

TECHNOLOGY

टेक्नोलॉजी फोकस

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DESIDOC: KNOWLEDGE REPOSITORY PAR EXCELLENCE



Technology Focus focuses on the technological achievements in the organization covering the products, processes and technologies.

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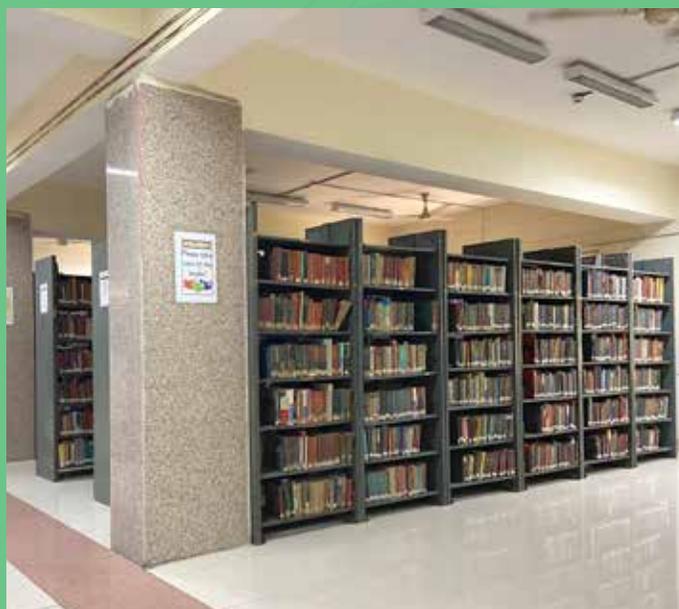
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From the Desk of Editor-in-Chief



DRDO established Scientific Information Bureau (SIB) in 1958 to cater to the information requirements of scientists. With the increased needs and requirements of information, SIB was made an independent establishment on 29 July 1970 with much wider scope and responsibilities as Defence Scientific Information & Documentation Centre (DESIDOC). Fifty years down the line, DESIDOC has become a central resource centre for scientific information, documentation, IT-based services, multimedia services, e-pub services, publishing services rendered on anticipation and demand to DRDO HQ/labs/estts and other establishments of the Ministry of Defence.

The core competence of DESIDOC is design and development of databases, application software for information retrieval in a multi-centre environment and development of multimedia content.

DESIDOC has kept pace with the fast evolving IT technologies and has kept itself abreast in the field. The centre is providing its services to DRDO scientists in real-time at their desk as well as on their hand-held devices at any time any place. Scientific journals brought out by the centre are available on web-based platforms. These initiatives have not only fastened the dissemination/delivery of the information but also multifold its reach.

From knowledge management to knowledge propagation, DESIDOC has proved itself and stands out as an integrated resource centre of DRDO. This issue of *Technology Focus* highlights the DESIDOC's activities, services, facilities and initiatives to serve the users.

Dr Alka Suri
Director, DESIDOC

DESIDOC: Knowledge Repository Par Excellence

DRDO soon after its inception in 1958, envisaged to set up an information centre, the Scientific Information Bureau (SIB) to meet the information requirements of the scientists. With the increased needs and requirements of information, SIB was made an independent establishment with a wider scope and responsibility on

29 July 1970 and rechristened as Defence Scientific Information & Documentation Centre (DESIDOC). Since then DESIDOC is supporting DRDO's academic pursuit and fulfilling the information needs of its scientists working in DRDO labs/estts located across the country.

During the last 50 years, DESIDOC has upgraded its services and products

keeping pace with international standards of information dissemination. Today DESIDOC is a central resource centre for scientific information, documentation, IT-based services, multimedia services, e-pub services, publishing services provided on anticipation and demand at the desk of scientists at DRDO HQ/labs/estts and other establishments of Ministry of Defence.



Vision

To provide essential science and technical research, development information rapidly, accurately and reliably to support DRDO's scientists' needs.

Mission

- ◇ To establish an integrated resource centre and state-of-the-art information management system encompassing knowledge centre, publishing, e-services, printing and multimedia
- ◇ To collaborate with national and international institutions/ academia/ organizations for cooperative partnerships to improve upon the quality and bring visibility to DRDO's R&D publications

- ◇ To introduce new innovative defence research journals for the benefit of the R&D community
- ◇ To improve the role of DESIDOC's Defence Science Library by reinventing library functions and services with a focus on the perception and expectation of the users
- ◇ Embracing advanced technologies to provide library and information services on emerging digital platforms
- ◇ Introducing digital imprint of DRDO to connect with the scientific and civil society through online community
- ◇ Building a "single window" facilitation by improving the quality of print media, multimedia and network services

Charter of Duties

- ◇ To function as a central resource for scientific and technical information, through print and digital media
- ◇ Publish scientific and technical publications like journals, magazines, news bulletins, and monographs in both English and Hindi
- ◇ To provide training, continual education, and awareness programmes in the field of library science, information technology and web-related areas
- ◇ To provide information technology services and support for DRDO website and DRDO Intranet

Defence Science Library

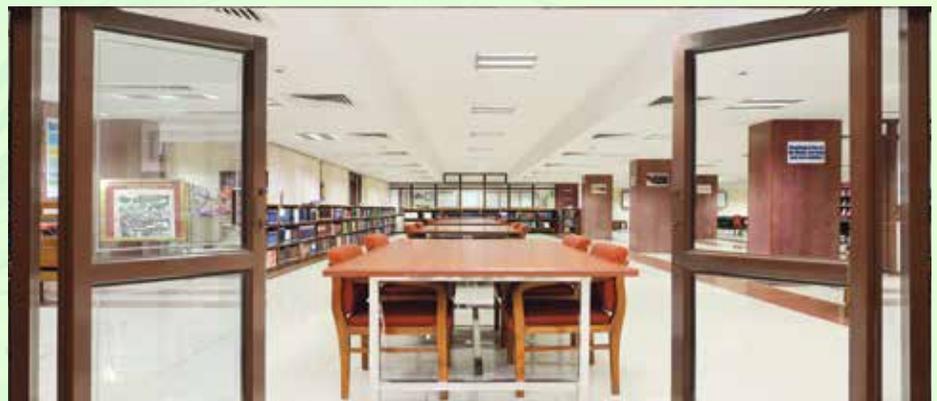
Defence Science Library (DSL) is nerve centre of DESIDOC and fulfills knowledge requirements of research community of DRDO. DSL has a specialized collection of books on various disciplines and defence science and technology. It subscribes top scientific journals, print as well as their e-version, scientific reports, conference proceedings and CD ROM databases. It also has special collection of Jane's publication, SPIE proceedings, IEE/IEEE publications and databases on specialized subjects.

DSL is fully automated and provides the following services:

- ◇ Online Public Access Catalogue (OPAC): Users can know the holdings of DSL.
- ◇ Digital Reference Service: For

- pin-pointed information in least possible time.
- ◇ Infowatch Service: Fortnightly compilation of news/recent developments in military S&T from Jane's publications.
- ◇ Newspaper Clippings Service: Daily service compiled from 17 newspapers.

- ◇ Monthly News Digest Service: Monthly compilations of news items.
- ◇ Translation Service: English translation of foreign language documents on demand.
- ◇ Provides Internet searching facility to users to facilitate browsing/ searching of electronic resources.



DRDO E-JOURNAL SERVICE

DESIDOC is the nodal agency that administers and monitors the consortium of e-journals on behalf of labs of DRDO. DRDO EJLS facilitates sharing of e-resources and improves access to information. The resources are shared among DRDO libraries that have common usage but are at different locations and acts on those commonalties. The service is IP-enabled and can be accessed with in lab premises under its network.



Remote access and search facility in DRDO e-Library portal, developed

by DESIDOC can be used to access subscribed content remotely.

DRDO LIBRARY MANAGEMENT SYSTEM

DESIDOC has developed DRDO Union OPAC (<https://catalog.drdolibrary.in>) where the library holdings of all DRDO labs can be accessed in real time, through a common gateway. Users at various DRDO labs can access the platform and search for the books/standards/patents. This union catalog is integrated with the DRDO e-library platform, so that users can search for all the e-resources as well as physical resources through a single platform.



DRDO E-LIBRARY SERVICES

DRDO e-Library of DESIDOC that serves users on-the go access on mobile of a massive collection of over 5 Lakh+ e-resources and information feeds including e-journals, eBooks, open source resources, expert talks, etc. anywhere-anytime without worrying about IP-based authentication.

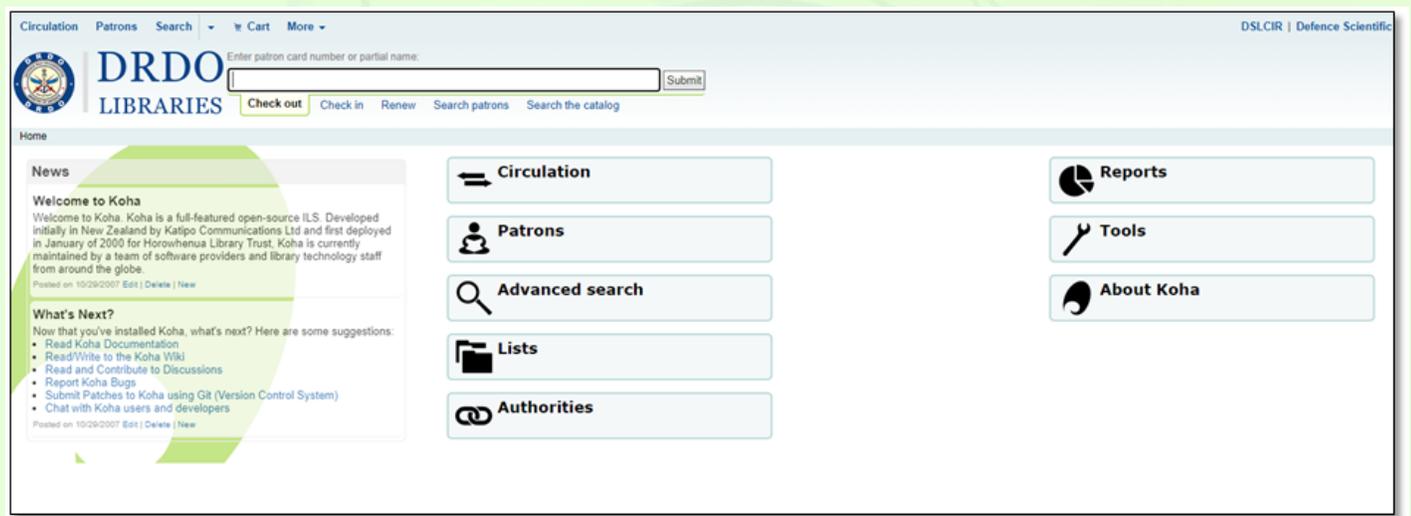


INTEGRATED LIBRARY MANAGEMENT SERVICE

DSL provides a cloud-based open source integrated library management service to all DRDO labs to automate their libraries uniformly using customised Koha—an open source integrated library management software. This has helped all DRDO libraries in developing a Union OPAC for DRDO where resources available in any library can be searched by the DRDO users.

DISCOVERY SERVICE

Discovery service provides all DESIDOC resources on a single window service platform, Koha OPAC and OJS-based journals. The new web application searches all types of DESIDOC resources in a unified index and presents the search results on a single interface using open source software *VuFind*.



NETWORK SERVICES

DESIDOC caters to the variety of users and provides access to various DRDO activities through Internet and Intranet. DESIDOC is Sub-Main Routing Centre of DRDO Intranet and is responsible for taking care of Intranet network for all DRDO labs in Metcalfe House complex. It is also responsible for live webcasting of all major events of DRDO. DESIDOC is responsible for design, development, hosting, and maintaining DRDO website on Internet.

DRDO INTERNET WEBSITE

As the Internet website of DRDO is viewed globally, maintaining its smooth operation, timely updation and above all, its security from imminent cyber attacks, have been a responsibility of utmost importance and is well taken care by DESIDOC. All the latest news, events like DRDO@60 celebrations, Dare to Dream contest,

DRDO's participation in international events like Aero India, DefExpo, along with recruitment related information are being maintained bilingually by DESIDOC through the DRDO website. It remains one of the most visited government websites. The website recorded around 3 million hits in 2019. The average visit per day is 78,082. The website maintain more than 99.85 per cent uptime annually.

DRDO INTRANET SERVICES

DESIDOC is also a Main Routing Centre for DRDO Intranet. It is responsible for taking care of local Intranet network in the Metcalfe House based DRDO labs. It is also responsible for live webcasting of all major events through Intranet. Besides this, DESIDOC also upkeeps and maintains all Intranet equipment ISG-D, Routers and leased lines at all the labs in the Metcalfe House campus and provide Video conferencing

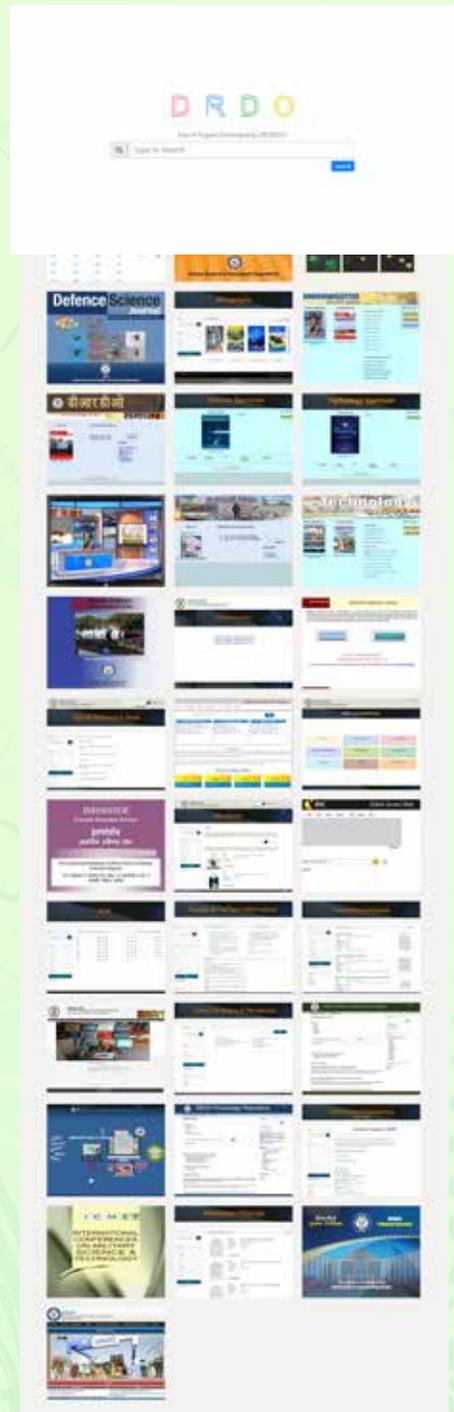
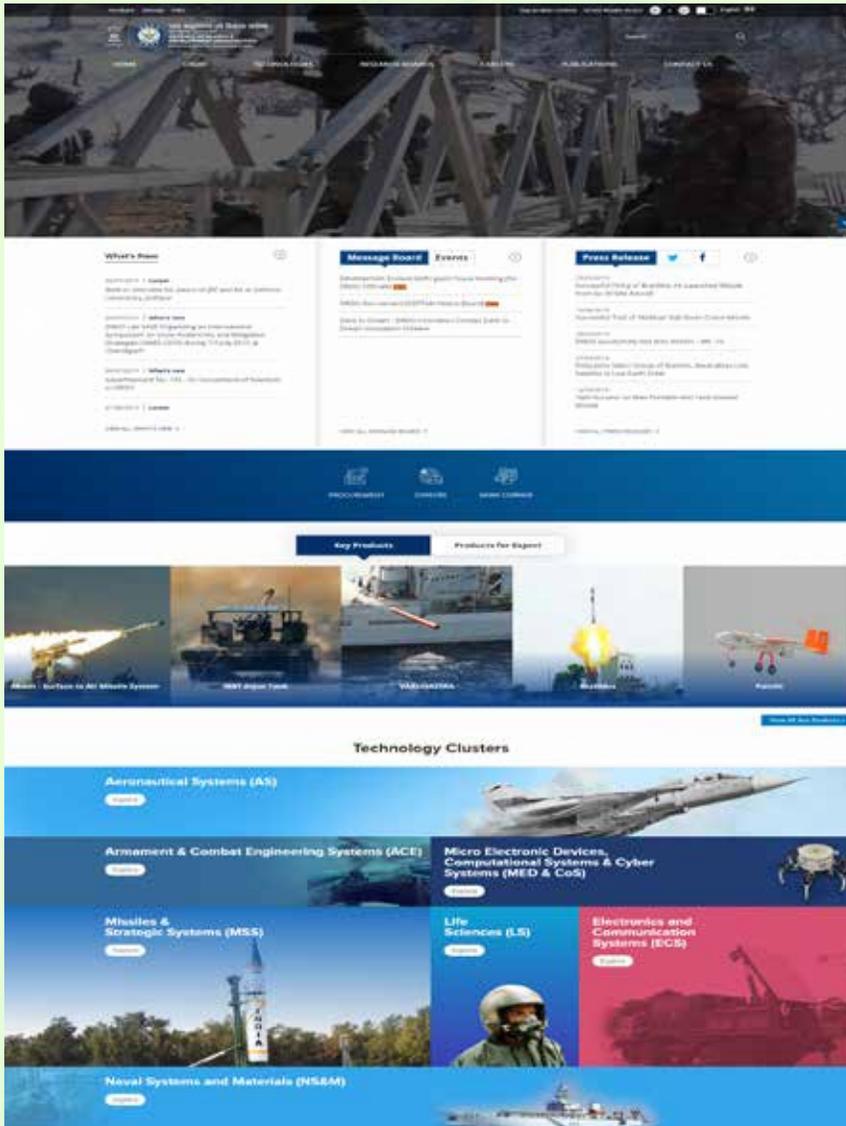
support and modifications in the firewall entries of labs.

DESIDOC also hosts various information and knowledge services placed under a single window service page on DESIDOC website on local Intranet for DRDO users.

All the repository-based services are available on a common DSpace platform and not only provides a single search and retrieval facility to the users but also helps service admin to upload and manage their content directly.

SEARCH ENGINES FOR QUICK AND PRECISE RESULTS

DESIDOC has developed a new search engine for searching information on the DRDO Intranet with quick and precise results.



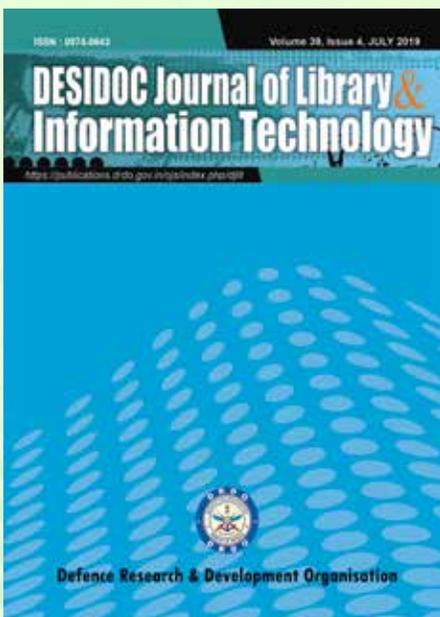
DRDO Publications

DESIDOC brings a number of primary research journals, DRDO Newsletter, Technology Focus, DRDO Monographs and other scholarly publications to give platform to DRDO scientists to publish their research & tacit knowledge for the civil society. These publications highlight DRDO's achievements in a proper perspective thereby helping in image building of the organisation.

DESIDOC JOURNAL OF LIBRARY & INFORMATION TECHNOLOGY

pISSN: 0974-0643 eISSN: 0976-4658
<https://publications.drdo.gov.in>

Started in 1981, DESIDOC Journal of Library and Information Technology (formerly known as DESIDOC Bulletin of Information Technology) is a peer-reviewed, open access, bimonthly journal



that publishes original research and review papers related to library science and IT applied to library activities, services, and products. It is meant for librarians, documentation and information professionals, researchers, students and others interested in the field. The readers get user experience on the application of IT in libraries and information centers, and analysis of underlying trends and their potential effects.

The Journal is indexed by all major social science indexing/abstracting national/international databases (Scopus, Web of Science–Emerging Source Citation Index, LISA, LISTA, ProQuest, etc.).

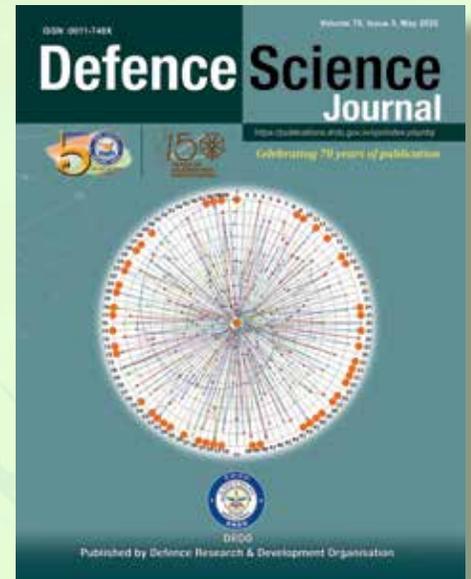
The Journal's Impact is: by Scopus [SJR-2018: 0.27, h-index: 8, Category-Q2]; by Web of Science [IF-2019: 0.492, h-index: 10].

DEFENCE SCIENCE JOURNAL

pISSN: 0011-748X eISSN: 0976-464X
<https://publications.drdo.gov.in>

Defence Science Journal (DSJ) is a peer-reviewed, bimonthly, research journal in the area of defence science, engineering, and technology. It publishes research articles in the disciplines of aeronautics, armaments, combat vehicles and engineering, biomedical sciences, computer sciences, electronics, material sciences, missiles, naval systems, etc.

DSJ is indexed by 20 major S&T International Databases. Editorial Board of DSJ is represented by eminent academicians, scientist from



India, Russia, USA, Netherlands, New Zealand, Sydney, Australia. DSJ has a specially designed reader-friendly layout in the form of dynamic HTML. Publishing process is reassuringly rigorous, with a minimum of three experts reviewer.

The Journal's Impact is: by Scopus [SJR-2018: 0.27, h-index: 8, Category-Q2]; by Web of Science [IF-2019: 0.492, h-index: 10].

DEFENCE LIFE SCIENCE JOURNAL

pISSN: 2456-379X eISSN: 2456-0537
<https://publications.drdo.gov.in>

Defence Life Science Journal (DLSJ), as a quarterly publication, caters to the needs of scientists, researchers, academicians of life sciences and allied disciplines like: biotechnology, bio-medicine, bio-engineering, bio-electronics, non-invasive life imaging, pharmacology and toxicology, physiology, NBC

warfare, food technology, and psychology.

DLSJ is successfully indexed in the UGC-CARE List (formerly UGC approved list of Journals), Indian Science Abstract, Indian Citation Index and NAAS (ICAR). DLSJ has received h-index and I5-index as 6 and 3, respectively according to Google Scholar metrics (2016-2019).



DRDO NEWSLETTER

DRDO Newsletter, a monthly house bulletin of DRDO, is an avenue to synergise important developments, events, visits and related activities of the DRDO laboratories across India. The publication is in 40 years of publishing. *DRDO Newsletter* is an important tool for building 'Brand DRDO' among services, bureaucrats, political leadership, academic institutes, public sector undertaking, S&T organisations, industry and general public at large.

Newsletter is also brought in Video version in both English & Hindi and

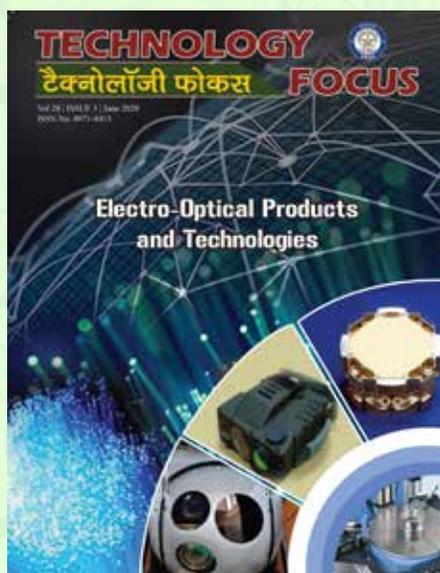


also in E-book, Flip book format. An initiative has been taken recently and Newsletter will also be brought out with more interactive and user-friendly features and format.

TECHNOLOGY FOCUS

Technology Focus is a bimonthly S&T publication which projects the products/technologies/processes developed by DRDO labs.

The magazine is circulated to the three Services, Indian Missions in

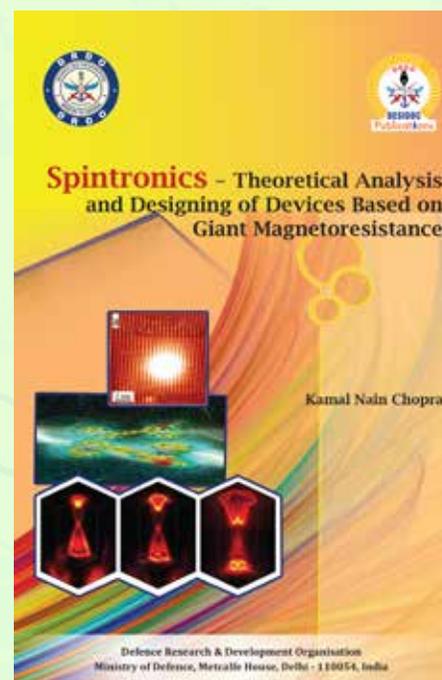


Foreign countries, S&T institutes, universities, industry, and students of AICTE approved engineering and technical colleges.

Besides regular PDF format, all the issues also available in FlipBook (E-mag) format available on both Intranet and Internet.

DRDO MONOGRAPHS/ SPECIAL PUBLICATIONS

DRDO Under the Series, DESIDOC publishes monographs/special publications and treatises authored by eminent retired scientists of DRDO. The aim is to capture the tacit knowledge of senior scientists gained through their life-long research in their area of work. Each monograph

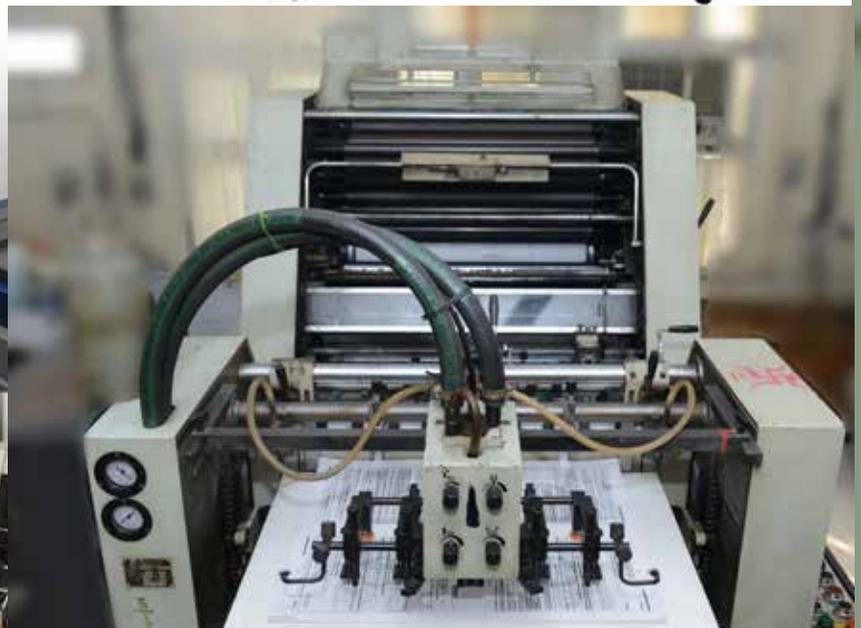


deals with specialised literature in areas that have direct relevance to defence, military science and technology. The authors are chosen based on their expertise in a specific field.

Printing Services

DESIDOC handles printing of both the regular and adhoc DRDO publications and other materials like classified reports, booklets, pamphlets, brochures, posters, etc., of DRDO HQ/labs/esstts.

DESIDOC has facilities for preparation of positives, Pre-Sensitised (PS) & Metjet printing plates, offset and digital printing. DESIDOC has installed new Computer-to-Plate (CtP) system for preparation of CtP plates. For digital and offset printing, the laboratory is equipped with high-end digital and offset printing machines, dampening auto roller cleaning machine for washing and cleaning of dampening rollers, perfect binding machine, auto creasing cum perforation machine, lamination machine, paper folding machine, programmable papercutting machine and stitching machine for binding and finishing of in-house printing jobs.



Multimedia Services

In the area of media coverage, video and photographic coverages, audio-visual production, archival of photographs, audio, videos, creation of multimedia programmes, digital preservation of photo, audio and video resources. DESIDOC provides its services to DRDO HQ/ labs/estt. and other defence units.

It maintains the photo bank which has huge collection of more than 1,00,000 digital images of DRDO's



DESIDOC is actively involved in production of short institutional films and documentaries on various subject related to Defence R&D. Initiatives has been taken to develop photo and video galley with enhanced search and retrieval features .



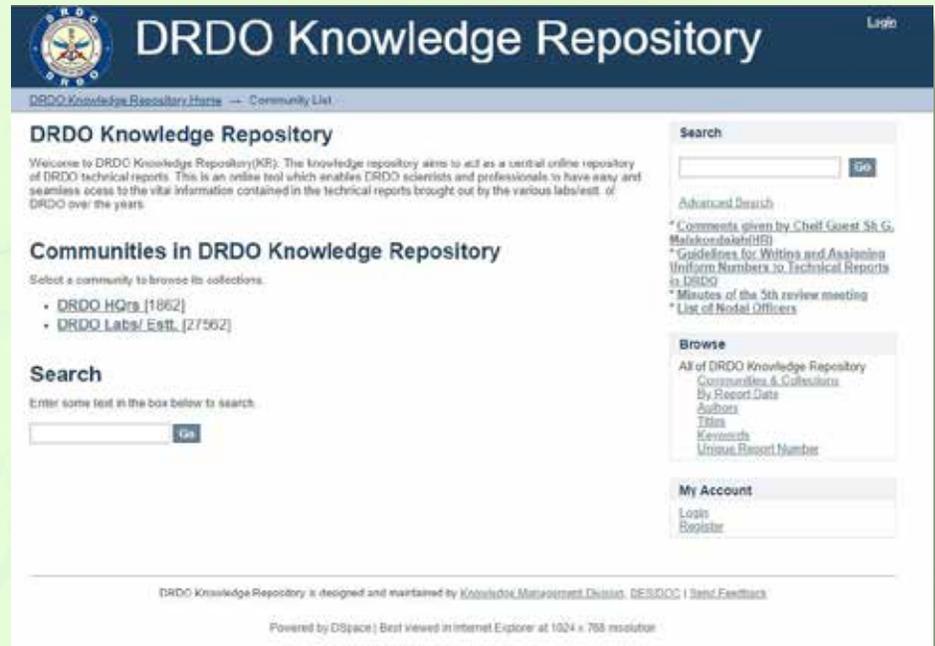
products & technologies, events, portraits, heritage photographs and large number of videos of DRDO events. The photo bank caters the demands of photos and video for various publications, exhibitions, web designing, video productions and presentations.

Knowledge Management Services

KNOWLEDGE REPOSITORY OF DRDO TECHNICAL REPORTS

The Repository contains Full text of technical and annual reports of DRDO labs/estts. These technical reports/project reports are primary source of vital information. Usually information contained in these reports are not available in any other document. It's a tool for literature search. It helps in avoiding duplication of efforts. Research output is more visible through these reports.

This repository provides an online archive for long term availability of technical project reports. These project reports indicate evolution of DRDO research and development. This institutional repository can be



accessed over DRDO Intranet single window services.

New Arrival

DRDO Monographs Series

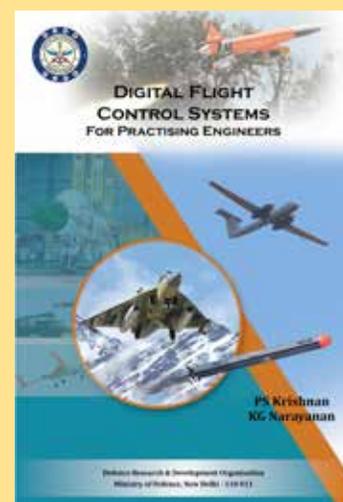
Digital Flight Control Systems For Practising Engineer

Sh PS Krishnan and Dr KG Narayanan

The monograph is an account of the journey made by Aeronautical Development Establishment (ADE), Bengaluru from its first analog automatic flight control system for an air launched drone (1974) to sophisticated digital Flight Control System (FCS) for the fly-by-wire supersonic fighter (2001) and to the autonomous low-level cruise platform

(2013). Distinguishing features of this monograph include the documentation of 'projects experience', inclusion of technical essays by domain experts and annotation of the contents of important references. A great deal of the technology described is a compilation of the work done by two generations of scientists and engineers at ADE and other co-operating institutions.

Price: INR ₹ 2080/-
US \$60
UK £50
ISBN: 978-81-86514-65-8; Pages: 416



INSTITUTIONAL REPOSITORY OF RESEARCH PAPERS/ ARTICLES

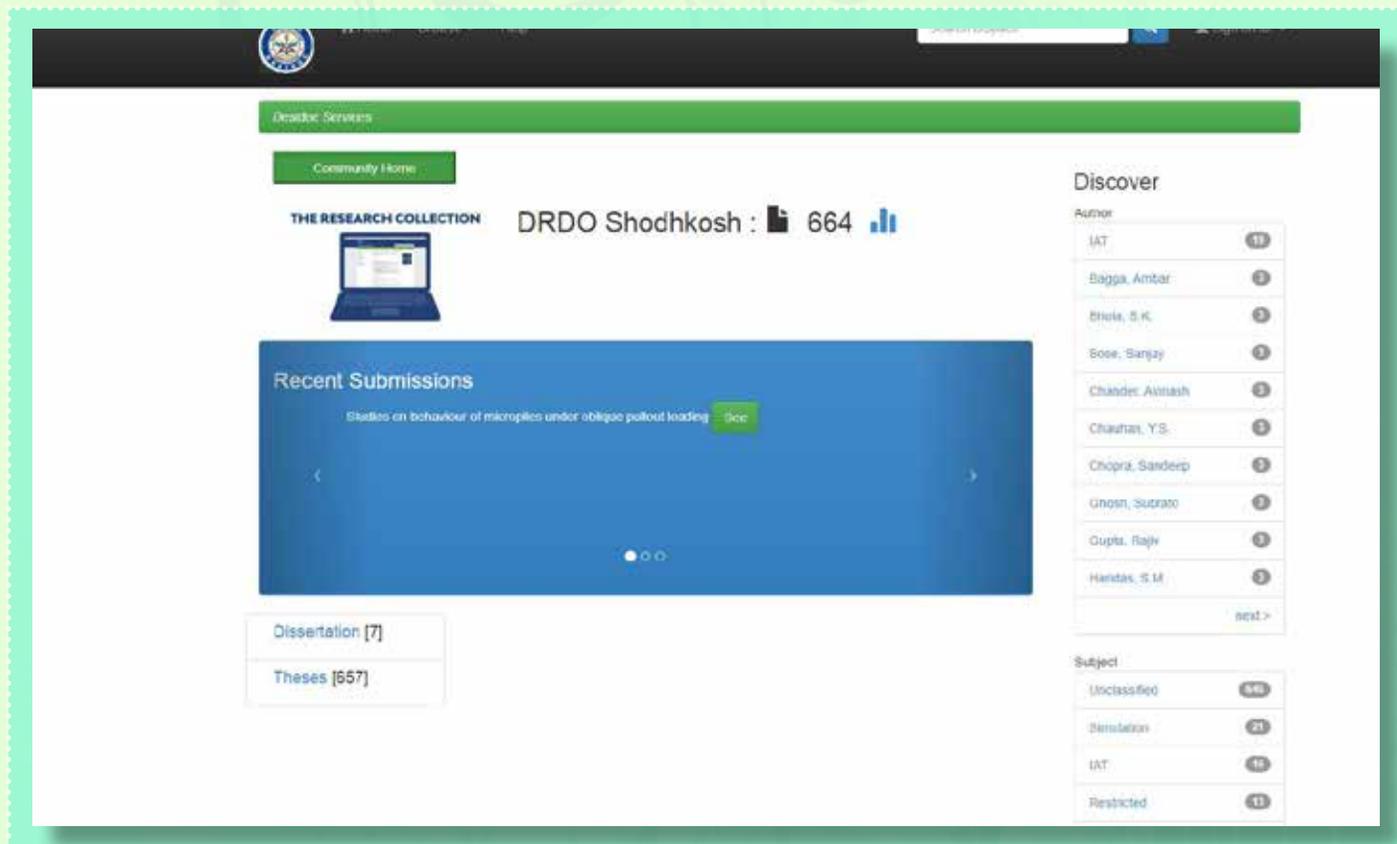
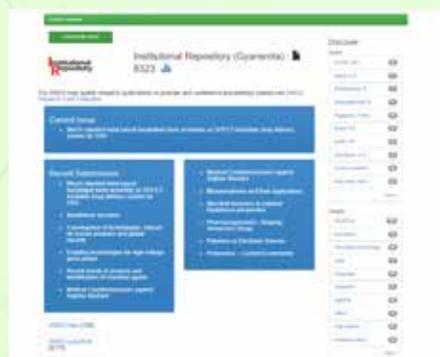
Institutional Repository (IR) of research papers/articles is a digital archive of the knowledge capital of DRDO which is accessible to the R&D community of the organization on DRDO Intranet. The Repository aims to capture, store, preserve and provide centralized access mechanism of the research output, i.e., intellectual content of DRDO. This includes all published material like research papers, articles, orations, biographies, books, chapters, etc. This institutional repository facilitates full-text access of all the documents archived in it.

The repository also provides data search on the basis of Year, Title, Author, Keywords and Citation.

DRDO SHODHKOSH: DIGITAL REPOSITORY OF THESES AND DISSERTATIONS

This repository is one of the recent initiatives of DESIDOC. The objective of this repository is to collect, collate, index and archive all theses and dissertations submitted by DRDO scholars on a central online platform for access across DRDO. Theses and dissertations are one of the rich and unique source of R&D information. DRDO encourages its employees to pursue higher studies (PhD and M. Tech.) to upgrade and update their knowledge. A good number of scientists are sponsored every year by DRDO to pursue higher education. On completion of their courses, the theses/dissertations are submitted in partial fulfillment of their doctoral and

postgraduate degrees. Keeping in view the importance of such intellectually rich scholarly documents, DESIDOC has established a “DRDO Shodhkosh: Repository of Theses & Dissertations”. This will help in creating wider visibility and usability of research work done by DRDO researchers in pursuance of their academic pursuit. The other objective is to preserve/archive these vital knowledge assets for better use in future.



DRDO E-LEARNING PORTAL

The objective of DRDO e-Learning Portal is to transform classroom based learning in DRDO to Computer-based learning in the form of e-Learning capsules through DRDO Intranet network. E-Learning portal increases the reachability and benefits of such trainings/talks to maximum personnel of DRDO, by making it round the clock available on Intranet. As of now, E-learning Portal has 24 modules of e-contents.



DESIDOC: The Way Ahead

DESIDOC has always been a pioneer in the field of documentation & information dissemination. The Centre has not only developed new ICT tools but has kept pace with the technology by adopting new tools and techniques to serve its users. The Centre is working towards the following:

- ◇ Automation of various activities done by HQ/labs. Online applications are being developed for enabling

Vendor registration, acquisition of research proposals, receiving test facility booking requests and many more. All these applications will be linked with Internet website.

- ◇ AI-based Knowledge Management Portal for DRDO: This will be a collaborative platform for all DRDO technical manpower where they can share and discuss various technical subjects to develop and manage new technical knowledge.
- ◇ As required by DRDO HQ, DESIDOC is documenting

successful projects/products of DRDO. Each project document will include complete details since inception till completion/induction.

- ◇ DESIDOC has a vast and ever-growing photo-gallery consisting of images for last many decades. To organize these images based on similarity and make the retrieval of desired images easy and quick, the process will be automated by use of image recognition techniques.

READERS' FEEDBACK

Readers are requested to send their feedback to enable us to further improve the content of Technology Focus. Please send your suggestions to The Editor, Technology Focus, DESIDOC, Metcalfe House, Delhi 110 054.

New Initiatives during 2019-2020



Release of DRDO E-library by Secretary DDR&D and Chairman DRDO on 1 January 2019



Release of DRDO Website by Raksha Mantri Shri Rajnath Singh on 15 October 2019



Release of DRDO e-Education and Knowledge Sharing Platform by DS & DG (HR) DRDO on 15 September 2020



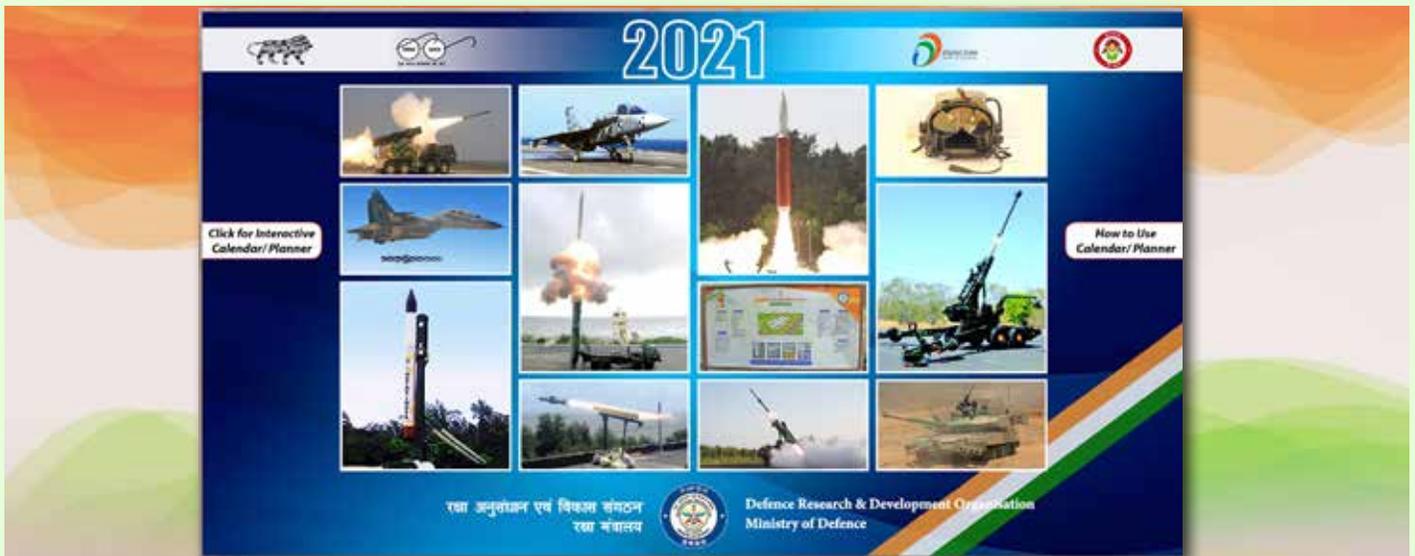
Release of DRDO Tube by Secretary DDR&D and Chairman DRDO on 13 October 2020



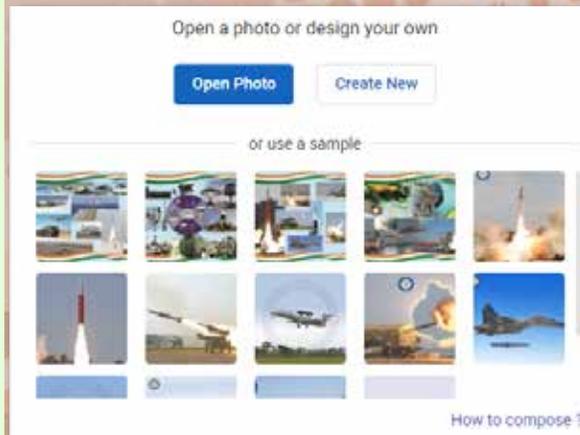
Release of DRDO Monograph 'Issues on Development of Communication Technology Using Orbiting Satellites' on 1 January 2021



Release of DRDO E-Bulletin by DS & DG (HR) on 1 January 2021



DRDO E-calendar and Planner



DRDO E-greetings Service



Single Window Access Service (SWAS) on DRDO Intranet



Newspaper Clippings Service and as visible in Touch Screen Kiosk

DRSJDOC at Various Exhibitions



Indian Science Congress 2019



Aero India 2019



Raising Day 2019



Indian Science Congress 2020



DefExpo 2020



World Book Fair 2020

Eminent Visitors at DESJDOC



**Nobel Peace Prize Winner
Shri Kailash Satyarthi**



Major General G.D. Bakshi (Retd)



Prof. Randeep Guleria



Prof. Balram Bhargava



Padmashree Surinder Sharma



Padma Bhushan MC Mary Kom



Padmashree Dr Arunima Sinha



Dr. Vinay Sahasrabudde



Shri Gaur Gopal Das

Statement about *Technology Focus* under Rule 10 of the Registration of Newspaper (Central) Rule 1965

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Nationality : Indian
Address : DESIDOC, Metcalfe House, Delhi-110 054
5. Editor-in-Chief : Dr (Mrs) Alka Suri
Nationality : Indian
Address : DESIDOC, Metcalfe House, Delhi-110 054
6. Name and address of individual who owns the newspaper and partners or shareholders holding more than one per cent of the total capital. : Defence Research and Development Organisation

I, Alka Suri, hereby declare that the particulars given above are true to my knowledge and belief.

(Alka Suri)
Signature of Publisher

Technology Focus
*wishes its Readers best wishes for a
Very happy & prosperous New year 2021*

डेसीडॉक द्वारा प्रकाशित

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