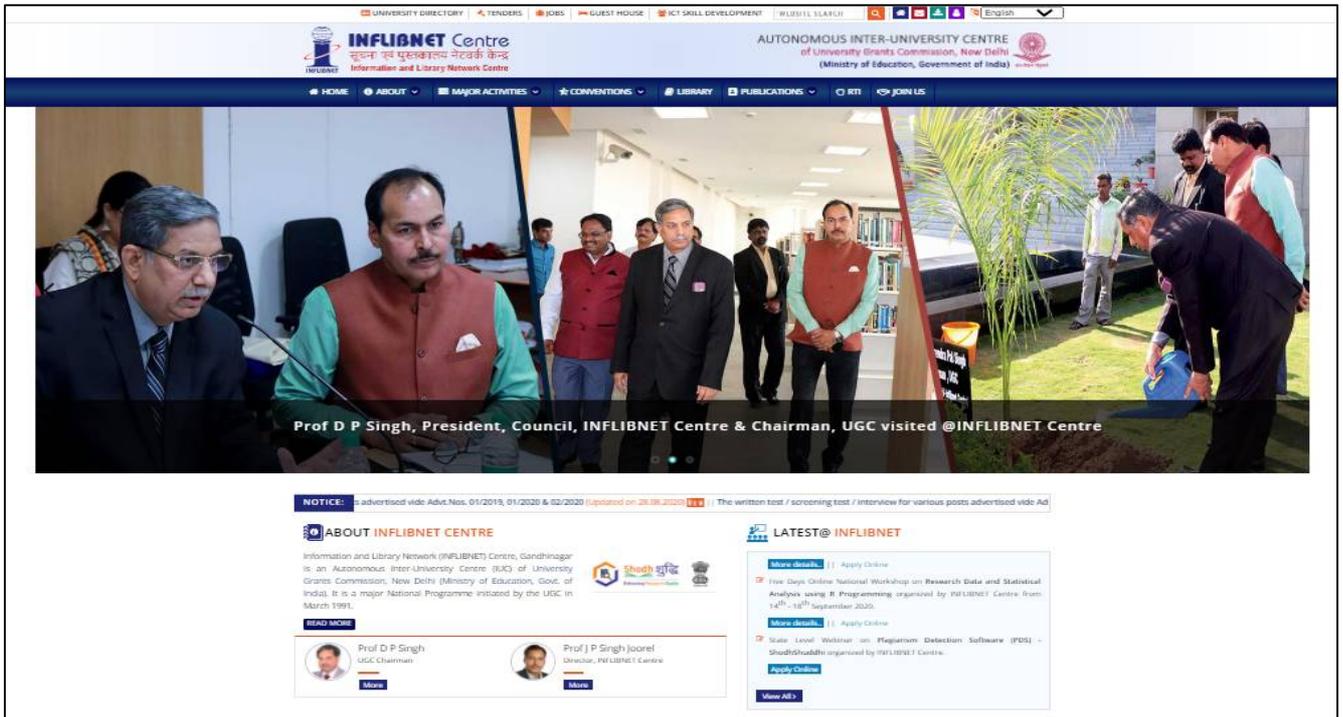
Fig. 44: INFLIBNET's Website

11.2   Intranet (http://172.16.16.11/intranet/;for INFLIBNET Staff Only)

A separate Intranet website is maintained for the internal staff of the Centre as shown in Fig. 45. The website provides detailed information to scientists and staff of the Centre to fulfil their following requirement:

- Rules and regulations of the Centre;
- MoA;
- All circulars;
- All types of forms in fillable pdf format;
- Committees and their constitutions;
- List of holidays; and
- Presentations on various activities and services of the Centre.
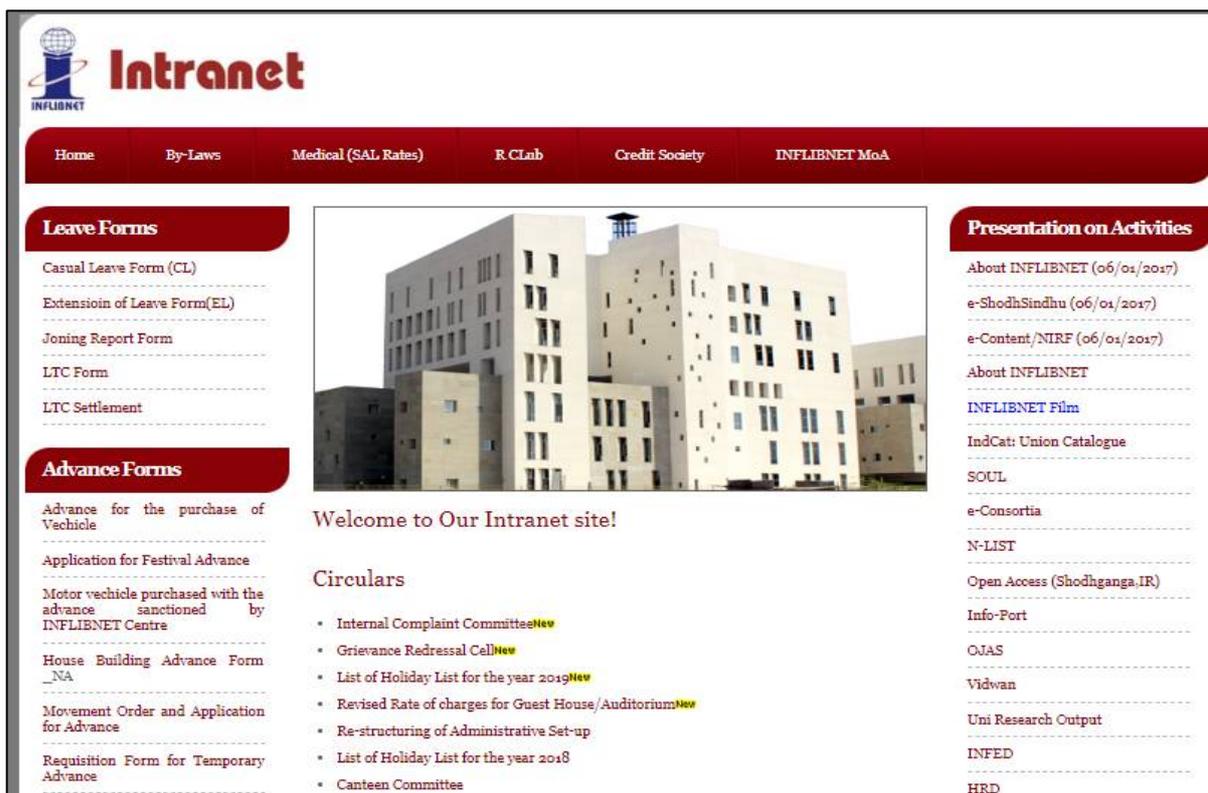
Fig. 45: INFLIBNET's INTRANET Website

11.3   Implementation of Web 2.0 Technologies at the Centre

The INFLIBNET Centre continued using Web 2.0 and Library 2.0 technology with the implementation of interactive and collaborative technological tools. All the Web 2.0 tools used are open-source software. Web 2.0/Library 2.0 technologies implemented at INFLIBNET Centre includes

- Chat (http://www.inflibnet.ac.in/chat/);
- Blogs (http://www.inflibnet.ac.in/blog);
- Wiki (http://www.inflibnet.ac.in/wiki/);
- Streaming Media and Social Network (http://in.youtube.com/inflibnet);
- RSS Feeds Aggregation Service (http://www.inflibnet.ac.in/feed/); and
- Library Toolbar.

12. Web Portals on Various Government Initiatives

12.1 Ek Bharart Shrestha Bharat (EBSB) & Unnat Bharat Abhiyan (UBA) (www.ekbharat.gov.in)

The MHRD assigned the task for creation of a web portal of "Ek Bharat Shrestha Bharat " to INFLIBNET Centre. The Centre developed and maintained the dedicated portal of "Ek Bharat Shrestha Bharat". The Centre has continued this project for this year also.
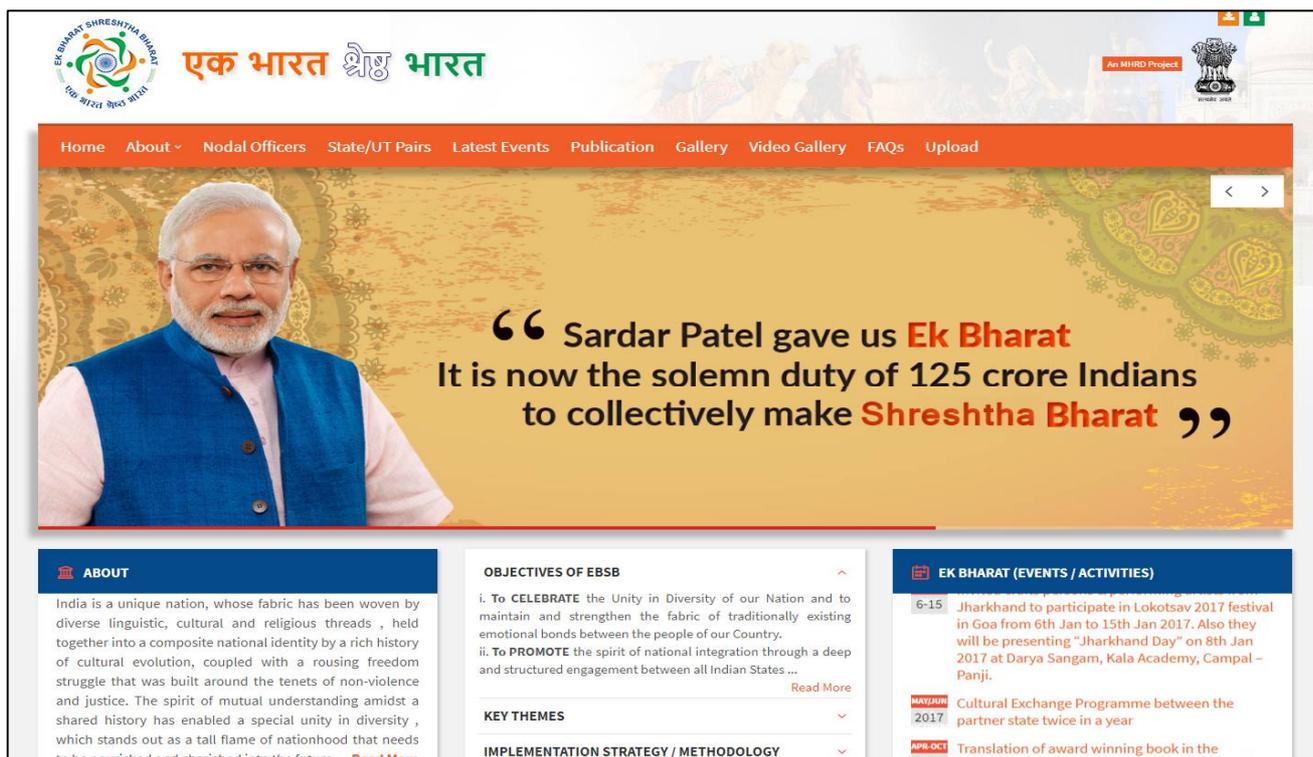
Fig. 46: Web Portal for Ek Bharat Shrestha Bharat (EBSB)

The following development has been done under EK Bharat Shreshta Bharat:

●   Maintenance of the EBSB portal;
●   Creation of different gallery for events/activities being organised by different States;
●   Admin module to manage the content of paired states;
●   Creation of youtube channel for video gallery;
●   Upload facility to all nodal officers of different states;
●   Hosting of the website at MHRD cloud i.e. BAADAL server;

Further, the centre also continued the online application for Institutes through which institute can join Unnat Bharat Abhiyan initiative and can opt the villages. In addition, admin dashboard including score module was created by the Centre.

12.2. Study in India (SII) (www.studyinindia.gov.in)

The Centre has executed the yearly exercise of counselling and admission process for foreign students under the "Study in India" program. It is one of the important educational project of MHRD which is being executed by the EdCIL & INFLIBNET. The centre is technical partner for designing & development of the website and its web applications & its hosting. This year Ind-Sat program was also incorporated.

Fig. 47: Web Portal of Study in India

The INFLIBNET Centre has executed the following module of "Study in India":

* Website of SII (aesthetically designed portal with intuitive web interface populated with relevant information, web applications to support dynamic maintenance of portal, features to support data analytics, search and browse interfaces)
* Institutional Module (online data capturing system to facilitate information flow from participating institutions, dashboard for nodal officer, statistics on counselling / admission
* Learner Module (online registration of learners, courses offered [feature of choice-based filtration], dashboard)
* Counselling module which includes online mock counselling, counselling and final admission matrix.

12.3. Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT)

The Centre has executed the scheme Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) where scope of work were design, development and hosting of dedicated portal of PMMMNMTT.

Fig. 48: Web Portal of PMMMNMTT

The Centre is working on this project and enabled the following features and functionalities for its different stake-holders:

- Portal: All information related with PMMMNMTT such as about scheme, list of Centres, program schedule, etc
- Call for Proposal
- User / stakeholder of the different components: A dashboard for each component with following activities:

  - ➢ Centre (LEAP, ARPIT, NRC, HRDC, TLC, FDC, SoE, etc) Management
  - ➢ Profile Management
  - ➢ Program Management
  - ➢ Content Repository

12.4. Atal Ranking of Institutions on Innovation Achievements (ARIIA)

The INFLIBNET Centre has successfully executed the 1st year exercise of Atal Ranking of Institutions on Innovation Achievements (ARIIA) framework which was launched by Hon'ble President of India on 08th April 2019. The Centre is technical partner of ARIIA project and signed MoU with AICTE for the same. The Centre has done the following activities under ARIIA.

- Dedicated website of ARIIA
- Web applications :
  - ➢ Registration module
  - ➢ Data Capturing Module
  - ➢ Feedback Mechanism Module
  - ➢ Ranking / Scoring Module
  - ➢ Analytical dashboard
  - ➢ Patent related data retrieval from patent databases etc.

The Centre also started the work for the 2nd exercise of ARIIA where a new framework introduced and accordingly data capturing system and further subsequent modules were developed.

12.5. National Testing Agency (NTA) (http://www.nta.ac.in

The Centre is involved with National Testing Agency (NTA) since 2018 and as proposed, following activities were continued for the year 2019:

- Portal and its hosting & maintenance: To handle Website dynamically through admin panel for various updated and changes.
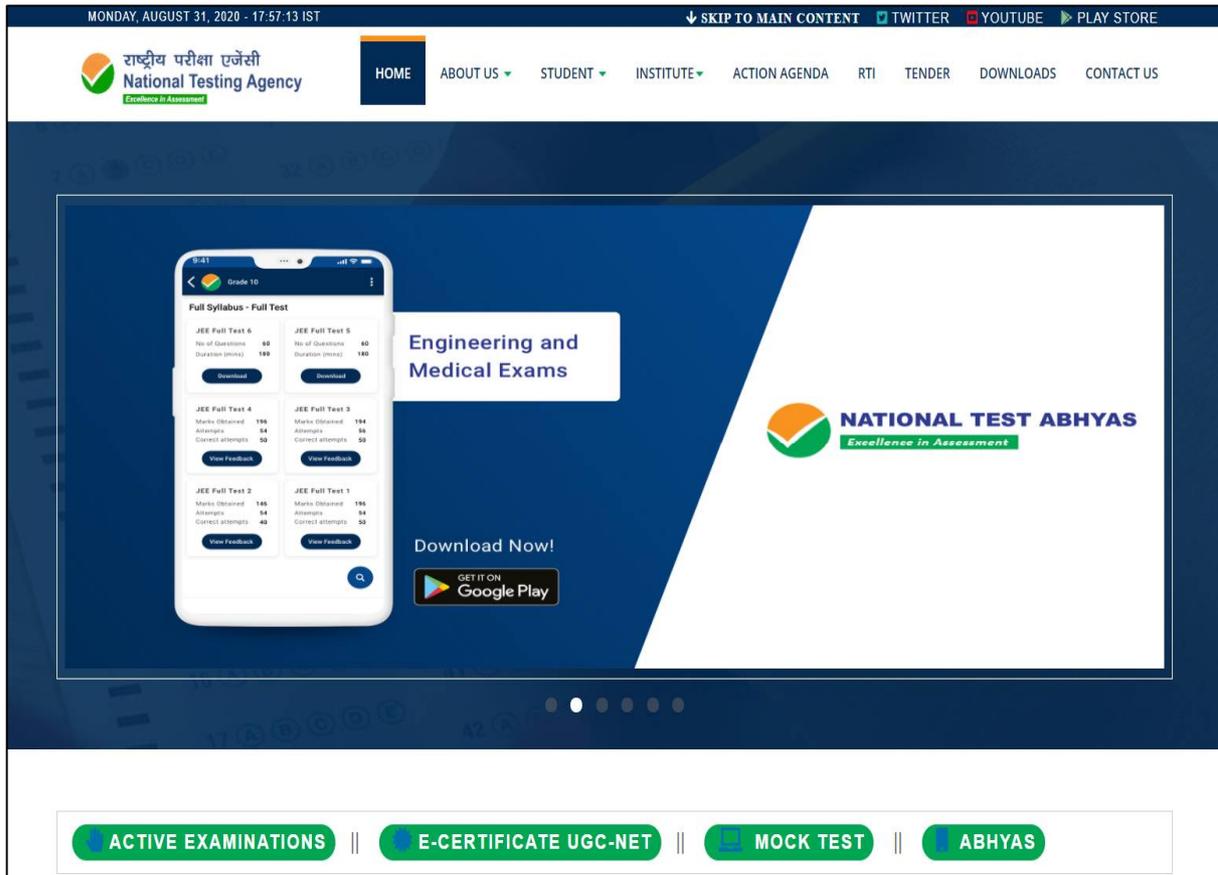
Fig. 49: Website of National Testing Agency

- Test Practice Centre Module
- Admin Portal
- Mock Test
- Test Admin Portal
- Exam Centre
- TA Admin
- Admit Card
- Exam Result

13.   UGC Website and e-Governance @ University Grants Commission

13.1. UGC Website

The INFLIBNET Centre has continued the development work related to the website as well as automation of its various schemes. The home page of the UGC website is given below:
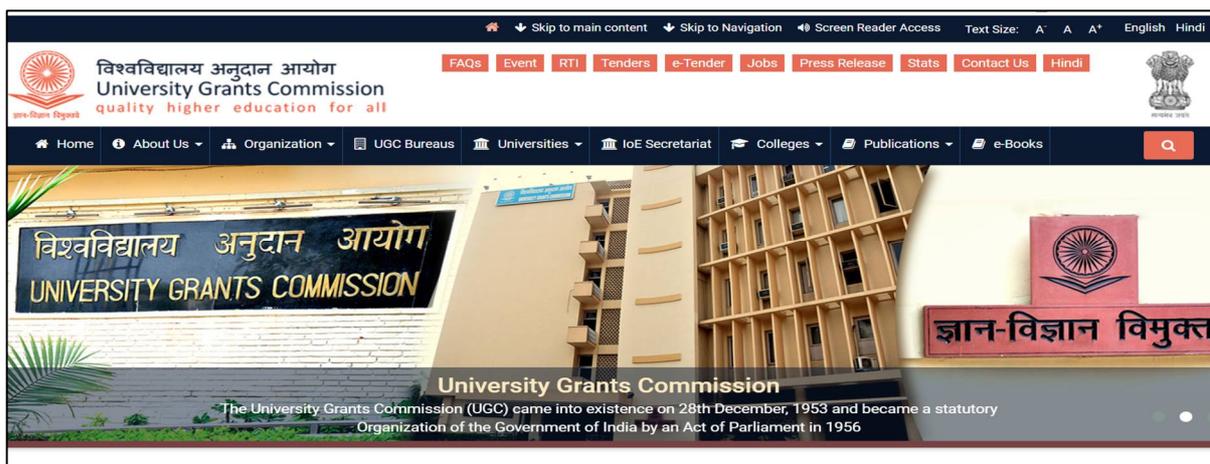
Fig.50: Homepage of UGC

13.1.1. New features and functionalities implemented in UGC website:

- Screen reader access
- Dynamic option to choose text size
- Implemented various types of statistics and events

13.2. e-Governance@ UGC

The Centre has also assigned the task of e-Governance activities for UGC, New Delhi as a project. The progress of the e-Governance project during the periods are given below.

13.2.1. Setting up IT Cell at UGC, New Delhi:

1) The physical infrastructure furniture fixture has been installed at the IT cell at UGC.
2) Computers, networks have been purchased and installed for the staff hired under this project.
3) Desired number of manpowers have been hired and placed at the IT Cell at UGC.
4) The IT Cell is fully functional.

13.2.2. Automation of Schemes

The Centre has developed ten (10) online systems for the schemes of UGC are listed below:

Sl. No.	Online Systems
1	Online Portal for Autonomous College (AU)
2	Online Education Portal (OEP)
3	University Activity Monitoring Portal (UAMP) (New version)
4	Institutions of Eminence (IoE)
5	Deemed to be University Portal (DTBU)

6	Automation of UGC-DEB's activities
7	Kartavya Portal
8	Scheme of Paramarsh
9	Saksham Portal
10	National Skills Qualifications Framework (NSQF)

Table 29: Online Systems linked with the UGC website for its stakeholders

All ten (10) online systems developed are linked with the UGC website for its stakeholders. Besides, the centre has continued to maintain 30+ online systems related to scholarships, fellowships as well as other schemes of the UGC.

13.2.3. Maintenance and hosting of UGC Website and Online Systems

- All the online system developed and implemented along with the UGC websites are hosted at INFLIBNET Data Centre, Gandhinagar,

- Mirrored sites are also created at the BSNL Data Centre, Ahmedabad.

14. Human Resource Development & Consultancy

One of the important objectives of the Centre is to impart training in the use of ICT to library and information science professionals working in university and college libraries. Since the inception of the Centre in 1991, 826 programmes include annual conventions, training programmes, workshops and seminars focusing on the library automation, networking, e-resource awareness, theses repositories, institutional repositories, etc. have been conducted by the Centre benefiting 62,772 participants. INFLIBNET Regional Training Programmes for Library Automation (IRTPLA) and User Awareness Programmes on e-resources, Shodhganga and plagiarism detection software were conducted across the country in collaboration with the universities and colleges. National and International Conventions called PLANNER in North-eastern regions and International CALIBER in various states of India are being organized bi-annually as part of the human resource development activities. Brief reports on every training programme organized during the period under report are given in Part III: National Conference, Workshops, Seminars and Training Programmes of this report. Table 30 given below provides no. of human resources development programmes conducted across the country and no. of participants who benefitted from these programmes during the year under report.

Sl. No.	Name of the Programme	Programmes	Total Participants
1	IRTPLA (INFLIBNET Regional Training Programme on Library Automation	1	80
2	Special Training Programme and National Workshops at INFLIBNET	11	290
3	CALIBER	1	350
4	Training Programme on SOUL 2.0	6	110
5	SOUL 2.0 User Meet-2020	2	202
6	Regional Training Programs on Plagiarism Detection Software (PDS)	7	1032
	Total	28	2064

Table 30: Conferences, Training Programmes, Workshops and Seminars conducted by INFLIBNET Centre during 2019-20

15. Publications

The INFLIBNET Centre has two major publications i.e. Quarterly Newsletter and Annual Report. Both publications were brought out and distributed across all academic institutions in India. The copies of the Newsletters and Annual Reports are downloadable in PDF format and the "Publications" on INFLIBNET website at http://www.inflibnet.ac.in/publication/. The copies of Annual Reports, PLANNER and CALIBER proceedings are also available through the Institutional Repository (IR) in PDF format. The course materials of various training programmes and workshops, lecture notes, presentations and newspaper clippings are also available in the IR of the Centre at http://ir.inflibnet.ac.in. List of Publications including articles published conference proceedings, user guides and manuals published by scientists and staff of the Centre is given as below:

15.1. Conference Proceedings in Print

i)   Joorel, J P Singh et al (eds.). Library 2030: Moving Towards Smart Technologies, Services and Resources: Proceedings of the 12th CALIBER 2019 organised by INFLIBNET Centre, Gandhinagar, November 28-30, 2019. Gandhinagar: INFLIBNET Centre, 2019. 442 p.

15.2. Papers Published in Journals, Newsletters and Conference Proceedings

1.   Kumar, Abhishek and Parmar, Sagendra Singh. ParmarPandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT): A Gateway for Teachers and Teaching. INFLIBNET Newsletter, 26(2), p.11-17, 2019

2.   Abhishek Kumar, Sanjay Tiwari, Ashish Kumar Chauhan & Ramswaroop Ahirwar (2019) Impact of NIRF on research publications: A study on top 20 (ranked) Indian Universities, COLLNET Journal of Scientometrics and Information Management, 13:2, 219-229, DOI: 10.1080/09737766.2020.1741194

3.   KUMAR, Abhishek et al. Quantitative and Qualitative Analysis of Research Outcomes: A Study of Top Engineering Institutes. SRELS Journal of Information Management, [S.l.], p. 315–320, dec. 2019. ISSN 0976-2477. Available at: <http://www.srels.org/index.php/sjim/article/view/149087>. Date accessed: 01 Sep. 2020. doi:10.17821/srels/2019/v56i6/149087.

4.   Pradhan, Pallab. India's MOOC Research during 2207-2018 as reflected in Web of Science (WoS): An Analysis. INFLIBNET Newsletter, 26(4), p.14-23, 2019

5.   Kimidi, Siva Shankar and P. Kannan. Indian Academic Institutions and Indian Research Information Network System (IRINS): A Journey. INFLIBNET Newsletter, 27(1), p.18-26, 2020

6.   Kumar, Abhishek, Tiwari, Sanjay and Pallavi. Case Study on Vidya-Mitra (e-Learning MHRD Initiative): A Quantitative Analysis on Multimedia Content (Video). **In:** Library 2030: Moving Towards Smart Technologies, Services And Resources: Proceedings of the 12th CALIBER 2019 organised by INFLIBNET Centre, Gandhinagar, November 28-30, 2019. Gandhinagar: INFLIBNET Centre, 2019 (eds. J P Singh Joorel [et.al.]).Gandhinagar: INFLIBNET Centre, p. 114-122, 2019.

7.   Pallavi, Kumar, Abhishek and Gala, Bhakti. Topical Coverage Analysis of Library and Information Science Discipline's Learning Objects of ePGPathshala with UGC-NET Syllabus: A Study for Future Sustainability with Emerging Topics. **In:** Library 2030: Moving Towards Smart Technologies, Services And Resources: Proceedings of the 12th CALIBER 2019 organised by INFLIBNET Centre, Gandhinagar, November 28-30, 2019. Gandhinagar: INFLIBNET Centre, 2019 (eds. J P Singh Joorel [et.al.]).Gandhinagar: INFLIBNET Centre, p. 403-411, 2019.

8.   Kumar, Abhishek, Tiwari, Sanjay and Pallavi. Case Study on Vidya-Mitra (e-Learning MHRD Initiative): A Quantitative Analysis on Multimedia Content (Video). In: Library 2030: Moving Towards Smart Technologies, Services And Resources: Proceedings of the 12th CALIBER 2019 organised by INFLIBNET Centre, Gandhinagar, November 28-30, 2019. Gandhinagar: INFLIBNET Centre, 2019 (eds. J P Singh Joorel [et.al.]).Gandhinagar: INFLIBNET Centre, p. 114-122, 2019

9.   Kumar, Abhishek, Joorel, J. P. Singh, Ahirwar, Ramswaroop, Chauhan, Ashish Kumar. India Rankings: Impact on Research Publications (A Case Study on Top 20 Engineering Institutions). In: ICT for Competitive Strategies: Proceedings of 4th International Conference on Information and Communication Technology for Competitive Strategies (ICTCS 2019), December 13th-14th, 2019, Udaipur, India\

10. Brahmbhatt, Shweta, Tiwari, Sanjay, Mehta, Devarshi and Kumar, Abhishek. Learning Objects of Computer Science Discipline: An Analysis of e-PG Pathshala with UGC-Net a Study for Future Sustainability with Emerging Topics. In: ICT for Competitive Strategies: Proceedings of 4th International Conference on Information and Communication Technology for Competitive Strategies (ICTCS 2019), December 13th-14th, 2019, Udaipur, India

11. Kumar, Abhishek, Joorel, J. P. Singh, Ahirwar, Ramswaroop, Chauhan, Ashish Kumar. India Rankings: Impact on Research Publications (A Case Study on Top 20 Engineering Institutions). **In**: ICT for Competitive Strategies: Proceedings of 4th International Conference on Information and Communication Technology for Competitive Strategies (ICTCS 2019), December 13th-14th, 2019, Udaipur, India

12. Panda, S. K., & Pandya, M. K. (2019). A bibliometrics analysis of the journal "Library & Information Science Research" from 2008–2017. Journal of Library and Information Communication Technology, 8(2), 8. https://doi.org/10.5958/2456-9399.2019.00011.7

13. Panda, S. K., Vijaykumar, M., & Pandya, M. (2019). A bibliometric analysis of research publications of Central University of Rajasthan for the period 2009-2018. Scholarly Communication and Scientometrics, 230–241

14. Asnani, Roma and Vyas, P. A bibliometrics analysis on publications of Maharaja Sayajirao University of Baroda. In: Building Smart Libraries: Challenges and Discovery Tools. In. Proceeding of the International conference on Knowledge organisation in Academic Libraries (I-KOAL 2019). New Delhi: Library Professionals Associations, p. 405–411, 2019

16. Awards, Honours and Distinctions

Prof J P Singh Joorel, Director

Prof Joorel was invited by the University of Jammu, Jammu on 12th April 2019 to be present in their meeting of 'Academic Council of National Resource Centre in Home Science'. He attended the meeting of 'ICT Committee' of NAAC at Bangalore held during 27th April, 5th May and 29th May 2019. The Central University of Gujarat has nominated Prof J P Singh Joorel as a member on 'Monitoring and Planning Board'. He attended the meeting of 'Academic Council of Consortium of Educational Communications' held at New Delhi on 28th May 2019. He was invited as a Chief Guest to inaugurate the faculty induction programme under Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNMTT) a Scheme launched by the Ministry of Human Resource Development, Government of India, and delivered the lecture at School of Education, Central University of South Bihar on 1st June 2019. He attended the Internal Core Committee (ICC) – NIRF meetings on 05th September 2019, and 23rd September 2019 respectively at MHRD, Government of India. he was

nominated as a member of the "Library Advisory Committee" of Indian Institute of Advanced Study (IIAS), Shimla, H.P., and GITAM (Deemed to be University), Visakhapatnam.

Prof Joorel was invited as the Chief Guest at the National Level Workshop on Anti Plagiarism at Gujarat University, Ahmedabad on October 12, 2019. He participated and chaired a Session in the 22nd International Symposium on Electronic Theses and Dissertations (ETD2019) at Porto, held at Universidade Portucalense in Porto, Portugal during November 6-8, 2019. He was the Guest of Honour in the Prize Distribution function of the Inter-Zonal Youth Festival at M D University Rohtak on November 15, 2019. Further, he inaugurated the Book Fair at M D University Rohtak on November 15, 2019. He was selected by the Ministry of Human Resource Development (MHRD), Government of India to attend the Leadership for Academician Programme (LEAP2019-2020) at Aligarh Muslim University Aligarh and Monash University, Australia, respectively.He attended the "Leadership for Academician Programme (LEAP 2019-2020) at Monash University, Australia during 14th – 22ndFebruary, 2020.

During the period under report,Prof J P Singh Joorel delivered the following invited talks:

- Delivered a talk on "Higher Education and its Ecosystem" in UGC Workshop on Training of Teachers" at UGC-Human Resource Development Centre, Gujarat University, Ahmedabad on 27thAugust 2019.
- Delivered a lecture on "Role of Inflibnet Centre in Knowledge Dissemination through ICT" at the Mahatma Gandhi Central University, Motihari, Bihar on 06thSeptember 2019.
- Delivered the Convocation address as the Chief Guest at the Graduation Day Ceremony of EGS Pillai College of Engineering, Nagapattinam, Taminadu.
- Delivered the keynote address as the Chief Guest at the International Conference on "Knowledge Organization in Academic Libraries"organized by Sardar Patel University, Vallabh Vidyanagar, Anand during 12th-13th September 2019.
- Delivered lecture on "Role of Inflibnet Centre in Higher Education and Research" in the Orientation Course organized by UGC-HRDC, University of Jammu, Jammu on28th September 2019.
- Delivered a Convocation address at AJK College of Arts and Sciences, Coimbatore, Tamilnadu.
- Delivered two talks on "Development of Higher Education in Modern India and Future Prospects" in the Orientation Programme on the theme 'देश: दृष्टि, दिशाऔरविकास' at Centre for Professional Development in Higher Education, UGC-HRDC, University of Delhi, Delhi on 16th January 2020.
- Delivered an invited talk on "Higher Education in India" during the International Conference on "Lokmanya Tilak: Maker of Modern India" organized by Tilak Maharashtra Vidyapeeth, Pune on 22ndJanuary2020.
- Delivered an inaugural lecture as Chief Guest in the Seminar on ETD Lifecycle Management at Indira Gandhi National Centre for Arts (IGNCA), New Delhi on 30th January 2020.

- Delivered an invited lecture on the Role of INFLIBNET Centre in Higher Education in the "Faculty Development Workshop on using E- Library Resources for Teaching and Research" organized by Ram Lal Anand College (Constituent College of University of Delhi), New Delhi on 30th January2020.
- Delivered an inaugural address as Chief Guest in the National Seminar on Promotion of Academic Integrity and Prevention of Plagiarism at the University of Petroleum and Energy Studies (UPES), Dehradun on 20th December 2019.

Mr Manoj Kumar, Scientist E (CS)

Mr Manoj Kumar K delivered the following invited talks, Panel discussion and presentation during the period under report:

- Delivered a lecture on 'Shodhganga & URKUND: a Plagiarism Detection Software' during the programme of Awareness for Prevention of Plagiarism in Research at Nirma Universityon 25th April 2019.
- Delivered the keynote address during National Workshop on "The Use of Anti Plagiarism Software for Detection of Plagiarism" at Dr BabasahebAmbedkar Open University, Ahmedabad on 11th May 2019.
- Delivered a lecture on Shodhganga and Plagiarism Issues or Ethics in General at HomiBhabha National Institute, Mumbai on 26th June 2019.
- Delivered a lecture on Shodhganga and Plagiarism Detection Software to the PG students and Faculty members of Rajagiri School of Engineering & Technology, Kakkanad, Kerala on 24th August 2019.
- Delivered a lecture on the topic 'Academic Integrity, Research Ethics and Plagiarism' at Institute of Teacher Education, Gandhinagar (IITE), Gandhinagar on 21stOctober 2019.
- Delivered a lecture on the topic Academic Integrity, Research Ethics and Plagiarismat Nirma University, Ahmedabad on 23rdOctober 2019.
- Delivered a lecture on MOOC module for the Annual Refresher Programme in Teaching (ARPIT) at Indian Institute of Technology, New Delhi on 27th November 2019.
- Delivered an invited talk on the topic Research Ethics and Plagiarism on 25th January 2020 CHMK Library, University of Calicut organized by Dept of Library and Information Science.
- Addressed in the PARAMARSH workshop for Mentee Colleges organized by Farook College on Topic Quality Enhancement and NAAC Accreditation: New Framework and Future Challenges on 25th January 2020.
- Delivered a Lecture on "Use of Anti-Plagiarism Software Urkund and Turnitin" during the Five-day Short Term Training Program on "Innovative and Adaptive Technologies for Libraries / Librarians" held from 2nd - 6th March 2020 jointly sponsored by AICTE, New Delhi and Gujarat Technological University (GTU), Ahmedabad at INFLIBNET Centre, Gandhinagar on 4th March 2020.

Mr Manoj Kumar was invited as a speaker on the topic Knowledge Based Resources Information Systems Hub for Innovations in Agriculture in 4th National Workshop at Indian Council of Agricultural

Research (ICAR), New Delhi on 10th December, 2019. He was also invited as a speaker during the UGC Sponsored Refresher Course in E-Content Development at Academic Staff College, UGC-HRDC, Gujarat University, Ahmedabad on 14th December 2019. He attended as a Key Resource Person on the topic Awareness Programme of MOOCs & INFLIBNET Services to Central universities at Central University of Odisha on 23rd January 2020. He attended as a Resource Person on the topic Library as a Learning Resource, INFLIBNET as a gateway for NAAC and NIRF in the 3-Days Orientation program to Principals on Academic Leadership organized by Commissionerate of Collegiate Education, Vijayawada, Government of Andhra Pradesh on 12th February 2020.

Mr Ashok Kumar, Scientist E (CS)

Mr Ashok Kumar was invited as resource person to deliver an invited talk on topic MOOCs, E-Content Development and Open Educational Resources at Faculty Development Centre (under the scheme of PMMMNMTT, MHRD, Govt. of India) on 30th August, 2019 during Training-cum-Workshop on MOOCs, E-Content Development and Open Educational Resources at Iswar Saran Degree College, University of Allahabad, Prayagraj during 27th August to 2nd September, 2019.

Mr Yatrik Patel, Scientist E (CS)

Mr Yatrik Patel delivered the following invited talks, Panel discussion and presentation during the period under report:

- Delivered lecture on E-Resources for Research, during UGC Sponsored Refresher Course in Social Science at Academic Staff College, UGC-HRDC, Gujarat University, Ahmedabad on 15th October 2019.
- Delivered lecture on E-Resources for Research, during UGC Sponsored Refresher Course in Information Communication Technology (ICT) at Academic Staff College, UGC-HRDC, Gujarat University on 18th October 2019.
- Delivered a lecture on Next Generation Technology for Libraries during UGC Sponsored Refresher Course Advancement in Library & Information Science at UGC-HRDC, Sardar Patel University, Vallabh Vidyanagar on 15th November 2019.
- Delivered a lecture on E-content Development best practice & tools during the UGC Sponsored Refresher Course on E-Content Development at Academic Staff College, UGC-HRDC, Gujarat University, Ahmedabad on 13th December 2019.
- Delivered the theme lecture/keynote address during half-day Quarterly Seminar on 'Impact of ICT in Compact Libraries' co-organised by DAIICT Resource Centre and ADINET on 25th January 2020.
- Delivered a Lecture on "MARC 21: Overview" during Five-day Short Term Training Program on "Innovative and Adaptive Technologies For Libraries / Librarians" during 2nd - 6th March 2020 jointly sponsored by AICTE and GTU at INFLIBNET Centre, Gandhinagar.

Mr. H G Hosamani, Scientist D (LS)

Mr H G Hosamani was invited to deliver a Lecture on "Library Automation Using SOUL 2.0 Software" during the Five-day Short Term Training Program on "Innovative and Adaptive Technologies For Libraries / Librarians" held from 2nd - 6th March 2020 jointly sponsored by AICTE, New Delhi and Gujarat Technological University (GTU), Ahmedabad at INFLIBNET Centre, Gandhinagar on 5th March 2020.

Mr Abhishek Kumar, Scientist D (CS)

Mr Abhishek Kumar attended the Board Meeting on SWAYAM for the proposal of new channels and its content presentation at MHRD, New Delhi on 8th April 2019. He also attended a meeting of Study in India for Planning of Methodology cycle under the Chairmanship of Secretary at MHRD, New Delhi on 10th April 2019. He attended a meeting of Swayam Prabha for Channel 29 at UGC, New Delhi on 14th May 2019. He also invited to deliver a presentation on "Distance Education Bureau (DEB)" at IGNOU, New Delhi on 15th May 2019. He was invited to attend a meeting for Discussion on UGC Autonomous College and Gap analysis at UGC, New Delhi on 20th May 2019. He was invited for selection of manpower for UGC e-governance project at the Institute for Studies in Industrial Development, New Delhi on 13th July 2019. He was also invited to discuss the requirement of NMTT project as well as to develop web-based DAK management software at MHRD, New Delhi on 17th July 2019. He participated in the AICTE meeting on evaluation of the project committee at AICTE, New Delhi on 13th August 2019. He was invited to attend a meeting of the Digital Innovation Committee at IITE Gandhinagar on 14th August 2019.   He was invited to attend the first meeting of the Implementation Core Committee of India Rankings 2020 at MHRD, New Delhi on 5th September 2019. He was invited to deliver a presentation on progress of UGC e-governance project at UGC, New Delhi on 13th September 2019. On 27th September 2019, he demonstrated before MHRD officials regarding 'deemed to-be-University' and participated in the discussion regarding 'e-governance project' at UGC, New Delhi and discussed and presented about 'e-NBA Project' at NBA, New Delhi. He attended UGC MOOCs meeting for demonstrating KVS portal created for HRM at UGC, on 3rd January, 2020. He also attended ARIIA review committee meeting and technical presentation on ranking module on 5th February, 2020. He attended walk-in interview as a selection committee member for selecting the manpower for the project of UGC e-governance at UGC on 7th February, 2020. He attended a meeting of EdCIL about NMEICT project and FIT India requirement with MHRD officials through Video Conferencing on 18th February, 2020. He attended DTH SWAYAM Prabha Channel Review Meeting during the Workshop for all the channels at Indian Institute of Technology Delhi on 21st February, 2020. He also attended ARIIA review Committee for presentation of ranking module of ARIIA at AICTE, New Delhi on 2nd March, 2020. He delivered two lectures on "Learning Content Creation using MOOCs" and "India Rankings" during the Five-day Short Term Training Program on "Innovative and Adaptive Technologies for Libraries / Librarians" held from 2nd - 6th March 2020 jointly sponsored by AICTE, New Delhi and Gujarat Technological University (GTU), Ahmedabad at INFLIBNET Centre,

Gandhinagar on 3rd and 4th March 2020 respectively. He was a resource person for the workshop on MOOC in the International Conference on Evolving Trends in Higher Education at St. Xavier's College (Autonomous), Mumbai on 12th March, 2020.

Mr Abhishek Kumar delivered the following invited talks, Panel discussion and presentation during the period under report:

- Delivered a lecture on "Digital Library Architecture"during PGDM course at School of Library and Information Science, Central University of Gujarat, Gandhinagar on 1st May 2019.
- Delivered a lecture on "Role of Faculty towards Government Initiatives (e-Resources, e-learning & e-content)" during the Faculty Induction Programme at Nirma University, Ahmedabad on 30th May 2019.
- Delivered lectures on "Introduction to MOOCs and MOOCs Providers" on 17th June 2018 and "Integrating MOOCs in Regular Courses" or "Infrastructure Necessary for MOOCs & SPOCs" on 18th June, 2019 during Four Weeks Induction Training Program for the Faculty Members of HEIs from 27th May to 22nd June 2019 at Central University of Rajasthan, Ajmer.
- Delivered a lecture on 'e-learning' at VIT Vellore on 12thAugust 2019.
- Delivered a presentation on the 'Production of the MOOCs Courses for SWAYAM' during one-day Regional workshop on "Adoption, Awareness & Promotion of MOOCs courses' for SWAYAM Platform" at Aryabhatta Auditorium, Ranchi University, Morabadi, Ranchi on 3rdSeptember 2019.

Mr Swapnil P Patel, Scientist C (CS)

Mr Swapnil Patel delivered a Lecture on "Creation and Management of Institutional Repository" during the Five-day Short Term Training Program on "Innovative and Adaptive Technologies for Libraries / Librarians" held from 2nd - 6th March 2020 jointly sponsored by AICTE, New Delhi and Gujarat Technological University (GTU), Ahmedabad at INFLIBNET Centre, Gandhinagar on 4th March 2020.

Mr Divyakant Vaghela, Scientist C (CS)

Mr Divyakant Vaghela delivered a Lecture on "Open Source Content Management System" during the Five-day Short Term Training Program on "Innovative and Adaptive Technologies for Libraries / Librarians" held from 2nd - 6th March 2020 jointly sponsored by AICTE, New Delhi and Gujarat Technological University (GTU), Ahmedabad at INFLIBNET Centre, Gandhinagar on 6th March 2020.

Mrs. Vaishali Shah, Scientist C (LS)

Mrs. Vaishali Shah delivered the following invited talks, Panel discussion and presentation during the period under report:

- Delivered a lecture on 'Metadata Standards, MARC21, ISO 2709, MARCXML and Dublin Core' at Central Library and Faculty of Library and Information Science, Parul University, Vadodara on 21st June 2019.
- Delivered a Lecture on "Hands-on Demonstration: Copy Cataloguing, OCS 2.0, XL2MARCXML Utility and MARCEdit" during the Five-day Short Term Training Program on "Innovative and Adaptive Technologies for Libraries / Librarians" held from 2nd - 6th March 2020 jointly sponsored by AICTE, New Delhi and Gujarat Technological University (GTU), Ahmedabad at INFLIBNET Centre, Gandhinagar on 4th March 2020.
- Delivered a lecture on "Overview of Online Copy-Catalogue System (OCS 2.0) for SOUL 2.0 Users (Theory, Practice & Installation)" at Parul University, Baroda on 13th March 2020.

Dr Kruti J Trivedi, Scientist C (LS)

Dr Kruti Trivedi was invited as a resource person during Faculty Development Programme on "Research Assessment using Bibliometric Indicators" organized by K. M. Shah Dental College and Hospital, Sumandeep Vidyapeeth on 19th April 2019. She was also invited as a resource person during three days National Workshop on "Honing Research Publication Skills" at Birla Vishvakarma Mahavidyalaya, Vallabh Vidyanagar, Anand from 21st to 23rd August 2019.

Dr Kruti Trivedi delivered the following invited talks, Panel discussion and presentation during the period under report:

- Invited as a Speaker during one-day National Workshop on "Use of Anti Plagiarism Software for Detection of Plagiarism" at Dr Babasaheb Ambedkar Open University, Ahmedabad on 11th May 2019.
- Invited as Panelist for Research Connect Forum Co-host by Savitribai Phule Pune University, Pune and Elsevier on 18th June 2019.
- Delivered a lecture on 'Research Impact metrics: calculation and context' on 3rd July 2019 during two weeks Faculty Development Programme (FDP) on Concepts of Quality by Design (QBD) and Statistics in Pharmaceutical Sciences sponsored by All India Council for Technical Education (AICTE) at Sankalchand Patel University, Visnagar from24th June 2019 to 06th July 2019.
- Delivered a lecture on "Citation Index with reference to Web of Science and Scopus" during the Five-day Short Term Training Program on "Innovative and Adaptive Technologies for Libraries/ Librarians" held from 2nd- 6th March, 2020 jointly sponsored by AICTE, New Delhi and Gujarat Technological University (GTU), Ahmedabad at INFLIBNET Centre, Gandhinagar on 3rd March 2020.

Mr Dinesh Ranjan Pradhan, Scientist C (LS)

Mr Dinesh Pradhan delivered a lecture on "Search and Discovery Tools" during the Five-day Short Term Training Program on "Innovative and Adaptive Technologies for Libraries/ Librarians" held from

2nd- 6th March, 2020 jointly sponsored by AICTE, New Delhi and Gujarat Technological University (GTU), Ahmedabad at INFLIBNET Centre, Gandhinagar on 3rd March 2020.

Dr Miteshkumar Pandya, Scientist C (LS)

Dr Miteshkumar Pandya attended a meeting as a member of the Committee constituted by the Governor of Rajasthan for Improving State Financed University and Affiliated College Libraries in the State of Rajasthan at Central Library, University of Rajasthan, Jaipur on 13th June 2019.

Dr Miteshkumar Pandya delivered the following invited talks, Panel discussion and presentation during the period under report:

- Delivered lectures on "Digital Library Architecture" at School of Library and Information Science, Central University of Gujarat, Gandhinagar on 3rd May 2019.
- Delivered lectures on "Reference Management Tools: Zotero and Academic Dishonesty & Use of Anti-Plagiarism Tool for Avoiding Plagiarism"during the Faculty Induction Programme - II at Coimbatore Institute of Technology, Coimbatoreon 14th May 2019.
- Delivered a talk on Reference Management Tool: Zotero during one-day National Workshop on Use of Anti Plagiarism Software for Detection of Plagiarism at DrBabasahebAmbedkar Open University, Ahmedabadon 11th May 2019.
- Delivered a lecture on Reference Tools: Zotero (Theory and Practices) during the Five-day Short Term Training Program on "Innovative and Adaptive Technologies for Libraries / Librarians" held from 2nd-6th March 2020 jointly sponsored by AICTE, New Delhi and Gujarat Technological University (GTU), Ahmedabad at INFLIBNET Centre, Gandhinagar on 2nd March, 2020.

Mr Hitesh Solanki, Scientist C (CS)

Mr Hiteshkumar Solanki delivered the following invited talks, Panel discussion and presentation during the period under report:

- Invited as a resource person to conduct hands-on sessions on R Programming in National Workshop on Research Tools and Techniques (NWRTT – 2019) by Dept of Library and Information Science, Assam University, Silchar in collaboration with INFLIBNET Centre, Gandhinagar during 23rd – 27thSeptember2019.
- Delivered lectures on "Data Handling in R" and "Summary Measures in R" during Three-day Workshop cum Training on "Market Analytics with R - Phase I" at Anand Agricultural University, Anand on 24th February, 2020.
- Delivered lectures on "IRINS: Overview" and "Statistical Methods for Research" during the Five-day Short Term Training Program on "Innovative and Adaptive Technologies for Libraries / Librarians" held from 2nd - 6th March 2020 jointly sponsored by AICTE, New Delhi and Gujarat Technological University (GTU), Ahmedabad at INFLIBNET Centre, Gandhinagar on 2nd and 5th March, 2020 respectively.

Mr Pallab Pradhan, Scientist B (LS)

Mr Pallab Pradhan was awarded an 'FSCI2019 Travel Fellowship', and attended the "FORCE11 Scholarly Communication Institute (FSCI 2019)" at the University of California, Los Angeles (UCLA), California, USA during 05th – 09th August 2019. He was also invited to deliver two sessions on Anti-Plagiarism Software (URKUND) and Reference Management Tool (Zotero) at Central Library, Guru Ghasidas Vishwavidyala, Bilaspur on 30th August 2019.

He was awarded a 'FORCE2019 Travel Fellowship' under the FORCE11 Travel Fellowship and Scholarship Program to attend FORCE2019, an annual FORCE11 conference and meeting where various different stakeholders in scholarly communication come together for an open discussion, to talk about changing the ways scholarly and scientific information is communicated, shared and used. It was held on October 16 and 17, 2019 at the historic BT Murrayfield Rugby Stadium, with pre-conference workshops held at the Hilton Grosvenor Hotel on October 15, 2019. The FORCE2019 was organized by FORCE11 in collaboration with the University of Edinburgh, Scotland, United Kingdom. He delivered two lectures on Research Metrics and Quality parameters for NIRF and ARIIA ranking, and Zotero – Online Reference Management Tool at Sambalpur University, Burla, Odisha during a one day workshop on 03rd December 2019. He delivered one session on Organizing Research with Reference Management Tools on 11th December 2019 in the Literature Review Workshop for PhD candidates (IInd Phase) held during 7th December – 15th December 2019 at Gujarat National Law University (GNLU), Gandhinagar, Gujarat.

Mr Pallab Pradhan delivered a lecture on Research Metrics, Ethics, Plagiarism, and Reference Management Tools at Dr C.V. Raman University, Bilaspur (C.G.) on 06th February, 2020 during Faculty Development Programme held from 05th-11th February, 2020 on "Ingredients of Effective Teaching" (FDP-IET-2020). He also delivered a lecture on 'Reference Tools: Mendeley' (Theory and Practice) during the Five-day Short Term Training Program on "Innovative and Adaptive Technologies for Libraries / Librarians" held from 2nd - 6th March 2020 jointly sponsored by AICTE, New Delhi and Gujarat Technological University (GTU), Ahmedabad at INFLIBNET Centre, Gandhinagar on 2nd March 2020.

Mr Raja V, Scientist B (CS)

Mr Raja was invited by e-Governance, AICTE, New Delhi on 14th June 2019 to be a part of the Selection Committee Member. Mr Raja V was selected for REFEDS (the Research and Education FEDerations group) Distinguished Engineer Fellowship Program and attended the international REFEDS meeting and Trans-European Research and Education Networking Association (TERENA) Networking Conference(TNC-19) held at Tallin, Estonia in Europe during 16th to 20th June 2019. He represented India and gave a presentation on the INFLIBNET Access Management Federation (INFED).

Mr Raja attended 48ᵗʰAsia Pacific Advanced Network (APAN) Meeting and presented about his Distinguished Engineer Fellowship report and INFED updates in the conference held at Universiti Putra Malaysia, Putrajaya, Malaysia during 22ⁿᵈto 26ᵗʰJuly 2019. He also presented INFED progress to the Malaysian Citation Centre, Ministry of Higher Education, Malaysia on 26ᵗʰJuly 2019. He also delivered a lecture onINFED on 2ⁿᵈ September 2019 during an annual five-day information literacy workshop "E-Resources: A Gateway for Research organised by the Central Library, DTU, Delhi during 2ⁿᵈ to 6ᵗʰ September 2019. He also presented integration with INFED during LIGO-INDIA meeting at the Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune on 26ᵗʰ September2019. He delivered a talk on INFLIBNET Activities at Avinashilingam University, Coimbatore on 21ˢᵗSeptember 2019. He delivered a lecture on Cloud computing during One-day workshop on "Cloud Computing" at PSGR Krishnammal College, Coimbatore on 20ᵗʰ September 2019.

Mr. Raja V was invited as a resource person to deliver a lecture on Cloud Computing in the one day workshop at AJK College of Arts and Science, Coimbatore, Tamilnadu on 17ᵗʰOctober 2019. As an invited resource person, Mr. Raja delivered a lecture on "Reference Management Tools" atTeaching Learning Centre (TLC), Coimbatore Institute of Technology on 18ᵗʰ October 2019 under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) Scheme, MHRD, GoI. He delivered a lecture on "Cloud Computing and Big Data, and its applications"during UGC-Refresher Course: Advancement in Library & Information at Sardar Patel University, Gujarat on 05ᵗʰNovember 2019. He delivered an invited lecture on "INFED and its features" on 13ᵗʰ December 2019 during the Two-day Workshop at National Institute of Fashion Technology, Gandhinagar. He was invited to deliver a lecture on "Cloud Computing" in the One day workshop at the EGS Pillay College of Engineering, Nagapattinam, Tamilnadu on 16ᵗʰ December 2019. He was a resource Person (on remote) for Progress and Challenges in Introducing Eduroam and Federated Identity under Asi@Connect/Geant and delivered a lecture on "eduGAIN Implementation Features and Challenges at INFED" to Bangladesh Research and Education Network on 19ᵗʰDecember 2019.

Mr Raja delivered a Lecture on "Indian Access Management Federation - Remote Access Tool" during the Five-day Short Term Training Program on "Innovative and Adaptive Technologies For Libraries / Librarians" held from 2nd - 6th March 2020 jointly sponsored by AICTE, New Delhi and Gujarat Technological University (GTU), Ahmedabad at INFLIBNET Centre, Gandhinagar on 3ʳᵈ March, 2020. He also acted as Resource person for one day faculty development program at Sri Krishna Arts and Science and Engineering College at Coimbatore on 5th March 2020

Mr Siva Shankar K, Scientist B (LS)

Mr. Siva Shankar K was invited as MOOC expert to deliver a lecture at Institute of Law, Nirma University Ahmedabad as a part of Faculty Development Programme (FDP) session on "e-learning through SWAYAM: A UGC "program on Digitization of Learning' on 3rd May 2019. He was also invited to brief about the "IRINS Project" to the Library Staff at Central Library, IIT Gandhinagar, on 9ᵗʰMay 2019. He was invited as an Interview Panellist to induct new students into its undergraduate program at School of Liberal Studies (SLS), Pandit Deendayal Petroleum University (PDPU) Gandhinagar during 25ᵗʰ to 26ᵗʰ May 2019.

He was invited to attend the review of IRINS project meeting under NMEICT held on 11th July, 2019 under the Chairmanship of JS (TEL & ICC) at the Ministry of HRD, Shastri Bhavan, New Delhi. Mr K Siva Shankar attended a joint symposium on 'Data Representation and Organization Techniques' hosted by DRTC, Indian Statistical Institute and Metadata Research Centre, Drexel University at DRTC, Bangalore during 2nd to 4th July 2019 and delivered a talk on "A road map of Indian Research Information Network System (IRINS)".

Mr. Siva Shankar K was invited to deliver a talk on Indian Research Information Network System (IRINS) during the IIM's Librarian Consortium meeting held at Indian Institute of Management Ahmedabad during 22ndOctober 2019. He was also awarded a 'FORCE11 travel fellowship', and attended the "FORCE2019 Conference" at the University of Edinburgh, Scotland during 15thto 17thOctober 2019.

Mrs. Hema V Cholin, Scientist B (LS)

Mrs. Hema Cholin delivered a lecture on "Digital Preservation" during the Five Day Short Term Training Program on "Innovative and Adaptive Technologies for Libraries / Librarians" held from 2nd - 6th March 2020 jointly sponsored by AICTE, New Delhi and Gujarat Technological University (GTU), Ahmedabad at INFLIBNET Centre, Gandhinagar on 6th March 2020.

Mrs Suboohi Siddiqui, Scientist B (LS)

Mrs. Suboohi Siddiqui delivered a Lecture on "Emerging Technology in LIS Profession" during the Five-day Short Term Training Program on "Innovative and Adaptive Technologies for Libraries / Librarians" held from 2nd-6th March, 2020 jointly sponsored by AICTE, New Delhi and Gujarat Technological University (GTU), Ahmedabad at INFLIBNET Centre, Gandhinagar on 2nd March 2020.

Mr Dharmesh A Shah, Scientific & Technical Officer (CS)

Mr Dharmesh Shah was invited to attend a meeting to discuss various issues of e-NBA project on 26thJuly 2019 at NBA, New Delhi. He also participated in the UGC e-Governance meeting during 08th and 09thAugust 2019 at UGC, New Delhi. He was invited to discuss and develop RUSA web portal at RUSA Office on 19th August 2019, New Delhi. On 27th September 2019, he was invited for e-NBA demonstration and discussion at MHRD and to discuss the 'e-governance project' at UGC, New Delhi. He was invited to discuss the pending work and requirements related to e-NBA Project at NBA, New Delhi on 1st November 2019. He delivered a Lecture on IT topic "JavaScript Library: An Introduction on React JS" at INFLIBNET Centre, Gandhinagar on 7th February, 2020 during the Educational visit of Geetanjali College of Computer Science, Rajkot.

Part – III

International & National Conferences, Workshops, Seminars and Training Programmes

1. 12ᵗʰ International CALIBER 2019

The 12ᵗʰ International CALIBER 2019 was organized by INFLIBNET Centre, Gandhinagar in collaboration with KIIT University, Bhubaneswar at KIIT University, Bhubaneswar from 28ᵗʰ to 30ᵗʰ November, 2019. The main theme of the CALIBER 2019 was "Library 2030: Moving Towards Smart Technologies, Services and Resources". Further, the main theme was divided into four sub-themes, i.e. Cutting Edge Technologies for Library; Next Generation Library Services; and Resources and Capacity Building in the Assessment of Research and Best Practices, Services and Challenges for Library 2030. 21 publishers participated in the exhibition arranged as part of the Convention. More than 350 delegates from different corners of India along with international invited speakers from other countries attended and participated in the convention. Out of 95 submissions, 42 papers and 4 theme papers were selected for presentation and 17 papers were selected for poster presentations.

1.1. Inaugural Session

Dignitaries on the Dias during the inauguration session of 12ᵗʰ International CALIBER 2019 at KIIT University, Bhubaneswar

The inauguration of the 12ᵗʰ International CALIBER- 2019 started by inviting the dignitaries on the Dias namely Dr Arun Kumar Sahoo, Minister Higher Education, Orissa; Prof Ashok Das, Vice Chairperson, Higher Education Council, Govt of Orissa; Prof T D Kamparaju Vice-Chancellor, North Bengaluru University; Prof J P Singh Joorel, Director INFLIBNET Centre; Prof C R Karsiddappa, Conference Director; Dr Sushmita Samanta, Pro-Vice-Chancellor, KIIT University, Bhubaneswar; Dr Vijayalakshmi Routray, Organizing Secretary and Librarian, Central Library KIIT; and Dr H G Hosamani, Conference Convener and Scientist D (LS), INFLIBNET Centre with the lighting of the ceremonial lamp in the presence of invited guests, delegates coming from various states of India and abroad.

After felicitation of dignitaries, the Souvenir and Conference proceedings were released by the Hon'ble Minister of Higher Education Orissa Dr Arun Kumar Sahoo. Dr Bijayalaxmi Routary, Organizing Secretary gave the welcome address and highlighted the organization of 12ᵗʰ International CALIBER 2019 at KIIT Bhubaneswar.

Prof J P Singh Joorel discussed the activities of the INFLIBNET Centre in detail starting with the centre's objectives and lamented that the Centre is working day and night with the limited existing staff very successfully. He highlighted especially on college and university library automation, union catalogue, IndCat, a database of books, journals, thesis, SOUL, proposed window-based SOUL (coming soon), scholarly resources, open-access facility, open software, open access initiatives, ShodhGanga, ShodhGangotri, IR, DSpace, plagiarism software (PDS), scholarly network projects (i.e. Vidwan, IRINS) funded by MHRD, Urkund (free of cost), content creation and e-Learning project, e-PG Pathshala, Vidya-mitra, e-content projects, technical partner, MOOCS, SWAYAM PRABHA, NIRF (MHRD project), Atal ranking, helping NAAC, e-Governance project for Govts and many schemes of MHRD, ESS project, HRD training, Regional training and many more. At the end, he highlighted about "Ek Bharat and Swastha Bharat" also.

Dr Sushmita Samanta said that information has taken the responsibility of knowledge and challenge to show the light of knowledge. According to her, every day new techniques are coming and LIS is not an isolated subject. It is a multidisciplinary subject where the information science integrated program should be designed and LIS should be given preference. She also highlighted the INFLIBNET's initiative towards the development of libraries and JIO's role towards the telecommunication revolution. At the end, she advocated that the library science be substituted by Digital Science.

Prof Ashok Das discussed on knowledge repositories, societal diversity and classic textbooks which carry knowledge, textbooks and reference books in detail. He further pointed out that journals are the major issues, suggesting to make a digital suitcase, portal for textbooks and reference books, MOOC, IndCat. Prof Das suggested that INFLIBNET Centre can think of a Digital Repository in Orissa; libraries used to be as temples and the future of libraries should be places of comfort. At the end he highlighted on artificial intelligence, big data mining, kindle; and mentioned about Parida Library, Kanika Library of Orissa. He completed his deliberation by saying Libraries are the foundation of society.

Prof T D Kemparaju, Vice-Chancellor, Bengaluru North University, said in his keynote speech that this is a leading event in the field of libraries and librarians. It is the age of change and transformation and the change is very fast and steady. Libraries are not out of the purview of change. Many new aspects have been explored by using information technology in the field of libraries. The librarians and library professionals should be acquainted with the new technologies. They should be familiar with computers and artificial tools in the field. He also highlighted the various issues related to LIS, advancement in technologies, smart technology, digital library, free access to information, next generation library resources, google, utilization of digital resources, new education policy, etc. in detail.

Prof C R Karisiddappa, the Conference Director spoke on the occasion and pointed out that computers have given opportunities to LIS professionals to prosper in a new direction. The themes of the convention are stimulating the emerging professionals. He also mentioned on the cutting edge technologies for libraries, capacity building, enrichment programme, INFLIBNET role in capacity development, etc. in detail.

Dr Arun Kumar Sahoo, Hon'ble Minister, Higher Education, Agriculture and Farmers' Empowerment, Fishries and Animal Resources Development, Govt. of Odisha pointed out that libraries should be accessible to everyone and everywhere. Awareness about access to libraries should be created among

young people. He said now change is very fast and motivation of people to use knowledge, to acquire knowledge is visible in the changing world. According to him, the library is the biggest place for research.

Dr H G Hosamani, Convener, CALIBER 2019 proposed the vote of thanks. During his deliberation, Dr Hosamani pointed out about the library multidisciplinary, marketing, leadership skill, technology skill, awareness to users, professional skills, and also highlighted on major skills required for librarians, management support, and smart technology. At the end he said the Library is a Learning Temple. The first day of the convention ended with a beautiful cultural evening performed by the students of KISS and KITT. The performances of tribal students of KISS were the centre of attraction for all. Various forms of tribal dances and songs were performed by the budding students of the university.

1.2. Tutorials

Convention tutorials were delivered on IRINS by Mr. Kannan P, Dy Librarian, Central University of Punjab; SWAYAM by Mr. Abhishek Kumar Scientist D (CS), INFLIBNET Centre; ShodhSuddhi by Mr. Manoj Kumar K., Scientist E (CS), INFLIBNET Centre.

Participants of the Convention

1.3. Technical Sessions

The presentations in the Convention were organized into the following 7 technical sessions, wherein 38 presentations were made including presentations on the theme papers. 4 commercial product presentations were made by their respective representatives:

Session	Theme of the Session	Chair/ Co-Chair	Invited Speaker
I	Cutting Edge Technologies for Library-I	Dr. D V Singh, Former University Librarian, DelhiUniversity, Delhi/ Dr. D K Singh, Librarian, Banaras Hindu University,Varanasi	Dr. Pijushkanti Panigrahi, Professor, DLIS,University of Calcutta, Kolkata

II	Cutting Edge Technologies for Library-II	Dr. Krishnamoorthy, Director, Library, Anna University, Chennai/ Dr. NruSingha Das, Silicon Institute of Technology, Bhubneswar	Prof Muttayya M Koganuramath, Former Professor, Central University of Gujarat, Gandhinagar
III	Next Generation Library Services-I	Prof Sangita Gupta, Professor & Head, University of Jammu, Jammu, Jammu and Kashmir/ Dr. R K Maheswari	Prof. P. V. Konnur, President, LIS Academy, Bengaluru
IV	Next Generation Library Services-II	Dr. Mayank Trivedi, Librarian, The M S University of Baroda, Vadodara/ Dr Sushitra Pradhan, Sr. Librarian KIIT	Prof. Dinesh K Gupta, University of Kota
V	Resources and Capacity Building-I	Prof. Ravinder Kumar Chadha, Professor, LIS and Research, Malwanchal University, Indore	Prof. Ravinder Kumar Chadha, Professor, LISand Research, Malwanchal University; Prof. Ashwini A. Vaishnav, Professor and Head, DLIS, Dr. Babasaheb Ambedkar Marathwada University(BAMU), Aurangabad; Dr. Gina de Alwis, Former Head of the Library,Singapore Institute of Management, Singapore; Dr. Akhtar Parvez, University Librarian,Maulana Azad National Urdu University, Hyderabad; Prof. A. S. Chandel, University Librarian, CentralLibrary, Sikkim University, Gangtok
VI	Resources and Capacity Building- II (Parallel Session)	Prof. Bulu Maharana, Professor, Sambalpur University, Sambalpur/ Dinesh Pradhan, Scientist- C (LS), INFLIBNET Centre, Gandhinagar& Dr Vikram Sarma, Librarian, Manav Rachna University, Faridabad	
VII	Resources and Capacity Building- III (Parallel Session)	Dr. Sunil Kumar Satpathy, NIT Raipur/ Abhishek Kumar Scientist D (CS), INFLIBNET Centre, Gandhinagar	

Session-wise Break up of Research and Commercial Presentations
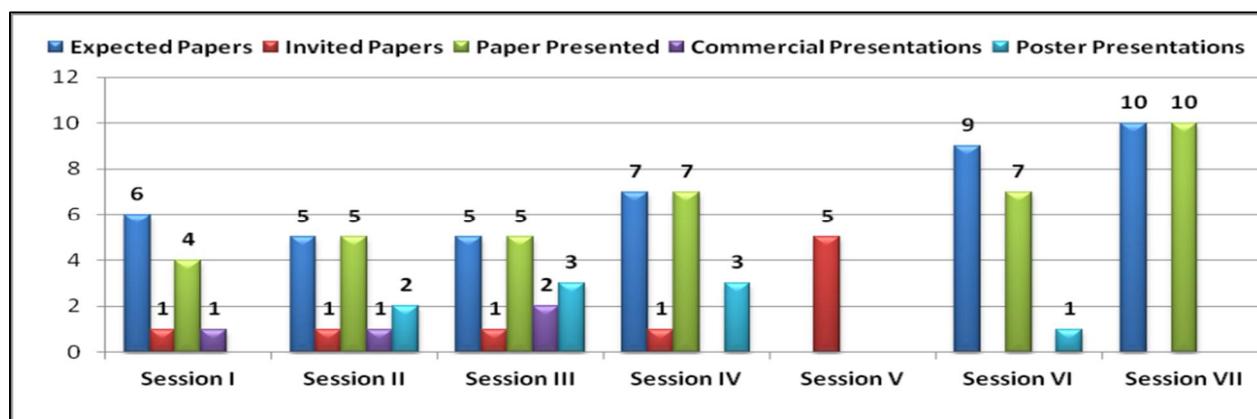
1.4. Panel Discussion

The moderator along with all the panelists was introduced by Prof C R Karisiddappa to the august delegates attending the 12th International CALIBER 2019. The entire sessions were moderated by Prof Pushpanjali Jena on the various themes and subthemes of the convention. The first panelist Prof Varlaxmi, Former Professor and Head, DLIS, Andhra University discussed on capacity building in detail. The next panelist Dr K P Singh, Associate Professor, University of Delhi spoke on information literacy. Prof Pravakar Rath, Professor, DLIS, Mizoram University, Aizwal highlighted the e-Resource management in modern libraries. Mr. Manoj Kumar K, Scientist E (CS), INFLIBNET Centre, Gandhinagar discussed on the cutting edge technologies for libraries in detail. The last panellist Dr R K Mahapatra, Associate Professor, DLIS, Tripura University talked on the next generation users' services.

1.5. Valedictory Session

Dignitaries on the Dias during the Valedictory Session of 12th International CALIBER 2019 at KIIT University, Bhubaneswar

The concluding session of the 12th International CALIBER 2019 was started with the presentation of bouquets to the invited guests and dignitaries on the podium. The welcome address of the valedictory ceremony was delivered by Mr. Swapnil Patel, Jt-Convenor which was followed by the Rapporteur General's brief Report on the deliberations and happenings of the last three days by Prof Sanjay Kumar Singh, Professor and Head, DLISc, Gauhati University, Guwahati. Prof C R Karisiddappa, Conference Director, Prof J P Singh Joorel, Director, INFLIBNET Centre Gandhinagar and Prof Hrushikesh Mohanty, Vice-Chancellor, KIIT Deemed to be University, Bhubneswar also spoke on the occasion and presented their views on the various activities took place during three day conventions at Kalinga Institute of Industrial Technology (KIIT). In between the guests were felicitated by the organizing committee of the convention. Prof Rajnish Jain, Secretary & CVO, UGC, New Delhi addressed the gatherings. Prof Jain highlighted on the changing trends of higher education in India. He said that education is for all rather quality education for all and pointed out the tangible outcomes. He also explored some of the important points like teacher centric education to student centric

education, quality research in higher education, CARE list of journals, libraries are changing, libraries have expanded, and libraries are not confined to one particular building rather going to villages, town, city or any places. The roles of librarians are also changing. Libraries are the place for the creation of knowledge, dissemination of knowledge and knowledge facilitation. He also stressed on the need to understand the journey of life of a student. Dr Dilip K Swain, Librarian, KIIT Deemed to be University, Bhubaneswar presented extended the vote of thanks to one and all who were directly or indirectly associated with the CALIBER 2019 at the end of the convention.

1.6. Recommendations

- Revamping and Strengthening of Library Automation in college and universities using SOUL Web enabled Software having all the required features.
- Smart Libraries in each state under the guidance of INFLIBNET Centre.
- Cloud based services should be strengthened in colleges and universities.
- Capacity Building Training Programme should be conducted at different places in India in phase manner.
- Strengthen the ESS service covering all the universities. Single Licensing Policy for e-Consortium after evaluation of various components of the consortia.
- Evaluation of Resources provided by the INFLIBNET Centre to the colleges and universities should be carried out at least once in two years.
- Application of Artificial intelligence
- IndCat service should be extended to all states of India by including the valuable documents from all the states.
- Proceedings of CALIBER and PLANNER should be endorsed in the UGC Care list of journals or Scopus or Web of Science.
- INFLIBNET may support the well-equipped LIS Departments in Indian Universities to offer periodical programmes in capacity building/ skill development.
- INFLIBNET should develop the integrated Library Apps with social media in a modular system.
- IndCat, ShodhSuddhi and IARDR (Indian Academic Research Data Repository) should be mapped to each other by the INFLIBNET Centre for creation of Research Data Repository of Universities in India.

2. Training Programmes on Installation and Implementation of the SOUL Software at INFLIBNET Centre

The INFLIBNET Centre provides an Orientation Training Programme on Installation and Implementation of the SOUL Software. The programme is specially designed for imparting training to new users of SOUL software. The morning sessions of the programme are devoted to theoretical lectures and demonstrations, while the afternoon sessions are completely earmarked for "hands-on" practice. The "hands-on" practical sessions are conducted in a well-equipped computer laboratory under the guidance of trained staff members of the Centre. The course content of the programme is designed to cover the following topics:

- INFLIBNET: Major Activities and Services
- SOUL – Administration and Overview
- SOUL - Catalogue Module
- SOUL - Acquisition Module
- SOUL – Circulation Module
- SOUL – Serials Control Module
- SOUL- OPAC, WebOPAC, Installation and Backup

Generally, two participants from every user institution of SOUL software are invited to join this training programme, one each with a computer and library science background. As on 31st March 2020, a total no. of 153 such training programmes were organized at the Centre. During the period under report, 8 training programmes were organized and training was imparted to 115 participants from different institutions as shown in Table 38 below.

Sl. No.	Name of Training Programmes	Period	No. of Participants
1	148thTraining Programme on SOUL 2.0	20th to 25th May, 2019	23
2	149th Training Programme on SOUL 2.0	08th – 13th July, 2019	20
3	150th Training Programme on SOUL 2.0	26th -31st August, 2019	28
4	151st Training Programme on SOUL 2.0	14th-19th October, 2019	14
5	152nd Training Programme on SOUL 2.0	2nd - 7th December, 2019	9
6	153rd Training Programme on SOUL 2.0	20th to 25th January, 2020	21
	Total		115

Table 38: SOUL Training Programmes Organized at the INFLIBNET Centre during 2019-20

3.   INFLIBNET Regional Training Programme on Library Automation (IRTPLA)

3.1.   INFLIBNET Regional Training Programme on Library Automation, Sri Guru Teg Bahadur Khalsa College, Sri Anandpur Sahib, Rupnagar, Punjab, 27th- 31st May, 2019

INFLIBNET Regional Training Programme on Library Automation (IRTPLA) was organised by Panth Rattan Jathedar, Gurcharan Singh Tohra Yaadgari Library, Sri Guru Teg Bahadur Khalsa College, Sri Anandpur Sahib in collaboration with INFLIBNET Centre, Gandhinagar from 27th to 31st May 2019. Mrs. Mandeep Kaur College, Dr.Amandeep Kaur and Mr. Tejinder Singh coordinated the programme. Mrs. Mandeep Kaur College, Librarian welcomed all the delegates and guests, and briefed them about the workshop. Dr. Jasvir Singh, Principal inaugurated the training programme. Dr. Jasvir Singh said library automation is necessary in the current era. He also said if the library is automated then the functions of the library perform accurately in less time. In the technical sessions, Dr. Jagtar Singh, Professor, Punjabi University, Patiala delivered a lecture on Library Automation and its applications. Mr. Kannan

P, Deputy Librarian, Central University of Punjab, Batinda delivered a lecture on INFLIBNET activities and services. Mr. Vijaykumar Shrimali, STA (CS), INFLIBNET Centre, Gandhinagar delivered lecture on SOUL Software Modules. Dr. Khushpreet Singh Brar, DLIS, Panjab University, Chandigarh delivered a lecture on Open Access of e-journals. Prof. Surinder Kumar, HOD, Department of Computer Science, SGTB Khalsa college delivered lecture on SQL database. Dr. Bhupinder Singh, Central University of Punjab, Batinda delivered a lecture on RFID technology. Dr. Jivesh Bansal, Librarian, A.C. Joshi Library, Panjab University, Chandigarh delivered lecture on Electronic Thesis and Digitization. Dr. Rupak Chakravarty, Professor, DLIS, Panjab University delivered lectures on Emerging technology in LIS: from SMOKE to SMAC and Avoiding Plagiarism through referencing: application of Mendeley. Theoretical lectures were followed by "hands-on" practical sessions on the same modules by the participants. All the practical sessions of the Training Programme involved intensive discussions and interactions on various pros and cons of SOUL software between participants and the resource persons. 80 participants participated in the programme. Mrs. Mandeep Kaur, Librarian extended vote of thanks at the end of the programme.

4. Specialized Training Programmes/National Workshops/National Conferences

4.1. Six-day National Workshop on Research Data and Statistical Analysis using R Programming, INFLIBNET Centre, Gandhinagar, 06th - 11th May, 2019

Six-day National Workshop on Research Data and Statistical Analysis using R Programming was organized from 06th to 11th May, 2019 at INFLIBNET Centre, Gandhinagar. Mr. Hitesh Solanki and Mr. Divyakant Vaghela, Scientists B (CS) and Dr. H G Hosamani, Scientist C (LS) coordinated the programme. Prof J P Singh Joorel, Director, INFLIBNET Centre, Gandhinagar inaugurated the Workshop. The aim of this Workshop was to provide hands on training in understanding the concepts in data science and statistical analysis using R programming. The R programming language is one of the most widely used programming languages among the data scientists and researchers. Details of lectures delivered by experts during the training programme are as follows:

Topics	Name of the Experts
INFLIBNET Activities and Services	Mr. Yatrik Patel, Scientist D (CS), INFLIBNET Centre
Introduction to R Programming (Installation, getting Started R, RStudio)	Mr. Vijay Shrimali, STA (CS), INFLIBNET Centre
Data Types in R (Constants, vectors, matrix, dataframes, lists)	Mr. DivyakantVaghela, Scientist B (CS), INFLIBNET Centre

Introduction to R Programming (Data Handling in R)	Mr. DivyakantVaghela, Scientist B (CS), INFLIBNET Centre
Introduction to R Programming (Working with Functions, Summary Measures)	Mr. DivyakantVaghela, Scientist B (CS), INFLIBNET Centre
Data Visualization using R : Base, lattice and ggplot packages	Mr. Hitesh Solanki, Scientist B (CS), INFLIBNET Centre
Statistical Analysis using R (Hypothesis Testing -I (Parametric))	Mr. Hitesh Solanki, Scientist B (CS), INFLIBNET Centre
Statistical Analysis using R (Simple and Multiple Regression Analysis)	Dr. R. D. Chaudhari, Associate Professor, M G Science Institute
Statistical Analysis using R (Factor Analysis)	Dr. DharmeshRaykundaliya, Assistant Professor, Sardar Patel University
Analysis of Variance (One Way and Two Way ANOVA)	Prof J P Singh Joorel, Director, INFLIBNET Centre
Statistical Analysis using R (Analysis of Variance (One Way and Two Way ANOVA))	Mr. Hitesh Solanki, Scientist B (CS), INFLIBNET Centre
Statistical Analysis using R (Logistic Regression)	Dr. Dharmesh Raykundaliya, Assistant Professor, Sardar Patel University
Statistical Analysis using R (Time Series Analysis)	Dr. Dharmesh Raykundaliya, Assistant Professor, Sardar Patel University
Statistical Analysis using R (Hypothesis Testing -II (Non-Parametric))	Dr. R. D. Chaudhari, Associate Professor, M G Science Institute
Reproducible Research using Rstudio (knitr and markdown packages, bookdown packages and blogs, website)	Dr. R. D. Chaudhari, Associate Professor, M G Science Institute

The certificates of participation were distributed at the end of programme. 29 participants including IT professionals, LIS professionals and research scholars attended the programme.

4.2. Six-day National Workshop on Metadata Management and Open Source Discovery Systems for Libraries, INFLIBNET Centre, Gandhinagar, 24th-29th June, 2019

Six-day National Workshop on Metadata Management and Open Source Discovery Systems for Libraries was organized from 24th to 29th June, 2019 at INFLIBNET Centre, Gandhinagar. Mrs. Vaishali Shah, Mr. Dinesh Ranjan Pradhan & Dr. Miteshkumar Pandya, Scientists B (LS) and Mr. Hitesh Kumar Solanki, Scientist-B (CS) coordinated the Workshop. Mr. Manoj Kumar K, Scientist D (CS) inaugurated the Workshop. The aim of this workshop was to provide extensive theoretical and practical training to convert various types of bibliographic data into standardized format i.e. MARC 21; basics of XML and XSL for mapping different metadata into single indexed format and installation and configuration of mentioned software and Vufind open source software. 8 participants attended the workshop. Details of lectures delivered by Staff of INFLIBNET Centre during the training programme are as follows:

Topics	Name of the Experts
INFLIBNET Activities and Services	Mr. Yatrik Patel, Scientist D (CS)
Understanding Metadata Standards, ISO 2709 Structure, MARC21, MARCXML and Dublin Core	Mrs. Vaishali Shah, Scientist B (LS)
Hands On Demonstration : Copy Cataloguing and XL2MARCXML Utility Developed by the INFLIBNET Centre	Mr. Vijay Kumar Shrimali, STA I (CS)
Insights for Converting Multilingual Bibliographic Data	Dr. Miteshkumar Pandya, Scientist B (LS)
Retrospective Conversion: Introduction, Need, Scope, Planning, Method & Steps	Mrs. Vaishali Shah, Scientist B (LS)
Retrospective Conversion of Metadata using ISISMARC	Dr. Miteshkumar Pandya, Scientist B (LS)
Data Migration using MARCEdit	Mrs. Vaishali Shah, Scientist B (LS)
Vufind Basics and other similar discovery tools	Mr. Dinesh Pradhan, Scientist B (LS)
Linux Basic Commands	Mr. Dharmesh Shah, STA (CS)
Vufind Installation & Importing MARC Records	Mr. Hitesh Solanki, Scientist B (CS)

Basic Understanding Markup Language especially XML, XSL	Mr. Hitesh Solanki, Scientist B (CS)
Vufind Customization - Basic Layout	Mr. Hitesh Solanki, Scientist B (CS)
Vufind Customization & Importing different type of records	Mr. Dinesh Pradhan, Scientist B (LS)
Understanding Metadata Harvesting & Preservation	Dr. Miteshkumar Pandya, Scientist B (LS)
Harvesting using Open Harvester Systems (OHS)	Dr. Miteshkumar Pandya, Scientist B (LS)
Harvesting records using VuFind	Mr. Dinesh Pradhan, Scientist B (LS)
Backup and Restore	Mr. Raja V, Scientist B (CS)

4.3. Six-day National Workshop on Creation and Management of Digital Library using Open Source, INFLIBNET Centre, Gandhinagar, 01st- 06th July, 2019

Six-day National Workshop on Creation and Management of Digital Library using Open Source was organized at INFLIBNET Centre, Gandhinagar from 5th to 10th August, 2019. Mr. Yatrik Patel, Scientist D (CS), Dr. H G Hosamani, Scientist C (LS) and Mr. Swapnil Patel, Scientist B (CS) coordinated the Workshop. Mr Swapnil Patel, Scientist B (CS) welcomed the participants and gave an overview of the programme. 8 participants from various parts of India and 2 participants from Nepal attended the programme. Details of lectures delivered by experts during the Workshop are as follows:

Topics	Name of Expert and Institution
INFLIBNET Activities, Services & Future Plans	Mr. Manoj Kumar K, Scientist D (CS)
Introduction to Open Source Software (OSS) and Institutional Repository (IR) OSS	Mr. Divyakant Vaghela, Scientist B (CS)
Introduction to Linux and Basic Commands	Mr. Dharmesh Shah, STA (CS)
Linux Basic Commands Practice	Mr. Dharmesh Shah, STA (CS) and Practical Team
IPR & Copyright Issues in Creating and Managing of Institutional Repository	Mr. Dinesh Pradhan, Scientist B (LS)
Introduction to Institutional Repository and DSpace	Mr. Yatrik Patel, Scientist D (CS)
Lab Session: DSpace Installation	Mr. Swapnil Patel, Scientist B (CS) / Mr. Vijay Shrimali, STA (CS)

Metadata Standards for Digital Content	Mr. Hitesh Solanki, Scientist B (CS)
DSpace: Basic Configuration & Administration	Mr. Swapnil Patel, Scientist B (CS)
Hands on: DSpace Administration	Mr. Swapnil Patel, Scientist B (CS) / Mr. Vijay Shrimali, STA (CS) and Practical Team
Digitization & Digital Preservation Issues & Challenges	Mrs. Hema Cholin, STO (LS)
DSpace: Basic Customization	Mr. Vijay Shrimali, STA (CS)
Hands on: DSpace Basic Customization	Mr. Swapnil Patel, Scientist B (CS) / Mr. Vijay Shrimali, STA (CS) and Practical Team
DSpace Import-Export & Backup-Restore	Mr. Raja V, Scientist B (CS)
Introduction to Metadata Harvesting and OAI-PMH	Mr. Yatrik Patel, Scientist D (CS)
Hands on : DSpace Import-Export & Backup-Restore	Mr. Swapnil Patel, Scientist B (CS) / Mr. Vijay Shrimali, STA (CS) and Practical Team
Project: Creation of IR	Mr. Vijay Shrimali, STA (CS)

4.4.   Six-day Advanced Training Programme on Bibliometric and Research Output Analysis, INFLIBNET Centre, Gandhinagar, 22nd- 27thJuly, 2019

Six-day Advanced Training Programme on Bibliometric and Research Output Analysis was organised at INFLIBNET Centre, Gandhinagar from 22nd to 27thJuly 2019. Prof J P Singh Joorel, Director lighted the ceremonial lamp along with Dr. H G Hosamani, Scientist C (LS) Dr. Kruti Trivedi Scientist B (LS) and Mr. Hitesh Solanki, Scientist B (CS), INFLIBNET Centre during the inaugural function. The training programme provided a sound overview of Bibliometric methods, Bibliometric data sources, Data processing and Performance indicators related to Bibliometric analysis and mapping. It has also provided awareness of most commonly used databases i.e. Web of Science and Scopus. Special emphasis has been given to advanced network analysis, interpretation and visualization of data. Theoretical sessions had consolidated with hands-on training on various tools such as BibExcel, VOS Viewer, etc. The programme also introduced R language for analysis of various Bibliometric indicators. Details of the lectures delivered by experts during the training programme are as follows:

Topics	Name of Expert and Institution
Research Impact Metrics: Calculation & Context	Dr. Kruti Trivedi, Scientist B (LS)
Graph Theory: Fundamentals	Mr. Hitesh Kumar, Scientist B (CS)
Tool and Techniques Part I (BibExcel)	Mr. Hitesh Kumar, Scientist B (CS)

(Demonstration & Practical)	
Advanced Search Technique of Web of Science (Demonstration & Practical)	Dr. Kruti Trivedi, Scientist B (LS)
Advanced Search Techniques of Scopus (Demonstration & Practical)	Dr. Kruti Trivedi, Scientist B (LS)
Co-authorship Analysis using BibExcel (Demonstration & Practical)	Mr. Hitesh Kumar, Scientist B (CS)
Co-Citation Analysis using BibExcel (Demonstration & Practical)	Mr. Hitesh Kumar, Scientist B (CS)
Bibliographic Coupling and H Index using BibExcel	Mr. Hitesh Kumar, Scientist B (CS)
Advanced Network and Cluster Analysis using BibExcel	Mr. Hitesh Kumar, Scientist B (CS)
Network Analysis in BibExcel using Alternative Data Sources (Demonstration & Practical)	Dr. Kruti Trivedi, Scientist B (LS)
Advanced Citation Analysis and Visualization using VOS Viewer (Demonstration & Practical)	Dr. Kruti Trivedi, Scientist B (LS)
Bibliometrics :Descriptive Analysis using R(Demonstration & Practical)	Mr. Hitesh Kumar, Scientist B (CS)
Network Analysis and Visualization using R(Demonstration & Practical)	Mr. Hitesh Kumar, Scientist B (CS)
Evaluating research performance of an Institute – case Study	Dr. Kruti Trivedi Scientist B (LS)
Advanced Analysis using R (Demonstration & Practical)	Mr. Hitesh Solanki, Scientist B (CS)
Altmetrics	Mr. Pallab Pradhan, Scientist B (LS)
Beyond Citation Analysis (Altmetrics – Demonstration and Practical)	Mr. Hitesh Solanki, Scientist B (CS)
Bibliometric Indicators and Rankings of University Research Performance	Mr. Abhishek Kumar, Scientist C (CS)
Academic Identity with reference to ORCID iD and IRINS	Mr. Kimidi Siva Shankar, Scientist B (LS)

Dr. Kruti Trivedi Scientist B (LS) and Mr. Hitesh Solanki, Scientist B (CS) coordinated the programme. Mr. Vijaykumar M Shrimali , Scientific & Technical Officer (CS), Ms. Shivani Thakur, Project Associate (LS), Mrs.Vichitra Adidravida, Project Associate (LS), Ms. Anita Kushwaha, Project Associate (LS), Mr. Sudam Sahu, Project Associate (LS), Mr. Divyanshu Jain, Project Assistant (LS) and Ms. Siddhita Parouha, Project Assistant (LS) were resource persons in practical sessions of the training programme. 40 participants including Dean, Scientist, IT professionals, LIS professionals and research

scholars attended the programme. The certificates of participation were distributed to all participants at the end of the programme. Dr. H. G. Hosamani, Scientist C (LS) extended a warm vote of thanks to participants and faculty.

4.5. Six-day Training Programme on e-Resources Access, Management and Usage Analysis, INFLIBNET Centre, Gandhinagar, 5th-10th August, 2019

Six-day Training Programme on e-Resources Access, Management and Usage Analysis was organized at INFLIBNET Centre, Gandhinagar from 5th to 10th August, 2019. Mr. Ashok Kumar Rai & Mr. Yatrik Patel Scientist E (CS), Mr. Dinesh R Pradhan, Scientist C (LS) and Mr. Raja V, Scientist B (CS) coordinated the Workshop. Mr Yatrik Patel, Scientist E (CS) welcomed the participants and gave an overview of the programme. Mr. Manoj Kumar K, Scientist E (CS), INFLIBNET Centre, inaugurated the Workshop. 21 participants from various parts of India attended the programme. Details of lectures delivered by experts during the training programme are as follows:

Topics	Name of Expert and Institution
Electronic Resources Management: Life Cycle, Licensing, Negotiation and more...	Dr. T S Kumbar, Librarian, IIT Gandhinagar
Overview ERM Software with special reference to CORAL	Mr. Dinesh Pradhan, Scientist C (LS)
Linux Command – Basics, CORAL Installation & Configuration	Mr. Hitesh Solanki, Scientist C (CS)
CORAL: Resources Module	Dr. Mitesh Pandya, Scientist C (LS)
Understanding License Agreements for subscription of e-Resources & Negotiation Skills	Mr. Ashok Kumar Rai, Scientist D (CS)
CORAL Licensing, Organization Module (Demonstration & Hands-on Practice)	Dr. Kruti Trivedi, Scientist C (LS)
COUNTER & SUSHI Usage Standards & CORAL Usage Statistics Module	Mr. Dinesh Pradhan, Scientist C (LS)
Economics & Evaluation of e-resources	Dr. Kruti Trivedi, Scientist C(LS)
CORAL Add-on Installation & Configuration with Hands-on Practice	Mr. Hitesh Solanki, Scientist C(CS)
Access Management of e-Resources (off-campus & on-campus)	Mr. Yatrik Patel, Scientist E (CS)
Internet Security	Mr. Gaurav Prakash, Scientist C (CS)
SSL Configuration	Mr. Hitesh Solanki, Scientist C(CS)
Shibboleth IdP Installation and configuration	Mr. Raja V, Scientist B (CS) & Ms. Vaishali, Project Assistant (CS)

LDAP and LDAP Account Manager configuration	Ms. Vaishali P, Project Associate (CS)
Hands-On: LDAP Account Creation	Mr. Raja V, Scientist B (CS)
REFEDS and EduGAIN Services	Mr. Raja V, Scientist B (CS)
Backup & Restore	Mr. Swapnil Patel, Scientist C (CS)
IRINS	Mr. Siva Shankar K, Scientist B (LS)
Federation 2.0	Mr. Raja V, Scientist B (CS)

4.6. One-day Workshop on IRINS: Adoption & Promotion, INFLIBNET Centre, Gandhinagar, 20th August, 2019

One-day Workshop on IRINS: Adoption and Promotion workshop was organized at INFLIBNET Centre, Gandhinagar on 20th August 2019. Mr Abhishek Kumar, Scientist D (CS), Mr Hitesh Solanki, Scientist C (CS), Mr K Siva Shankar, Scientist B (LS) and Mr. Kannan P, Deputy Librarian, Central University of Punjab, Bathinda coordinated the programme. Prof J P Singh Joorel, Director, INFLIBNET Centre, Gandhinagar, Sh Parameswaran N, Advisor MHRD and Dr H G Hosamani, Scientist D (CS) inaugurated the programme. Mrs Hema Cholin, Scientist B (LS) started the event with her welcome address and by introducing all the dignitaries graced the occasion followed by the lighting of the lamp ceremony. Mr Abhishek Kumar, Scientist D (CS) briefed about the workshop and the importance of IRINS. Sh Parameswaran N in his keynote address discussed the information explosion and its impact through the research output from the researchers across the country. He gave emphasis on the way the research output needs to be showcased in a better format. He envisaged the changes by implementing IRINS across all the Centrally Funded and other top-ranked institutes. Prof J P Singh Joorel in his inaugural speech addressed the participants about the role of IRINS in the higher education institutions, the way it needs to be taken forward by the respective stakeholders for wider visibility of the research output by implementing IRINS.

The sessions were started by a lecture delivered by Mr Hiteshkumar Solanki, Scientist C (LS) about "Research Information Management (RIM): Overview" followed by a (Skype) invited talk delivered by Dr. Pablo de Castro, Open Access Advocacy Librarian at the University of Strathclyde in Glasgow and Secretary of euroCRIS on "The role of Research Information Management in capacity building" presenting the RIM concept across the globe. The participants were made to understand the importance of academic identity and specifically about 'ORCID iD' through the lecture titled "Need for Academic Identity" delivered by Mr Siva Shankar K, Scientist B (LS). Later, Mr. Kannan P, Deputy Librarian, Central University of Punjab presented about "Introduction to Indian Research Information Network System (IRINS)".

The post-lunch sessions were given emphasis on IRINS workflow and case studies. Mr Kannan P and Mr Siva Shankar K made the participants to clearly understand the different levels of workflow mechanism by giving a live demo of "Implementation (workflow) of IRINS at Institutes''. The

workshop also witnessed two case studies presented by Dr Suresh Kumar BB, Deputy Librarian, IISc, Bengaluru and Mr Shivaram B S, Senior Technical Officer, NAL, Bengaluru briefing about their journey with IRINS the challenges and reviews were also explained to all the participants in brief. The participants actively participated in the open discussion giving their feedback and suggestions for the betterment of the IRINS.

Ms Shivani Thakur, Project Assistant (CS), Ms Jinal, Project Assistant (CS), Mr Nitesh, Project Assistant (LS), Mr Iliyas Mansuri, Project Officer (LS) and Mr Rathavi Viren, Office Assistant were the organizing team during the training programme. The certificates of participation were distributed at the end of the programme. 39 participants attended the programme.

4.7. Five-Day Advanced Training Programme on Bibliometric and Research Output Analysis, INFLIBNET Centre, Gandhinagar, 2nd– 7th September, 2019

The INFLIBNET Centre organized a five-day Advanced Training Programme on Bibliometric and Research Output Analysis from 2nd to 7th September 2019 at INFLIBNET Centre, Gandhinagar. The training programme provided a sound overview of bibliometric methods, bibliometric data sources, data processing and performance indicators related to bibliometric analysis and mapping. It has also provided awareness of most commonly used databases i.e. Web of Science and Scopus. Special emphasis has been given to advanced network analysis, interpretation and visualization of data. Theoretical sessions had consolidated with hands-on training on various tools such as BibExcel, VOS Viewer, etc. The programme also introduced R language for analysis of various Bibliometric indicators. Details of the lectures delivered by experts during the training programme are as follows:

Topics	Name of Expert and Institution
Research Impact Metrics: Calculation & Context	Dr. Kruti Trivedi, Scientist C (LS)
Graph Theory: Fundamentals	Mr. Hitesh Kumar, Scientist C (CS)
Tool and Techniques Part I (BibExcel) (Demonstration & Practical)	Mr Hitesh Kumar, Scientist C (CS)
Advanced Search Technique of Web of Science (Demonstration & Practical)	Dr Kruti Trivedi, Scientist C (LS)
Advanced Search Techniques of Scopus (Demonstration & Practical)	Dr Kruti Trivedi, Scientist C (LS)
Co-authorship Analysis using BibExcel (Demonstration & Practical)	Mr Hitesh Kumar, Scientist C (CS)
Co-Citation Analysis using BibExcel (Demonstration & Practical)	Mr. Hitesh Kumar, Scientist C (CS)
Bibliographic Coupling and H Index using	Mr Hitesh Kumar, Scientist C (CS)

BibExcel	
Advanced Network and Cluster Analysis using BibExcel	Mr Hitesh Kumar, Scientist C (CS)
Network Analysis in BibExcel using Alternative Data Sources(Demonstration & Practical)	Dr Kruti Trivedi, Scientist C (LS)
Advanced Citation Analysis and Visualization using VOS Viewer(Demonstration & Practical)	Dr Kruti Trivedi, Scientist C (LS)
Bibliometrics :Descriptive Analysis using R (Demonstration & Practical)	Mr Hitesh Kumar, Scientist C (CS)
Network Analysis and Visualization using R (Demonstration & Practical)	Mr Hitesh Kumar, Scientist C (CS)
Altmetrics	Mr Pallab Pradhan, Scientist C (LS)
Academic Identity with reference to ORCID iD and IRINS	Mr K Siva Shankar, Scientist B (LS)
Evaluating research performance of an Institute – case Study	Dr Kruti Trivedi, Scientist C (LS)
Advanced Analysis using R (Demonstration & Practical)	Mr Hitesh Kumar, Scientist C (CS)
Beyond Citation Analysis (Altmetrics – Demonstration and Practical)	Mr Hitesh Kumar, Scientist C (CS)
Bibliometric Indicators and Rankings of University Research Performance	Mr Abhishek Kumar, Scientist D (CS)

Dr Kruti Trivedi Scientist C (LS), Mr. Hitesh Solanki, Scientist C (CS) and Dr. H G Hosamani, Scientist D (LS) coordinated the programme. Ms Shivani Thakur, Project Associate (LS), Ms. Vichitra Venkatesan Adidravida, Project Associate (LS), Ms. Anita Kushwaha, Project Associate (LS), Mr. Divyanshu Jain, Project Assistant (LS) and Ms. Siddhita Parouha, Project Assistant (LS) were resource persons in practical sessions of the training programme. 7 participants including LIS professionals, Professors and research scholars attended the programme. The certificates of participation were distributed to all participants at the end of the programme.

4.8. Six-day National Workshop on Research Data and Statistical Analysis using R Programming, INFLIBNET Centre, Gandhinagar, 16th–21st September, 2019

Six-day National Workshop on Research Data and Statistical Analysis using R Programming was organized from 16th September to 21st September 2019 at INFLIBNET Centre, Gandhinagar. Mr Hitesh Solanki and Mr Divyakant Vaghela, Scientists C (CS) and Dr H G Hosamani, Scientist D (LS) coordinated the programme. The aim of this Workshop was to provide hands on training in understanding the concepts in data science and statistical analysis using R programming. The R programming language is one of the most widely used programming languages among the data

scientists and researchers. Details of lectures delivered by experts during the training programme are as follows:

Topics	Name of Expert and Institution
INFLIBNET Activities and Services	Mr Yatrik Patel, Scientist E (CS), INFLIBNET Centre
Introduction to R Programming (Installation, getting Started R, RStudio)	Mr Vijay Shrimali, STO (CS), INFLIBNET Centre
Data Types in R (Constants, vectors, matrix, dataframes, lists)	Mr Divyakant Vaghela, Scientist C (CS), INFLIBNET Centre
Introduction to R Programming (Data Handling in R)	Mr Divyakant Vaghela, Scientist C (CS), INFLIBNET Centre
Introduction to R Programming (Working with Functions, Summary Measures)	Mr Divyakant Vaghela, Scientist C (CS), INFLIBNET Centre
Data Visualization using R: Base, lattice and ggplot packages	Mr Hitesh Solanki, Scientist C (CS), INFLIBNET Centre
Statistical Analysis using R (Hypothesis Testing -I (Parametric))	Mr Hitesh Solanki, Scientist C (CS), INFLIBNET Centre
Statistical Analysis using R (Analysis of Variance (One Way and Two Way ANOVA))	Mr Hitesh Solanki, Scientist C (CS), INFLIBNET Centre
Statistical Analysis using R (Simple and Multiple Regression Analysis)	Dr R. D. Chaudhari, Associate Professor, M G Science Institute
Statistical Analysis using R (Hypothesis Testing -II (Non-Parametric))	Dr R. D. Chaudhari, Associate Professor, M G Science Institute
Statistical Analysis using R (Factor Analysis)	Prof J P Verma, Professor& Dean, Laxmibai Institute of Physical Education, Gwalior
Statistical Analysis using R (Logistic Regression)	Prof J P Verma, Professor& Dean, Laxmibai Institute of Physical Education, Gwalior
Statistical Analysis using R (Time Series Analysis)	Prof J P Verma, Professor& Dean, Laxmibai Institute of Physical Education, Gwalior

Reproducible Research using Rstudio (knitr and markdown packages, book down packages and blogs, website)	Dr R. D. Chaudhari, Associate Professor, M G Science Institute

The certificates of participation were distributed at the end of programme. 30 participants including IT professionals, LIS professionals and research scholars attended the programme.

4.9.   Six-day National Workshop on Research Methodology and Ethics: Anti-Plagiarism, Reference Management Tools and Altmetrics, INFLIBNET Centre, Gandhinagar, 23rd - 28th September, 2019

Six-day National Workshop on Research Methodology and Ethics: Anti-Plagiarism, Reference Management Tools and Altmetrics was organized from 23th to 28th September 2019 at INFLIBNET Centre, Gandhinagar. Mr Manoj Kumar K, Scientist E (CS) was the Coordinator and Mrs Suboohi Siddiqui, Scientist B (LS) co-ordinator for the Workshop.

Dr Savita Gandhi, HOD, Rollwala Computer Centre, Gujarat University, Ahmedabad inaugurated the Workshop. The aim of this workshop was to provide extensive theoretical and practical training related to research ethics and academic honesty, planning of research, qualitative academic writing and publications, design thinking for research, introduction to Plagiarism Detection Software (PDS) and URKUND, statistical methods for research, Reference Management Tools, Altmetrics: installation and practice, Bibliometric Indicators, UGC MOOCs and IRINS a Web-based Research Information Management System etc.

About 40 participants attended the workshop. Prof J P Singh Joorel, Director, INFLIBNET Centre gave an interactive session on an Overview of Research, Methodology and related Issues. Details of lectures delivered by various Scientists and external experts of INFLIBNET Centre during the training programme are as follows:

Topics	Name of Expert and Institution
An Overview of Research, Methodology and related Issues	Prof J P Singh Joorel, Director, INFLIBNET Centre
Research Methodology and Planning of Research	Dr Savita R. Gandhi HOD, Rollwala Computer Centre, Gujarat University
Qualitative Academic Writing and Publications	Dr Jagdish Joshi,

	UGC-Human Resource Development Centre, Gujarat University, Ahmedabad
1. INFLIBNET Activities and Introduction to PDS and URKUND 2. Introduction to Research Ethics and Academic Honesty 3. Managing URKUND: Monitoring and Creation of Accounts	Mr Manoj Kumar K, Scientist E (CS)
1. Institutional Repositories in Research: An Overview of Shodhganga/Shodhgangotri, 2. URKUND for Users: Account Activation in PDS and URKUND, 3. Document Submissions, Report Analysis in URKUND	Ms Suboohi S, Scientist B(LS)
UGC MOOCs: An Overview	Mr Abhishek Kumar, Scientist D (CS)
e-Resources for Research, Introduction to e-ShodhSindhu	Mr Dinesh Pradhan, Scientist C (LS)
Assessing and Evaluating Research Performance using Bibliometric Indicators	Dr Kruti Trivedi , Scientist C (LS)
IRINS is web-based Research Information Management (RIM)	Mr K Siva Shankar, Scientist B (LS)
URKUND: An Overview	Mr Prakash Sarda, eGalactic Pune
Statistical Methods for Research and Data Analysis using R	Mr Hitesh Solanki, Scientist C(CS)
1. Use of Reference Management Tools, Use of Mendeley, Zotero 2. Writing Research Report	Dr Miteshkumar Pandya, Scientist C (LS)
1. Altmetrics: An Overview, Installation and Practice, 2. Webometric Analyst 2.0	Mr Pallab Pradhan, Scientist B (LS)
Design Thinking for Research: MOOC Modules, Research Ethics in Conducting Research	Video Tutorials

4.10. Three-day Advanced Training Programme on Shodhganga and Plagiarism, INFLIBNET Centre, Gandhinagar, 11th - 13thDecember 2019

Three-day Advanced Training Programme on Shodhganga and Plagiarism was organized during 11th - 13th December 2019 at INFLIBNET Centre, Gandhinagar. Mr Manoj Kumar K, Scientist E (CS) and Mrs. Suboohi Siddiqui, Scientist B (LS) coordinated the Workshop. Prof J P Singh Joorel, Director, INFLIBNET Centre inaugurated the Workshop. The aim of this workshop was to provide extensive theoretical and practical training related to managing and uploading Theses into Shodhganga and also about Plagiarism issues, research ethics and academic honesty, introduction to ShodhShuddhi, i.e. Plagiarism Detection Software (PDS) and hands-on in URKUND software, etc. 43 participants attended the workshop from 15 States. Details of lectures delivered by the staff of INFLIBNET Centre during the training programme are as follows:

Topics	Name of the Experts
1. An Overview of INFLIBNET activities and Introduction to Shodhganga/Shodhgangotri/ Introduction to ShodhShuddhi and Plagiarism Detection Software 2. UGC Guidelines and Responsibilities of INFLIBNET/University 3. Introduction to ShodhShuddhi/Plagiarism Detection Software (PDS) Anti-Plagiarism Tools and Services	Mr Manoj Kumar K, Scientist E (CS), INFLIBNET Centre
ETD Programs/Projects at National/International Level: An Overview	Dr Lalitha Poluru, Head & Librarian, NID, Gandhinagar
Introduction to DSpace and Building IR	Mr Swapnil Patel, Scientist C (CS), INFLIBNET Centre
Subject Classification: Some features	Dr Miteshkumar Pandya, Scientist C(LS), INFLIBNET Centre
Introduction to Library Standards, Metadata and Dublin Core	Mr Dinesh Pradhan, Scientist C(LS), INFLIBNET Centre
1. Theses Submission in Shodhganga 2. Roles and Privileges of University Coordinators in Shodhganga 3. Theses Search Browse and Download	Mrs Suboohi S, Scientist B(LS), INFLIBNET Centre

Brief introduction on VIDWAN and IRINS	Mr K Siva Shankar, Scientist B(LS), INFLIBNET Centre
Hands on Practice	Shodhganga Team

5. Regional Training Programs on Plagiarism Detection Software URKUND

5.1. Northern Regional Training Programme on Plagiarism Detection Software URKUND, Chandigarh University, Chandigarh, 19th August, 2019

Northern Regional Training Programme on Plagiarism Detection Software (URKUND) for University Administrators was organized by the Knowledge Resource Centre, Chandigarh University, Mohali in collaboration with Information and Library Network Centre (INFLIBNET), Gandhinagar on 19th August, 2019. In this training programme, 108 participants from Himachal Pradesh, Delhi, Punjab, Haryana, Jammu & Kashmir, Uttarakhand and Rajasthan participated. Prof. (Dr) R.S. Bawa, Hon'ble Vice-Chancellor inaugurated the training programme. During the inauguration ceremony, Dr. M.S. Pathania, University Librarian-cum-Coordinator of the Programme welcomed the Chief Guest, Resource Persons, Scientists and participants and briefly introduced the training programme. Dr. Pathania urged the participants to make best use of this training programme being organized for upgrading the technical skills regarding uploading, checking similarity reports, managing university users etc. Mr. Manoj Kumar K, Scientist E (CS), INFLIBNET Centre, Gandhinagar briefly described the Plagiarism Detection Software & other activities of INFLIBNET in the country. Mr. Henning Sall, Global Expansion Manager, URKUND, Sweden and Mr. Prakash Sarda, Director, M/s eGalactic, Pune discussed and demonstrated in detail the Introduction to URKUND Plagiarism software. Thereafter, they organized the Hands on/ Demo of PDS. After this discussion, Question/Answer Session was conducted by the Technical Experts. In his presidential remarks, Prof. (Dr.) RS Bawa, Hon'ble Vice-Chancellor congratulated the Knowledge Resource Centre, Chandigarh University & INFLIBNET Centre for recognizing the importance of trained manpower for the detection of similarity and plagiarism and providing funds for the training programme. After the training programme, the summary & feedback on the programme was taken by Mr. Manoj Kumar K, Scientist E (CS), INFLIBNET Centre. Dr. M.S. Pathania, University Librarian proposed vote of thanks at the end of the programme. The certificates distributed to the participants in the concluding session.

5.2. Eastern Regional Training Programme on Plagiarism Detection Software URKUND, Indian Institute of Management Calcutta, Kolkata, 21st August 2019

The Eastern Regional Training Programme on Plagiarism Detection Software URKUND was organized at Indian Institute of Management Calcutta (IIMC) on 21st August 2019. It was a day-long workshop cum training event for the administrative users of the various higher educational institutions, namely, Universities and Centrally Funded Technical Institutes (CFTIs). The training was conducted in the juncture when trial access to the said PDS (URKUND) was active to all the admin users to provide free

full-fledged access to the faculty members and research scholars of all the Universities / CFTIs. The event was inaugurated by Prof. Anju Seth, the Honourable Director, IIM Calcutta in the august presence of Prof. Bodhibrata Nag, Dean-Academic, Prof. Ramendra Singh, Chairperson, LCSC, IIMC, Mr. Gurider Singh Malik, Advisor, MHRD, Mr. Manoj Kumar K., Scientist E (CS), INFLIBNET Centre and Dr N C Ghosh, Librarian, IIM Calcutta.

Mr Manoj Kumar K. elaborated the main objective of the said training programme and the role of the INFLIBNET Centre to the participants. He had given a broader understanding of plagiarism and the necessity of the PDS for maintaining the originality of the content and academic integrity in the higher educational institutes. He also cited many examples of unethical practices followed by the academicians in different places knowingly or unknowingly and the consequences faced for the incidents for awareness of the participants.

Mr. Prakash Sarda from M/S egalactic and Mr Henning Sall from URKUND conducted the hands-on training of the software to the participants mostly the admin users from various Universities and CFTIs. The training was intended to build confidence among the admin users for carrying messages about the Plagiarism Detection Software – URKUND and how to make use of that in their respective organizations. It was thoroughly interactive, and the participants raised lots of questions to the resource persons. Mr Prakash, Mr Henning Sall and especially Mr Manoj Kumar answered all the issues raised by the participants with the utmost care and sincerity. 93 participants from 35 Universities and 15 CFTIs participated in the programme. The training was attended by the faculty members, librarians and the academic administrators as admin users. It was a very fruitful event with complete exposure of the PDS – URKUND and will help all the admin users to implement the system confidently and successfully in their respective University / CFTI.

5.3.   Northeast Regional Training Programme on Plagiarism Detection Software URKUND, North-Eastern Hill University, Shillong, 23rd August 2019

Northeast Regional Training Programme on Plagiarism Detection Software (PDS) URKUND was organised at the Multi-Use Convention Hall, North-Eastern Hill University Campus, Shillong on 23rd August 2019. The programme was jointly organized by Central Library, NEHU, Shillong and INFLIBNET Centre, Gandhinagar under the aegis of the Ministry of Human Resource Development, Government of India. The training programme was the outcome of the urgent need to sensitise URKUND Administrators and Users on the implementation of PDS-URKUND in higher education especially those including in the North-Eastern Region of the country.

The Inaugural Session commenced with a welcome address by Dr. J.N. Nayak, Registrar, NEHU, Shillong who extended a warm welcome to the resource persons and all the 159 participants from different institutions of higher and technical education of the region. Mr. Manoj Kumar K, Scientist-E (CS), INFLIBNET Centre, Gandhinagar presented a brief outline of the programme with particular

emphasis on the ethical dimensions of plagiarism in research and publications. Prof. H. Lamin, Pro Vice-Chancellor, NEHU, Shillong, while presenting the inaugural address, spoke about the changing academic scenario wherein technology has made a tremendous impact on the quality of scholarly information generation and dissemination. He also stressed upon the need to maintain originality in research including publications which is one aspect of research ethics. The Inaugural Session was concluded with the vote of thanks proposed by Dr. F.R. Sumer, Librarian In-Charge, NEHU, Shillong.

The Technical Session started with a very interactive presentation on "Introduction to Ethics and Plagiarism" by Mr. Manoj Kumar K, Scientist-E (CS), INFLIBNET Centre, Gandhinagar. Mr. Manoj Kumar K spoke at length about ethics in scholarly writing, with emphasis on the pitfalls and consequences of plagiarism in the present-day scholarly environment. The presentation also witnessed a lively interaction between the resource person and the participants who sought clarification on relevant issues relating to the implementation and administration of URKUND. The tutorial presentation on "Training on the Use of URKUND for Admins and Users" by Mr. Henning Sall, Global Expansion Manager, URKUND (Pro Infocenter AB, Sweden) highlighted the enhanced features of URKUND. The presentation drew much attention, particularly from among the participant URKUND Administrators. Suggestions to incorporate specific and enhanced features in URKUND as expressed by the existing Administrators were also promptly noted by the resource person. Mr. Prakash Sarda, Director, eGalactic, Pune also interacted with the participants on issues relating to subscription, implementation and software support for URKUND.

The highlight of the training programme was the exhaustive presentation on various aspects of URKUND and all the participants collectively commended the joint organizers and the URKUND corporate team for the highly informative presentations. The programme concluded with the presentation of mementos to the resource persons and certificates of participation to the participants.

5.4.   Southern Regional Training Programme on Plagiarism Detection Software URKUND, Cochin University of Science and Technology, Cochin, 27th August, 2019

CUSAT, Cochin, Kerala in association with INFLIBNET Centre, Gandhinagar, MHRD-Govt. of India, UGC and e-Galactic conducted Regional Training Programme for Plagiarism Detection Software-URKUND, Sweden at Seminar Complex CUSAT, Cochin on 27th August, 2019. There were 237 participants from the various parts of the country participated in the regional training programme. Participants were a heterogeneous group comprising of faculties, librarians, engineers, coordinators of URKUND, technical persons, information scientists, programmers, research scholars etc.

Prof. (Dr.) K.N Madhusoodanan, Honourable Vice-Chancellor, CUSAT inaugurated the programme. He stressed the need for these programmes in maintaining academic integrity. Mr. Manoj Kumar K Scientist E (CS), INFLIBNET introduced the concept of plagiarism and conveyed the importance of conducting these kinds of programmes. Prof. (Dr.) Sunoj S.M Syndicate Member, CUSAT and Mr.

Henning Sall, URKUND, Sweden, Global Expansion Manager felicitated the gathering. Dr. Veerankutty C, Deputy Librarian, CUSAT welcomed the gathering. Dr. Shibu Ray. S, Assistant Librarian CUSAT proposed the vote of thanks.

First technical session was handled by Mr. Manoj Kumar K Scientist-E (CS), INFLIBNET Centre, Gandhinagar. He elaborated the concept and types of plagiarism. He also described the penal actions associated with plagiarism, and highlighted some of the prominent cases associated with plagiarism from various disciplines. Second session was handled by Mr. Henning Sall, URKUND, Sweden, Global Expansion Manager. He briefly described URKUND and the content it possesses. Third technical session was handled by Mr. Prakash Sarda, Director, e-Galactic. He described in detail the customization process of URKUND and explained how to create administrator and user accounts. The account limits, uploading procedure, report generation and issues associated with checking of documents again etc was also discussed.

This was followed by a discussion, question and answer session. Mr. Manoj Kumar K., Scientist E (CS), INFLIBNET Centre, Gandhinagar handled this session. Participants raised various queries in this session and Mr. Manoj Kumar and experts from URKUND clarified the doubts. Several participants shared their feedback on the programme. Dr. Veerankutty C, Deputy Librarian, CUSAT extended vote of thanks at the end of the training programme.

5.5.   Western Regional Training Programme on Plagiarism Detection Software URKUND, MGM Institute of Health Sciences, Navi Mumbai, 29th August, 2019

The Western Regional Training Programme on Plagiarism Detection Software was organised at MGM Institute of Health Sciences, Navi Mumbai on 29th August, 2019. Delegates from Four States of Western Region of India, Gujarat, Rajasthan, Maharashtra, Goa and Karnataka participated in the workshop. A total no of 161 participants registered from 83 Universities and Institutions. Dr. Sabita M Ram, Director (Research) was the organizer on behalf of MGM Institute of Health Sciences (MGMIHS) and Dr. Himanshu Gupta who was the coordinator for the workshop. Mr. Gurinder S Malik, Senior Consultant, MHRD was the guest of honor and Mr. Manoj Kumar K, Scientist-E (CS) from INFLIBNET was the speaker and honoured guest. The Vice Chancellor Dr. Shashank D Dalvi and Registrar Dr. Rajesh B Goel of the MGM Institute of Health Sciences, presided over the function. The URKUND Team were the technical resource persons for demo and hands-on.

The program started with the inauguration with a houseful of participants. Dr. Rajesh B Goel, Registrar, MGMIHS welcomed the dignitaries and delegates to the MGMIHS for the workshop. He expressed the need to have such workshops to utilize and get familiar with the software. The Vice Chancellor emphasized the need to detect plagiarism and the research today must be more innovative and not copied from other researchers. One should be original in their research writing. Mr. Gurinder S Malik appreciated the large number of participants. He made a point that the MHRD is taking up the

project through INFLIBNET to stop plagiarism in a big way and all Universities/Institutes must be vigilant when research thesis of PhD and Research Publications are concerned and must have original Research writing. Mr. Manoj Kumar has brought about the need of Software for detecting plagiarism, which would objectively detect plagiarism. URKUND has been introduced for detection of Plagiarism and has a number of features to detect similarity. Dr. Sabita M Ram extended vote of thanks at the end of inauguration function.

The workshop started with a presentation by Mr. Manoj Kumar K on Introduction to Ethics & Plagiarism, which was very interesting and brought out the need to be ethical in research writing and if not the consequences to be faced by the plagiarists. There was interaction amongst the speaker and participants to clarify their doubts. URKUND Team Mr. Henin Sall presented the software and explained how it has been designed to detect plagiarism.

Mr. Prakash Sarda   took hands-on training on the URKUND software programme, which was very interesting. The participants interacted enthusiastically and the session was informative and can be easily utilized for detection of plagiarism. Mr. Manoj K Kumar, concluded the workshop taking queries and questions which he answered to the delegates' satisfaction. The participants were requested to give feedback on the program through the google form. The feedback received from the participants was overwhelmed and was satisfied with the conduction of the program. Few suggestions for increasing the time for hands-on as well as focused training for admin were given.

Dr. Sabita M Ram, Director (Research), thanked one and all and handed over the participation certificates. MGMIHS, thanked Prof J P Singh Joorel, Hon'ble Director of INFLIBNET Centre for giving the golden opportunity to conduct the regional level PDS workshop at their Institute.

5.6.   Central Regional Training Programme on Plagiarism Detection Software URKUND, Devi Ahilya Vishwavidyalaya (DAVV), Indore, 18th September 2019

The Central Regional Training Programme of Plagiarism Detection Software URKUND was organized at Devi Ahilya Vishwavidyalaya (DAVV) on 18th September 2019. It is not only significant to put regulations in place, but it is pertinent that the stakeholder are provided with tools and training to achieve the mandated objective. The MHRD through INFLIBNET Centre, Gandhinagar and URKUND (a product of e-Galactic PE of Sweden) has provided universities a tool i.e., Plagiarism Detection Software termed URKUND. Through a series of training programmes it is trying to impart the ability to the institutions to check and curb the menace of academic dishonesty.

DAVV has been represented by Prof. Pratosh Bansal in INFLIBNET Centre and it was due to his diligent efforts that this training programme (sixth in the series) was allotted to DAVV Indore. DAVV through its Central Library and In-Charge Librarian Prof. Ajay Kumar took up this challenge to organize this programme within a span of four days. The INFLIBNET Center was represented by Mr. Manoj Kumar K., Scientist-E (CS); e-Galactic PE Sweden was represented by Mr. Prakash Sarda.

Hon'ble Vice Chancellor Prof. Renu Jain inaugurated the training programme, she stressed on the fact that 'academic dishonesty or plagiarism' is a major concern and is being used to vindicate academicians. There have been many instances where even Vice-Chancellors have been asked to step down due to the appearance of plagiarised content in theses and research articles.

Speaking on the occasion Mr. Manoj Kumar K., Scientist-E (CS) from INFLIBNET Centre stressed that our education system relies on reproduction and very little importance is put on original thinking or creation. However, suddenly when the student gets to the masters level, they are expected to produce original scripts. He further explained that due to easy availability of matter on the internet, it becomes easy and tempting for students to copy. While at the same time the same aspect is responsible for detection as well. Mr. Prakash Sarda of e-Galactic, Pune demonstrated the features of the software URKUND to the participants. He showed the modes of document submission and the analysis. Training to the university administrators to create and manage the tool was imparted. Queries, concerns and doubts were addressed and Participants appreciated the training programme.

The programme was attended by heads of departments, senior faculty members, researchers, librarians, and representatives of various public and private universities of the Central Region including Madhya Pradesh, Chhattisgarh, Uttar Pradesh and Uttarakhand. There were 181 participants who participated in this training programme.

6. User Awareness Programme on Plagiarism Detection Software

6.1. User Awareness Programme on Plagiarism Detection Software (PDS), Indian Institute of Management Lucknow, Lucknow, 18th January 2020

Indian Institute of Management Lucknow (IIML) organized a user awareness programme in collaboration with Information and Library Network Centre (INFLIBNET), Gandhinagar on access and use of plagiarism detection software subscribed under ShodhSuddhi programme on 18th January 2020. During the inaugural session, Mr M K Singh, Librarian, IIML welcomed the participants and dignitaries, Prof. Sanjay Kumar Singh, Dean (Faculty) addressed the gathering and highlighted the importance of checking plagiarism before publishing scholarly publications and appreciated the efforts of INFLIBNET in enabling the academic institutions of the country to have plagiarism detection software.

Mr Ashok Kumar Rai, Scientist E (CS), INFLIBNET Centre also addressed the gathering and briefed the participants about the activities of INFLIBNET Centre, and gave a detailed presentation about e-ShodhSindhu. Mr Prakash Sarda and Mr Gautam Raval, representatives of the plagiarism software gave detailed step by step procedure to use the software under the two technical sessions entitled technical session and admin session. About 80 participants, including faculty members and research scholars of IIML, Librarian, research scholars and faculty members of Lucknow based institution attended the workshop. Mr Sanjay Degloorkar, Assistant Librarian proposed the vote of thanks at the end of the programme.

7. Region-Wise National Workshops on Indian Research Information Network System (IRINS)

7.1. One-day National Workshop on Indian Research Information Network System (IRINS): Adoption and Promotion, Banaras Hindu University, Varanasi, Uttar Pradesh, 10th January 2020

One-day National Workshop on Indian Research Information Network System (IRINS): Adoption and Promotion was organized by Sayaji Rao Gaekwad Library (Central Library), Banaras Hindu University, Varanasi in collaboration with the Information and Library Network (INFLIBNET) Centre, Gandhinagar and Institute of Science, BHU on 10th January 2020 at Seminar Complex, Institute of Science, BHU. Dr Dewendra Kumar Singh, Librarian, Central Library, BHU welcomed the Chief Guest, Scientists of INFLIBNET Centre and the participants, and also gave a brief introduction about the workshop. Prof A K Tripathi, Director, Institute of Science delivered the keynote address. Mr Abhishek Kumar, Scientist D (CS), INFLIBNET Centre, Gandhinagar delivered a lecture about 'Research Information Management (RIM), IRINS data workflow, its key features and functionalities and ORCID ID as an academic identity to the systematic update of publications. During his informative lecture, he was accompanied by Mr Hitesh Solanki, Scientist C (CS), INFLIBNET Centre. They focused on the importance of IRINS to showcase the scholarly communication activities and how it provides an opportunity to create a scholarly network of every higher educational institution and faculty members. They created a separate webpage of IRINS for BHU fraternity at *bhu.irins.org*. The session was quite interesting and fruitful because participants were actively involved and interacted, and their queries were answered by the resource persons. Dr Vivekanand Jain proposed the vote of thanks at the end of the programme. More than 300 participants from various Institutes and Faculties of theBanaras Hindu University and other reputed colleges of Varanasi and Kangana, Himachal Pradesh and Bihar attended the programme.

7.2. One-day National Workshop on Indian Research Information Network System (IRINS): Adoption & Promotion, University of Hyderabad, Hyderabad, Telangana, 24th January 2020

One-day National Workshop on Indian Research Information Network System (IRINS): Adoption & Promotion was organized by the Indira Gandhi Memorial Library, University of Hyderabad (UoH) in collaboration with the Information and Library Network Centre (INFLIBNET), Gandhinagar on 24th January 2020. Dr N Varatharajan, University Librarian welcomed the guests and participants. Prof P Prakash Babu, Dean, Medical Sciences, UoH inaugurated the workshop. Dr B Ravi, Librarian welcomed the Chief Guest, the Scientists from INFLIBNET Centre and the participants, and briefly introduced about the workshop. Mr Hitesh Solanki, Scientist C (LS), INFLIBNET Centre delivered a lecture about "Research Information Management (RIM) and the importance of IRINS". Mr K Siva Shankar, Scientist B (LS), INFLIBNET Centre delivered a lecture on "Faculty Profile and its Academic Identity" focusing on the creation of academic identity. The sessions were fruitful as the participation was interactive, all the queries posed by the participants were answered by the resource persons. Dr Siva Sankar Prasad, Deputy Librarian proposed the vote of thanks at the end of the programme. The

certificates of participation were distributed during the concluding session. More than 80 participants from various academic institutions in and around the state of Telangana attended the programme.

7.3. One-day National Workshop on Indian Research Information Network System (IRINS): Adoption & Promotion, Alagappa University, Karaikudi, Tamil Nadu, 08th February 2020

One-day National Workshop on Indian Research Information Network System (IRINS): Adoption & Promotion was organized by the Department of Library and Information Science, Alagappa University, Karaikudi in collaboration with the Information and Library Network Centre (INFLIBNET), Gandhinagar on 08th February 2020. Dr S Thanuskodi, Professor & Head, Department of Library and Information Science welcomed the Chief Guest Prof N Rajendran, Vice-Chancellor, Alagappa University, Mr H S Siddamalliah, Librarian, Rajiv Gandhi University of Health Sciences and Mr Sanjeev Kumar Singh, Rashtriya Uchchatar Shiksha Abhiyan Coordinator of Alagappa University, Mr Kannan P, Deputy Librarian, Central University of Punjab, Mr Hitesh Kumar Solanki, Scientist C (CS), INFLIBNET Centre and the participants of the workshop. Hon'ble Vice-Chancellor, Prof N Rajendran, in his presidential address, addressed the gathering about the importance of research and the role of librarians. He emphasized that "the root of good teaching is nourished by the soil of good research". He conveyed a message to all the research community in the University to work with integrity, passion and social relevance so that the results found can be used as inputs for policymaking purposes. Mr H S Siddamalaih, Librarian, Rajiv Gandhi University of Health Sciences in his inaugural speech, said the library could play a vital role in providing and assisting language correction to data analysis. Mr Sanjeev Kumar Singh, Rashtriya Uchchatar Shiksha Abhiyan Coordinator of Alagappa University said the library on the campus was home to a wide range of books and journals, thanks to financial assistance from schemes such as RUSA. 100 participants who actively participated from various academic institutions in and around the state of Tamil Nadu. Mr Kannan P, Deputy Librarian, Central University of Punjab delivered a lecture about "RIM & IRINS" followed by a lecture by Mr Hitesh Solanki, Scientist C (LS), INFLIBNET Centre, Gandhinagar about "Role of Academic Identity in Scholarly Communication System-ORCID".

Technical sessions were held and case studies were shown in the post-lunch sessions. Mr Kannan P and Mr Hitesh Solanki made the participants to clearly understand the different levels of workflow mechanism by giving a live demo of "Implementation of IRINS and its workflow administration". The workshop also witnessed IRINS Implementation: Experience and challenges shared by the Nodal Officers of IRINS from 'National Institute of Technology, Trichy', 'Central University of Tamil Nadu' and 'Annamalai University'. The participants actively participated in the open discussion by giving their feedback and suggestions for the betterment of the IRINS. The certificates of participation were distributed at the concluding session.

7.4. One-day National Workshop on Indian Research Information Network System (IRINS): Adoption & Promotion, INFLIBNET Centre, Gandhinagar, Gujarat, 27th February 2020

One-day National Workshop on Indian Research Information Network System (IRINS): Adoption and Promotion was organized at INFLIBNET Centre, Gandhinagar on 27th February 2020. Mr Abhishek Kumar, Scientist D (CS), Mr Hitesh Solanki, Scientist C (CS), Mr K Siva Shankar, Scientist B (LS) and Mr Kannan P, Deputy Librarian, Central University of Punjab, Bathinda coordinated the programme. Prof J P Singh Joorel, Director, INFLIBNET Centre, Gandhinagar inaugurated the programme. 23 participants across the country participated in the workshop. Mr K Siva Shankar, Scientist B (LS) delivered a welcome address by introducing all the dignitaries graced the occasion followed by the lighting of the lamp ceremony. Mr Abhishek Kumar, Scientist D (CS) briefed about the workshop and the importance of IRINS. Prof J P Singh Joorel, Director, in his inaugural speech, discussed the information explosion and its impact through the research output from the researchers across the country. He wished the participants should be the brand ambassadors for the IRINS in their respective institutions and need to be taken forward by the respective stakeholders for the wider visibility of the research output by implementing IRINS. Mr Hitesh Solanki, Scientist C (CS) extended a formal vote of thanks at the end of the inaugural session.

The technical sessions were started by a lecture delivered by Mr Kannan P, Deputy Librarian, the Central University of Punjab, about "Introduction to Indian Research Information Network System (IRINS)". In the post-lunch sessions, participants were made to understand the importance of academic identity and specifically about 'ORCID' through the lecture titled "Role of Academic Identity in Scholarly Communication System - ORCID" delivered by Mr Hitesh Solanki, Scientist C (CS). Mr Abhishek Kumar, Scientist D (CS) and Mr K Siva Shankar, Scientist B (LS) gave a formal presentation focusing on "Implementation of IRINS and its workflow, the administration", and later the participants were made to understand the different levels of workflow mechanism by giving a live demo. The participants actively participated in the "Open discussion regarding IRINS and its features" giving their feedback and suggestions for the betterment of the IRINS.

Mr Iliyas Mansuri, Project Officer (LS), Ms Mamta, Senior Project Associate (CS) and Ms Trupti Barot, Senior Project Associate (LS), Mr Viren Rathavi Viren, Office Assistant, and Mr Nitesh, Project Assistant (LS) were the organizing team members during the National Workshop. The certificates of participation were distributed at the end of the Workshop.

8.   SOUL User Meet-2020

8.1. One-day SOUL User Meet-2020, University of Mumbai, Mumbai, 25th February 2020

The INFLIBNET Centre jointly organized One-day SOUL User Meet-2020 at Institute of Distance and Open Learning (IDOL), University of Mumbai, Mumbai on 25th February 2020 with the following objectives:

- To know the active usage of different modules of SOUL software and suggestions;
- To get feedback and suggestions from all users, related to operational modules of SOUL software;
- To increase the efficiency of SOUL software and its services at the regional level;
- To discuss the new SOUL 3.0, advanced features and implementation; and
- To strengthen operational and support services in the new version of SOUL.

75 participants have participated from various parts of Maharashtra. Dr Kavita Laghate, Director, IDOL, University of Mumbai welcomed the resource persons and participants. She expressed good concerns about SOUL User Meet and said that this would surely encourage the librarians to strengthen the library automation and its services. Miss Nalini Raja, former SOUL Coordinator, Maharashtra & Goa coordinated the meeting.

The first session was handled by Dr H.G. Hosamani, Scientist D (LS), INFLIBNET Centre.He mentioned about the support extended by university/college librarians for SOUL 2.0 software, and also summarized the survey report conducted by INFLIBNET on the effective use of various modules in the SOUL 2.0 and new suggestions incorporated in the SOUL 3.0 software. He also mentioned about training programmes and support services at a regional level. More than 3,700 SOUL 2.0 installations across the country. Maharashtra is the second-highest users of SOUL software.

In the second session, Mr Divyakant Vaghela Scientist-C (CS), INFLIBNET Centre demonstrated regarding the new version of SOUL 3.0 software step by step. He informed the various changes of SOUL 2.0 software, different modules and reports, upgrade that has been made in the new version, SOUL 3.0 software. Then open house session was conducted for SOUL users to know issues related to the SOUL 2.0. Their suggestions were recorded for improvement in SOUL 3.0. Finally, Dr Kavita Laghate distributed the certificate to participants, and Miss Nalini Raja extended a vote of thanks to Prof JP Singh Joorel, Director, INFLIBNET Centre for such initiative. At last, she thanked both the scientists of INFLIBNET, the staff of IDOL, University of Mumbai, and all the participants. The meet successfully ends up with suggestions and feedback followed by thanks and appreciations.

8.2. One-day SOUL User Meet-2020, Makhanlal Chaturvedi University of Journalism and Communication, Bhopal, 2nd March 2020

The INFLIBNET Centre organized One-day SOUL User Meet-2020 in collaboration with Govt. College Narela, Bhopal and Makhanlal Chaturvedi University of Journalism and Communication Bhopal on 2nd March 2020 at Makhanlal Chaturvedi University of Journalism and Communication Bhopal with following objectives:

- To know the active usage of different modules of SOUL software and suggestions;
- To get feedback and suggestions from all users, related to operational modules of SOUL software;
- To increase the efficiency of SOUL software and its services at the regional level;

• To discuss the new SOUL 3.0, advanced features and implementation; and

• To strengthen the operational and support services in the new version of SOUL software.

127 participants participated from various parts of Madhya Pradesh. The programme was inaugurated by Dr Deepak Tiwari Vice-Chancellor, Makhanlal Chaturvedi University of Journalism and Communication Bhopal. The programme was presided over by Dr Veena Mishra, In-charge Principal, Govt. College Narela Bhopal. In her speech, she mentioned about achievements on the automation process using SOUL 2.0 Software. The Chief Guest Dr Deepak Tiwari, Vice-Chancellor has expressed his views about the present library system and also the usefulness of SOUL 3.0 Software for library automation. He has also said that the university library is constantly working to improve the quality of library services using the services offered by INFLIBNET Centre.

Mr Yatrik Patel, Scientist-E (CS), INFLIBNET Centre mentioned that SOUL 2.0 software is being used in the libraries of most colleges and universities in the country. He highlighted the INFLIBNET initiatives about New SOUL3.0 software and services. The organizing Secretary Dr Rakesh Khare, Librarian Govt. College Narela Bhopal expressed that the SOUL User Meet would surely encourage the librarians to strengthen the library automation and its services. He also said Higher Education of Madhya Pradesh has played an important role in providing SOUL software to its all Govt colleges for library automation.

The first session was handled by Dr H.G. Hosamani, Scientist-D (LS), INFLIBNET Centre. He summarized the survey report conducted by INFLIBNET on the effective use of various modules in the SOUL 2.0 and new suggestions incorporated in the SOUL 3.0 software. He also mentioned about training programmes and support services at the regional level. He informed the participants that the SOUL 2.0 has approximately 3700+ installations across the country, and is the most installed software in the country for library automation. Further, he informed that the State Governments like Gujarat, Madhya Pradesh, Haryana, and Andhra Pradesh have fully automated their libraries using SOUL Software. During the second session, Mr Yatrik Patel, Scientist E (CS), INFLIBNET Centre demonstrated the new version of SOUL 3.0 software step by step and briefed about the various improvements in different modules and reports in the upgraded version, SOUL 3.0 Software. Then an open house session was conducted for SOUL users to know issues related to the SOUL 2.0. Their suggestions were recorded for improvement in SOUL 3.0.

At the closing ceremony, the Chief Guest, Prof Anurag Seetha, Makhanlal Chaturvedi University of Journalism and Communication Bhopal. Madhya Pradesh Mahavidhyalyeen Pustakalay Adhikari Sangh felicitated Mr Yatrik Patel, Scientist-E (CS), INFLIBNET Centre in recognition of his outstanding contribution in developing SOUL Software which is used in college and university libraries in Madhya Pradesh and Dr H.G. Hosamani, Scientist D (LS), INFLIBNET Centre in recognition of his outstanding contribution in implementing and guiding the use of SOUL 2.0 software which is used in college and university libraries in Madhya Pradesh and for their contribution in this field. The Chief Guest, Prof

Anurag Seetha then gave a participation certificate to the participants. In the end, Dr Rakesh Khare gave the vote of thanks to INFLIBNET for making this meet happen. He also thanked Mr Deepak Tiwari, Vice-Chancellor, Makhanlal Chaturvedi University of Journalism and Communication Bhopal for extending infrastructure to hold the meet and also accepting the invitation as Chief Guest. He appreciated and thanked Mr Anurag Seeha, Dr Aarti Sarang, Mr Somesh Kumar & Sughar Singh (the Makhanlal Chaturvedi University of Journalism and Communication Bhopal) for their great support in conducting the meet. He also thanked Prof J P Singh Joorel, Director, INFLIBNET centre for such initiative. At last, he thanked both the scientists of INFLIBNET Centre, the staff of Colleges and Universities, and also all the participants. The meet was successfully ended with thanks & appreciation all around.

Part - IV

Infrastructure Facilities, Distinguished Visitors, Other Important Activities
and
Financial Status

1. Central Facilities

1.1. Library (http://www.inflibnet.ac.in/library/)

The INFLIBNET Centre has a specialized library having a unique collection on library and information science, computer science, communication and information technology. The library is fully computerized using SOUL 2.0 integrated library management software. The library has around 2,300 documents including books, proceedings, journal Bound Volumes and magazines. The collection of the library is available online through the web OPAC at http://www.inflibnet.ac.in/library/. Fig. 57 shows a library of the INFLIBNET Centre.

Fig. 57: INFLIBNET Centre's Library

The INFLIBNET Library plays a vital role in the collection development and dissemination of scientific and technical information to meet the present and future needs of the Centre.

1.1.1. Library Services

The library provides the following services to its users:

a) Reference Service
b) Document Delivery Service
c) Current Awareness Service
d) Inter-Library Loan Service
e) Electronic Information Service
f) Reprographic Service

1.1.2. Access to Online Databases

The Centre subscribes to the web edition of the Ulrich's International Periodical Directory, a web-based bibliographic database of periodicals that are being used for authentication of bibliographic records in union catalogues and for other activities. The database accessible on INFLIBNET's IPs is also accessible to visiting users. Besides, the Centre is the executing and monitoring agency for e-ShodhSindhu has access to all e-journals, e-books and bibliographic databases subscribed under this programme.

1.2.   IR @ INFLIBNET (http://ir.inflibnet.ac.in)

The Centre has established an institutional repository called IR@INFLBNET using DSpace, open-source software accessible at http://ir.inflibnet.ac.in. The papers published in the proceedings of the CALIBER and PLANNER are uploaded into the repository. The Repository also includes course materials, newspaper clippings, etc. The repository has 1,859 full-text articles.

1.3.   Institutional Members

The Centre has institutional membership of following national and international organizations:

- ADINET (Ahmedabad Library Network)
- American Library Association (ALA)
- British Library, Ahmedabad
- Computer Society of India (CSI)
- EuroCRIS
- Indian Association of Special Libraries and Information Centres (IASLIC)
- Indian Library Association (ILA)
- National Information Standards Organization (NISO)
- The International Federation of Library Associations and Institutions (IFLA)
- The Networked Digital Library of Theses and Dissertations (NDLTD)

2.   ICT Infrastructure@INFLIBNET Centre

The main objective of the Centre is to provide proactive help to the universities in library automation and to mediate resource sharing amongst them. The computing and network infrastructure are the main assets of the Centre, which is designed and planned based on the requirements of schemes, projects and activities of the Centre, its scientists and staff. Basic infrastructural facilities such as Computer Laboratories, Walk-in User's Facility and Data Centre are being maintained to support all its essential computing activities.

2.1. Servers, Desktops and Laptops

The Centre has added more PCs, Laptops, gadgets and other equipment with high configuration in 2019-2020 with a total no. of 211 PCs, 49 laptops and 29 servers for scientists, project staff, walk-in User's Facility, Training Laboratories, etc. 29 servers include servers that are installed at the Data Centre of INFLIBNET Centre either as staging servers for hosting services such as Web services, INFLIBNET Website, Shodhganga, N-LIST, N-LIST Proxy Server, InfoPort, e-PG Pathshala, IndCat, DNS server, Intranet server, UGC website, e-SARTS, etc. or as development servers as well as servers that are co-hosted at BSNL Data Centre for mirroring mission-critical services.

The IT infrastructure at INFLIBNET is being upgraded to cope-up with the cutting edge technology as well as to meet the requirements of high-ended, storage-intensive and mission-critical computing. During the year under report, the Centre acquired the following addition computing and network infrastructure:

Sl. No	Computer and Network Equipment	Quantity
1	Server	3
2	SAN Box	1
3	Desktop	12
4	Laptops	2
5	Firewall	2

Table 53: Computing and Network Infrastructure Acquired During 2019 - 2020

Fig. 58 depicts the thematically representation of the Data Centre at the INFLIBNET Centre, Gandhinagar.
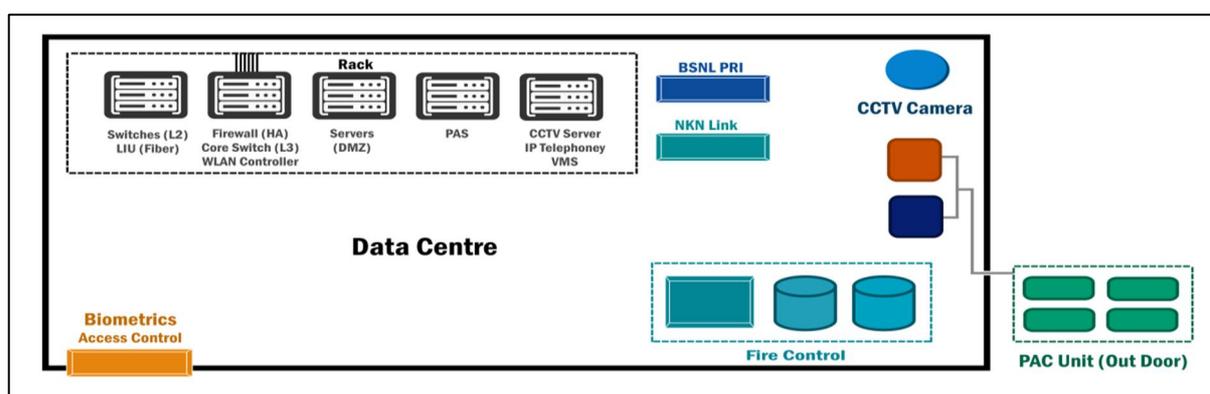
Fig. 58: Thematical Representation of Data Centre at INFLIBNET Centre

The Centre also uses services of BAADAL Cloud maintained by IIT Delhi as an NMEICT initiative of the MHRD.

2.2. Campus-LAN and Internet Connectivity

The Centre provides most of its services through the Internet on a 24x7x365 basis. The network infrastructure is one of the most important components providing efficient and effective services to remote and local academic users. The Centre has upgraded network infrastructure that connects all its offices and laboratories with National Knowledge Network (NKN) that provides 1 Gbps MPLS (Multi-Protocol Layer Switching) connectivity to all universities in India. The bandwidth is currently used within a limit of 150-250 Mbps, but it can be increased on-demand based on bandwidth-intensive applications up to 1 Gbps. INFLIBNET Centre has two Internet connections, i.e. one from NKN and other from BSNL for redundancy. Access to e-resources is enabled on all sets of IP addresses used by the Centre. STM (Synchronous Transfer Mode) equipment at Centre is connected through Optical Fibre to Gandhinagar node of NKN on ring topology. During the period of Report NKN provides the second physical path for the 1Gbps line in case of physical damage to any single line. This gives redundancy of NKN links and the architecture of the NKN is enabled to reach all universities with minimum hops. Any university can be reached with minimum hops on NKN and this gives INFLIBNET an advantage of serving the universities with good speed and higher data transfer.

The network is running over managed L3 switches and managed L2 switches with 40 Gbps ready network with structured cabling, rack, I/Os, jack panels, etc. as shown in Fig. 59. A dedicated firewall appliance is purchased with a subscription to anti-virus, anti-spam and intrusion detection systems. PCs and laptops used in the Centre are protected against attack and other vulnerability by Gateway level-filtering and intrusion detection system using Fortinet UTM. User-level antivirus protection is also enabled for end-user protection. On average, the INFLIBNET Website and the national union databases attract more than 15,000 visitors per month.
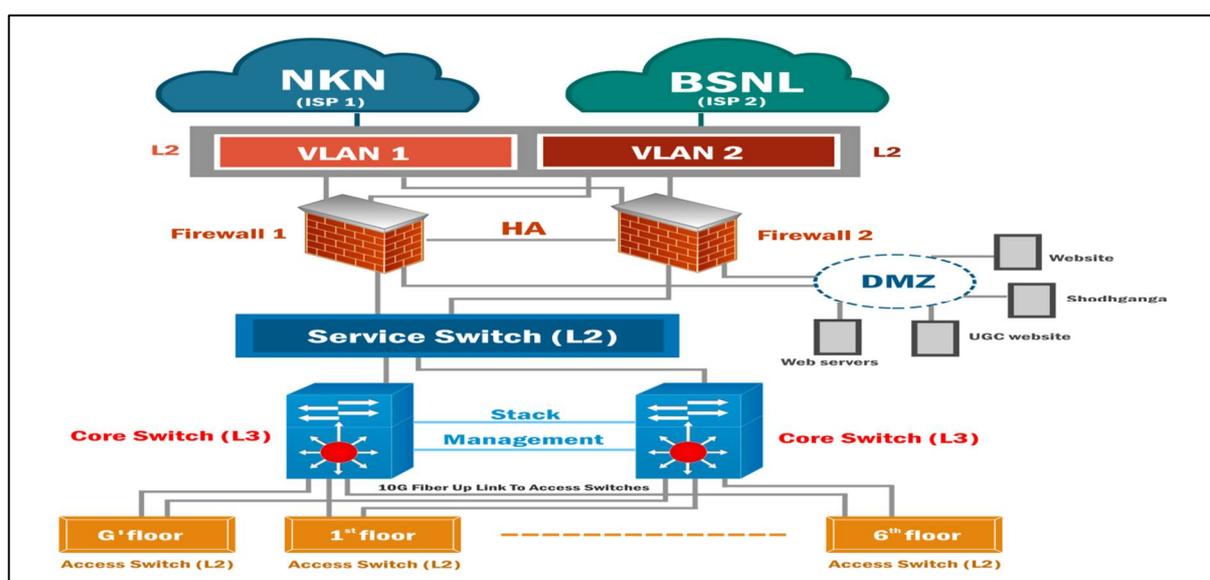
Fig. 59: Thematical Diagram Showing L-2 and L-3 Switches Connected to NKN /BSNL, Firewall and Other Computing Infrastructure in INFLIBNET

During the year under report, 2 firewalls in HA mode were procured and commissioned for enhancing IT Security and the network service throughout the Campus of INFLIBNET Centre.

2.3.   Integration of Data Centre and other IT Services

The Data Centre established at INFLIBNET Centre is having the most robust setup that is to host mission-critical servers and computer systems, with fully redundant subsystems. All components are fully fault-tolerant including uplinks, storage, chillers and Heating, Ventilation and Air Conditioning (HVAC) systems, servers, etc. The INFLIBNET Centre uses HP BladeSystem C 3000 Enclosure for hosting Web Services, INFLIBNET website, Shodhganga, N-LIST, InfoPort, e-PG Pathshala, IndCat, DNS server, Intranet server, etc. IBM Bladecenter S chassis is used for Web colocation services at BSNL, which host mirror sites of services such as UGC website, N-LIST Proxy Server, Online UGC's e-SARTS and other important services.

The Building Management System (BMS) integrates the mechanical and electrical equipment used for various services such as ventilation, lighting, power system, fire system and security system. HVAC is used for indoor environmental comfort based on the principle of thermodynamics, fluid mechanics and heat transfer, ensuring maximum levels of efficiency and economy. Honeywell Trend is used for BMS Solutions. Smart Visitor Management Software is used for storing data and generating a gate-pass for visitors.

26 CCTV cameras from M/s. Honeywell is used for the Surveillance System by categorizing into three types. PTZ security cameras allow controlling the Pan, tilt and zoom operations of the camera lens remotely or through programming. Other two cameras are Box type's cameras and Dome type cameras. All cameras are IP-based, advanced and PoE (Power on Ethernet) enabled. Telephony services in the Centre are established using the IP Telephony system in the Local Area Network itself which is based on Internet Protocol phones. Three different categories of phones i.e. Siemens Open Stage 60 for Scientists and Open Stage 40 are used for other staff members and Open Stage 15 for security & residences. The Centre also has 60 "Open Stage 15" IP phones to extend IP Telephony services in 39 Guest Rooms and staff in the office.

A dedicated ISDN PRI line is used for Video Conferencing Facility with high definition resolution camera with codec, multipoint control unit and HD LCD/LED TV for display. The Public Addressing System (PAS) is in place for playing soothing music in the background in the premises of a building to give pleasant ambience for working professionals. The entire building is divided into various zones and a zone-wise announcement is also possible with centralized control. The boardroom is equipped with facilities that can be controlled with a wireless touchpad/iPad. The auditorium with 380 seating capacity is well equipped with professional sound system, advanced dynamic mixer and state-of-art mic preamps with DSP with 100 presets including reverb, chorus, flanger, delay, pitch shifter and

various multi-effects with at least 12 channels for audio devices like mics (i.e. collar, hand-help, audio mike, cordless and vocal-instrumental), laptop, CD/DVD player or music instruments, media players, etc. The mixer is connected with sufficient amplifiers for Base (Woofers), FOH (Front of the House), surround speakers, crossover amplifier for balancing the gain of audio and stage monitor speaker with plug and play facility. The entire campus is equipped with Wi-Fi hotspot including guesthouses, residences and Plaza area.

2.4. Training Laboratories

The Centre conducts training programmes including SOUL Training Programmes on a regular basis. One of the two Training Laboratories is equipped with 42 PCs with a projector and other equipment for this purpose. All PCs in the Laboratory are well connected to the Centre's LAN, which is connected to the Internet. All PCs are set-up in dual operating system mode, i.e. Windows and Linux. All the PCs and network equipment are backed-up with Uninterrupted Power Supply (UPS).

2.5. SOUL Support Centre

The SOUL software, developed by the Centre, has more than 3,700+ installations across the country. SOUL Support Cell is equipped with 5 PCs, scanner and printer. A facility has been created to provide support to the users of the SOUL Software with a dedicated telephone line, fax and manpower special earmarked for this purpose.

2.6. Walk-in User's Facility for Researchers

The Centre has 16 Internet-enabled all-in-one PCs with Internet connectivity earmarked for students, scholars and faculty from neighbouring institutions for accessing e-resources subscribed under the e-ShodhSindhu. The license agreements signed with the publishers of e-resources to provide access to e-resources to "walk-in" users. More than 400 users availed this facility during the period under report.

2.7. Uninterrupted Power Supply (UPS)

Centre has four 40 kVA each UPS for dedicated power supply to Data Centre and network equipment installed at different locations of the Centre.

3. Academic Interaction with Universities and other Research Institutions

Although the Centre receives a large number of applications from engineering colleges in Gujarat and neighbouring states for training at the INFLIBNET, the Centre selects limited student trainees. Many students had undergone practical training at the INFLIBNET Centre during the year under report. Facilities are also extended to the library science students of Gujarat University, Ahmedabad to avail

library internship at the Centre. The number of students who availed internship at INFLIBNET and their institutional affiliations are given below in Table 54.

Sl. No.	Name of the Institute	Degree	No. of students
1	Charutar Vidya Mandal's Natubhai V. Patel College of Pure & Applied Sciences under Sardar Patel University, Vallabh Vidyanagar	MSc(IT)	01
2	Gujarat University, Ahmedabad	MTech (Web Technologies)	01

Table 54: No. of Students who Availed Internship at INFLIBNET and their Institutional Affiliation

4. Other Notable Activities and Events

4.1 National Festival of Tree Planting (Van Mahotsav) Celebration

The INFLIBNET Centre celebrated the National Festival of Tree Planting (Van Mahotsav) on 8[th]July 2019. On this occasion, a tree plantation drive was organized for all the staff members. The Director along with staff members planted trees in and around the campus of the Centre.

Tree Plantation Drive at INFLIBNET Centre on the Occasion of Van Mahotsav on 08[th]July 2019

4.2 Independence Day Celebration

The INFLIBNET Centre celebrated 73rd Independence Day on Thursday, 15th August 2019. The National Flag was hoisted by Mr Prof J P Singh Joorel, Director, INFLIBNET Centre. Prof Joorel addressed the staff members and their families on this occasion.

73rd Independence Day Celebration at INFLIBNET Centre

4.3   Navatri @INFLIBNET Centre

The INFLIBNET Centre celebrated Garba festival with great enthusiasm. The Garba night was organized for its employees and their families on 4th October 2019. The function started with the Durga Puja and everyone from the campus, staff members and their families participated. The employees and their families turned out in their best traditional attire. Prof J P Singh Joorel, Director, INFLIBNET Centre distributed the prizes for the best dance performers, best-dressed staff and their children. The function concluded with the ceremonial dinner.
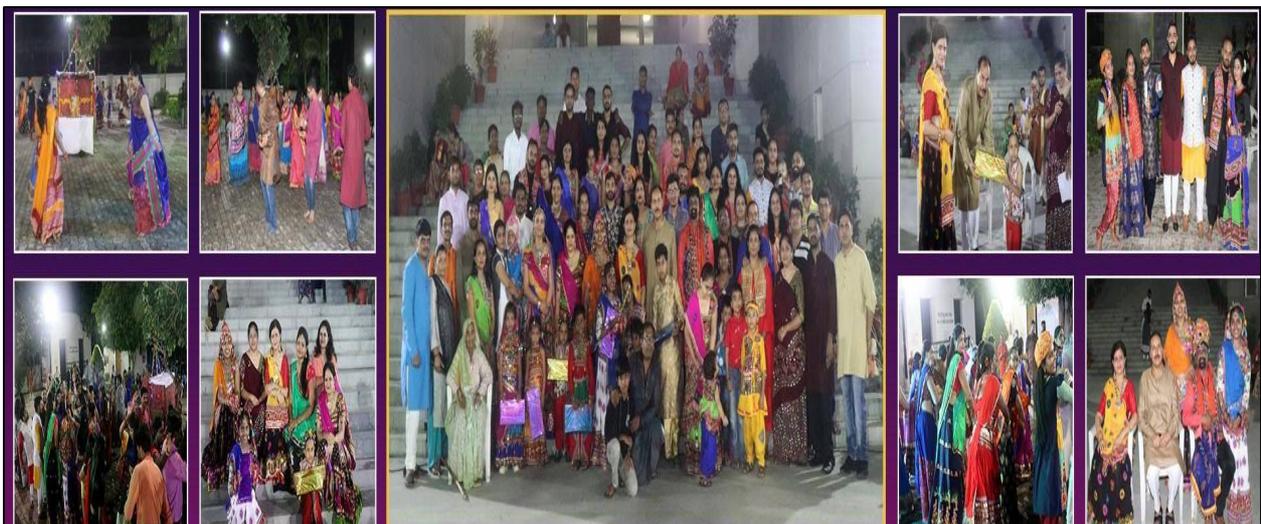
Navatri @INFLIBNET Centre

4.4 Goddess SARASWATI Idol Installation @INFLIBNET Centre

Goddess SARASWATI Idol Installation@INFLIBNET Centre

Prof J P Singh Joorel, Director, INFLIBNET Centre with other Senior Scientists and Administrative Staff performed Goddess Saraswati Pooja followed by the installation of the new idol of Goddess Saraswati in the lawns of the Centre on 06th December 2019.

4.5 71st Republic Day Celebration

The INFLIBNET Centre celebrated 71st Republic Day on 26th January 2020 at INFLIBNET Centre, Gandhinagar. The National Flag was hoisted by Mr Yatrik Patel, Scientist D (CS), INFLIBNET Centre. Further, he addressed the staff members and their families about the activities of the Centre on this occasion.

71st Republic Day Celebration at INFLIBNET Centre

4.6 Lecture on Sexual Harassment of Woman at Workplace (Prevention, Prohibition and Redressal) Act 2013, INFLIBNET Centre, Gandhinagar, 5th March 2020

Lecture on "Women at work: An overview of Legislative and Judicial Trends Vis-a-Vis Sexual Harassment" was delivered by Prof Arvind Jasrotia, Professor, Department of Law, University of Jammu, J&K on 5th March 2020 in the event of Lecture Series organized at INFLIBNET Centre, Gandhinagar to address the issues related to women harassment at workplace. Prof Jasrotia addressed the gathering and through his presentation highlighted the issues and aspects related to women harassment at work and highlighted about the laws, acts, implications, penalties, punishments which are related to sexual harassment of woman at workplace. Prof J P Singh Joorel, Director INFLIBNET Centre, and staff members of the INFLIBNET Centre were present in the programme. Dr Kruti Trivedi, Presiding Officer, Scientist C (LS) coordinated the programme with Sh. Manoj Kumar K, Scientist-E (CS) and other Committee members of the Committee. About 150 participants attended the programme.

Lecture on Sexual Harassment of Woman at Workplace organized at INFLIBNET Centre

4.7 Holi Celebration

The festival of colours, Holi was celebrated at the Centre on 10th March 2020. Hon'ble Director, INFLIBNET Centre along with his family joined the staff and their family members and celebrated the occasion.

Holi Celebration at INFLIBNET Centre

5.   **Visitors & Institutional Tours**

The Centre had the privilege of welcoming the following important visitors:

1)   Dr Pratosh Bansal, Professor, Devi Ahilya Vishwavidyalaya, Indore
2)   Dr Rama Kant Shukla, Librarian, Delhi Technological University, New Delhi
3)   Prof RK Agrawal, Jawaharlal Nehru University, New Delhi
4)   Prof Lalit Kumar Awasthi, Director, Dr B R Ambedkar NIT, Jalandhar
5)   Dr Dinesh K Gupta, Professor, Kurukshetra University, Kurukshetra
6)   Dr Mayank Trivedi, University Librarian, MS University of Baroda, Vadodara
7)   Dr P Visakhi, Librarian, IISER Mohali
8)   Prof P P Chakrabarti, Director, Indian Institute of Technology Kharagpur
9)   Prof Venkata Rao, National Law School of India University (NLSIU) Bangalore
10)   Dr G S Mallick, Advisor, NMEICT, MHRD, Government of India
11)   Shri Parameswaran N, Sr Consultant, NMEICT, MHRD, Government of India
12)   Shri Raman Gupta, System Engineer, University of Jammu, Jammu
13)   Dr Mahendra V Mete, Librarian, Shri Shivaji Arts & Commerce College, Amravati
14)   Prof P V Konnur, Adviser, Visvesvaraya Technological University (VTU) Consortium, Belgaum, and its Executive Committee members.
15)   Sh G Chamu and Sh Keerthi, National Institute for Smart Government (NISG), Hyderabad
16)   Prof Jagat Bhushan Nadda, Director, CEC, New Delhi

17)   Dr Rakesh Sarwal, Additional Secretary, MHRD, New Delhi

The Centre has been visited by the following institutions as part of their educational and professional tour:

1) Department of Computer Engineering, Faculty of Technology, Dharmsinh Desai University, Nadiad, Gujarat
2) Department of Communication & Journalism, Gujarat University, Ahmedabad, Gujarat
3) Department of Library and Information Science, Sardar Patel University, Ballabh Vidyanagar, Anand, Gujarat.
4) Geetanjali College of Computer Science & Commerce, Rajkot, Gujarat

6. Right to Information (RTI) Act

In accordance with the provisions of Section 4(1) (b) of this Act, the INFLIBNET has put information and guidance of the stakeholders and the general public and hosted the same on the website of the Centre at http://www.inflibnet.ac.in. In terms of section 5(2) of the Right to Information Act 2005, the Director of the INFLIBNET Centre is designated as Appellate Authority / Nodal Officer for all matters concerning the Centre. The detailed information about RTI and responsible officers appointed for are available on the Centre's website at "http://www.inflibnet.ac.in".

7. Financial Status

The Audited Annual Accounts of INFLIBNET Centre for the financial year 2019-2020 is given in **Appendix X**.

Appendices

Council

Ex. Officio Members

President	
Prof D P Singh Chairman University Grants Commission	
Prof Bhushan Patwardhan Vice-Chairman University Grants Commission	**Prof Anil D Sahasrabudhe** Chairman All India Council for Technical Education
Dr Shekhar C Mande Director-General CSIR	**Prof Bhushan Patwardhan** Chairperson ICSSR
Mr. Padma Lochan Sahu Joint Secretary, Ministry of Culture Director General, National Library	**Prof J P Singh Joorel** Member Secretary Director, INFLIBNET Centre
Nominated members	

Prof Vinay Kumar Pathak Vice-Chancellor Dr A P J Abdul Kalam Technical University, Lucknow	**Prof (Dr.) Ajay P Singh** Director General RRRLF, Ministry of Culture Government of India	**Prof Lalit Kumar Awasthi,** Director National Institute of Technology Jalandhar

All Members of the Governing Board are the Member of the Council

Governing Board

Ex. Officio Members

Chairman
Prof Yogesh Singh Vice-Chancellor Delhi Technological University Delhi

Dr Bhushan Patwardhan Vice-Chairperson University Grants Commission	**Prof Rajnish Jain** Secretary University Grants Commission

Prof Rama Shankar Dubey Vice-Chancellor Central University of Gujarat Gandhinagar	**Dr. Neeraj Saxena, Advisor-II** Member Secretary All India Countil for Technical Education	**Prof J P Singh Joorel** Member Secretary Director, INFLIBNET Centre

Nominated Members

Prof E Suresh Kumar, Vice Chancellor, The English and Foreign Languages University Hyderabad	**Prof Rajesh Singh** Vice Chancellor, Purnea University Purnia
Prof Shalini Bharat Director Tata Institute of Social Sciences Mumbai	**Dr R K Chadha** Former Additional Secretary Lok Sabha Parliament House, New Delhi
Prof Kamlesh Joshipura Former Vice-Chancellor Saurashtra University Rajkot, Gujarat	**Prof Pratosh Bansal** Professor of IT Institute of Engineering and Technology Devi Ahilya Vishwavidyalaya, Indore
Dr B K Tripathi Director IUC for Teacher Education Banaras Hindu Univerity, Varanasi	**Representative of MHRD (e-ShodhSindhu)**

Finance Committee

Ex. Officio Members

Chairman		
Prof Yogesh Singh Vice-Chancellor Delhi Technological University Delhi		
Prof Rajnish Jain Secretary University Grants Commission		**Mr P K Thakur** Financial Advisor University Grants Commission
Prof Kamlesh Joshipura Former Vice-Chancellor Saurashtra University Rajkot, Gujarat	**Dr (Mrs) Manju Singh** Joint Secretary (IUC) Bureau Head of the Plan Budget Section, UGC	**Prof J P Singh Joorel** Director, INFLIBNET Centre
Sh Ashok Kumar Rai Member Scientist-D (CS) INFLIBNET Centre		**Sh Harish Chandra** Non-Member Secretary Admin. Officer (PA & F) INFLIBNET Centre

Building Committee

Chairman	
Prof Himanshu Pandya Vice-Chancellor Gujarat University, Ahmedabad	
Prof R C Kuhad Vice-Chancellor Central University of Haryana Jant-Pali, Mahendragarh	**Prof J P Singh Joorel** Director INFLIBNET Centre, Gandhinagar
Prof S C Sharma Director NAAC, Bengaluru	**Prof Asutosh Trivedi** Dean, IRD Delhi Technological University Delhi
Mr A K Jain Assistant Engineer CPWD, Gandhinagar	**Prof Utpal Kumar Sharma** Director Institute of Architecture Nirma Univerity, Ahmedabad
Mr N K Ojha **University Engineer** The M S Univerity of Baroda Vadodara	**Mr Rajeev Kathpalia** Vastu Shilpa Consultants Ahmedabad
Dr Nilesh Shah Advocate, Vadodara	**Mr Manoj Kumar K** Scientist E(CS) INFLIBNET Centre, Gandhinagar
Mr Harish Chandra Admn. Officer (PA & F) INFLIBNET Centre, Gandhinagar	

Technical, Administrative and Supporting Staff

Scientific & Technical Staff		
Sl. No.	Name of the employee	Designation
1.	Prof J P Singh Joorel	Director
2.	Mr Manoj Kumar K	Scientist-E (CS)
3.	Mr Ashok Kumar Rai	Scientist-E (CS)
4.	Mr Yatrik R. Patel	Scientist-E (CS)
5.	Dr H. G. Hosamani	Scientist-D (LS)
6.	Mr Abhishek Kumar	Scientist-D (CS)
7.	Mr Kannan P	Scientist-C (LS) (on lien w.e.f.01.06.2018)
8.	Mr Swapnil P Patel	Scientist-C (CS)
9.	Mr DivyakantVaghela	Scientist-C (CS)
10.	Mr Gaurav Prakash	Scientist-C (CS)
11.	Mrs Vaishali A Shah	Scientist-C (LS)
12.	Dr Kruti J Trivedi	Scientist-C (LS)
13.	Mr Dinesh Ranjan Pradhan	Scientist-C (LS)
14.	Dr Miteshkumar Pandya	Scientist-C (LS)
15.	Mr Hitesh H. Solanki	Scientist-C (CS)
16.	Mr Pallab Pradhan	Scientist-B (LS)
17.	Mr Raja V	Scientist-B(CS)
18.	Mr Kimidi Siva Shankar	Scientist-B (LS)
19.	Mrs Hema Cholin	Scientist-B (LS)
20.	Ms Suboohi Siddiqui	Scientist-B (LS)
21.	Mr Dharmeshkumar A. Shah	S.T.O - I (CS)
22.	Mr Mohit Kumar	S.T.O - I (CS)
23.	Mr Vijaykumar M Shrimali	S.T.O - I (CS)
24.	Mrs Roma Yogesh Asnani	S.T.O - I (LS)
25.	Mr Harish Chandra	Administrative Officer (PA &F)
26.	Mr Sanjay R Shah	Section Officer
27.	Mrs Yamini J Dave	Office Assistant-II
28.	Mr Ankur B Parikh	Office Assistant-II
29.	Mr Devang Roy	Office Assistant.-II
30.	Mr Shyam T Yadav	Office Assistant (In-charge S &P)
31.	Mr Vinod B Dantani	Helper
32.	Mr Bakul M Parmar	Lab Attendant
33.	Mr Manish R Bhoi	Helper/Auxiliary Staff-I

State-wise List of SOUL Installations

Sr. No.	Name of the State	Installations	1st April2019 to 31st March 2020	Total
1	Andhra Pradesh	296	4	300
2	Arunachal Pradesh	1	0	1
3	Assam	88	3	91
4	Bihar	18	4	22
5	Chhattisgarh	41	5	46
6	Daman	4	0	4
7	Goa	3	0	3
8	Gujarat	973	23	996
9	Haryana	129	6	135
10	Himachal Pradesh	71	2	73
11	Jammu & Kashmir	87	7	94
12	Jharkhand	9	0	9
13	Karnataka	31	0	31
14	Kerala	131	0	131
15	Madhya Pradesh	292	9	301
16	Maharashtra	499	21	520
17	Manipur	2	0	2
18	Meghalaya	3	0	3
19	Mizoram	34	0	34
20	Nagaland	6	0	6
21	Nepal	4	0	4
22	New Delhi	42	1	43
23	North Eastern States*	338	0	338
24	Orissa	11	0	11
25	Pondicherry	5	0	5
26	Punjab	132	1	133
27	Rajasthan	65	1	66
28	Sikkim	3	1	4
29	Tamil Nadu	34	3	37
30	Telangana	5	1	6
31	Uttar Pradesh	116	3	119
32	Uttarakhand	22	0	22
33	West Bengal	150	0	150
	Total	3645	95	3740

*NERO-Funded

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MHRD, New Delhi

Member from TEL Bureau
MHRD, New Delhi

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Lok Sabha, Parliament House,New Delhi
(INFLIBNET GB Member)

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Librarian, IIM Lucknow (Member from IIM)

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Librarian, NIT Surathkal (Member from NIT)

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Librarian, Ambedkar University, Delhi (Member from
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Dr. P. Visakhi
Librarian
IISER, Mohali

Dhirubhai Shah & Co LLP
CHARTERED ACCOUNTANTS

4th Floor, Aditya Building
Mithakhali Six Road, Ahmedabad
Telephone No.:079 -26403325/26

INFLIBNET CENTRE
Information and Library Network Centre
(An Autonomous Inter-University centre of UGC)
Infocity, Gandhinagar - 382 007
BALANCE SHEET AS AT 31ST MARCH, 2020

Amount in Rupees

SOURCES OF FUNDS	Schedule	Current Year 2019-2020	Previous Year 2018-2019
CORPUS/CAPITAL FUND	1	54,48,65,793.62	50,78,46,623.59
DESIGNATED/ EARMARKED / ENDOWMENT FUNDS	2	91,31,17,443.48	63,11,47,094.60
CURRENT LIABILITIES & PROVISIONS	3	8,65,69,899.40	8,38,61,871.08
TOTAL		1,54,45,53,136.50	1,22,28,55,589.27

APPLICATION OF FUNDS	Schedule	Current Year 2019-2020	Previous Year 2018-2019
FIXED ASSETS	4		
Tangible Assets		27,59,88,302.46	30,44,38,903.87
Intangible Assets		5,64,965.23	17,776.01
Capital Works-In-Progress		-	-
INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS	5		
Long Term		-	-
Short Term		74,93,60,655.00	7,43,53,014.00
INVESTMENTS - OTHERS	6	-	-
CURRENT ASSETS	7	39,85,77,476.30	77,92,79,894.71
LOANS, ADVANCES & DEPOSITS	8	12,00,61,737.51	6,47,66,000.68
TOTAL		1,54,45,53,136.50	1,22,28,55,589.27

SIGNIFICANT ACCOUNTING POLICIES	23
CONTINGENT LIABILITIES AND NOTES TO ACCOUNTS	24

As per our report of even date attached.
For Dhirubhai Shah & Co LLP
Chartered Accountants

[Parth S Dadawala]
Partner
FRN : 102511W/W100298
MEM. NO. : 134475
Place : Gandhinagar
Date : 31.07.2020

[Harish Chandra]
Administrative Officer-PA&F

The above Balance Sheet to the best of our belief contains a true account of the Funds and Liabilities and Properties & Assets of the Institution.

[Prof P Singh] [ooru]]
Director

Place : Gandhinagar
Date : 31.07.2020

Page No. : 01

Dhirubhai Shah & Co LLP
CHARTERED ACCOUNTANTS

4th Floor, Aditya Building
Mithakhali Six Road, Ahmedabad
Telephone No.:079-26403325/26

INFLIBNET CENTRE
Information and Library Network Centre
(An Autonomous Inter-University centre of UGC)
Infocity, Gandhinagar - 382 007

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED ON 31st MARCH, 2020

Amount in Rupees

Particulars	Schedule	Current Year 2019-2020	Previous Year 2018-2019
INCOME			
Academic Receipts	9	9,43,79,000.00	10,56,68,912.00
Grants / Subsidies	10	78,27,728.66	47,48,861.00
Income from investments	11	6,08,246.00	5,82,976.00
Interest earned	12	1,72,62,853.32	2,19,12,829.50
Other Income	13		74,87,404.60
Prior Period Income	14		
TOTAL (A)		12,00,77,827.98	14,04,00,983.10
EXPENDITURE			
Staff Payments & Benefits (Establishment expenses)	15	5,08,49,822.50	5,79,31,786.00
Employees Retirement & Terminal Benefits	15 A	-2,65,16,623.00	2,65,16,623.00
Academic Expenses	16	31,80,852.52	30,99,378.85
Administrative and General Expenses	17	2,80,14,159.95	2,49,98,561.86
Transportation Expenses	18	6,75,507.73	6,82,388.70
Repairs & Maintenance	19	42,33,596.27	30,00,817.70
Finance costs	20	7,169.90	6,605.23
Depreciation	4	3,18,39,131.08	3,43,23,235.72
Other Expenses	21		
Prior Period Expenses	22		
TOTAL (B)		9,22,83,616.95	15,05,59,397.06
Balance being excess of Income over Expenditure (A-B)		2,77,94,211.03	-1,01,58,413.96
Transfer to / from Designated Fund			
Building fund			
Others (specify)			
Balance Being Surplus / (Deficit) Carried to Capital Fund		2,77,94,211.03	-1,01,58,413.96
Significant Accounting Policies	23		
Contingent Liabilities and Notes to Accounts	24		

As per our report of even date attached.
For Dhirubhai Shah & Co LLP
Chartered Accountants

[Parth S Dadawala]
Partner
FRN : 102511W/W100298
MEM. NO. : 134475
Place : Gandhinagar
Date : 31.07.2020

[Harish Chandra]
Administrative Officer-PA&F

The above Balance Sheet to the best
of our belief contains a true account
of the Funds and Liabilities and
Properties & Assets of the Institution.

[Prof. P.Singh]
Director

Place : Gandhinagar
Date : 31.07.2020

Information and Library Network Centre, (An IUC of UGC)

Page No. : 02

INFLIBNET CENTRE
Information and Library Network Centre

SCHEDULE – 2 DESIGNATED/ EARMARKED / ENDOWMENT FUNDS :

Amount in Rupees

	Project Development Fund	D-Space	Swayam Pradha Project	North Eastern Region	E-NBA	UGC Website Maintenance	UGC Grants for Shodhganga	AIU Project	Integrated E-Content Portal
A.									
a) Opening balance of the funds	24,500.00	4,81,187.22	62,58,008.32	27,15,380.00	3,09,900.23	0.00	59,35,670.19	0.00	8,001.49
b) Additions during the year	0.00	0.00	0.00	0.00	0.00	0.00	1,65,00,000.00	10,00,000.00	0.00
c) Income from investments made of the funds	0.00	43,838.00	4,05,253.00	1,50,871.00	2,52,270.00	0.00	2,54,508.00	29,335.00	0.00
d) Accrued Interest on investments/Advances	0.00	15,792.00	1,45,987.00	54,349.00	90,877.00	0.00	91,683.00	10,568.00	0.00
e) Interest on Savings Bank a/c	0.00	0.00	0.00	0.00	0.00	0.00	6,00,461.00	0.00	0.00
f) Other additions (Specify nature)	0.00	2,58,000.00	0.00	0.00	79,91,520.00	0.00	0.00	0.00	0.00
g) To be recovered from UGC/MHRD	0.00	0.00	0.00	0.00	0.00	7,63,410.76	0.00	0.00	0.00
TOTAL (a+b)	24,500.00	7,98,817.22	68,09,248.32	29,20,600.00	86,44,567.23	7,63,410.76	2,33,82,322.19	10,39,903.00	8,001.49
B.									
Utilisation/Expenditure towards objectives of funds									
ii) Capital Expenditure	0.00	0.00	0.00	0.00	0.00	0.00	15,42,050.00	0.00	0.00
ii) Revenue Expenditure	0.00	1,85,607.19	19,86,458.82	23,07,197.46	69,83,919.81	7,63,410.76	1,77,62,529.97	5,03,060.89	8,001.49
TOTAL (c)	0.00	1,85,607.19	19,86,458.82	23,07,197.46	69,83,919.81	7,63,410.76	1,93,04,579.97	5,03,060.89	8,001.49
NET BALANCE AS AT THE YEAR END (a+b-c)	24,500.00	6,13,210.03	48,22,789.50	6,13,402.54	16,60,647.42	0.00	40,77,742.22	5,36,842.11	0.00
Represented by									
Cash and Bank Balances	24,500.00	5,97,418.03	46,76,802.50	5,59,053.54	15,69,770.42		39,86,059.22	5,26,274.11	-
Investments	-	15,792.00	1,45,987.00	54,349.00	90,877.00		91,683.00	10,568.00	-
Interest accrued but not due		-	-	-	-	-	-	-	-
TOTAL	24,500.00	6,13,210.03	48,22,789.50	6,13,402.54	16,60,647.42	-	40,77,742.22	5,36,842.11	-

INFLIBNET CENTRE
Information and Library Network Centre

SCHEDULE – 2 DESIGNATED/ EARMARKED / ENDOWMENT FUNDS :

	Vidhwan Expert Database	UGC Scheme SA-III	E-Shodh Sindhu AICTE	E-Shodh Sindhu	ICSSR	NIRF	N-LIST	e-Governance Project	PDS Project
A.									
a) Opening balance of the funds	9,48,274.43	0.00	3,37,60,790.00	50,36,71,925.21	7,31,376.80	59,22,924.92	4,71,18,625.61	0.00	0.00
b) Additions during the year	0.00	0.00	3,54,91,713.00	2,27,66,00,000.00	0.00	0.00	0.00	1,21,96,000.00	13,35,00,000.00
c) Income from investments made of the funds	63,662.00	0.00	0.00	2,91,12,562.00	42,319.00	7,06,646.00	57,13,488.48	5,50,090.00	26,22,340.00
d) Accrued Interest on investments/Advances	22,934.00	0.00	0.00	0.00	15,245.00	2,54,560.00	0.00	1,98,163.00	0.00
e) Interest on Savings Bank a/c	0.00	0.00	16,30,993.00	1,09,72,713.00	0.00	0.00	2,18,380.00	0.00	0.00
f) Other additions (Specify nature)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g) To be recovered from UGC/MHRD/Other		10,25,965.25			18,00,000.00	1,27,97,738.79	1,93,15,487.34		
TOTAL (a+b)	10,34,870.43	10,25,965.25	7,08,83,496.00	2,82,03,57,200.21	25,88,940.80	1,96,81,869.71	7,23,65,981.43	1,29,44,253.00	13,61,22,340.00
B. Utilisation/Expenditure towards objectives of funds									
ii) Capital Expenditure	0.00	0.00	0.00	6,100.00	0.00	34,327.00	0.00	23,15,343.00	0.00
ii) Revenue Expenditure	87,033.20	10,25,965.25	3,37,70,023.00	2,20,55,58,155.96	12,81,269.63	96,47,023.21	10,61,031.37	31,92,424.84	4,44,63,397.43
TOTAL (c)	87,033.20	10,25,965.25	3,37,70,023.00	2,20,55,64,255.96	12,81,269.63	96,81,350.21	10,61,031.37	55,07,767.84	4,44,63,397.43
NET BALANCE AS AT THE YEAR END (a+b-c)	9,47,837.23	0.00	3,71,13,473.00	61,47,92,944.25	13,07,671.17	1,00,00,519.50	7,13,04,950.06	74,36,485.16	9,16,58,942.57
Represented by									
Cash And Bank Balances	-	-	3,71,13,473.00	3,47,92,944.25	12,92,426.17	97,45,959.50	67,03,926.21	72,38,322.16	9,16,58,942.57
Investments	9,24,903.23	-	-	58,00,00,000.00	15,245.00	2,54,560.00	6,46,01,023.85	1,98,163.00	-
Interest accrued but not due	22,934.00	-	-	-			1,98,163.00		
TOTAL	9,47,837.23	-	3,71,13,473.00	61,47,92,944.25	13,07,671.17	1,00,00,519.50	7,13,04,950.06	74,36,485.16	9,16,58,942.57

Information and Library Network Centre, [An IUC of UGC]

INFLIBNET CENTRE
Information and Library Network Centre

SCHEDULE – 2 DESIGNATED/ EARMARKED / ENDOWMENT FUNDS :

	MGCUB	FSKAN A/c.	CUH	Atal Ranking Project	Ek Bharat Shreshtha Bharat Pro	IRINS Project	NAAC Project Expenses	UGC DEB Project	Children University
A.									
a) Opening balance of the funds	8,00,976.15	11,70,076.11	43,481.00	42,13,667.98	10,57,175.10	91,07,013.00	14,21,302.87	0.00	0.00
b) Additions during the year	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
c) Income from investments made of the funds	64,577.00	75,266.00	0.00	2,62,056.00	71,279.00	4,47,481.00	49,812.00	0.00	3,053.00
d) Accrued Interest on investments/Advances	23,263.00	27,114.00	0.00	94,402.00	25,677.00	1,61,199.00	17,944.00	0.00	1,100.00
e) Interest on Savings Bank a/c	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
f) Other additions (Specify nature)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,04,000.00
g) To be recovered from UGC/MHRD	3,84,000.00	0.00	0.00	0.00	0.00	0.00	0.00	2,03,957.70	0.00
TOTAL (a+b)	12,72,816.15	12,72,456.11	43,481.00	45,70,125.98	11,54,131.10	97,15,693.00	14,89,058.87	2,03,957.70	2,08,153.00
B.									
Utilisation/Expenditure towards objectives of funds									
i) Capital Expenditure	0.00	0.00		24,800.00		2,13,000.00	1,62,840.00	1,42,000.00	
ii) Revenue Expenditure	3,41,863.84	3,43,860.12	43,481.00	13,82,683.41	2,77,248.09	38,62,846.38	11,27,795.72	61,957.70	0.00
TOTAL (c)	3,41,863.84	3,43,860.12	43,481.00	14,07,483.41	2,77,248.09	40,75,846.38	12,90,635.72	2,03,957.70	0.00
NET BALANCE AS AT THE YEAR END (a+b-c)	9,30,952.31	9,28,595.99	0.00	31,62,642.57	8,76,883.01	56,39,846.62	1,98,423.15	0.00	2,08,153.00
Represented by									
Cash and Bank Balances	9,07,689.31	9,01,481.99	-	30,68,240.57	8,51,206.01	54,78,647.62	1,80,479.15	-	2,07,053.00
Investments	-	-	-	-	-	-	-	-	1,100.00
Interest accrued but not due	23,263.00	27,114.00	-	94,402.00	25,677.00	1,61,199.00	17,944.00	-	-
TOTAL	9,30,952.31	9,28,595.99	-	31,62,642.57	8,76,883.01	56,39,846.62	1,98,423.15	-	2,08,153.00

Dhirubhai Shah & Co LLP
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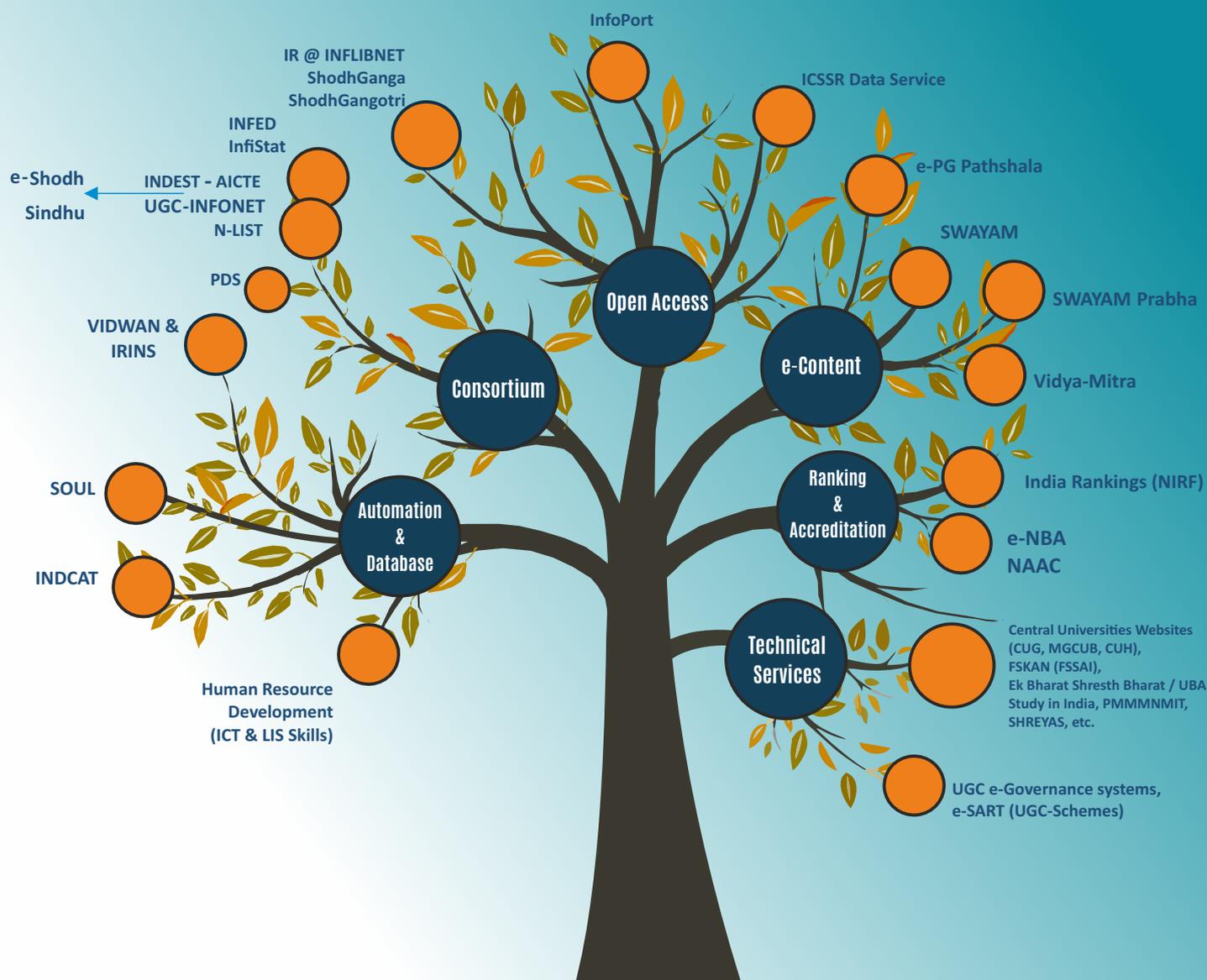Telephone No.:079 -26403325/26

INFLIBNET CENTRE

Information and Library Network Centre

SCHEDULE – 2 DESIGNATED/ EARMARKED / ENDOWMENT FUNDS :

Amount in Rupees

	NTA Project Fund	PMMNMT Project Fund	Study In India Project	E-content Portal Maintenance	SPU Project	Swayam Prabha Chennai 29	TOTALS Current Year 2019-2020	Previous Year 2018-2019
A.								
a) Opening balance of the funds	13,21,882.54	35,98,069.00	5,26,886.43	0.00	0.00	0.00	63,11,47,094.60	13,71,42,131.40
b) Additions during the year	0.00	0.00	0.00	0.00	0.00	10,00,000.00	2,47,62,87,713.00	2,12,18,44,288.00
c) Income from investments made of the funds	63,834.00	2,03,139.00	2,08,714.00	0.00	0.00	0.00	4,13,96,393.48	1,09,03,518.01
d) Accrued Interest on investments/Advances	22,995.00	73,178.00	75,186.00	0.00	0.00	0.00	14,22,216.00	1,98,632.00
e) Interest on Savings Bank a/c	0.00	0.00	0.00	0.00	0.00	0.00	1,34,22,547.00	1,28,82,830.60
f) Other additions (Specify nature)	8,75,733.22	0.00	70,45,541.59	0.00	0.00	0.00	4,84,88,020.94	3,63,70,495.20
g) To be recovered from UGC/MHRD	9,46,503.87	0.00	0.00	5,00,00,000.00	1,38,000.00	0.00	5,52,61,837.58	10,61,928.38
TOTAL (a+b)	32,30,948.63	38,74,386.00	78,56,328.02	5,00,00,000.00	1,38,000.00	10,00,000.00	3,26,74,25,822.60	2,32,04,03,823.59
B.								
Utilisation/Expenditure towards objectives of funds								
i) Capital Expenditure	0.00	1,98,950.00	0.00	0.00	0.00	0.00	46,39,410.00	29,17,779.00
ii) Revenue Expenditure	32,30,948.63	29,36,085.62	45,55,053.22	9,18,635.11	0.00	0.00	2,34,96,68,969.12	1,68,63,38,949.99
TOTAL (c)	32,30,948.63	31,35,035.62	45,55,053.22	9,18,635.11	0.00	0.00	2,35,43,08,379.12	1,68,92,56,728.99
NET BALANCE AS AT THE YEAR END (a+b-c)	0.00	7,39,350.38	33,01,274.80	4,90,81,364.89	1,38,000.00	10,00,000.00	91,31,17,443.48	63,11,47,094.60
Represented by								
Cash and Bank Balances	-	6,66,172.38	-	4,90,81,364.89	-	-		
Investments	-		32,26,088.80	-	1,38,000.00	10,00,000.00		
Interest accrued but not due	-	73,178.00	75,186.00	-	-	-		
TOTAL	-	7,39,350.38	33,01,274.80	4,90,81,364.89	1,38,000.00	10,00,000.00		

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