CAPACITY BUILDING COMMISSION

Department of Defence Research and Development

Annual Capacity Building Plan (ACBP)

Capacity Building Commission, Government of India

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List of Abbreviations

Abbreviations	Full Form
NPCSCB	National Programme for Civil Services Capacity Building
CBC	Capacity Building Commission
ACBP	Annual Capacity Building Plans
MoD	Ministry of Defence
DoD	Department of Defence
MDO	Ministries/Departments/Organisation
FGD	Focused Group Discussions
RACT	Role-Activity-Competency-Training
SO	Section Officer
ASO	Assistant Section Officer
OSD	Officers on Special Duty
ISTM	Institute of Secretariat Training and Management
GDP	Gross Domestic Product
IMF	International Monetary Fund
PMHRC	Prime Minister's Public Human Resource Council
SPV	Special Purpose Vehicle
FRAC	Framework of Roles, Activities, and Competencies
JS	Joint Secretaries
MoU	Memorandum of Understanding
RTI	Right to Information
GeM	Government e-Marketplace
IFI	International Financial Institutions
PMO	Prime Minister Office
FDI	Foreign Direct Investment
APMS	Audit Para Monitoring System
APAR	Annual Performance Assessment Report
ACR	Annual Confidential Report
CPGRAMS	Centralised Public Grievance Redress and Monitoring System

Abbreviations	Full Form
ACP	Assured Career Progression
DPC	Departmental Promotion Committees
GFR	General Financial Rules
DFPR	Delegation of Financial Powers Rules
DFPDS	Delegation of Financial Powers Defense Services
CPL	Continuous Professional Learning
CBU	Capacity Building Unit
OM	Office Memorandum
TNA	Training Needs Analysis
SoCs	Statement of Cases
SHQs	Service Head Quarters
IRCC	Inter-Regional Coordination Committee
ENC	Eastern Naval Command
ICG	Indian Coast Guard
HBA	House Building Advance
BRO	Border Road Organisation
CVC	Central Vigilance Committee
APCSS	Asia-Pacific Center for Security Studies
URDPFI	Urban and Regional Development Plans Formulation and Implementation
AFMS	Armed Forces Medical Services
DGDS	Director General of Dental services
MES	Military Engineer Service
OOMF	Output-outcome monitoring framework
DPENGRAMS	Defence Pension Grievances Redress And Monitoring System
RBMS	Results-based management system
SOP	Standard Operating Procedures

1. Executive Summary

A. Context

The Union Government launched Mission Karmayogi, also referred to as the National Programme for Civil Services Capacity Building (NPCSCB), in September 2020. The programme aims to create a professional, competent, well-trained, and future-ready civil service through guided capacity building and is based on the philosophy of creating an ecosystem thriving on "competency-driven training and human resource management" by transitioning from a 'rule-based' system to a 'role-based' system." Under this program, the Capacity Building Commission (CBC) has been set up for functional supervision of civil services training institutions and is currently conceptualizing and developing Annual Capacity Building Plans (ACBPs) for different Ministries, Departments, and Organisations of Government of India (GoI) – with Defence Research and Development Organisation under Ministry of Defence (MoD) being one of them.

B. Annual Capacity Building Plan

The Annual Capacity Building Plan (ACBP) is a strategic document that outlines key strategic areas that require intervention within the Ministry, Department, Organisation (MDO) and provides a macro picture of year-wise capacity building initiatives that would cater to those areas. The ACBP is incremental in nature, identifying a few focus areas (in which the competency of the MDO – its officials, resources, etc. needs to be built) that demand immediate attention and will gradually evolve into a full-fledged annual training calendar plan. The plan will follow a structured process of preparation as it involves working in tandem with all divisions within the MDO.
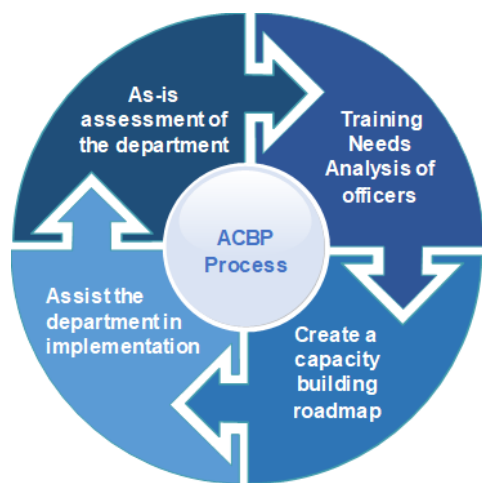

Figure 1: The process of Annual Capacity Building Plan (ACBP)

C. ACBP for the Defence Research and Development Organisation

The ACBP preparation for Defence Research and Development Organisation began in the month of January 2023 with a kick-off meeting held under the Chairpersonship of the Secretary of the Defence Research and Development Organisation on 23rd January 2023. This meeting was subsequently followed by consultations with the Director of HR and Focused Group Discussions (FGDs) with officers/staff of the Department held across multiple labs in Delhi, Pune, Hyderabad, and Bangalore.

As part of the process to prepare the ACBP, data collection and collation exercises were initially rolled out to conduct an As-Is Assessment of the Department. The same aimed to capture data points that would enable in building up a baseline for training and capacity building interventions at an institutional level. Roles and responsibilities of various divisions of the Department along with the existing capacity building interventions at the departmental level were studied. FGDs were carried out through in-person meetings and consultative workshops, spanning various levels of hierarchy within the organization. The workshops conducted were targeted to gauge nature of demand on specific areas of competency and training needs that were directly fed into a detailed matrix outlining the major roles and activities being performed across functions.

As a part of the next steps, for every unique role under the Defence Research and Development Organisation (DRDO), the competency needs will be grouped under one of the three buckets as discussed below:

- **Domain**: Knowledge and expertise related to the sector, division, and the respective focus areas of each division
- **Functional**: Cross-cutting needs across MDOs which is related to functional aspects of the division such as administration, financial planning, communication, legal, stakeholder management, technological knowledge, and other such broad areas of expertise
- **Behavioural**: Pertaining to the learning and implementation of soft skills and cultivating certain attitudes

Based on the understanding of the nature of roles and activities at each level, specific areas of competencies were mapped to each role. These competencies were evaluated through primary interaction with these individuals and consultation with higher officials to identify competency gaps. Based on these competency gaps, basic and advanced levels of training interventions were identified and marked out across the **Role-Activity-Competency-Training** (RACT) matrix. At an organizational level, the dimensions for capacity building are for non-training interventions like enhancements to technical systems, processes mapping and improvements, technology and data handling, resources and assets optimization, personnel management, partnerships, and stakeholder engagement methods, use and enhancement of digital tools especially for future, etc.

D. Macro picture of Capacity Need Analysis (CNA) exercise

The Capacity Needs Analysis exercise has been undertaken to identify and assess the knowledge and skills required by all officers under DRDO which would enable them in executing their duties effectively. It involved evaluating the required competencies within the department and identifying gaps that need to be addressed to enhance performance and achieve desired outcomes. In this context, three key dimensions of knowledge are being considered: domain knowledge, functional skills, and behavioral skills and the analysis is being conducted at a department level, hierarchical role level, and at an individual and division level.

In terms of domain knowledge, the top courses identified as crucial for all officers across the department varies from one role to the other. For officers entailing the role of Human Resources, domain trainings will include trainings on **Competency mapping, Training Needs Analysis, Recruitment Guidelines, Mentoring Procedures** as well as **Public Relation** skills. For the technical department, domain trainings will encompass trainings on **Research Methodologies, Design Standards, AI modelling, Safety Procedures, Reliability Engineering, Encryption** etc. Officers in the Account Management department will require trainings on **Policies and Financial rules**, **Project Accounting, Resource Generation Accounting**, **Handling cash and Accounts** etc. The Material Management department domain trainings would encompass **Procurement Processes, INCO terms, Warehouse and Inventory Management, Disposal Processes** etc. Officers in the Admin department, would require domain training on **Establishment Rules, Knowledge of statutory regulations, Litigation Management** etc.

As a part of functional knowledge, there's an overlap of competencies required across multiple roles. Some of the most common functional competencies required across the department include **Data Analytics, Cyber-Security, Database Management,** Handling government e-portals like **Mayurpankh ERP**, **GeM, SPARROW, e-Pragati,** and **MoD dashboard, Project Management tools, Financial Management and Budgeting,** Knowledge of different technology tools like **Artificial Intelligence**, **Cloud Computing**, **Networking, Programming Languages** etc., **Contract management and Report Writing.** In terms of behavioral competencies, common skills required across the department include **Decision-making** abilities, **Time**

management, Teamwork, Stress management, Conflict resolution, Emotional intelligence, Gender-bias training and proper **workplace ethics.**

At higher management levels, there is a requirement to be competent with **different policies** under the Ministry of Defence (MoD) that may impact the overall delivery of critical projects at the implementation stage. Competency needs at the middle and junior management level are largely **administrative and research-oriented in nature**, involving considerable desk work. It thus requires them to be proficient with the MS-Office suite, handling different processes and portals, research skills and report-writing skills. Also, based on a specific role and job-description, the intensity of training would vary from basic to advanced, depending on the criticality of a particular competency area in effectively discharging duties under a role / designation.

E. Conclusion

Based on the capacity-building requirements identified across the domain, functional and behavioural competency areas, the ACBP report presents an annual training plan. The plan developed takes into account all the competency requirements identified above, offering a macro picture of year-wise capacity building initiatives that would cater to identified gap areas. The implementation of ACBP is envisaged through a Capacity Building Unit (CBU). CBC shall guide the CBU on exercising a monitoring oversight over the implementation exercise.

2. Introduction to Mission Karmayogi

The Indian economy is anticipated to be one of the fastest-growing economies in the world. International Monetary Fund (IMF) estimates India's Gross Domestic Product (GDP) to grow at 7 percent in CY23. This is a positive step towards realising its ambition of becoming a USD 55 trillion economy in the next few years. Major reforms are being introduced to achieve this target and to meet the aspirations of its growing youth. India is on the cusp of a major transformation. The implementation of the planned transformations is being led by the civil services. The civil services are engaged in rendering a range of public services, welfare programmes and core governance related functions that enable the government to serve its citizens efficiently and effectively. Hence, capacity building of civil service has been identified as one of the key pillars to meet the changing needs of the country, with a focus on moulding a future ready civil service that can deliver to larger social and economic mandates.

However, the prevailing civil services capacity building landscape was marred by various challenges. The capacity programmes were largely cadre, service and department driven leading to a silo-based approach disallowing consistent peer to peer learning across multiple services, thereby limiting a collaborative learning environment. There is a non-availability of life-long and continuous training programmes for civil servants with the current ones having an inordinate high time lapse between them. The capacity building landscape also lacked data-driven, robust monitoring and evaluation framework to achieve outcomes, milestones, key performance indicators of civil servants.

The National Programme for Civil Services Capacity Building (NPCSCB)- Mission Karmayogi was launched in 2020, keeping in mind the above challenges. Mission Karmayogi aims at a comprehensive reform of civil services capacity building mechanism at individual, organizational and institutional level for efficient public service delivery, capacity building and continuous learning for India's most vital civil servants. The program believes in the philosophy that a suitable government workforce requires a dynamic, competency-driven capacity building approach, aligned to the demands of the rapidly changing world. Envisioned as one of the largest capacity building initiatives for government organizations globally, the programme envisages to train ~46 lakh officials at the centre and ~1.5 crore officials across states and local bodies.

NPCSCB proposes to leverage technology to offer world class learning to all the civil service officials across different hierarchies and geographies. For larger impact, the intervention aims to cover and address the capacity building requirements of all the employees of government ministries/departments/organizations. Mission Karmayogi aims to embark on a learning transformation programme that will address the capacity building requirements of civil service through a comprehensive online platform – i-GOT Karmayogi. iGOT Karmayogi aims to offer online, face-to-face and blending learning options, while managing and maintaining an extensive record of civil servants. i-GOT is an online learning platform that has been developed under Mission Karmayogi to specifically cater to the capacity building needs of the nation's administrators. The content can be created by different ministries, departments, in-house or through knowledge partners. Carefully crafted and vetted content from leading government institutions, private content providers and individual resources have already been made available on the i-GOT platform. Along with the i-GOT platform, Mission Karmayogi aspires to enable all the officials to pursue anytime-anyplace-any-device learning at their own convenience. The officials will have access to round-the clock guidance by being able to refer to job-specific learning resources and collaborating with officials who have completed the training previously. This feature

aims at enabling the officials to take charge of their own professional learning journey, using self-directed or guided learning paths, enabling continuous learning for all.

The institutional arrangement for implementation and monitoring of programme comprises of the apex body, **Prime Minister's Public Human Resource Council** (PMHRC), Cabinet Secretariat Coordination Unit, **Capacity Building Commission** (CBC) and a **Special Purpose Vehicle** (SPV) to operate the digital assets created for NPCSCB. While the Cabinet Secretariat Coordination Unit will monitor the implementation of NPCSCB, align stakeholders and oversee the capacity building plans, the Capacity Building Commission (CBC) will be playing a critical role with respect to facilitating the preparation of annual capacity building plans.

Under this highly aspirational initiative, CBC aims to facilitate creation of Annual Capacity Building Plans (ACBPs) for all ministries, departments, and organizations of Government of India to enhance competency and efficacy at all the levels - individual, organizational, and institutional. Constituted in 2021, CBC is the custodian of the civil services capacity building initiative and hence oversees the planning and implementation of the Mission Karmayogi programme. Under the programme it is envisaged to prepare Annual Capacity Building Plans which would enable:

Figure 2: Institutional arrangement of Mission Karmayogi

- A 21st century civil service machinery that is focused on delivering Ease of Living, Ease of Doing Business, Citizen Centricity, and governance reform at its core.
- A civil service which is aligned with national priorities, and is well apprised and equipped to respond to emerging technologies
- Aligning work allocation of civil servants by matching their competencies to the requirements of the post, enabling a transition from 'Rule-based' to 'Role-based' management framework

- Calibration of civil service positions to a Framework of Roles, Activities, and Competencies (FRAC) approach, to suggest learning content relevant to the identified FRAC for different positions
- An opportunity for civil servants to continuously build and strengthen their Behavioural, Functional and Domain competencies in their self-driven and guided learning path.
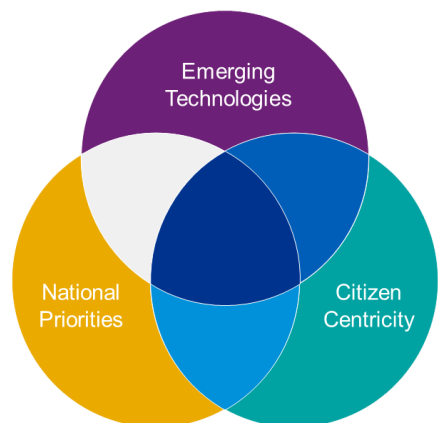
Figure 3: Three lenses of CBC interventions

As highlighted above, 'national priorities', 'emerging technologies' and 'citizen centricity' remain the three key lenses of all the interventions planned by CBC, including the Annual Capacity Building Plans. As per the exercise of ACBP preparation under Mission Karmayogi, each MDO is expected to arrive at its capacity building goals, keeping in focus the mentioned three lenses. The same have been elaborated below.

- **National Priorities**: This lens examines how the MDO contributes to the national priorities now and in future. The national priority includes goals such as USD 5 Trillion economy for India, Ease of Living, etc. The vision, mission, goals, and objectives of the Department (DRDO in this case) are studied to assess how these contribute to national priorities in coming times. Gaps, if found any, would then be identified by ACBP. Addressing these gaps through

training and organisation interventions would then become the key goal of ACBP.

- **Emerging Technologies:** The ACBP and the initiative overall should enhance the capacity of civil servants on emerging technologies. To prepare future-ready civil service, this focus area looks to understand the potential impact and challenges being posed by new technology trends in the sector in which the MDO is operating. The ACBP will also gauge the capacity the MDO currently has and the need to have other emerging technology trends. Such gaps would be targeted by ACBP to propose relevant capacity building interventions for the MDO.

- **Citizen Centricity:** The initiative should raise a set of civil service officers who promotes citizen centricity and customer serviceability as key focus areas. The ACBP exercise will involve examining MDO's key citizen centric initiatives (if applicable) such as – transparent and effective public delivery, customer focus, inclusion of citizen inputs during policy/scheme formulation, maintenance of effective grievance redressal system, participatory governance etc. Gaps in citizen centric initiatives, if identified for an MDO, will be targeted by ACBP and addressed using capacity building interventions at individual and organisational level.

3. Approach and Methodology

This section describes the approach taken by the study to understand steps taken for the preparation of the Capacity Needs Analysis (CNA) report for Department of Defence Research and Development Organization (DRDO).

In the initial stage, the charter of duties/allocation of work document was collected from the Department to understand the work performed by each wing in the Department. Subsequently, discussions (including Focus Group Discussions) were conducted with Directors, Deputy Secretaries, OSDs, Under Secretaries, Section Officers and Assistant Section Officers of various wings. The overall approach undertaken for preparation of this study report is explained below.

The key steps as illustrated above are explained in detail in the table below:

Steps	Details	Phase
Step 1: Meeting with officials of the Department	- A kick-of meeting was conducted under the chairmanship of the Secretary of the Defence Research and Development Organisation on 23rd January 2023. - Introduction to the initiative being undertaken for the preparation of the Annual Capacity Building Plan (ACBP) was provided. - Details for the formats/tools to be followed for data collection was shared along with identification of a nodal officer from the Department. - The current agenda which would focus on capacity building at – individual, organisational, and institutional level was shared along with the critical facets encompassing the same.	As-Is Assessment
Step 2: Understanding the role and function of the Department	Following the meeting, team conducted a thorough secondary review of following areas: - Departments' mandate, roles, activities, policies, any recent developments/trends from Department's website, annual reports, portals etc. - The current organisational structure, important stakeholders of the Department including its various attached offices. - Department's key programmes, priorities, future-plan, and vision along with key activities from the lens of national priorities, citizen centricity and emerging technology. - Sectoral training institutes falling under the Department engaged in training of civil servants.	As-Is Assessment
Step 3: Identification and mapping of officials/staff	Mapping of officials/staff working at different hierarchical levels of the Department / Divisions was conducted, i.e., Human Resources, Technical, Material Management, Accounts and Admin. for Focus Group Discussions held across multiples labs in Delhi, Pune, Hyderabad and Bangalore	As-Is Assessment

Steps	Details	Phase
Step 4: Consultation with head/Joint Secretaries and other officials	• Focus Group Discussions were conducted with Directors, Scientists, and other staff/officials of the Department working at different hierarchical levels.	As-Is Assessment
Step 5: Comprehend roles and responsibilities of different wings/ positions of the Department	FGDs were done to understand: • The roles and responsibilities undertaken by each role of the Department. • Understanding the Training needs and competencies required to deliver the various roles in the department • The current state of training/ capacity development/ challenges within the Department/divisions. FGD workshops conducted with the officials also involved understanding the existing capacity building initiatives being taken at the Department. • Any structured induction training to explain about the department/ wing, employee's role and responsibilities, and expectations from them. • Types of training conducted, if any. • Frequency of the training. • Effectiveness of the training provided. Any encouragement/incentive structure provided by the Department for participating in capacity building initiatives.	As-Is Assessment
Step 6: Identification of current capacity building practices and Capacity Needs Assessment (CNA)	Discussions with Joint Secretaries and Directors, and FGDs with Scientists, and other staff/officials were undertaken to understand the following aspects - • The competencies required to execute the key functions of the division / role • The competency gaps as per the experience of the head of the division or other Department officials • Current organizational practices and institutional mechanisms to address competency deficits, and ongoing capacity building and training initiatives	Capacity Needs Analysis
Step 7: Identification of training providers and preparation of training plan to finalize ACBP	• The competency requirements of the officials identified as part of CNA exercise were mapped to relevant training providers. The Department will collaborate with these training providers for development and delivery of training courses to its officials. • An annual training plan for delivery of such courses is prepared. Steps for identifying a particular institute, training course, mode of delivery, duration are listed below:	Preparation of ACBP

Steps	Details	Phase

	• Relevant courses from a variety of institutes and platforms based on their competency was identified. These include-
	    o iGOT Karmayogi platform
	    o Institutes associated with respective MDOs
	    o Other government training institutes
	    o Central and State Public Sector Undertakings
	    o Indian universities (CBC is developing policies on onboarding & pricing)
	    o Private sector organizations within and outside India (Udemy, Coursera, etc.)
	    o Foreign universities (CBC is developing policies on onboarding & pricing
	• Once the pertinent courses were identified, assessment on their applicability to officials along with their potential usefulness was deliberated.
	• Further meetings were held with Department officials to determine whether if officials prefer online, classroom, or a combination of both for course delivery.
	• Following mutual discussions with Ministry CBU/institution, the frequency and duration of courses at specific role level was identified.
	Going ahead, a designated spokesperson will be appointed as a point of contact between CBU and the relevant institute.	

Table 1: Understanding Key Steps undertaken for Preparation of the Capacity Needs Analysis Report

4. Annual Training Plan

4.1. At Role and Division level – Training Plan

This section presents a tentative annual training plan to address the competency requirements identified in the CNA exercise (Findings of the CNA exercise are explained in detail in the CNA report). It proposes the training interventions that the Department can undertake to address the different domain, functional and behavioural competency requirements identified in the CNA exercise. For each of the competencies required, a training intervention outlining the training provider(s)/institute (s), mode of delivery, training duration, target group, quarter of training etc. etc. is suggested. The approach is followed for all the domain, functional and behavioural competencies identified.

All Quarter 1 trainings have been assigned based on the availability of these trainings on i-GoT. Therefore, these training could be taken up immediately. Most Quarter 2 trainings have also been assigned on their availability on i-GoT or their plans to be available by the quarter 2 timelines. Most quarter 3 and quarter 4 trainings, however, are yet to be available on i-GoT and are presently in the process of preparation. The domain competencies listed under DRDO will require DRDO's supervision for its preparation and implementation.

4.1.1. Training plan for Domain competencies

The below table presents the annual training plan for domain competencies required by the Department officials at various designations. These competencies are specific expertise related to the Defence sector which are required by the Department officials currently and in coming times. The Department can collaborate with the listed institutes/Training Providers (TPs) to undertake and complete the required training interventions. All this can be done under the overall guidance and support of CBC. The domain training interventions, along with their partner TPs, training duration, target audience, delivery mode, and training quarter are provided below.

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No.	Course	Mode	Institute/Training Provider	Division	Duration	Quarter
1.	"Know Your Ministry" module for Ministry of Defence and Department of Defence Research and Development	Online	DRDO and third-party agency empaneled by CBC	Human Resources	3-4 hours	Q2
2.	Postings and Transfer policies in DRDO	Online	DRDO Internal Training Institutes	Human Resources	<TBD>	Q3
3.	Recruitment cycle and recruitment guidelines for JRF and apprentices in DRDO	Online	DRDO Internal Training Institutes	Human Resources	<TBD>	Q4
4.	Modules on SOP for JRF Recruitment and MHRD's Recruitment of Apprentices	Online	DRDO Internal Training Institutes	Human Resources	<TBD>	Q4
5.	Orientation Course in Defence Finance For Higher Management	Online	iGot and National academy of defence financial management (NADFM)	Human Resources	1hr 56 min	Q2
6.	Simulation and tools required for simulation	Online	IIT Bombay - Simulation Modelling and Analysis Swayam: Modelling and Simulation of Dynamic Systems (IIT Roorkee)	Technical	<TBD>	Q3
7.	Research methodologies – literature surveys, patent search etc.	Online	National Programme on Technology Enhanced Learning (NTPEL): Research Methodologies Swayam – IISER – Research methodology Swayam – IIT Kharagpur – Patent Search for Engineers and Lawyers	Technical	<TBD>	Q3
8.	Knowledge of military design standards, aero standards	Online	DRDO Internal Training Institutes	Technical	<TBD>	Q4
9.	Reverse engineering of imported technology	Online	Manufacturing Technologies: IIT Guwahati Reverse Engineering & Rapid Prototyping: Centurion University	Technical	<TBD>	Q4 Q4
10.	Knowledge of Design tools in 3D like- Computer Aided Design (CAD), Computer	Online	IIT Bombay: Realistic Architectural 3D Modeling	Technical	<TBD>	Q4

No.	Course	Mode	Institute/Training Provider	Division	Duration	Quarter
	Aided Manufacturing (CAM), Computer Aided Engineering (CAE), Electronic Design Automation (EDA)		IIT Bombay: Realistic Architectural 3D Modeling	edX			Q4
11.	Knowledge of DoE – Design of Experiment/ Design for Six Sigma (DFSS)	Online	Six Sigma and Lean Six Sigma Certification	Technical	<TBD>	Q4
			Swayam – IIT Kharagpur – Six Sigma			
			Industrial Design, Innovation and Entrepreneurship – IIT Delhi			
			Design of Experiments: Concepts and Application Case Studies - Udemy			
			Design for Six Sigma – YouTube – IIT Kharagpur			
			IIT Kharagpur: Six Sigma Fundamentals and Applications			
13.	Knowledge of Project management tools / PERT chart/ GANTT etc.	Online	National Programme on Technology Enhanced Learning (NTPEL): Project Management	Technical	<TBD>	Q4
			IT Project Management – Indian School of Business (ISB)		<TBD>	
14.	Knowledge about MATLAB / Lab view tools / origin / solid works / software testing / Linux etc.	Online	Matlab Programming for Numerical Computation – Swayam – IIT Madras	Technical	<TBD>	Q3
			Software Testing – Swayam – IIT Kharagpur			
			Modeling and Simulation using solid works – IIT Kharagpur			
			Linux – IIT Kanpur			
16.	Available technology knowledge for development of product – Scada, high accelerated stress training (quality & reliability, software / hardware quality assurance & reliability).	Online	New Product Development and Management – IIT Delhi	Technical	<TBD>	Q3
					<TBD>	
					<TBD>	

No.	Course	Mode	Institute/Training Provider	Division	Duration	Quarter
17.	Knowledge & usage of programming languages – C, C++, Python, Web application development, Shell programming	Online	Programming Basics: IIT Bombay: Programming Basics | edX	Technical	<TBD>	Q3
			Basic Programming using Python: IIT Bombay		<TBD>	
19.	Safety procedures specific to DRDO – safety management, System safety analysis	Online	DRDO Internal Training Institutes	Technical	<TBD>	Q3
20.	Knowledge about military industry standards.	Online	DRDO Internal Training Institutes	Technical	<TBD>	Q3
21.	Industry 4.0: Introduction and Implementation	Online	iGoT and Bharat Sanchar Nigam Limited (BSNL)	Technical	31m	Q1
22.	Introduction to Emerging Technologies	Online	iGoT and Wadhwani Institute of Technology and Policy	Technical	2h 20m	Q1
24.	Ansys and Hyper mesh design tools	Online	Ansys Innovation Courses | Ansys Innovation Space	Technical	<TBD>	Q3
			Ansys Workbench Full Course - Structure, Thermal Analysis (Udemy)		<TBD>	
25.	Knowledge of ISO and ASME standards	Online	Quality System Standards: IIT Kharagpur	Technical	<TBD>	Q3
			Introduction to ASME Standards & Certification		<TBD>	
26.	System Engineering	Online	Architecture and Systems Engineering - MIT	Technical	<TBD>	Q3
			Systems Engineering: Theory & Practice – Swayam – IIT Kanpur		<TBD>	
			Introduction to Systems Engineering | Coursera		<TBD>	
27.	Design for Manufacturing	Online	Manufacturing process selection and Design for manufacturing | Udemy	Technical	<TBD>	Q3
			Swayam NPTEL - Design for Manufacture and Assembly (DFMA)		<TBD>	

No.	Course	Mode	Institute/Training Provider	Division	Duration	Quarter
			QIP Short Term Course on Design for Manufacture and Assembly (iitk.ac.in)		\<TBD\>	
28.	Reliability engineering	Online	Introduction to Reliability Engineering - Course (nptel.ac.in)	Technical	\<TBD\>	Q4
			Reliability Engineering, IITB		\<TBD\>	
			Free Online Course: Reliability in Engineering Design from edX	Class Central (Purdue University)		\<TBD\>	
30.	Failure Mode Effect Analysis	Online	Swayam NPTEL: Failure Mode Effect Analysis	Technical	\<TBD\>	Q4
			Mechanical Engineering at IIT Madras » Failure Analysis and Design		\<TBD\>	
			Top Failure Mode and Effects Analysis (FMEA) Courses Online - Udemy		\<TBD\>	
31.	Derating analysis	Online	Derating Analysis Module (aldservice.com)	Technical	\<TBD\>	Q4
32.	Knowledge of software frameworks like QT, IDE	Online	Qt Courses	Software development courses with Qt Framework	Technical	\<TBD\>	Q4
33.	Knowledge about machine tools and cutting tools	Online	Metal Cutting and Machine Tools – Swayam – IIT Kharagpur	Technical	\<TBD\>	Q4
			MACHINING DYNAMICS (iitk.ac.in)		\<TBD\>	
			CNC cutting tools, and machining techniques	Udemy		\<TBD\>	
34.	Knowledge about production processes and materials, assembly processes	Online	Massachusetts Institute of Technology: Fundamentals of Manufacturing Processes	edX	Technical	\<TBD\>	Q4
			Fundamentals of manufacturing processes – SWAYAM IIT Roorkee		\<TBD\>	

No.	Course	Mode	Institute/Training Provider	Division	Duration	Quarter
			QIP Short Term Course on Design for Manufacture and Assembly (iitk.ac.in)			
35.	Document traceability and Requirement traceability	Online	Tracing and Leveraging Requirements | Pluralsight	Technical	<TBD>	Q4
37.	Knowledge about Aerodynamic studies, Aero standards	Online	IIT Kanpur - Aerospace Engineering Courses	Technical	<TBD>	Q4
39.	Technology forecasting	Online	Technology Forecasting for strategic decision making – Swayam – IIT Madras	Technical	<TBD>	Q4
			Forecasting Technology Innovation: Using Data for Strategic Advantage | Professional Education (mit.edu)		<TBD>	
40.	Knowledge of instrumentation, instrument calibration, test standards, coding standards etc.	Online	Global Navigation Satellite Systems And Applications - Course (nptel.ac.in)	Technical	<TBD>	Q4
			IIT Kharagpur		<TBD>	
41.	Knowledge of policies – DRONE policy, Make in India policy	Online	DRDO Internal Training Institute/ NADP	Technical	<TBD>	Q4
42.	Latest trends and developments in the Satellite system availability	Online	IIT Bombay	Technical	<TBD>	Q1
	Space Situational Awareness		iGoT and Indian Space Research Organisation (ISRO)		6h 22min	
45.	Knowledge of relevant policies as listed - Classification of Handbook by Controller General of Defence Accounts (CGDA)	Online	DRDO Internal Training Institutes	Accounts		Q4
46.	Fundamental Rules (FR) and Supplementary Rules (SR)	Online	iGoT and Department of Expenditure	Accounts	3h 54m	Q1
47.	Public Procurement Framework of GOI	Online	iGoT and Department of Expenditure	Accounts	1h 55m	Q1
48.	Payment Function and Booking of Expenditure	Online	iGoT and National academy of defence financial management (NADFM)	Accounts	1h 22m	Q1

No.	Course	Mode	Institute/Training Provider	Division	Duration	Quarter
49.	Budgetary System in Government	Online	iGoT and National academy of defence financial management (NADFM)	Accounts	45m	Q2
50.	Technical Evaluation and Commercial Evaluation - Process knowledge	Online	DRDO Internal Training Institutes	Accounts	<TBD>	Q3
51.	Foreign procurement knowledge/process - Foreign exchange knowledge, Foreign purchase payments	Online	DRDO Internal Training Institutes	Accounts	<TBD>	Q3
52.	International Commercial Terms (INCOTERMS)	Online	iGoT and National academy of defence financial management (NADFM)	Accounts	27m	Q2
53.	Knowledge of Air Consolidation Agency (ACA) Contracts	Online	DRDO Internal Training Institutes	Accounts	<TBD>	Q2
55.	Financial Effects of Penalties	Online	iGoT and Institute of Secretariat Training and Management	Accounts	22m	Q2
59.	Benchmarking price tools	Online	Principles of Pricing (iitk.ac.in) – IIT Kharagpur	Accounts	<TBD>	Q4
60.	Handling DRDO – Integrated ERP – Integrated Material Management System (IMMS)	Online	DRDO Internal Training Institutes	Accounts	<TBD>	Q4
61.	Knowledge on Material Management	Online	IIT Bombay/IIT Roorkee	Stores	<TBD>	Q3
62.	Knowledge of policies on insurances for stores movement – transit, burglary etc.	Online	DRDO Internal Training Institutes	Stores	<TBD>	Q3
63.	Knowledge about SMG (Stores Management Guidelines) 2023	Online	DRDO Internal Training Institutes	Stores	<TBD>	Q4
64.	FOL (Fuel, Oil, Lubricants) Management	Online	DRDO Internal Training Institutes with DGAQA	Stores	<TBD>	Q3
65.	Handling ammunition and explosive stores (specialized stores)	Online	DRDO Internal Training Institutes	Stores	<TBD>	Q4
66.	Reserve Guided Price (RGP) process	Online	DRDO Internal Training Institutes	Stores	<TBD>	Q3

No.	Course	Mode	Institute/Training Provider	Division	Duration	Quarter
68.	Environmental regulations/e-wastage disposal processes/cyber guidelines	Online	Certificate Course on E-Waste Management in India (cseindia.org) - Centre for Science and Environment Electronic Waste Management - Issues And Challenges - Course (nptel.ac.in)	Stores	<TBD>	Q4 Q3
69.	Internal Audit in Defence	Online	iGoT and National academy of defence financial management (NADFM)	Admin	1h 11m	Q2
70.	Govt Accounting System		iGoT and National academy of defence financial management (NADFM)	Admin	54m	Q1
71.	Recruitment processes - Knowledge about Vacancy identification processes – ARRV, scientific manpower projection	Online	DRDO Internal Training Institutes	Admin	<TBD>	Q3
72.	Knowledge of Statutory Regulatory Orders (SROs) and other policies/rules/Oms such as – DoPT guidelines etc.	Online	Defence Headquarters Training Institute (DHTI)	Admin	<TBD>	Q4
73.	Record Management Policy DRDO	Online	DRDO Internal Training Institutes	Admin	<TBD>	Q4
79.	National Pension System	Online	iGoT and Border Roads Organisation (BRO)	Admin	20min	Q2
80.	Family Pension under NPS	Online	iGoT and Defence Headquarters Training Institute (DHTI)	Admin	9 min	Q2
81.	Pensionary Benefits	Online	iGoT and Institute of Secretariat Training and Management	Admin	55 min	Q2
82.	Crisis management - Disaster management, identification of hazards and potential list of disasters and how to manage them in labs	Online	DRDO Internal Training Institutes	Admin	<TBD>	Q3
	Safety, Accident Prevention & Disaster Management (Power disaster)		iGoT		11h 37m	
83	Scientific Writing	Online	L1: R skillup L2: Elsevier R academy L3: CSIR-HRDC	Technical	<TBD>	Q2

No.	Course	Mode	Institute/Training Provider	Division	Duration	Quarter
84	Science Communications	Online	L1: R skillup L3: FAST (Offline)	Technical	<TBD>	Q2
85	Science Diplomacy	Online	L1: FAST L2: ITEC	Technical	<TBD>	Q2
86	Design thinking, Innovation thinking	Online	L1: IIT Delhi (CnK) L2: Udemy/Futurskills	Technical	<TBD>	Q2
87	Research Ethics	Online	L1: R skillup L2: ICMR (Multiple courses, including scientific ethics, human ethics, animal ethics) L2: Elseview R Academy	Technical	<TBD>	Q2
88	Research Practices	Online	L1: R skillup & NAARM L2: Coursera	Technical	<TBD>	Q2
89	Open Peer Reviewing	Online	L1: R Upskill L2: Elseview	Technical	<TBD>	Q2
90	Managing and Sharing Research Data, Data Protection	Online	L1: Elsevier R academy L3: CSIR	Technical	<TBD>	Q2
91	Interdisciplinary research	Online	Delft University of Technology: Multidisciplinary Research Methods for Engineers by edx	Technical	<TBD>	Q2
92	Tech Transfer	Online	CSIR-HRDC	Technical	<TBD>	Q2
93	Special Acts	Online	L1: Sardar Vallabhbhai Patel National Police Academy L2: Controller General of Patents Designs and Trademarks L3: Council of Scientific and Industrial Research	Technical	7h 17m	Q2
94	Survey Technics and Data Collection	Online	L1: Geological Survey of India L3: National Institute of Planning & Survey Engineering	Technical	<TBD>	Q2

No.	Course	Mode	Institute/Training Provider	Division	Duration	Quarter
95	Introduction to Leveraging AI and Chat GPT	Online	L1: iGoT L2: CloudX L3: IIT Kharagpur	Technical	\<TBD\>	Q2
96	Grant Writing	Online	L1: R Upskill L2: Welcome Trust Alliance- DBT	Technical	\<TBD\>	Q2
97	Project Management - R&D Projects	Online	L1: Udemy L2: IISER - Pune	Technical	\<TBD\>	Q2
98	Health research data management (ICMR)	Online	L2: R Upskill L3: ICMR	Technical	\<TBD\>	Q2

4.1.2   Training plan for Functional competencies

The below table presents the annual training plan for different functional competencies required by the Department officials, as identified during the CNA exercise. Few of the courses are readily available on iGOT (the Learning Management System started under Mission Karmayogi). Officials can directly start undertaking such iGOT courses. For others, the Department may collaborate with CBC to partner with the suggested institutes or Training Providers (TPs). Under the guidance of CBC, TPs can be partnered with to develop and deliver the proposed training courses. Specific requirements such as – delivery mode, duration, delivery quarter etc. can be communicated to the TPs to develop courses in line with the training plan presented below.

No.	Course	Mode	Institute/Training Provider	Duration	Quarter
1.	Formulation of Public Policies	Online	i-GoT and Institute of Secretariat Training and Management (ISTM)	2h 30m	Q1
	Basics of Public Policy Research		I-GoT and Indian Institute of Public Administration (IIPA)	2h 48m	
	Evidence in Public Policy		i-GoT and Indian School of Business	4h 48mins	
	Insights from Data for Policy		i-GoT and Indian School of Business	5h	
2.	Building strategic human resource capacity in public administration	Online	CBC to prepare a training module on this	<TBD>	Q1
	Establishment & Human Resource Management		State bank of India (CBC is collaborating to upload this on i-GoT)		
3.	Contract Management and Contract Laws/Indian Contract Act/Arbitration	Online	Contract Management – IIM Ahmedabad	<TBD>	Q2
			Contract Management and Arbitration – IIM Calcutta		
4.	Project Management	Online	Quality Control of India (QCI)	<TBD>	Q2
			iGOT & Indian Institute of Public Administration		
			Primavera – Oracle		
5.	Data Analysis (R and Python)	Online	Python – Upgrad	<TBD>	Q1
			R – Indian Statistical Institute		
			R and Python – Arun Jaitley National Institute of Financial Management		

No.	Course	Mode	Institute/Training Provider	Duration	Quarter
6.	Data Visualization (Tableau, Power BI)	Online	Courses from Simply Learn to be moved to i-GoT	<TBD>	Q3
7.	PARIMARJATA – Leave Rules, Pension Rules, Conduct Rules, Allowances, Office Procedure, RTI Act, Cabinet notes, Parliamentary Procedures, CAT Cases, Pay Fixation, Reform Initiatives of GoI, Procurement framework of GoI, APAR, Budget, CGHS and CS Rules etc.	Online	i-GoT and The Institute of Secretariat Training and Management (ISTM)	23 hours	Q1
	Central Civil Services (Conduct) Rules 1964		i-GoT and National Academy Of Defence Financial Management Institute (NADFM)	46 min	
8.	Vigilance Clearance	Online	i-GoT and Defence Headquarters Training Institute (DHTI)	12 min	Q1
	Vigilance Angle			9 min	
	Natural Justice			5 min	
	COMPLAINTS			5 min	
	Conduct of Enquiry in Disciplinary Matters			42 hours	
9.	Budgeting and Accounting	Online	The Institute of Chartered Accountants (ICAI) – CBC is collaborating on this	<TBD>	Q1
	Budgetary System in Government		i-GoT and National Academy Of Defence Financial Management Institute (NADFM)	45 mins	
	Govt Accounting System			54 mins	
	Budgeting in Defence			52 mins	
10.	Public Grievance Handling and CPGRAM 7.0	Online	i-GoT and The Institute of Secretariat Training and Management (ISTM)	2 hours	Q1
11.	Right to Information Act - Part 1 Right to Information Act - Part 2	Online	i-GoT and Institute of Secretariat Training and Management (ISTM) – Part 1& 2	55 min + 41 min	Q1
	Landmark Judgments- RTI Act, 2005		iGoT and Institute of Secretariat Training and Management (ISTM)	1 h 10m	
	Right to Information Act 2005		i-GoT and National Academy Of Defence Financial Management Institute (NADFM)	2 days	

No.	Course	Mode	Institute/Training Provider	Duration	Quarter
12.	Framing of Contracts	Online	Contract Management – IIM Ahmedabad	<TBD>	Q2
			Contract Management and Arbitration – IIM Calcutta		
13.	Basics of Administrative Law	Online	iGoT and LBSNAA	43 min	Q1
	Advanced Administrative Law	Online Online	iGoT and National Institute of Communication Finance	1 hour	
	Understanding of Labour Law		iGoT and National Institute of Communication Finance	46 min	
	Contract Labour Act and other Labour Laws		iGoT and Bharat Sanchar Nigam Limited (BSNL)	26 min	
14.	Apprenticeship programme management	Online	National Skill Development Corporation	<TBD>	Q4
15.	Coaching & Mentoring	Online	State bank of India (CBC is collaborating to upload this on i-GoT)	<TBD>	Q3
16.	Training to plan and conduct a workshop	Online	Certificate Program in Practitioner Skills for Facilitation (5 Days)	Tata Institute of Social Sciences (tiss.edu)	<TBD>	Q3
			Facilitation Skills - Indian Society for Training & Development (istd.in)		
17.	Tools and frameworks required for market survey	Online	Survey Data Collection and Analytics	Coursera	<TBD>	Q3
18.	Introduction to Gender and Disaster Risk Management	Online	iGoT and World Bank	40 min	Q1
19.	Cyber Security Basics	Online	iGoT and Microsoft	2h 22min	Q1
	Cyber Security and Strategy		iGoT	38 min	
	Basic Course on Cyber Security Awareness		iGoT and Centre for Development of Advanced Computing (C-DAC)	17h	
20.	Audit Paras	Online		<TBD>	

No.	Course	Mode	Institute/Training Provider	Duration	Quarter
	Handling the APMS Portal	Online	Institute of Secretariat Training and Management (ISTM)		Q4
21.	Introduction to GeM for Buyers	Online	Government e-marketplace (GeM)	1h 2min	Q1
	Mode of Procurement (Product)			3h 51min	
	Procurement Process			3h 6min	
	Invoicing and payment Process			17min	
	Mode of Procurement (Service)			1h 40min	
	Introduction to Sellers & Service Provider			5min	
	Bid Participation			21min	
	Payment process for Buyers			2h 7min	
	Vendor Registration			20min	
	Buyer Dashboard			1h 28min	
	Registration of Buyers			1h 38min	
	Catalogue Management			42min	
22.	General Financial Rules (GFR)	Online	National Academy Of Defence Financial Management Institute (NADFM)	<TBD>	Q3
23.	Delegation of Financial Powers (DFPR)	Online	National Academy Of Defence Financial Management Institute (NADFM)	<TBD>	Q2
24.	Delegation of Financial Powers to Defence Services 2021 (DFPDS)	Online	i-GoT and Defence Headquarters Training Institute (DHTI)	14m 2s	Q1
25.	A course on research of old records/online research	Online	Defence Headquarters Training Institute (DHTI)	<TBD>	Q3
26.	User Experience/User Interface (UX/UI) design	Online	Foundations of User Experience (UX) Design | Coursera	<TBD>	Q4
27.	Pay Fixation	Online	i-GoT and Institute of Secretariat Training and Management	1h 26m	Q1

No.	Course	Mode	Institute/Training Provider	Duration	Quarter
29.	Prevention of Sexual Harassment of Women at Workplace	Online	i-GoT and Institute of Secretariat Training & Management (ISTM)	1h 51m	Q1
32.	Parliament at Work	Online	iGoT and Institute of Secretariat Training and Management	5h 41m	Q1
33.	Microsoft Word Beginners	Online	iGoT and Microsoft	2h 56m	Q1
	Microsoft Word Advanced			2h 49m	
34.	Microsoft PowerPoint Beginners	Online	iGoT and Microsoft	3h 17m	Q1
	Microsoft PowerPoint Advance			2h 28m	
35.	Microsoft Excel for Beginners	Online	iGoT and Microsoft	7h 3m	Q1
	Excel Advanced			3h 49m	
36.	Social Media & Digital Marketing	Online	Ministry of Information and Broadcasting	<TBD>	Q3
			Ministry of Electronics and Information Technology (CBC is collaborating for developing this course)		
37.	Knowledge of legal affairs to handle all court cases	Online	National Institute of Defence Estates Management (NIDEM)	<TBD>	Q4
38.	Operating in E-office mode	Online	i-GoT and The Institute of Secretariat Training and Management (ISTM)	2h 17m	Q2
			National Informatics Centre (NIC)		
39.	Artificial Intelligence	Online	Wadhwani Institute of Technology and Policy (WITP)	<TBD>	Q1
40.	Establishment & Human Resource Management	Online	State bank of India	<TBD>	Q4
41.	Event management	Online	National Academy of Event Management and Development (NAEMD)	<TBD>	Q4

No.	Course	Mode	Institute/Training Provider	Duration	Quarter
42.	Digital Promotions for Events	Online	Ministry of Electronics and Information Technology in collaboration with CBC is developing a course	<TBD>	Q2
43.	Training on RFP preparation and other bid documents	Online	Defence Headquarters Training Institute (DHTI)	<TBD>	Q3
44.	Knowledge of processes for getting financial and administrative closure	Online	DRDO Internal Training Institutes	<TBD>	Q3
45.	Knowledge about using and managing - Mayurpankh ERP (Enterprise Resource Planning)	Online	DRDO Internal Training Institutes	<TBD>	Q3
46.	Internal Audit in Defence	Online	iGoT and National Academy Of Defence Financial Management Institute (NADFM)	<TBD>	Q3
47.	Accrual Accounting	Online	iGoT and National Institute of Communication Finance	47m	Q1
	Understanding the Format of Financial Statements			1h 13m	
	Bank Guarantees and their Encashment			33min	
48.	Understanding Financial Position of an organization	Online	iGoT	43 min	Q1
49.	GST Applicability on Government Related Activities	Online	iGoT and National Institute of Communication Finance	39m	Q1
	A Course on TDS Under GST Act			54m	Q1
	Direct Tax		National Academy of Direct Tax (Under development with CBC)	<TBD>	Q4
50.	Knowledge about Project Accounting, related software, 'Classification of Handbook' etc.	Online	DRDO Internal Training Institutes	<TBD>	Q3
51.	Warehouse Management	Online	Supply Chain Management – IIT Delhi	<TBD>	Q3
52.	Inventory Management process	Online	Management of Inventory Systems - Course (nptel.ac.in)	<TBD>	Q3

4.1.3. Training plan for Behavioural competencies

As suggested for domain and functional competencies, the below table presents the annual training plan for various behavioural competencies. The same have been identified to be important for the Department officials. The training plan suggests the training courses that the officials can undertake to train themselves for the specific competencies. Many of these courses are already available on iGOT. Department can encourage its officials to directly undertake such courses following the timeline (quarter of training) suggested. For others, the Department can collaborate with CBC to reach out to the proposed institutes / TPs to develop courses that are in accordance with the specifics proposed in the below training plan.

No.	Course	Mode	Institute/Training Provider	Duration	Quarter
1.	Effective Communication	Online	iGOT & IIM Bangalore	5h 35m	Q1
2.	Complete Journey to Stress Management	Online	i-GoT and Art of Living	6h 8min	Q1
3.	Change Orientation	Online	Harappa	<TBD>	Q3
4.	Conflict Management at Workplace	Online	State Bank of India in collaboration with EDx (CBC is in process of collaborating with SBI for course development)	<TBD>	Q2
5.	Emotional Intelligence	Online	Harappa Course: Leading Self	<TBD>	Q2
			Increasing your Emotional Quotient: The Art of Living	1h 7m	
6.	Learning Agility	Online	IIT Delhi	<TBD>	Q3
7.	Motivation	Online	Sri Aurobindo Ashram	<TBD>	Q1
			i-GoT and LBSNAA	1h 35m	
8.	Negotiation	Online	Indian School of Business (CBC is in the process of collaborating with ISB for course development)	<TBD>	Q2
9.	Problem solving and decision-making skills	Online	Solve: Harappa (Collaboration of CBC with the platform is under progress)	<TBD>	Q2
			Department of Personnel and Training DoPT	1h 45m	
10.	Strategic Thinking	Online	CBC to design a course from IIMs or McKinsey/Bain/BCG	<TBD>	Q1

No.	Course	Mode	Institute/Training Provider	Duration	Quarter
11.	Teamwork and Team Management	Online	Harappa	<TBD>	Q1
12.	Time Management	Online	Harappa	<TBD>	Q1
13.	Visionary Leadership	Online	High Impact Leadership: IIM Indore	<TBD>	Q2
			Leadership Development: IIM Lucknow		
			Leadership and Team Building: IIM Calcutta		
14.	Interpersonal skills / Building relationships	Online	Level III CSSS Course to Develop Behaviour Competencies – Interpersonal skills: i-GoT	2h 18m	Q2
			Building Presence: Harappa	<TBD>	
15.	Self-Awareness	Online	Leading Self: Harappa	<TBD>	Q3
			Self-Leadership: iGOT & The Art of Living	1h 26m	
16.	Gender Equality and Development – Overview	Online	iGoT and World Bank	1h 58m	Q1

5. Non-training Initiatives

A. Individual Capacity Building Interventions

The mandate of Mission Karmayogi is to create life-long learning for civil servants through a **70-20-10** framework of learning, which illustrates that for any professional, **70 percent** of the learnings and expertise around his / her field of work comes through **on-the-job experiences and reflections**, **20 percent** of it comes through **interactions with peers and colleagues** while the **remaining 10 percent** comes from **instructor led training modules**. In line with the importance of experiential learning to overall capacity development, certain non-training interventions like immersion programs and induction modules are being conceptualized for the Department as described in subsequent sections.

i. Immersion Program

The Defence Research and Development Organisation (DRDO) based on recommendation by the Capacity Building Commission (CBC), proposes to establish an 'Immersion Programme' to allow officers of the Department to visit different MDOs/ancillary organisations of DRDO to learn about their functioning, share best practices and gather more knowledge on the latest developments of science and technologies relating to Defence. The duration of this immersive programme is expected to be for a period of one week every six months and will remain subject to revision depending upon the inputs received.

The key objectives of the 'Immersion Programme' are:

- To provide exposure to how different MDOs work and develop connects for facilitating collaboration and innovation.
- To learn from other MDOs about their best practices in terms of development of defence technologies.
- To broaden officers' perspectives about on-ground issues to make better design-related decisions.
- To create a network between intersecting MDOs to share and learn from each other and not work in silos.

a. Learning opportunities:

The immersion programme will provide officers with the opportunity to understand on-ground issues related to their area of expertise/priority areas, and key challenges in terms of development. Through this programme, the participating officers will get an opportunity to create a network of expertise and understand the following:

- The diverse ways **MDOs operates** and deals with changing business, technology, and operating environment
- To familiarize oneself with the **entire value chain** of the development of defence technologies from design, development, production, quality assurance, testing etc.
- Learn about the different ways the implementation of policies might face challenges and create bottlenecks in the system
- Gather information on the areas DRDO and other similar MDOs **collaborate with national and international agencies** for development purposes
- To gain exposure to the best practices of HR Management, Material Management and Account Management from other MDOs

b. Planning for the Immersion exercise:

Along with planning for logistical and operational details, immersion exercise also needs to plan towards creating a particular learning experience for selected officers.

- Each immersion exercise needs to be connected to certain learning outcomes as applicable to the officers selected for the immersion exercise.
- These learning outcomes need to be communicated with officers before the visit.
- The officers can be asked to make a list of questions that they would be able to address during the immersion exercise to drive their own learning.
- Feedback should be collected at the end of every immersion visit for the planning team to learn and implement viable suggestions.

c. Selection of officers for the programme:

Minimum service duration, domain expertise, and specific roles played by the officer will be considered for participation in the programme with selected company (host institution). The officer(s) selected for the programme must not have directly dealt with matters concerning the host institution specifically, in the previous 2-3 years.

The selected officer will be required to disclose any material information that may lead to instances of conflict of interest, for example – if there are any specific financial interests held by the officer in the host institution or by any of his/her close relations. The trainee officer must also undertake that during the training, the officer cannot engage in outside employment or undertaking of any other work assignments, including seeking, or negotiating for employment opportunities.

d. Expected output:

On completion of the programme, the officer(s) will be required to debrief and share knowledge gained in the Immersion Programme in debriefing session with peers, junior and senior officers as deemed desirable by Department.

Officers who complete the programme will be required to make a short presentation covering the following aspects:

- Areas of his current work and impact on it post the immersion visit.
- Key learnings from the visit.
- Gainful application of the knowledge gained during the immersion visit to tasks in the Department/Division in future.

e. Feedback on the immersion exercise (Collected by the immersion-visit planning body)

ii. Preparation of an Induction Module for New Joiners

Interactions with scientists in DRDO suggested that DRDO being a huge organisation spread across the entire country, officers find it difficult to know about the functioning of associated labs/organisations that they work with.

a. **Know Your Ministry:** To ease bottlenecks and increase efficiency, a customized module called the "Know Your Ministry/Department/Lab" have been conceptualized. This will help officers understand the entire ministry, department and associated laboratories and the part that they play in facilitating the national priorities of the ministry.

The process for developing this module has already begun. The department is currently working on developing an induction module through a third party empanelled by CBC to understand roles, responsibilities and duties of a particular division and its interlinkage with other divisions. The Department's linkage with other MDOs in similar sector will also be covered in this module. This module will be useful for any new scientist recruited in the department and in the case of transfers.

b. **A compendium of major policies/OMs required for all scientists in DRDO:** Each Ministry/Department needs to access certain policies/OMs/process-flow documents for their functioning in the department. The development of a compendium of all these policies can help a new joiner in getting familiar with a basic set of domain knowledge in their early days. Later these policies/OMs could also be translated into digital modules which can be a part of officers' regular training program.

B. Organizational Capacity Building Interventions

Organisational Capacity Building initiatives refer to the process of building capacity of collective and shared aspects of the organisation such as existing processes, digital and physical infrastructure and technological capabilities that enable the organisation to achieve its goals.

a. Technology and Data

This dimension deals with the technology solutions employed by the department to improve its functioning.

i. **Database management:** Officers have suggested that a database management system for all policies, acts, processes could help is sharing information across multiple labs of DRDO. It could also help in tracking best practices and standardising them across labs.

For setting up these processes, a dedicated data management unit can be set up to handle data collection, analysis, privacy as per industry recognized quality standards which can enable the following:
- Data entry only at the primary unit of activity as opposed to at different levels of administrative command
- Develop a protocol to assess the quality of data collected
- Procure or commission software that enables encryption of sensitive data

ii. **Learning Management System:** Learning Management systems are being set up for regular updation of required competencies across the Ministry:
- **iGOT platform** under Mission Karmayogi is the **Learning Management System (LMS)** for all Government MDOs. DRDO may use the platform as their LMS.
- Different **training content – modules, knowledge briefs etc.** about DRDO can be uploaded periodically on i-GoT. Such content can emphasise on covering aspects such as - latest trends, R&D, investments, sector growth prospects, new technologies etc. of the defence industry. DRDO officials (across different hierarchies) may consume these knowledge briefs over the LMS.

b. System and Processes

This dimension includes all the established systems and processes of the Department to conduct its day-to-day functions. These include setting up Standard Operating Procedures (SOPs) and Knowledge Management systems in place.

i. **Project Governance:** Small-scale experimental and innovative pilots on a specific product could be tested out in different labs. All scientists in the lab could gather to debate on developed functionalities for the product or discuss possible breakdowns. The focus of this exercise would be on improvement and knowledge generation goals without a rigid focus on targets.

These project review cycles could also be institutionalised on a periodic basis where officers could gather to learn about the successes and failures of a particular project and derive key learnings from them to apply in their next project. Exercises like these could also be taken up across labs in the same cluster.

ii. **Knowledge generation and management:** One major challenge which has come up has been in terms of labs working in silos. Therefore, a knowledge transfer portal across all labs of DRDO could be beneficial for developing practices of knowledge sharing.

- **Knowledge dissemination**: Monthly/quarterly newsletter for disseminating latest information about the department or experience of handling specific cases along with latest trends in the sector could be set-up.
- **Setting up Standard Operating Procedures (SOPs)**: Documenting all processes and related outputs of the department such that they are easily accessible could help the department function more efficiently. As mentioned above, collection of data through a database management system could lead to developing a Standard Operating Procedure for certain common processes.
- **Knowledge Sharing**: Quarterly knowledge sharing sessions where officials can share their work experiences could be set up online as an open space for scientists of multiple labs to come together to brainstorm etc.

iii. Quick Wins

Quick impact initiatives are those that can be implemented within a short span of time and operationalized soon, without requiring enormous budget and planning. Basis the CNA exercise conducted with the Department officials, following Quick Impact Initiatives were identified for the officials.

i. Under Training interventions:

- Implementing courses on General Financial Rules (GFR), Delegation of Financial Powers to Defence Services (DFPDS), training on portals like (GeM, E-Samiksha, etc.) MS Office Suite training, etc. **Online self-paced courses are already available on i-GOT** and could easily be undertaken
- Implementing courses on **functional aspects** like noting and drafting, communication skills etc.
- Implementing courses on **behavioural competency** areas like Stress Management, Motivation Building, Team Building, Leadership Skills, Emotional Intelligence and Conflict Management
- **Learning hour** – One hour a week may be fixed for learning in the Department with staff / officials undertaking the DAKSHTA courses.
- A Phygital **DAKSHTA** course is being launched for Directors. It is currently under preparation by CBC. DRDO may ensure participation of its Director-level officials in the intervention.

ii.   *Under Non- Training interventions*

iii. **Know Your Ministry / Know Your Department** - Induction training programmes can be provided to new joiners (even if transferred within the same Ministry/Department to a different role) with a broad overview of the work undertaken by the Department or Lab in the Department, and particular responsibilities to be undertaken by each of them. Thus, these programmes can include – 'Know You Department' / 'Know Your Lab' module.

   a.   **Conducting Immersion programme**: Immersion programmes allow officers to engage with various MDOs and private industries to understand how development of defence technology and its value chain operates with changing business, technology, and operating environment. As a part of the quick win, one immersion exercise based on these identified options may be implemented by the Department in the near future.

Intervention 1

Workshop between DRDO, ISRO, CSIR, and TIFR for share learnings

- The goal of the workshop would be to provide a forum for scientists and engineers from Defence Research and Development Organisation (DRDO), Indian Space Research Organisation (ISRO), Council of Scientific & Industrial Research (CSIR), Department Of Science & Technology (DST), Department of Atomic Energy (DAE) and Tata Institute of Fundamental Research (TIFR) to share their knowledge and expertise. This would help to foster collaboration and innovation, and it would also help to ensure that India is at the forefront of scientific and technological development.
- The workshop could cover a wide range of topics, including, Defense technology, Artificial intelligence, Robotics, Nanotechnology, Biotechnology, Energy research etc. along with sharing of operational and management best practices.
- In terms of formats, there could be a series of lectures and presentations, Panel discussions, Networking events, Open-floor discussions with QNA sessions

Intervention 2

Visit to Directorate General of Quality Assurance (DGQA) office for DRDO officials

Programme outcomes

- DRDO officials will gain a better understanding of the DGQA's role in ensuring the quality of defence products and services.
- DRDO officials will learn about DGQA's quality assurance standards and procedures.
- DRDO officials will learn about DGQA's tools and techniques for ensuring quality
- DRDO officials will have the opportunity to network with other professionals in the field of quality assurance.

Programme

The Programme can include sharing knowledge on DGQA's organization and functions, a tour of DGQA's facilities along with a panel discussion on quality assurance challenges and best practices. This could conclude with a Q&A session.

Intervention 3

Visit for DRDO officers to Hindustan Aeronautics Limited (HAL) sites

Programme Outcomes

- DRDO officers can learn about the company's origins, its major projects, and its contributions to the Indian defense industry.
- DRDO officers can gain insights about the latest technologies and capabilities of HAL. Officers can learn about the company's latest projects, including its next-generation fighter aircraft, its new helicopters, and its unmanned aerial vehicles.
- HAL has a team of highly skilled engineers and scientists who are experts in a wide range of fields. Officers can network with these professionals and learn about their work.

Programme

The Programme can include sharing knowledge on HAL's history, a tour of HAL's facilities, an open space for discussions between engineers and scientists, a tour of the test facilities, a demonstration of new technologies and finally a discussion of the future of the Indian Defense industry.

Intervention 4
Visit to some certification laboratories, test ranges and design laboratories

Programme outcomes

- To develop an understanding of the laboratory's certification processes
- To gain an exposure to the latest technologies in defence
- To understand the importance of quality assurance in defence products and services

Programme

The Programme can include sharing knowledge on the laboratory's organization and functions, a tour of the laboratory's facilities along with a discussion on laboratory's certification processes. This could conclude with a Q&A session.

Suggested laboratories to visit:

- **Defence Research and Development Laboratory (DRDL)** in Hyderabad is one of the premier laboratories of DRDO. It has a wide range of facilities for testing and certification of defence products.

- **Armament Research and Development Establishment (ARDE)** in Pune is another important laboratory of DRDO. It has several test ranges and design laboratories for developing and testing armaments.

- **Naval Physical and Oceanographic Laboratory (NPOL)** in Visakhapatnam is responsible for the development of naval weapons and sensors. It has several test ranges and design laboratories.

- **Electronics and Radar Development Establishment (ERDL)** in Dehradun is responsible for the development of radars and other electronic systems. It has several test ranges and design laboratories.

- **Advanced Numerical Research and Analysis Group (ANURAG)** in Bangalore is a premier laboratory of DRDO for the development of high-performance computing systems. It has several test ranges and design laboratories.

6. Conclusion

In conclusion, the Capacity Needs Analysis of the Department of Research and Development (DRDO) has provided valuable insights into the knowledge and skills required by officers to enhance their existing capacities. The analysis focused on three key dimensions: domain knowledge, functional skills, and behavioural skills, which were conducted at the department, hierarchical role, and individual levels. While the domain competencies relate to the sector-specific expertise needed by the officials, functional competencies are competencies that are applicable in any work setting such as – report writing, data analysis, project management etc.; behavioural competencies constitute attitude or personality traits that complement hard skills such as – interpersonal skills, communication, time management etc.

The Department of Research and Development is responsible for all research and development for preparing for India's territorial defence. In that regard, a thorough capacity needs analysis across all hierarchical roles and divisions of the Department has been conducted and validated further to ensure that all training required by officers is mapped. To fulfil the training needs, a list of institutions equipped to provide training in the identified competency areas was compiled, including government training institutes such as Central Training Institutes (CTIs), Regional Training Institutes (RTIs), Zonal Training Institutes (ZTIs), and other renowned educational institutes across the country. With the development of the i-GoT portal, online courses have been mandated to be prioritized. In-person training sessions may also be considered based on specific requirements. The calendar has been prepared separately to address domain competency needs, functional competency needs, and behavioural competency needs. Each of these calendars has been divided into four quarters for the delivery of the training. The first quarter majorly consists of training which already exist on the i-GoT portal while the training for the second, third and fourth quarter are under development.

Considering the comprehensive analysis of competency needs at the department and individual role levels, it is also recommended to consider non-training interventions as part of the Annual Capacity Building Plan (ACBP) for DRDO. These interventions may address both individual and organizational levels, focusing on areas such as stakeholder collaboration, long-term thinking, policy designing, and a strategic point-of-view for senior personnel. For Director/DD/US levels, the focus may be on swift policy implementation, cross-department and cross-ministry collaboration, and effective supervision of work allocated to SOs and ASOs. At the SO/ASO levels, administrative proficiency, particularly in the MS Office suite and noting and drafting skills, may be emphasized. To further enhance the effectiveness of the Capacity Needs Analysis immersion programmes may be implemented and evaluated for potential annualization. This iterative approach will ensure continuous improvement and alignment of the DRDO's personnel's competencies with the department's goals and objectives.

The implementation of the ACBP will be overseen by a Capacity Building Unit (CBU) under the guidance of the Capacity Building Committee (CBC), ensuring effective monitoring and evaluation throughout the implementation process.