

**No. 55-11/2021/CDP-Trg**  
**Government of India**  
**Department of Telecommunications**  
**212, Mahanagar Doorsanchar Bhawan, Old Minto Road, New Delhi- 110002**  
**(Capacity Building and Training Division)**

Dated <sup>4</sup> 6 Jan 2022


**Office Memorandum**

**Subject: Inviting nominations for comprehensive training to be Domain Expert in "Network & Mobile Security" under Competency Development Program (CDP) in Emerging Telecom Technologies-reg.**

In continuation to this office letter of even No. dated 22.12.2021, the last date for submitting application for Competency Development Program (CDP) in "Network and Mobile Security" **has been extended till 21.01.2022**. The application must be duly filled up with pre-formatted application form available at [www.ntiprit.gov.in/circulars/forms/CdpNmsApp.pdf](http://www.ntiprit.gov.in/circulars/forms/CdpNmsApp.pdf) and other relevant details.

2. The duly filled application form signed and approved by Division/Unit Head, shall be submitted through email to Sri Vinod Singh Dir. (I&KR), NTIPRIT at [vinod.singh35@gov.in](mailto:vinod.singh35@gov.in) so as to reach to Dir (I&KR), NTIPRIT on or before **21.01.2022**.
3. This issues with the approval of the Competent Authority.

Encl: As above

  
(Ashish Kushwaha)  
Director (Training-II)  
DoT HQ

**To,**

1. All the Heads of LSAs/Sr. DDG (TEC)/Sr. DDG (NCCS)
2. All DDGs DOT HQ/ DDG (NOCC)/ Joint Administrator (USOF)/Joint wireless Advisor, Department of Telecommunications

**Copy to:**

1. The Member (Finance) / Member (Technology) / Member (Services) /, Digital Communications Commission, Sanchar Bhawan, New Delhi
2. The Director General (Telecom)
3. Sr. PPS to Wireless Advisor, Sanchar Bhawan, New Delhi.
4. PPS to DG (NTIPRIT), Ghaziabad.
5. DDG (Pers) DoT HQ.
6. DDG (Training)/ DDG(Admn.) NTIPRIT.



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22<sup>nd</sup> December '2021

**Subject** Inviting nominations for comprehensive training to be Domain Expert in “Network & Mobile Security” under Competency Development Program (CDP) in Emerging Telecom Technologies

1. Taking forward the capacity building vision of NDCP – 2018, the Competency Development Program (CDP) has been initiated to unlock the transformative power of DoT officers for creating a pool of highly competent officers equipped with necessary domain knowledge to strengthen the Department, for fulfilling NDCP objectives.
2. The CDP envisages to develop pool of in-house experts in some of the emerging technology domains such as Network & Mobile Security, 5G Networks and Use Cases, Internet of Things(IOT), Artificial Intelligence, Spectrum Management, Machine Learning, Block Chain and Distributed Ledger Technology, Data Science & Big Data Analytics etc. CDP is a 3 phase programme comprising of foundation, intermediate and advance level training in each domain. The implementation of CDP is entrusted with NTIPRIT.
3. The first Domain Expert area undertaken is “Network & Mobile Security”. CDP envisages capacity building through three phased program, Foundational Phase – I of one week and Intermediate Phase – II of four weeks. The phase-III of the CDP in the domain of Network and Mobile Security will be decided after the completion of first 2 phases. A preparatory one-week module at NTIPRIT will be precursor to start of three phased CDP.
4. Nominations are invited from highly motivated, dynamic and tech-savvy officers of the department to transform them as Domain Expert in “Network & Mobile Security” through the proposed three phased rigorous training program. The program requires sound understanding of Computing & Networking environment with acumen to develop competitive edge in various scripting languages used in advanced tools. The applicants with suitable traits, experience and zeal to excel will be selected through a high level screening committee.



5. It is requested to give wide publicity to this opportunity among officers of your respective Unit/ Division to come forward and be future Domain Expert in Network & Mobile Security.
6. The detailed handbook (Annexure-I) and application form for nomination is attached with this letter. The aspiring officers are required to thoroughly understand the program structure and fill the accompanying application form. The officers should use the pre-formatted (Annexure-II) fillable PDF format of the application also available at NTIPRIT website ([www.ntiprit.gov.in/circulars/forms/CdpNmsApp.pdf](http://www.ntiprit.gov.in/circulars/forms/CdpNmsApp.pdf)) and get filled application form signed/ approved by Unit Head and mail the scanned copy of the same to Sri Vinod Singh Director (I&KR), NTIPRIT at [vinod.singh35@gov.in](mailto:vinod.singh35@gov.in) **on or before 7<sup>th</sup> January 2022.**

M. Bedekar  
22/12/21

Mousumy Bedekar  
Deputy Director General (CB&T)  
DoT HQ

**Enclosures:**

1. CDP Handbook containing details of the CDP
2. Application form for nomination in CDP

**To,**

1. All the Heads of LSAs/ Sr. DDG (TEC)/ Sr. DDG (NCCS)
2. All DDGs DoT HQ/ DDG(NOCC) / Joint Administrator (USOF) / Joint wireless Advisor, DoT

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# NTIPRIT

**National Telecommunications Institute  
For Policy Research, Innovation & Training**

**Handbook on  
Competency Development Program  
for  
Network & Mobile Security**

NATIONAL TELECOMMUNICATIONS INSTITUTE FOR  
POLICY RESEARCH, INNOVATION & TRAINING  
Govt. of India Enclave, Admin Building,  
ALTTC Campus, Rajnagar, Ghaziabad – 201002



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SECTION - 1

**Competency Development Program**

**Framework**



## 01. INTRODUCTION

The telecommunications industry world-wide has experienced sweeping transformation since the advent of Mobile Technologies, especially in last two decades. In addition, emerging new areas like Fourth industrial revolution, Manet/Adhoc networks, 5G networks, IoT, M2M communication, big data analytics, artificial intelligence etc., need to be taken cognizance for improving the safety and security. The responsibility of DoT would be immense as it is uniquely positioned to handle the new emerging landscape effectively, both in terms of technological capabilities and capacities, apart from the works currently undertaken.

To meet the nation's communication needs, and to empower the country towards Digital India, various telecom policies have been adopted from time to time for the growth of telecommunications in India. Out of the three key vision areas – Digital Infrastructure as a utility to every citizen and Digital empowerment of citizens are the areas under which DoT has to work to achieve the desired goals. Towards this, DoT had come out with NDCP 2018, to re-orient itself at every level to cope up with the changing environment.

In past five years Government has been leveraging high on technology and has made sweeping change in way the technology is harnessed by individuals. The Digital India programme has made the technology available to masses. And at the core of this Digital Change Revolution are sitting the most disruptive technologies of today like Artificial Intelligence, Cloud Computing, Big Data Analytics, Blockchain, Secure Network and related technologies. All these new technologies adoption by the Government will call for new skills to be acquired by its officers, which will pave the way for the Government to better understand, manage and support the underlying eco-system. It becomes imperative to build capacities within the Government by involving cross-sectorial teams for improving expertise and promote a sustainable Digital Growth.

Department of Telecommunications (DoT) has largest number of highly qualified and experienced technocrats, than any other organised service cadre. Apart from the Telecom domain, the capable and techno-strategically placed workforce of DoT has unexplored potential to venture into all the aspects of Digital Initiatives of the Government both at Centre and State level. With "Data" being the sole mover & shaker for all the emerging technologies and almost vanishing line between Telecom and Information Technology, role of DoT and its officers is immensely of great importance to fulfil the technology driven vision of the Government.

In last two decades there is paradigm shift in DoT functioning from 'Service Provider' to 'Service Enabler' due to opening up of Telecom Sector for private participation. With corporatisation of service provisioning function of DoT into BSNL, the entire gamut of DoT's working underwent sea-change. Where Telecom officers once needed a solid background in



operations with an added dose of planning, in modern days telecom executives are required not only to keep them abreast of latest technological developments in Telecom but also have to equip themselves with strong technical knowledge of the advance ICT technologies to address the formidable challenges that lie ahead.

There is also a need for continuous in-house capacity building, with focussed and coordinated efforts in order to address the challenges of new technologies and services against regulatory and security concerns, along with driving the sector towards effective participation in the implementation of various Government schemes.

Due to above mentioned importance of competency enhancement this Competency Development program (CDP) concept is conceived. This is not merely pertaining to technical skill set, but about combining it with efficacy of strategic decision making for all round development in art of policy making. CDP is drafted to incorporate the necessary inputs to make DoT future ready.

## 02. OBJECTIVE

The Competency Development Program seeks to unlock the transformative power of young officers for leveraging digital communications technologies - to achieve the goals of NDCP; this program can also be perceived as a enabler which facilitates practical field exposure coupled with free flow of innovative ideas to bring out policy level/ prototype solutions by leveraging DCTs.

## 03. FRAMEWORK

### 3.1 CDP APPROACH

The CDP (Competency Development Program) is implemented through a modular approach with well identified Expert Domains in alignment to fulfilling Government's Digital Initiative. Each module shall be delivered through a containerised Domain Targeted Capacity Development Program. The identified Domains for developing expertise are:

- Network & Mobile Security
- 5G Networks and Use Cases
- Internet of Things
- Artificial Intelligence
- Spectrum Management
- Machine Learning
- Block Chain and Distributed Ledger Technology
- Data Science & Big Data Analytics
- Cloud & Edge Computing



- Quantum Computing

While there is a Broader Common Framework for CDP, each of the identified Expert Domains are guided by a unique Domain Targeted Capacity Development Program detailing the fine-prints of area of capacity building and identifying the available learning platforms and avenue.

### 3.2 PROGRAM LAYOUT

Under the CDP each target Domain training is envisaged to be imparted at three levels:

- Foundation Level (Maximum Two Weeks) – Phase I
- Intermediate Level (Maximum Four Weeks) – Phase II
- Advance Level (Maximum Six Months) – Phase III

These classroom / online courses are specially designed for the DOT officers with emphasis on hands on experiments / projects. Institutions identified for training may arrange a qualifying examination at the end of the course, to assess the learning and understanding of individual officers, undertaken the course. Depending upon the need felt, NTIPRIT may organise a preparatory training of one week duration for some of the domain.

### 3.3 SELECTION & IDENTIFICATION

The group of officers to be made Domain-Target Expert will be identified based on their quest to harness technology and showcase their already acquired domain knowledge by way of alternate learning behaviour and their ability to build innovative technical solutions in past based on that learning. While the emphasis will be to train limited, deserving and capable young officers, the selection criteria will broadly be based on:

- Educational Qualifications
- Additional acquired knowledge needed to be the Domain Expert
- Demonstration of stand-apart knowhow in the domain
- Proven research and development track record in the domain
- Additional working experience in the domain
- ACR track of last 5 years mentioning special attributes and innovative technology solutions in the domain

For each of the above identified technology area, 2 to 4 SAG level officers, 6 to 8 JAG level officers and 10 STS & 10 JTS level officers will be selected. A batch of 30 officers will be trained in each Technology Domain.

Applications will be called for from the officers about their area of interest, expertise, educational qualification, experience and demonstrative capability in their domain. After preliminary screening of all applications at NTIPRIT, the final selection will be done by a Selection Committee.



### 3.4 DEPLOYMENT AND RETENTION

After successful completion of Domain Expert program, the specially trained officers will be equipped with in depth knowledge of their domain and will be able to contribute in all related spheres of government activity. For all future requirements related to the specific Technology area, the certified Expert officers will be referred for catering departmental needs as well as the requirements of other- departments/ ministries/ state governments/ PSUs. For next three years, these officers will be posted only on such posts which deal in their relevant Technology area.

Also after successful completion of Domain Expert program, such officers will be allowed to proceed on deputation in the Ministry/Organisation which can utilize their expert skills.

These officers will also be preferably utilized for nomination as members of different international organization and study groups (such as ITU, APTU, IEEE etc.). Their domain expertise will lead to the significant contribution from Indian side at different international platforms which will eventually strengthen the policy opinion of India at different International Forums.

To ensure availability of these expert officers, preferably those below the age of 52, at the time of call of applications, will be eligible for the training subject to fulfilling other eligibility criteria. The trained expert officers will also be required to sign a Security Bond to serve the department for at least three years or pay back equivalent of expenditure incurred on them in this program plus the salary given while on classroom environment training.

The requisite bond will be signed by the selected officer at the time of commencement of "Advance Level" phase.

### 3.5 EXPECTED OUTCOMES

The CDP (Competency Development Program) is envisaged to raise an army of highly qualified officers who are not only technologically at par with their private counterparts but also more competitive and learned to directly get involved in technology development & implementation as well as empowered to frame policy woven around these technologies.

These officers will serve as immediate experts to evolve innovative solutions to problems in proliferation of Digital India. Apart from Telecom domain, these specially trained officers will have the capability to shape the future course of policy & regulation both at Centre and State level, across all Digital Communication technology areas.



The CDP (Competency Development Program) is envisaged keeping the NDCP strategies and goals in sync with CDP objectives:

A. Propel India Strategies:

- a) Ensuring a holistic and harmonised approach for harnessing Emerging Technologies.
- b) Leveraging AI, Big Data in a synchronized and effective manner to enhance the overall quality of service, spectrum management, network security and reliability.

B. Accelerating Industry 4.0:

- a) Create roadmap for transition to Industry 4.0 by 2020, by closely working with sector specific industry councils.

C. Secure India Strategies:

- a) Develop and deploy robust digital communication network security frameworks.
- b) Developing a comprehensive plan for network preparedness, disaster response relief restoration and reconstruction.



SECTION - 2

**Domain Expert Area**  
**Network & Mobile Security**  
**(under CDP Framework)**



## 04. ABOUT THE DOMAIN EXPERT AREA

It has been universally observed that there is large number of recent threats and incidents reported to CERT therefore security in networks and distributed systems has gradually become a global challenge. To deal with such debilitating issue, it is critical to design and develop security solutions from different viewpoints including that of end-to-end. Other than these threats, the growing need of wireless, ad-hoc and sensor networks also create hazards of a new dimension. Another significant technical feature that create risk is the communication speed in networks versus complex and time consuming cryptography/security mechanisms and protocols.

Various communication networks are the mainstay of much of the critical infrastructure in many sectors today such as civil aviation, shipping, railways, power, nuclear, oil and gas, finance, banking, IT, law enforcement, intelligence agencies, space, defence, and government networks. In the Communication Networks, there may be serious security attacks such as data theft, fraud, and denial of service attacks, hacking, and cyber warfare, terrorist and antinational activities.

A cyber-attack which can control the infrastructure may harm the system and disrupt the communication network. The attacks can be through viruses, malware, Trojans, hacking, network scanning, probing, and phishing. Furthermore, the Social network attacks can be one of the major sources of attacks in future because it is used by huge number of users and they post their personal information on sites through these networks.

Developing proper telecom security structures that will ensure Cyber Safety, Security & Assurance at network level is the need of the hour. Also, the networks of the service providers have to be routinely security audited and certified. As per the license agreement, TSPs and ISPs are bound to secure and safeguard communication networks from attacks and are required to have their networks audited every year.

To cater to the need, officers of the department should be equipped with the expertise in

- Secure Configurations for Hardware and Software
- Continuous Vulnerability Assessment
- Monitoring, and Analysis of Network Audit Logs
- All types of Malware Detection & Mitigation
- Secure Configurations for Network Devices such as Firewalls, Routers, and Switches
- Network & Boundary Defence
- Data Protection
- Incident Response and Management



- Penetration Tests and Red Team Exercises

Under the master framework of Competency Development Program, the Domain Expert area of Network & Mobile Security is formulated. This program derives the implementation skeleton from CDP framework and is planned for delivery in three levels or phases of Foundation, Intermediate and Advanced.

Applicant officers must have appetite to learn and perform in highly technological environment involving high-end computing and programming. Each phase of training program is followed by intensive evaluation schedule which the candidate has to pass through for becoming eligible for next phase of training.

## 05. PROGRAM LAYOUT

### 5.1 PREPARATORY

To acquaint the selected officers about the preliminary concepts about the domain expert area the program will start with a one week Preparatory Program delivered at NTIPRIT in classroom training.

#### **PREPARATORY**

***Preparatory at NTIPRIT***

Delivery :

- At NTIPRIT, from in-house faculty and guest speakers.
- Focus on theoretical foundation

***Duration : One week***

### 5.2 PHASE – I, FOUNDATION

The officers will be trained in fundamental concepts of Communication Network Systems and associated technologies, Network Security and Network Defense, cyber-attack scenarios to web technologies, network security holes in standard networking architecture & protocols and Security in Mobile Platforms. The program is aimed to give the officers an overview of Network Security Space and related terminologies.

Indian Institute of Technology, Kanpur, has been selected on nomination basis for delivery of this phase. This is an online delivery module for one week.

#### **PHASE – I**

***Foundation***

Delivery:

- Online with IIT Kanpur.
- Focus on theoretical foundation

***Duration : One week***



### 5.3 PHASE – II, INTERMEDIATE

The officers will be introduced to more practical learning environment which can be put in practice in real communication environment. Learning will be weaved around Communication Network Architecture with detailed protocol level knowledge, Network Foot-printing and Reconnaissance, Scanning Networks, Vulnerability Analysis, Ethical System Hacking Techniques and Ethic Code of Conduct in various network security domains, Malware Detection & Analysis, Social Engineering Techniques, Distributed Attack Scenario, IDS/IPS and Firewalls, Mobile Security, IoT Security Audit & Incident Reporting.

C-DAC Pune has been selected on nomination basis as partner institute for delivery on this phase. This will be fully classroom and hands-on practical training of four weeks duration.

#### **PHASE – II**

*Intermediate*

Delivery:

- a) Residential program at C-DAC Pune.
- b) Significant component of Hands-on mode

***Duration : Four weeks***

### 5.4 PHASE – III, ADVANCED

In this program the officers will be made domain expert on Network Security getting professional level expert training from premier domestic or international institution. While the course of learning will be same as of associate level but it will be advance in terms of employability and applicability in communication domain. The officers will be exposed to more technological advanced techniques of Network Threat Identification, Auditing and Mitigation procedures with exposure to international best practices. The ultimate aim shall be to produce highly qualified experts in Network Security with cutting edge technical tools and know-how. After the completion of this phase, the officers will also have to undergo at least one internationally acclaimed certification in the area of Cyber & Network Security, like CISSP, CISA, CEH Masters etc. One attempt for such certification will be on offer as part of Phase-III program.

#### **PHASE – III**

*Advanced*

Delivery:

- a) Residential cum Online program at selected institute.
- b) Major component in hands-on mode

***Duration : Six Months***

**Note:** As of now, NTIPRIT is having approvals for conduction of training upto Phase-II. As per approvals granted for CDP framework and Domain Expert program of Network & Mobile Security, the Phase-III part of the composite program shall be arrived at after evaluating the outcome till Phase-II.



## APPLICATION FORM FOR CDP – NETWORK &amp; MOBILE SECURITY

01.	Name of the officer in CAPITAL letters			
02.	Staff number (as per blue book)			
03.	Present post and date since held			
04.	Office Address			
05.	Mobile Number			
06.	Email Address (GOV/NIC)			
07.	Date of Birth			
08.	Age as on 01 <sup>st</sup> Jan 2022			
09.	Date of retirement			
10.	Date of entry into service			
11.	Educational Qualifications (Graduation onward)			
	Qualification	Subject/Stream	Institute	Year of pass-out
13.	Particulars of posts held during past ten years			
	Post & Place	From	To	Nature of Duties
14.	Details of training programs attended in past ten years			
	Name of course/training	Year	Institute of training	Duration



15.	APAR rating for past five years				
	2020-21	2019-2020	2018-2019	2017-2018	2016-2017
16.	Technical Knowledge and Domain Experience related with Network Security (Describe in max. 1000 words)				
17.	Additional information related with your suitability for the Competency Development program on Network Security (Describe in max. 1000 words)				
18.	Any vigilance or disciplinary case against you in past or pending currently				
	If YES, status and penal details				
19.	Details of Foreign visits in past ten years, if any				
	Year and duration of visit	Country of visit	Purpose of visit		



Declaration:

- 01. I certify that the information given in this application form is correct and true to the best of my knowledge.
- 02. I have gone through the complete details of the program and agree to abide by all the clauses of the program including clause 3.4 regarding deployment & retention.
- 03. I agree to abide by the decision of the authorities concerned regarding my selection to the program.

Signature of the applicant

Name .....

Designation .....

Date .....

Approval of Head of Unit

- 01. Certified that the service particulars given by the applicant have been verified from his/her service records and found to be correct.
- 02. Also the officer will be relieved for all the spells of the training of this program, as and when required.

Signature with seal of the Competent Authority

Name.....

Designation .....

Date.....