

Consultation Paper No.13/2022



Telecom Regulatory Authority of India

Consultation Paper on Introduction of Calling Name Presentation (CNAP) in Telecommunication Networks

New Delhi, India

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Written Comments on the Consultation Paper are invited from stakeholders by 27th December 2022 and counter-comments by 10th January 2023. Comments and counter-comments will be posted on TRAI's website. Comments and counter-comments may be sent, preferably in electronic form, to Shri Akhilesh Kumar Trivedi, Advisor (Networks, Spectrum and Licensing), TRAI, on the email ID: advmn@trai.gov.in. For any clarification/information, Shri Akhilesh Kumar Trivedi, Advisor (Networks, Spectrum and Licensing), TRAI, may be contacted on Telephone No. +91-11-23210481.

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CHAPTER I

INTRODUCTION AND BACKGROUND

- 1.1 Telecom Regulatory Authority of India (hereinafter, also referred to as, “the Authority”) was established in 1997. The Authority is mandated to regulate the telecommunication services, protect the interests of service providers and consumers of the telecommunication sector, and promote and ensure orderly growth of the telecommunications sector in the country. Safeguarding consumer interests is of paramount importance to the Authority.

- 1.2 India is currently the world’s second-largest telecommunications market. There were 114.55 crore wireless subscribers and 2.65 crore wireline subscribers in the country as on 30.09.2022. The last two decades have witnessed a remarkable growth in the telecommunication sector in the country.

- 1.3 Currently, the Government of India follows a regime of Unified License for the provision of telecommunication services. Eligible entities may obtain appropriate authorization(s) under Unified License from the Government and provide a range of telecommunication services to their customers. Under the Unified License regime, licensees are mandated to provide Calling Line Identification (CLI) supplementary service to their customers. As per the Unified License Agreement, *“Calling Line Identification (CLI) means identity of the calling/ originating subscriber in terms of the telephone number assigned as per E.164¹ of ITU Recommendation/ IP Address or any other identification as may be prescribed by the Licensor from time to time.”*

¹ E.164 is the international public telecommunication numbering plan, standardized by International Telecommunication Union (ITU).

- 1.4 At present, all access service providers in India provide Calling Line Identification Presentation (CLIP) supplementary service, as a part of their bouquet of services to telephone consumers. When a telephone consumer receives an incoming call, the telephone number of the calling party is displayed on the called party's telephone (mobile handset/landline telephone set), through the CLIP service.
- 1.5 The telephone consumers require that they should be able to correctly identify the calling party. The CLIP service does not adequately meet this requirement as this service presents only the telephone number of the calling party. Apparently, the said requirement may be met through a name presentation facility where the name identity of the calling party is displayed on the called party's telephone.
- 1.6 Currently, the telephone handsets provide a feature (such as 'contact list') which allows the handset owner to store names of the called parties against their respective telephone numbers. At the time of an incoming call, the called party's telephone handset searches for the calling party's telephone number in its contact list. In case the calling party's telephone number is stored in the contact list, the telephone handset displays the name stored against the calling party's telephone number. In case, the calling party's telephone number is not stored in its contact list, the telephone handset displays the calling party's telephone number instead.
- 1.7 Telephone consumers, at various fora, have raised a concern that in absence of the calling party name presentation facility, they prefer not to attend calls from unknown telephone numbers, as most of such calls are

unsolicited commercial communications (UCCs) from un-registered telemarketers². As a result, even genuine telephone calls go unanswered.

1.8 Telephone consumers have also raised their concern in respect of robocalls, spam calls, and fraudulent calls. Robocalls are calls made automatically by IT-enabled systems mainly to financially dupe telephone consumers. Spam calls are unsolicited marketing calls from personal mobile connections, bypassing the do-not-disturb (DND) feature, and targeting many telephone consumers. Through fraudulent calls, certain individuals attempt to obtain details of bank account/ one-time-password (OTP) with an aim to defraud consumers.

1.9 The telephone consumers have also expressed their concern in respect of CLI spoofing. Spoofing is when a caller deliberately falsifies its CLI to disguise its identity³; this technique is used to trick the called party into answering the call. Scammers often spoof a number from a company or a government agency (that a called party may already know and trust) with an aim to defraud the called party.

1.10 At present, smartphone users make use of native smartphone tools and third-party apps to identify the calling party name and mark spam calls. Apple (manufacturer of iPhones) has a 'silence unknown numbers' feature on its mobile handsets. The Google Phone app for Android has a

² Telemarketers, who are registered with access service providers, can make commercial calls to telephone subscribers through 140-level series number. Telephone consumers can block all commercial communications by registering his/ her preference in National customer Preference Register (NCPR) also known as DND Registry. As most of telephone consumers have registered their preference for blocking all commercial communications, telemarketers have started calling telephone consumers from personal telephone connections (10-digit number), instead of the designated 140-level series number for telemarketers.

³ In some countries, Voice over IP (VoIP) providers allow the user to configure their displayed number.

‘caller ID and spam’ protection option that allows phone users to mark incoming calls as spam. Third-party apps like ‘Truecaller’ and ‘Bharat Caller ID & Anti-spam’ also provide calling party name identification and spam identification facilities. The native smartphone tools and third-party apps, generally, provide name identification services based on crowd-sourced data. However, the crowd-sourced name identity information may not be reliable, in many instances.

- 1.11 The Authority has been cognizant of the need for calling party name presentation facility for protection of consumer interests. Through the Telecom Commercial Communications Customer Preference Regulations, 2018 (TCCPR, 2018), the Authority has mandated all access service providers “*to take initiatives to enable calling name display (CNAP) based on Intelligent Network or ISDN based protocols, enhanced calling name (E-CNAP) functionality as defined in 3GPP technical specifications TS 24.196 for providing services to terminating user with the name associated with the originating user and optionally delivering metadata about that originating user*”.

DoT’s Reference dated 21.03.2022

- 1.12 Through a reference dated 21.03.2022 (**Annexure-I**), the Department of Telecommunications (DoT) requested the Authority to submit recommendations under Section 11(1)(a) of TRAI Act, 1997 (as amended) on introducing the Calling Name Presentation (CNAP) facility in Indian Telecommunication Network. The said reference is reproduced below:
- “ *It has been desired to examine the feasibility of Calling Name Presentation (CNAP) in Indian Telecommunication Network. The CNAP is the supplementary service which enables the called party to receive the calling name information of the calling party. This supplementary service*

provides the ability to indicate the name information of the calling party to the called party at call set-up time for all incoming calls.

2. Presently, in Indian Telecom Networks, only the mobile/landline numbers are being displayed as Calling Line Identification (CLI) during incoming calls. There is no mandate in the license for providing CNAP services.

3. In Unified License, the Calling Line Identification is defined as: CALLING LINE IDENTIFICATION (CLI) means identity of the calling/originating subscriber in terms of the telephone number assigned as per E.164 of ITU Recommendation/IP Address or any other identification as may be prescribed by the Licensor from time to time.

4. In view of above, TRAI is requested to submit its recommendations under Section 11 (1) (a) of TRAI Act, 1997 (as amended) on introducing the Calling Name Presentation (CNAP) facility in Indian Telecommunications Network.”

1.13 Thereafter, through a letter dated 01.06.2022, the Authority requested DoT to provide background notes on ‘Introducing the Calling Name Presentation (CNAP) facility in Telecom Network’. In response, DoT through a letter dated 11.07.2022, provided a background note on the subject. In the note, DoT stated that the introduction of CNAP facility in telecommunication networks aims to empower subscribers to take an informed decision while receiving an incoming call, and to reduce the harassment of subscribers from unknown/ spam callers; in order to facilitate CNAP feature to all telephone subscribers (smartphone and feature phone owners) in India, telecom network readiness and feasibility need to be explored so that CNAP can be implemented in multi-technology networks across telecom service providers without the need for internet or smartphones/ devices; CNAP facility requires inter-telecom service provider coordination and access to a subscriber’s name during the call flow. Further, DoT requested the Authority to carry out a

consultation process to resolve some of the important issues as mentioned below:

- (a) Inter-service provider subscriber name access mechanism;
- (b) Modification in the call flow process for inclusion of the subscriber's name during call completion;
- (c) Requirement of storage and retrieval of calling party name at terminating network;
- (d) Technology neutral caller name display facility of the telecommunication subscribers;
- (e) Internet independent caller name display facility of the telecommunication subscribers; and
- (f) Delivery of subscriber name to called party without hindering latency of existing call flow mechanism.

1.14 In this background, the present consultation paper is being issued for soliciting comments of stakeholders on the issues related to introduction of CNAP in the telecommunication networks in India. This consultation paper is divided into three chapters. Chapter I provides a background of the subject. Chapter II examines the issues related to introduction of CNAP facility in telecommunication networks. Chapter III lists the issues for consultation.

CHAPTER II

EXAMINATION OF ISSUES

A. Calling Name Presentation (CNAP) Supplementary Service

2.1 In 1996, International Telecommunication Union (ITU) defined, the Calling Name Identification Presentation (CNIP) supplementary service through its Recommendation No. ITU-T I.251.9 (07/96)⁴ on ‘Number identification supplementary services: Calling name identification presentation’ as a part of service capabilities in Integrated Service Digital Network (ISDN), as below:

“Calling name identification presentation (CNIP) is a supplementary service offered to the called party which provides the name information associated with the calling party to the called party.”

2.2 In 2012, European Telecommunication Standards Institute (ETSI) released the technical specification No. TS 122 096 V11.0.0 (2012-10)⁵ on ‘Digital Cellular Telecommunication system (Phase 2+); Universal Mobile Telecommunication System (UMTS); Name identification supplementary services; Stage 1 (3GPP TS 22.096 version 11.0.0 Release 11)’. Through the said technical specification, ETSI defined Calling Name Presentation (CNAP) supplementary service as below:

“The CNAP supplementary service enables the called party to receive the calling name information of the calling party.”

A few other parameters defined by ETSI through the said technical specification are given below:

⁴ Source:
https://www.itu.int/rec/dologin_pub.asp?lang=s&id=T-REC-I.251.9-199607-I!!PDF-E&type=items

⁵ Source:
https://www.etsi.org/deliver/etsi_ts/122000_122099/122096/11.00.00_60/ts_122096v110000p.pdf

*“The **name identity** is made up of the following information unit: - The name of the mobile subscriber for the purpose of calling name presentation - up to 80 characters of information associated with a specific calling party. The calling name identity is the name identity of the calling party.”*

*“In addition to or instead of the name identity, the network may give a **Presentation Indicator (PI)** to the called mobile subscriber of the CNAP service. The following information may be given :- Presentation Indicator (PI) showing: a) presentation restricted, or b) name unavailable. The name identity of a PLMN subscriber shall always be provided by the network.”*

*“**Calling Party** is the originating party.”*

*“**Called Party** is the terminating party. The CNAP service is provided to the called party.”*

*“**Calling Name Information** of the calling party includes either the calling name identity or an indication of privacy or unavailability.”*

“CNAP is applicable to all telecommunication services except Short Message service.”

- 2.3 In 2021, 3rd Generation Partnership Project 2 (3GPP2) released a technical specification No. 3GPP TS 22.173 V17.3.0 (2021-03)⁶ on ‘IP Multimedia Core Network Sub-system (IMS) Multimedia Telephony Service and Supplementary Services; Stage 1 (Release 17)’. Through the said technical specification, 3GPP2 introduced, *inter-alia*, the specifications of two supplementary services viz. Originating Identification Presentation (OIP) and Enhanced Calling Name (eCNAM) as below:

*“The **OIP** service provides the terminating party with the identity of the originating party.”*

⁶ Source:

<https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=620>

*“The terminating service provider shall extract the originating party’s telephone number from the originating party identity (e.g., from the tel-URI) to use in its query to retrieve **eCNAM** identity data from a trusted data source.”*

B. Need for Introduction of CNAP Service in the Indian Telecommunication Network

2.4 As indicated in Chapter I of this Consultation Paper, telephone consumers have expressed that in absence of calling party name presentation facility, they prefer not to attend calls from unknown telephone numbers; as a result even genuine calls go unanswered.

2.5 The telephone subscribers consume wireless telephone services on mobile handsets, and landline telephone services on landline telephone sets. Mobile handsets are generally of two broad categories namely feature-phone and smartphone. While it is possible to run mobile applications (apps) on smartphones, the feature-phones and landline telephone sets do not have such a facility. The mobile apps which are run on smartphones could either be ‘native’ apps (provided by mobile handset manufacturers) or ‘third-party’ apps. Many subscribers make use of the relevant native apps and third-party apps for identification of calling party and marking spam calls. However, such native apps and third-party apps, available on smartphones, do not fully meet the requirement of calling party name identification because such apps provide name identification services based on crowd-sourced data, which may not be reliable, in many instances.

2.6 In summary, while the telephone consumers are actively seeking the facility of calling party name presentation on their telephones in the face of the

prevalence of spam calls etc., at present, the calling name presentation facility is not available to the telephone consumers. Though the smartphone users may technically make use of the native apps and third-party apps for identification of calling party name, such solutions are fraught with the perils of unreliable name information.

- 2.7 In the background note on CNAP provided through the letter dated 11.07.2022, DoT has mentioned that CNAP facility empowers telephone consumers for taking informed decision while receiving incoming calls, and this mechanism reduces the harassment of telephone consumers from unknown/ spam callers. Further, DoT has requested TRAI to explore the telecom network readiness and feasibility of providing CNAP facility to all telephone subscribers (smartphone and feature-phone owners).
- 2.8 In this background, the Authority solicits comments of stakeholders on the following set of questions.

Issues for Consultation:

- Q1. Whether there is a need to introduce the Calling Name Presentation (CNAP) supplementary service in the telecommunication networks in India?**
- Q2. Should the CNAP service be mandatorily activated in respect of each telephone subscriber?**
- Q3. In case your response to the Q2 is in the negative, kindly suggest a suitable method for acquiring consent of the telephone subscribers for activation of CNAP service.**

C. Method of Capturing Name Identity of a Calling Subscriber

- 2.9 For implementation of CNAP service in the telecommunication networks, it would be necessary that the service providers have access to a database which contains the correct name identity information of each telephone subscriber.
- 2.10 The clause 39.17 (i) of the Chapter VI (Security Conditions) of Unified License mandates that “[T]he Licensee shall ensure adequate verification of each and every customer before enrolling him as a subscriber; instructions issued by the Licensor in this regard from time to time shall be scrupulously followed.” DoT has issued several instructions in respect of verification of subscribers, which must be followed by telecom service providers (TSPs) at the time of issuing mobile connections to their subscribers. At present, TSPs acquire subscribers with the help of the Customer Acquisition Form (CAF). CAF contains several fields such as name, address, details of the Proof of Identity (PoI) and details of the Proof of Address (PoA) of the subscriber. Subscribers also provide POI and POA documents as a documentary proof along with the CAF. In short, TSPs obtain, *inter-alia*, name identity information of each subscriber through the CAFs.
- 2.11 There are two broad categories of telephone subscribers viz. individual subscribers, and bulk subscribers. The requirement to submit documentary proof along with CAFs is somewhat different for these two categories of subscribers. Individual subscribers need to submit POI and POA documents as a documentary proof along with the CAF. On the other hand, bulk subscribers need to submit a proof of address of the entity (company, firm etc.), an authorization letter for the authorized signatory, PoI document of the authorized signatory, and end user list containing the name, designation etc. of each user, along with the CAF. PoI and PoA

documents submitted by the subscriber are verified, at first, at the Point of Sale (PoS) while issuing blank SIM card to the subscriber and later by the authorized representative of the TSP before activating the SIM card.

- 2.12 In this background, the Authority solicits views of stakeholders on the following question:

Issue for Consultation:

Q4. Should the name identity information provided by telephone consumers in the Customer Acquisition Forms (CAFs) be used for the purpose of CNAP? If your answer is in the negative, please elaborate your response with reasons.

D. Method for Implementing CNAP

- 2.13 In the background note on CNAP provided through the letter dated 11.07.2022, DoT has indicated that CNAP service should be technology-neutral and Internet independent.
- 2.14 In this regard, the Authority approached telecommunication regulators of various countries to seek information on different models of implementing CNAP service. Apart from the above, publicly available information on CNAP service was also perused. It has been observed that in the United States of America, the terminating service provider performs a lookup on the database maintained by the originating service provider or a trusted third party, using the calling party's telephone number to obtain the name information for presenting it to the called party. In Canada, the calling party name information is sent over the telecommunication network from the originating service provider to the terminating service provider. In Turkey,

service providers are allowed to use the sender's name, commercial name, a public institution or a non-governmental organization's name, trademarks, and patents as CLI, provided that the respective subscribers possess official documents to prove their legitimate right to use these names.

2.15 Based on the available information and further analysis on the matter, it appears that there could be four models for implementing CNAP service in the telecommunication networks in India. Before describing these models, certain useful terms are being defined below:

- (a) **'CNAP database'** is the database established and operated by either telecommunication service providers (TSPs) or a third party. The CNAP database will contain three fields: (i) telephone number of the subscriber, (ii) name of the subscriber, and (iii) a field indicating if name identity is available, unavailable, or restricted.
- (b) **'CNAP lookup'** is the query on the CNAP database to extract the name identity of the calling party.
- (c) **'CNAP data'** is the extracted name identity of the calling party or the Presentation Indicator⁷ as the case maybe.
- (d) **'CNAP presentation'** is the display of the CNAP data on the called party by the terminating TSP.

(1) Model No. 1: Each TSPs establishes and operates a CNAP database in respect of its subscribers

2.16 In this model, each TSP establishes and operates a CNAP database in respect of its own subscribers. At the time of call set up, the originating TSP does a CNAP lookup in its own CNAP database using the telephone number of the calling subscriber and extracts the CNAP data

⁷ Presentation indicator may be either (a) presentation restricted or (b) name unavailable.

corresponding to it. The originating TSP then sends this CNAP data over the signaling path to the terminating TSP. Intermediate network nodes pass along the CNAP data. The terminating TSP receives the CNAP data and does a CNAP presentation to the called party. The following figure provides an outline of this model.

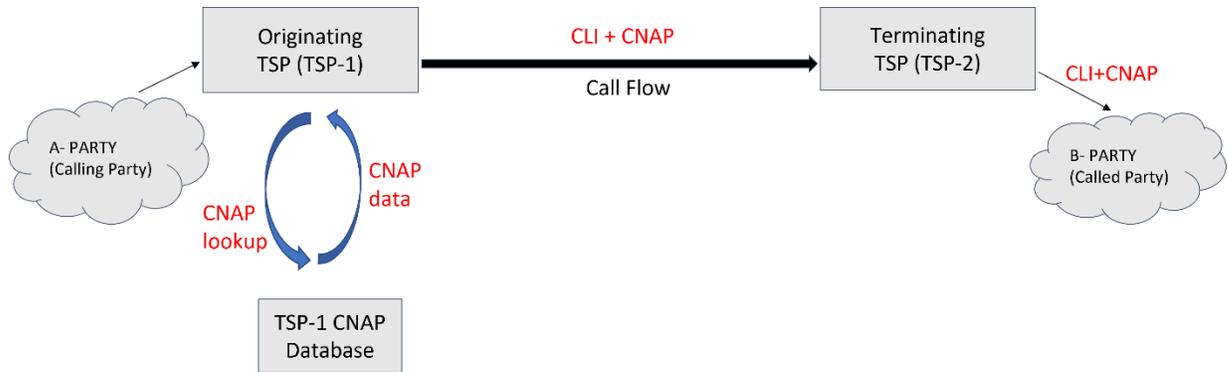


Figure-1: Outline of Model No. 1

2.17 For implementation of Model No. 1, each TSP will have to maintain a CNAP database in respect of its own subscribers. Besides, intermediate network nodes might need to be upgraded to cater to the passage of CNAP data on the signaling path over the telecommunication network.

(2) Model No. 2: The terminating TSP seeks CNAP data from the originating TSP

2.18 In this model, each TSP establishes and operates a CNAP database in respect of its own subscribers. This model comprises of the following steps:

- (a) Based on the CLI of the calling party, the terminating TSP dips in its own Mobile Number Portability (MNP) database to determine the originating TSP.
- (b) In the next step, in case the terminating TSP and the originating TSP are the same, the terminating TSP does a CNAP lookup in its own

CNAP database, retrieves the CNAP data and does a CNAP presentation to the called party. However, in case the originating TSP is different from the terminating TSP, the terminating TSP does a CNAP lookup in the originating TSP's CNAP database, retrieves the CNAP data and does a CNAP presentation to the called party.

2.19 The following figure provides an outline of this model.

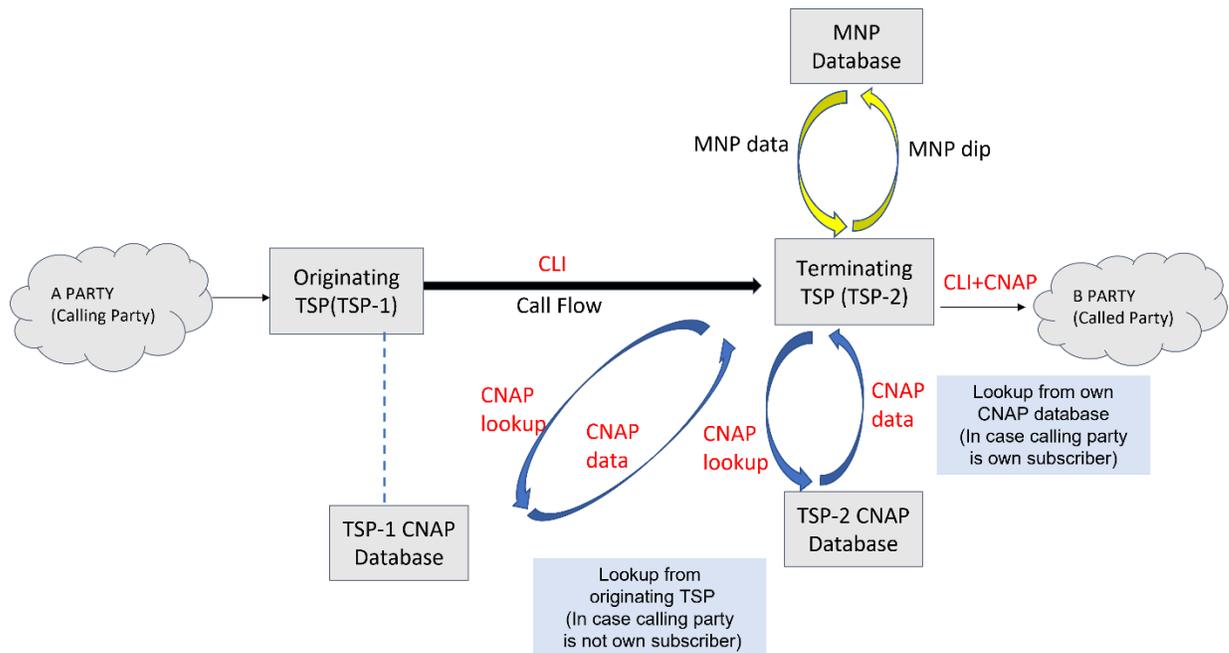


Figure 2: Outline of Model No. 2

2.20 For implementation of the Model No. 2, each TSP will need to maintain a CNAP database in respect of its own subscribers. Additionally, each TSP will need to provide access of its CNAP database, to other TSPs.

(3) Model No. 3: A third party establishes and operates a centralized CNAP database

2.21 In this model, a third party establishes and operates a centralized CNAP database. Whenever a new subscriber is acquired by any TSP, telephone number and the corresponding name identity of the newly added subscriber is inserted in the centralized CNAP database. At the time of call set up, the originating TSP sends the telephone number of the calling party to the terminating TSP over the signaling path as CLI. The terminating TSP then does a CNAP lookup in the centralized CNAP database using the CLI. The terminating TSP retrieves the CNAP data of the calling party and does a CNAP presentation to the called party. The following figure provides an outline of this model.

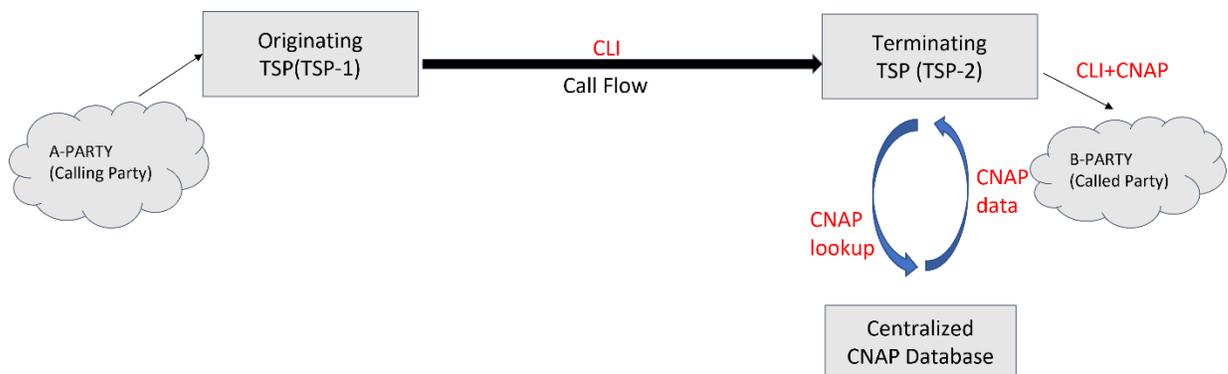


Figure 3: Outline of Model No. 3

2.22 For implementation of the Model No. 3, a centralized CNAP database will be established and operated by a third party. Individual TSPs will send timely updates to the centralized CNAP database upon acquisition of new subscribers or deactivation of the existing subscribers.

2.23 In this regard, it is worth mentioning that DoT, through a note dated 02.07.2021⁸, has envisaged creation of a Digital Intelligence Unit (DIU) at central level and Telecom Analytics for Fraud Management and Consumer Protection (TAF COP) at Licensed Service Area (LSA) field units of DoT. The said note mentions, *inter-alia*, that, through DIU and TAF COP, a Central Telecom Subscriber Database System (CTS DS) will be implemented, which will contain information of all telecom subscribers across all TSPs of all LSAs; a Calling Name Identification System (CLNIS) will also be implemented, which will store the name of each telephone subscriber (as per CAF submitted by the subscriber) against the telephone number.

(4) Model No. 4: Each TSP maintains a CNAP database to keep a copy of the centralized database established and operated by a third party

2.24 This model, in a sense, is a combination of the Model No.2 and Model No.3. In this model, two types of CNAP databases are to be established viz. (a) a centralized CNAP database established and operated by a third party, and (b) CNAP databases established by each TSP, which contain a replica of the centralized CNAP database. The contents of CNAP databases established by individual TSPs are synchronized with the centralized CNAP database and are updated daily.

2.25 In this model, at the time of call set up, the originating TSP sends the telephone number of the calling party to the terminating TSP over the signaling path as the CLI. The terminating TSP then does a CNAP lookup in its own CNAP database, retrieves the CNAP data of the calling party and does a CNAP presentation to the called party. The following figure provides an outline of this model.

⁸ Source: <https://dot.gov.in/accessservices/platform-digital-intelligence-unit-central-level-and-telecom-analytics-fraud>

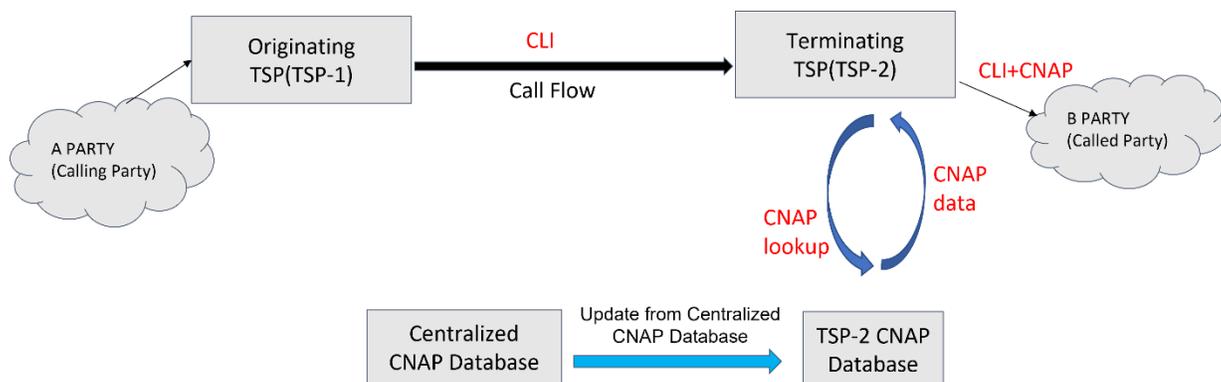


Figure 4: Outline of Model No.4

2.26 Having outlined a few possible models for implementation of CNAP in telecommunication networks, the Authority solicits comments of stakeholders on the following question:

Issue for Consultation:

Q5. Which among the following models should be used for implementation of CNAP in telecommunication networks in India?

- (a) Model No. 1, in which a CNAP database is established and operated by each TSP in respect of its subscribers and the name information is sent by the originating TSP to the terminating TSP during the process of call set up; or**
- (b) Model No. 2, in which a CNAP database is established and operated by each TSP in respect of its own subscribers. The terminating TSP dips into its MNP database to determine the originating TSP of the calling party and then performs a CNAP lookup on the CNAP database of the originating TSP; or**

- (c) **Model No. 3, in which a centralized CNAP database is established and operated by a third party with an update mechanism from each TSP in respect to their subscribers; the terminating TSP performs CNAP lookup from the centralized CNAP database at the time of receiving a call; or**
- (d) **Model No. 4, in which a centralized CNAP database is established and operated by a third party, and individual CNAP databases are established by all TSPs; the TSPs keep a copy of the centralized database and perform local CNAP lookup at the time of receiving a call; or**
- (e) **Any other suitable model for implementation of CNAP along with a detailed description of the model.**

E. Impact on Call set up Time on Introduction of CNAP in Telecommunication Networks

2.27 In the background note on CNAP provided through the letter dated 11.07.2022, DoT stated that the Authority may explore the possibility of delivery of calling party name to called party without hindering latency of existing call flow mechanism.

2.28 The 'Latency' of call flow mechanism is, essentially, the call set up time. Call set up time indicates the time taken between the moment the calling party finishes dialing the telephone number of the called party and the moment the called party's telephone starts ringing. In case the CNAP service is introduced in telecommunication networks, there is a likelihood of a slight increase in the call set up time in the implementation models referred to above.

2.29 It appears that in the case of Model No.1 and Model No.4 (in which CNAP lookup will be performed in a local CNAP database), the increase in call set up time would be lesser than that in case of the Model No. 3 (in which the CNAP lookup will be performed on a centralized CNAP database). Further, in the Model No. 2, the increase in call set up time would be lesser in case the calling party is a subscriber of the terminating TSP and slightly more, in case the calling party is not a subscriber of the terminating TSP.

2.30 In this background, the Authority solicits comments of stakeholders on the following question:

Issue for Consultation:

Q6. What measures should be taken to ensure delivery of CNAP to the called party without a considerable increase in the call set up time?

F. Need for Upgradation of Telecommunication Networks for Implementation of CNAP

2.31 In the background note on CNAP provided through the letter dated 11.07.2022, DoT has requested the Authority to explore telecom network readiness so that CNAP can be implemented in multi-technology networks across TSPs.

2.32 Whether a network is ready for implementation of CNAP supplementary service or not will depend upon the technology in use in the network. At present, a large variety of network types are available in Indian telecommunication network. Besides the modern wireless networks (based on 4G and 5G access technologies) and modern landline networks (based on Next Generation Network (NGN) access technology), there exist legacy

wireless networks (based on 2G and 3G access technologies) and legacy landline networks (based on circuit-switched technology). While the modern networks might readily support CNAP supplementary service, some legacy networks might require an upgrade to support the CNAP service. Besides, there could be issues related to passage of CNAP at the points of interconnection (POI) between various types of networks.

- 2.33 In this background, the Authority solicits comments of stakeholders on the following question:

Issue for Consultation:

Q7. Whether the existing telecommunication networks in India support the provision of CNAP supplementary service? If no, what changes/additions will be required to enable all telecommunication networks in India with CNAP supplementary service? Kindly provide detailed response in respect of landline networks as well as wireless networks.

G. Handset Related Issues

- 2.34 In the background note on CNAP provided through the letter dated 11.07.2022, DoT requested the Authority to explore the feasibility of implementation of CNAP without the need for Internet or smartphone/ devices.
- 2.35 Mobile telephone consumers make use of a variety of feature-phones and smartphones of different makes and models. While some mobile handsets could already be supporting CNAP feature, the other handsets might require software upgrades to enable CNAP feature on them. Some landline telephone sets in use have the alphanumeric display feature while many

others do not. In case CNAP service is introduced in the Indian telecommunication network, the manufacturers of mobile handsets and landline telephone sets may have to enable the CNAP feature in their future supplies.

- 2.36 In this background, the Authority solicits comments of stakeholders on the following question:

Issue for Consultation:

Q8. Whether the mobile handsets and landline telephone sets in use in India are enabled with CNAP feature? If no, what actions are required to be taken for enabling CNAP feature on all mobile handsets and landline telephone sets?

H. CNAP Service for Toll-Free Numbers

- 2.37 National Toll-Free number is an 1800 series number that can be dialed by any telephone consumer across India without being charged any tariff. Generally, business entities seek Toll Free numbers from their TSPs to facilitate their customers in calling them without worrying about the charges of the calls. For ease of access, some customers, store the Toll-Free numbers of relevant business entities in their telephone contact list. At present only incoming calls to Toll-Free numbers are permitted. The business entities make outgoing calls to their customers from a different set of telephone numbers, which may not be easily identifiable with the respective business entities.

- 2.38 One may argue, that in case outgoing calls are permitted from Toll-Free numbers, and CNAP service is implemented on Toll-Free numbers as well,

it will make it easier for the called customers to associate a call received from any Toll-Free number with the relevant business entity.

- 2.39 In this background, the Authority solicits comments of stakeholders on the following set of questions:

Issues for Consultation:

Q9. Whether outgoing calls should be permitted from National Toll-Free numbers? Please elaborate your response.

Q10. In case the response to the Q9 is in the affirmative, whether CNAP service should be activated for National Toll-Free numbers? If yes, please provide a mechanism for its implementation.

I. CNAP Service for Registered Telemarketers

- 2.40 The TCCPR, 2018 issued by TRAI on 19.07.2018 provides a framework for commercial communication through access service provider's network. A principal entity (which could be any business identity or individual) hires a registered telemarketer for sending commercial communication through the network of an access service provider. The TCCPR, 2018 identifies a Telemarketer as '*a person or legal entity engaged in the activity of transmission or delivery of commercial communication or scrubbing or aggregation*'. Registered telemarketers, on behalf of the principal entities, make commercial calls to telephone subscribers through 140-level series number.

- 2.41 The telephone numbers assigned to the registered telemarketers are mapped to a 140-level number by the access service provider. Whenever a registered telemarketer calls a telephone subscriber on behalf of the principal entity, the 140-level number is presented as the CLI to the called party. In case CNAP service is activated for registered telemarketers, the name identity of the principal entity associated with the registered telemarketer would also be required to be displayed on the called party's telephone. For displaying the name identity of the principal entity to the called party, suitable provisions will have to be made to store the name identity of the principal entity in the CNAP database.
- 2.42 In this background, the Authority solicits comments of stakeholders on the following set of questions.

Issues for Consultation:

Q11. Whether CNAP service should be implemented for 140-level numbers allocated to registered telemarketers?

Q12. If your answer to Q11 is in the affirmative, then kindly elucidate the technical considerations for implementing CNAP service for registered telemarketers so that the name identity of the principal entity may be presented to the called party.

J. Presentation of Preferred Name in Case of Bulk Subscribers

- 2.43 In line with the example of turkey, where service providers are allowed to use the sender's name, commercial name, a public institution or a non-governmental organization's name, trademarks, and patents as CLI (provided that the subscriber possesses official documents to prove

legitimate right to use the name), bulk subscribers in India could also be permitted to choose a 'preferred name' in place of the name information available in the CAF for familiarity of their customers. The preferred name identity should be accepted by TSPs only after due verification of the supporting documents which adequately establish that the bulk subscriber has the legal right to use the desired preferred name.

2.44 Like the bulk subscribers, the owners of toll-free numbers may also require the facility of presenting their 'preferred name'.

2.45 In this background, the Authority solicits comments of stakeholders on the following questions:

Issues for Consultation:

Q13. Whether the bulk subscribers and National Toll-free numbers should be given a facility of presenting their 'preferred name' in place of the name appearing in the CAF? Please elaborate your response.

Q14. In case the response to the Q13 is in the affirmative, what rules should govern the implementation of such a facility?

K. Regulatory Provisions in the Telecommunication Service Licenses

2.46 The Chapter VI (Security Conditions) under Unified License mandates provision for CLI as below:

"39.17(i) Calling Line Identification (CLI) shall be provided. The network should also support Malicious Call identification and Centralized Automatic Message Accounting (CAMA).

39.17(ii) Calling Line Identification (CLI) shall never be tampered as the same is also required for security purposes and any violation of this amounts to breach of security.”

National Long Distance (NLD) Service Authorization under Unified License mandates provision for CLI as below:

“5.3 The Licensee shall transit the CLI as received from the Access/ILD operators.”

2.54 The International Long Distance (ILD) Service Authorization of Unified License mandates provision for CLI as below:

“6.5 All International Long-Distance Operators (ILDOs) should drop all calls with no CLI or improper CLI at their Gateways and should ensure that all calls handed over by ILDOs to National Long-Distance operators (NLDOs)/ Access Service providers should bear “Nature of Address Indicator (NAI)” field in case of CCS7/ equivalent field in SIP/ IP as “International Number”. For identifying an improper CLI, ITU-T recommendations on E.164 numbering scheme may be referred”.

2.55 Similar provisions for CLI exist in Unified Access Service License (UASL), NLDO License and ILDO License as well.

2.56 As indicated above, provision of CLI have been mandated in various telecommunication service licenses/ authorizations. However, there is no such mandate in respect of provision of CNAP. In case CNAP service is introduced in the Indian telecommunication network, DoT may need to amend existing provisions or include new provisions in telecommunication service licenses/ authorizations.

2.57 In this background, the Authority solicits comments of stakeholders on the following set of questions:

Issues for Consultation:

Q15. Whether there is a requirement of any amendment in telecommunication service licenses/ authorizations in case CNAP is introduced in the Indian telecommunication network? Please provide a detailed response.

Q16. Whether there are any other issues/ suggestions relevant to the subject? If yes, the same may be furnished with proper justification.

2.58 The following chapter lists the issues for consultation.

CHAPTER III

ISSUES FOR CONSULTATION

Stakeholders are requested to provide responses to the following questions with detailed justifications:

- Q1. Whether there is a need to introduce the Calling Name Presentation (CNAP) supplementary service in the telecommunication networks in India?**
- Q2. Should the CNAP service be mandatorily activated in respect of each telephone subscriber?**
- Q3. In case your response to the Q2 is in the negative, kindly suggest a suitable method for acquiring consent of the telephone subscribers for activation of CNAP service.**
- Q4. Should the name identity information provided by telephone consumers in the Customer Acquisition Forms (CAFs) be used for the purpose of CNAP? If your answer is in the negative, please elaborate your response with reasons.**
- Q5. Which among the following models should be used for implementation of CNAP in telecommunication networks in India?**
- (a) Model No. 1, in which a CNAP database is established and operated by each TSP in respect of its subscribers and the name information is sent by the originating TSP to the terminating TSP during the process of call set up; or**
 - (b) Model No. 2, in which a CNAP database is established and operated by each TSP in respect of its own subscribers. The**

terminating TSP dips into its MNP database to determine the originating TSP of the calling party and then performs a CNAP lookup on the CNAP database of the originating TSP; or

- (c) Model No. 3, in which a centralized CNAP database is established and operated by a third party with an update mechanism from each TSP in respect to their subscribers; the terminating TSP performs CNAP lookup from the centralized CNAP database at the time of receiving a call; or
- (d) Model No. 4, in which a centralized CNAP database is established and operated by a third party, and individual CNAP databases are established by all TSPs; the TSPs keep a copy of the centralized database and perform local CNAP lookup at the time of receiving a call; or
- (e) Any other suitable model for implementation of CNAP along with a detailed description of the model.

Q6. What measures should be taken to ensure delivery of CNAP to the called party without a considerable increase in the call set up time?

Q7. Whether the existing telecommunication networks in India support the provision of CNAP supplementary service? If no, what changes/additions will be required to enable all telecommunication networks in India with CNAP supplementary service? Kindly provide detailed response in respect of landline networks as well as wireless networks.

Q8. Whether the mobile handsets and landline telephone sets in use in India are enabled with CNAP feature? If no, what actions are

required to be taken for enabling CNAP feature on all mobile handsets and landline telephone sets?

- Q9. Whether outgoing calls should be permitted from National Toll-Free numbers? Please elaborate your response.**
- Q10. In case the response to the Q9 is in the affirmative, whether CNAP service should be activated for National Toll-Free numbers? If yes, please provide a mechanism for its implementation.**
- Q11. Whether CNAP service should be implemented for 140-level numbers allocated to registered telemarketers?**
- Q12. If your answer to Q11 is in the affirmative, then kindly elucidate the technical considerations for implementing CNAP service for registered telemarketers so that the name identity of the principal entity may be presented to the called party.**
- Q13. Whether the bulk subscribers and National Toll-free numbers should be given a facility of presenting their 'preferred name' in place of the name appearing in the CAF? Please elaborate your response.**
- Q14. In case the response to the Q13 is in the affirmative, what rules should govern the implementation of such a facility?**
- Q15. Whether there is a requirement of any amendment in telecommunication service licenses/ authorizations in case CNAP is introduced in the Indian telecommunication network? Please provide a detailed response.**

Q16. Whether there are any other issues/ suggestions relevant to the subject? If yes, the same may be furnished with proper justification.

F. No. 20-405/2013- AS-I
Ministry of Communications
Department of Telecommunications
(Access Service Wing)
20, Ashoka Road, Sanchar Bhawan, New Delhi

Dated the 21st March, 2022

Subject: Provision of displaying Name of Subscriber to called party for incoming calls- seeking recommendations of TRAI

It has been desired to examine the feasibility of Calling Name Presentation (CNAP) in Indian Telecommunication Network. The CNAP is the supplementary service which enables the called party to receive the calling name information of the calling party. This supplementary service provides for the ability to indicate the name information of the calling party to the called party at call set-up time for all incoming calls.

2. Presently, in Indian Telecom Networks, only the mobile/landline numbers are being displayed as Calling Line Identification (CLI) during incoming calls. There is no mandate in the license for providing CNAP services.

3. In Unified License, the Calling Line Identification is defined as:
CALLING LINE IDENTIFICATION (CLI) means identity of the calling/originating subscriber in terms of the telephone number assigned as per E.164 of ITU Recommendation/IP Address or any other identification as may be prescribed by the Licensor from time to time.

4. In view of above, TRAI is requested to submit its recommendations under Section 11 (1) (a) of TRAI Act, 1997 (as amended) on introducing the Calling Name Presentation (CNAP) facility in Indian Telecommunications Network.


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Deputy Director General (AS)

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To,
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LIST OF ACRONYMS

S. No.	Acronym	Description
1	3GPP 2	3rd Generation Partnership Project 2
2	CAF	Customer Acquisition Form
3	CCS	Common Channel Signaling
4	CLI	Calling Line Identification
5	CLIP	Calling Line Identification Presentation
6	CLNIS	Calling Line Name Identification System
7	CNAP	Calling Name Presentation
8	CNIP	Calling Name Identification Presentation
9	DIU	Digital Intelligence Unit
10	DND	Do Not Disturb
11	E-CNAP	Enhanced Calling Name Presentation
12	ETSI	European Telecommunication Standards Institute
13	ILD	International Long Distance
14	ILDO	International Long-Distance Operator
15	IMS	IP Multimedia Subsystem
16	IP	Internet Protocol
17	ITU	International Telecommunication Union
18	LSA	Licensed Service Area
19	MNP	Mobile Number Portability
20	NAI	Nature of Address Indicator
21	NGN	Next Generation Network
22	NLD	National Long Distance
23	NLDO	National Long-Distance Operator

24	OIP	Originating Identification Presentation
25	OTP	One Time Password
26	PI	Presentation Indicator
27	PLMN	Public Land Mobile Network
28	PoA	Proof of Address
29	PoI	Proof of Identity
30	POI	Point of Interconnection
31	PoS	Point of Sale
32	SIM	Subscriber Identity Module
33	SIP	Session Initiation Protocol
34	TAF COP	Telecom Analytics for Fraud Management and Consumer Protection
35	TCCPR	Telecom Commercial Communications Customer Preference Regulations
36	TSP	Telecom Service Provider
37	UASL	Unified Access Service License
38	UCC	Unsolicited Commercial Communications
39	UL	Unified License
40	UMTS	Universal Mobile Telecommunication System