



National Numbering Plan: Central Office (CO) Codes and Home Network Identifier (HNI)

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Executive Summary

This National Numbering Plan is one in a series of National Numbering Plans that will govern the administration of national numbering resources in the Republic of Trinidad and Tobago, in accordance with the Telecommunications (Numbering) Regulations. The number resources addressed in this Plan are Central Office (CO) codes and Home Network Identity (HNI) assignments. This document examines the current allocation of numbers for public fixed (wired/wireless) and mobile telephony (telecommunications) services in the Republic of Trinidad & Tobago and presents the Numbering Scheme for CO Code Allocation and administration guidelines for numbers for fixed (wired/wireless), mobile and special services (e.g. toll free services, premium services). Additionally, the administration guidelines for HNIs are also contained in this document. Other national numbering resources that are not addressed in this Numbering Plan, but will be addressed in future Plans include:

- Carrier Identification Codes.
- International Signalling Point Codes.
- SS7 Point Codes.
- Toll Free (800) Services.
- Premium (900) services.
- System Identifier (SID) Numbers.
- Any other numbering resource that the Authority may identify from time to time.

Prior to the establishment of the Telecommunications Authority of Trinidad and Tobago (hereafter called “the Authority”), the number assignments were solely made to the incumbent concessionaire of public telecommunications services, the Telecommunications Services of Trinidad and Tobago (TSTT). Subsequent to the introduction of competition, number assignments have been made to new entrant concessionaires in the domestic fixed and mobile markets. As competition increases in the telecommunications sector, the demand for numbers is expected to increase.

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Based on an evaluation of the existing assignment of numbers, a Numbering Scheme for CO Code Allocation has been developed by the Authority. This plan includes:

- 3,440,000 numbers for mobile (cellular) services
- 1,450,000 numbers for fixed (wired/wireless) services
- 600,000 numbers for number translation services, operator services, plant test codes and network switching services
- 970,000 numbers for future services
- 100,000 numbers for government and public services
- 180,000 numbers for premium and special services

The numbering scheme accounts for **7,810,019** numbers¹. It makes provision for special numbering reserves, such as for government and public purposes, accommodates the existing assignments and outlines the principles and guidelines required for the efficient administration of CO codes.

The Authority has also assumed the duty of administering HNIs to concessionaires of public domestic mobile telecommunications networks and services in the Republic of Trinidad and Tobago who offer international roaming capabilities. The HNI segment comprises the Mobile Country code (MCC) and Mobile Network Code (MNC). The HNI forms part of the International Mobile Station Identifier (IMSI), which is a 15-digit number which uniquely identifies a subscriber to a specific network (i.e. concessionaire of a public mobile telecommunications network).

The HNI is a 6-digit number, i.e. a 3-digit MCC plus a 3-digit MNC. In the Republic of Trinidad and Tobago, the MCC assigned for use in the HNI is 374. The MNC uniquely identifies the home network of a public mobile telecommunications service subscriber within a country's MCC. The concessionaire, to whom the MNC is assigned, directly administers the remaining segment of the IMSI, i.e. the Mobile Station Identification Number (MSIN).

¹ Note that nineteen (19) Central Office (CO) codes are used for abbreviated dialing services.

1 Objectives

The National Numbering Plan: Central Office (CO) Codes and Home Network Identifiers (HNIs) address the planning and administration of CO codes and HNIs. The objectives of this National Numbering Plan are to:

1. Identify the Numbering Scheme that will be employed for the allocation of CO codes to telecommunications service types (e.g. fixed (wired/wireless) service, mobile service).
2. Outline the principles and guidelines that will be employed in the administration of CO codes, and by extension, the Numbering Plan Area (NPA).
3. Identify any obligations that will apply to concessionaires assigned CO codes (e.g. number conservation methods).
4. Outline the principles and guidelines that will be employed in the administration of HNI assignments.

2 Relevant Legislative Framework

The Telecommunications Act 2001, as amended in 2004 provides the legislative framework for the Authority to develop a plan for the numbering of telecommunications services. The Authority is also responsible for the administration and management of such numbers.

The Responsibilities of the Authority with respect to numbering are stated in Part IV section (44) of the Act as follows:

1. The Authority shall develop a plan for the numbering of telecommunication services and shall administer and manage such numbers.
2. Subject to subsection (5), numbers shall be made available to providers of telecommunications services on an equitable basis

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3. The numbering plan may establish procedures by which providers of telecommunications services may assign or re-assign telephone numbers to users.
4. The numbering plan shall be made available to the public in the manner prescribed by the Authority.
5. In developing the numbering plan referred to in subsection (1), the Authority shall preserve to the extent feasible, the assignment of numbers made before the commencement of this Act.
6. The Authority shall notify all service providers of any new numbering assignments made.

3 Background

3.1 Basic Model – North American Numbering Plan

The Republic of Trinidad & Tobago is a participating country in the North American Numbering Plan (NANP), which is the basic numbering scheme throughout the US, Canada, the Bahamas and 16 Caribbean countries. The structure of the numbers is defined as follows:

Country Code	Area Code	Directory Number	
		Central Office Code	Station Number
1	NXX	NXX	XXXX

N = 2-9

X = 0-9

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The Country Code is a combination of one, two or three digits identifying a specific country, countries in an integrated numbering plan, or a specific geographic area. All NANP participating countries use Country Code 1 for the routing of calls internationally (i.e. amongst NANP participating countries and other countries globally).

The Area Code identifies the particular country, state or province (for countries with more than one area code) within the NANP. It is also termed the Numbering Plan Area (NPA) code, or simply the NPA. It comprises 3 digits. For example, the Republic of Trinidad and Tobago is assigned to NPA 868, as a NANP participating country.

The Central Office (CO) Code identifies a particular district within an area. A CO Codes is a three (3) digit number, ranging from 100 to 999, which represents up to 10,000 telephone numbers when used with a 4-digit station number as a suffix, as the case with a local telephone number

The Station Number identifies a particular subscriber or telephone line. The station number is also termed the subscriber or line number. It comprises 4 digits.

The NANP follows the guidelines of the International Telecommunications Union, Telecommunications Standardisation Bureau (ITU-T) Recommendation E.164 – The International Public Telecommunication Numbering Plan, with regard to the number structure of an international telephone number. The ITU-T Recommendation E.164 specifies that the international telephone number should comprise a maximum of 15 digits, where 1 to 3 digits are allocated for the Country Code and the remaining (15 – n) digits (where n is the number of digits used for the Country Code) are divided between the National Destination Code (i.e. Area Code) and Subscriber Number.

The NANP also defines a number of special codes including the N11 Codes. These are Easily Recognizable Codes (ERC), more formally known as ‘service codes’, which are used to provide three-digit access to special services. They are never used as area codes or CO codes. The legitimate area codes and CO codes are therefore reduced by the number of possible N11 codes.

Other special codes used in the NANP are the N00 Codes. These are ERCs usually used for the provision of toll-free and premium services. Other special NANP codes are the Carrier Identification Codes (CICs), which identify the various carriers.

Quite apart from the telephone numbers used to identify subscribers, there are special codes known as Automatic Number Identification (ANI) II Digits, used within the telecommunications network. ANI II Digits are two-digit pairs sent with the originating telephone number as part of the signaling that takes place during the set up phase of a call and identify the type of originating station.

3.2 Importance of Numbering

Numbers are an indispensable means for identifying subscribers and directing calls and connections through interconnected circuit switched telecommunications networks to ultimately access a party or service. Numbers are critical for the provision of public telecommunications services.

The manner in which the numbering resource is managed is of direct concern to subscribers in many ways. For example, by traditionally assigning numbers to various geographic regions, and advertising the tariffs associated with calls from any one region to any other, calling parties could easily determine the costs of their calls before they are made. The manner in which the numbering resource is managed also has a direct impact on the competitive environment. For example, subscribers are more likely to try new service providers if their phone numbers do not change as a consequence.

3.3 Availability of Numbers

Currently, 868-NXX-XXXX defines the range of numbers available to Trinidad & Tobago, where NXX can fall within 200-999, and XXXX can fall within 0000-9999. This provides almost 8 million (7, 820, 007) numbers available for assignment. Though the supply of numbers

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is finite, the exhaustion of such a resource is not currently under threat. However, without proper numbering allocation and assignment practices, the resource may become cumbersome to use and manage efficiently, and may eventually face exhaustion.

3.4 NANPA Resources

This plan documents the Authority's proposed administration of the following resources:

- Central Office (CO) Codes.
 - N11 Codes (Abbreviated Dialling Services).
 - Vertical Service Codes (VSC).
- Home Network Identifier (HNI) numbers.

Other NANPA resources that the Authority may consider administering in the future are:

- Carrier Identification Codes (CICs).
- ANI II Digits.

3.5 Non-NANPA Resources

This plan currently addresses the administration of International Mobile Subscriber Identifiers (IMSI), which is administered in North America by the Telcordia IMSI Administrator, based on guidelines developed by the IMSI Oversight Council (IOC).

Other Non-NANPA resources that the Authority may propose to administer are:

- Local ANSI SS7 Point Codes.
- System Identifier (SID) numbers.
- Data Network Identification Codes (DNICs).
- ITU International Signalling Point Codes.

4 Modification of Document

As the country's telecommunications industry matures, the National Numbering Plan will evolve. Subsequent to the consultation process, and after this document has been finalised, the National Numbering Plan: Central Office Codes and Home Network Identifiers will be reviewed and modified as necessary and in consultation with stakeholders (including the public), to ensure that regulatory practices and processes continue to be guided by appropriate policy guidelines and objectives.

Questions or concerns regarding the maintenance of the National Numbering Plan: Central Office (CO) Codes and Home Network Identifiers (HNIs) may be directed to the Authority.

5 The Consultation Process

On November 1st, 2004, the Authority published the first draft of this document and invited comments and recommendations from all interested parties. The first consultation period ended in February, 2005. The only comments received on that first consultative document were from the Telecommunications Services of Trinidad and Tobago (TSTT), as they were the only public telecommunications service provider in the market at the time.

The Authority has revised this National Numbering Plan taking into consideration the comments and recommendations received in the first consultation round. A Decisions on Recommendations (DOR) Matrix has been included at Annex I, which provides all the comments and recommendations received and summarises the Authority's decisions in respect of those.

On July 3rd 2009, the Authority published the second draft of this document and invited comments and recommendations from all interested parties. The second consultation period ended in August 14th 2009.

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Both rounds of consultation were conducted in accordance with the Authority's *Procedures for Consultation in the Telecommunications Sector of Trinidad and Tobago*. This document represents the final version of the National Numbering Plan: Central Office (CO) Codes and Home Network Identifiers (HNIs). A DOR Matrix has been included for both rounds of consultation in Annex I and Annex II respectively, which provides all comments and recommendations received in the second consultation round and the Authority's decisions in respect of those.

6 Current CO Code Assignments

The following lists the CO code number assignments to concessionaires of public telecommunications services in Trinidad and Tobago, inclusive of CO codes assigned to the incumbent, TSTT, prior to the introduction of competition in the mobile market.

Table 1: CO Code Number Assignments to Concessionaires of Public Telecommunications Services

Mobile	Fixed	Unallocated	Comments
		201 - 220	
	221 - 224		Assigned to Columbus Communications Trinidad Limited
		225 - 289	
290 - 299			Assigned to Digicel (Trinidad and Tobago) Limited
301 - 310			Assigned to Digicel (Trinidad and Tobago) Limited
312 - 399			Assigned to Digicel (Trinidad and Tobago) Limited
460 - 499			Assigned to TSTT post liberalisation
620, 678	610 – 679		Assigned to TSTT pre-liberalisation. 666 – currently unassigned.
680 – 689			Assigned to TSTT pre-liberalisation.
	690 – 699		Assigned to TSTT pre-liberalisation. 699 (Inbound and Outbound International Call Testing – DMS 300)
701 – 719			Assigned to TSTT post liberalisation.
720 – 799			Assigned to TSTT pre-liberalisation.
		801 – 819	800 (Local Toll Free Service)

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Mobile	Fixed	Unallocated	Comments
	821 – 822		Assigned to TSTT pre-liberalisation. 821 and 822 assigned to Direct-Inward-Dialling services.
	824		824 (TSTT Customer Care Services). Assigned to TSTT pre-liberalisation.
		834 – 899	888 (TSTT Calling Card Helpdesk service) 848, 874 (International Inbound Audiotext Service)
		901 - 989	938 (NPA used for Wholesale International Toll Free Service from MCI and not routable as a CO Code) 976 (Information Services) 950, 958 (Routing Codes for 900 and 800 Services respectively)
		990 – 999	990 and 999 (Emergency) 998 (Automatic Number Announcement Service)

The dialing scheme currently used in the Republic of Trinidad and Tobago is as follows:

Table 2: Dialling Scheme for the Republic of Trinidad and Tobago

Type of Calls	Existing Dialling Procedure
Inter-exchange - Unassisted - Operator assisted	7 digits 0 + 7 digits
Automatic Intra-exchange	7 digits
International to World Zone 1	

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Type of Calls	Existing Dialling Procedure
(WZ1) - Unassisted - Operator assisted	1+NPA+7 digits 0+NPA+7 digits
International outside WZ1 - Unassisted - Operator assisted	011+ Country Code + national number 01+ Country Code + national number
Local Operator	0
Directory Assistance	6411
Emergency - Police - Fire - Ambulance	999 990 811

The Authority shall maintain the current dialling scheme/plan which establishes the format to be used when dialling a telephone number.

7 Considerations: CO Code Allocation and Assignment

A number of factors have been considered in the development of the new numbering scheme for CO code allocation, with the intention of meeting the needs of a liberalized sector. The issues considered in the development of this numbering scheme are discussed below.

7.1 Central Office (CO) Codes – Migration of Numbers

CO Codes should be assigned to permit the most effective and efficient use of a finite numbering resource in order to prevent premature exhaust of the NPA and to delay the need to develop and implement costly relief. Efficient resource management and CO code conservation are necessary due to the impacts of expanding the numbering resource.

Many improvements on the existing numbering scheme can be implemented to maximize the lifespan of the NPA. The main reason for the inefficiencies in the existing numbering allocations was the lack of an adequate numbering scheme for CO code allocation. In the development of a proper numbering scheme, there may be need for the migration of numbers associated with existing services, in order to maximize the efficiency of the scheme and its lifespan as well. Such number migrations would result in a change in the “telephone” number or abbreviated dialling code used to access specific telecommunications services to one that is aligned with the numbering scheme.

The Authority shall consult with concessionaires, who are assigned CO code numbering resources and other relevant stakeholders in the development of migration plans to align the numbers assigned to telecommunications services to the numbering scheme. A migration process will be undertaken only when deemed necessary, by the Authority, in its administration of these numbering resources. The Authority shall exercise reasonable measures to minimize the unavoidable inconveniences that will be imposed on consumers (i.e. subscribers), where a migration of numbers assigned in a telecommunications service is deemed necessary. Furthermore, the Authority will seek to retain, wherever possible, existing numbering assignments, to minimize the impact to consumers.

The current areas where number migration may be necessary all relate to the use of such numbers by the incumbent operator, TSTT, prior to the promulgation of the Telecommunications Act 2001, as amended. It should also be noted that the lack of a numbering scheme prior to liberalisation led to inadvertent use of these CO codes by the incumbent, in a manner that is not consistent with the proposed CO codes numbering scheme. The potentially affected CO codes and numbers are as follows:

- a. Existing Mobile Ranges: The CO codes 620, 678 and 680 – 689 are currently allocated to mobile services. However the Authority shall endeavour to work with the CO code assignee, TSTT, to gradually retire the use of these numbers for Mobile Services when they become inactive or in the event that it becomes necessary to re-allocate the assigned numbers from these CO codes. This activity will allow the reallocation of these number allocations to the Fixed Services category.
- b. Directory Services: 6411 – Presently, TSTT provides directory assistance at this number. Instead, a three-digit number (411) should be used. This can be introduced more subtly, as subscribers who dial the four digits 6411 can be informed that the new number for directory services is the newly assigned numbers. Similarly 611 can be used instead of 6611 for Repair services.
- c. Fixed Services: 821 and 822 – TSTT currently has this allocation for fixed services (direct inward dialling). CO codes that have already been assigned to TSTT for fixed services can be used to provide this service. For example, this service can be migrated to CO codes within the range 610 – 618.
- d. TSTT Customer Care Services – TSTT currently offers its customer care services at 824-TSTT. Digicel's customer care services can be accessed via dialling 100 on a Digicel mobile phone or 628-7000, otherwise. Flow (Columbus Communications Trinidad Limited) uses 223-FLOW as its customer care service number. Although it is commendable that these concessionaires offer customer care (call-in) services, the choice of using a number assignment from its Fixed Services number allocation or from an entirely new CO code (as in TSTT's case) may not be the best number assignment to make for this service. Considering that this service is a local toll free service and should be accessible either on the network that

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offers it or from any other network, a number assignment from the Premium (toll free) Services allocation would be more appropriate. For example, instead of 824-TSTT, 800-TSTT can be employed as CO code 800 has been assigned to TSTT for Premium (toll free) services.

- e. Premium Services: 800, 900 – These CO codes are being used for the provision of premium services such as local toll free (800) and pay (900) services by TSTT. At this time, these CO code uses are consistent with the proposed numbering scheme. The only caveat to this will be whether these codes remain exclusive to TSTT or are shared for use by other concessionaire who may have subscribers who request a local toll free or pay service. In the interim, the CO codes 866 and 877 have been assigned to Flow and Digicel respectively for the provision of local toll free services.
- f. TSTT's Information Services: 976 - This CO code is presently being used by TSTT for subscribers who wish to have information service numbers. This CO code was also used by TSTT for its InfoZone service, which has been discontinued. The Authority may consider the migration of this service to the CO code range 901 – 949, which is more appropriate based on its allocation to premium and special services in the proposed numbering scheme.
- g. TSTT's DMS 300 Codes: 699. This is currently used for ISDN trunk loop back testing at the TSTT House DMS-300. Inbound and Outbound International call testing is facilitated. The Authority shall investigate the utilization of this block and may consider the migration of this service to one of the blocks proposed for Plant Testing (958, 959), or an operator services block.
- h. Routing of 800 and 900 calls: 950, 958. These codes have been assigned and used as routing codes to facilitate the local 900 and 800 services respectively. These codes are used throughout the entire network. Customers would dial 800-xxxx and this would be translated to 958-xxxx for routing and termination to the particular associated local office and line. Similarly, customers would dial 900-xxxx and this would be translated to 950-xxxx for routing and termination to the particular associated local office and line. The Authority shall investigate the utilization of these blocks and may consider, based on the results, re-allocating these services to a block in the Translation Services range.

- i. Audio Text Service: 848, 874. These codes are being used for international inbound audio text services by TSTT, based on the most recent information submitted to the Authority. There have been cases in the region of service providers that charge exorbitant rates for audio text services to international consumers without their knowledge. Internationally, consumers may dial a 900-NXX-XXXX number to access this service; however other NPAs can be used. The Authority shall investigate the utilization of these blocks and gather information with respect to the billing of this service to ensure that consumers are protected from fraudulent services. The Authority may withhold the right to not assign a CO Code to this service.
- j. Wholesale International Toll Free service from MCI: 938. This service facilitates customers, e.g. a local airline or bank, who want to allow their customers to reach them toll free from several countries around the world. MCI would facilitate translation of the originating toll free number in the foreign country to 868-938-xxxx for international routing purposes. The single code 938 is used for terminations anywhere in TSTT's network. The Authority shall investigate the utilization of these blocks and based on the results, may consider that a block of NXXs (possibly the same) be allocated for such wholesale international toll free services as other local operators would also wish to offer.

7.2 North American Numbering Plan (NANP) Expansion

In 2001 the NANP Administrator, based on NANP Numbering Resource Utilization/ Forecast (NRUF) data, has projected NANP exhaust by the year 2025 (with a timeframe range between 2024 and 2038 depending on the applicable assumptions). The Industry Numbering Committee (INC) has evaluated and provided recommendation on NANP Expansion, having taken into consideration the major activities essential for implementation. The INC has estimated that a ten-year lead-time is necessary.

The INC has recommended the addition of a fourth digit to the end of the NPA field and the addition of a digit to the beginning of the Central Office code field, resulting in a twelve-digit numbering plan as shown below.

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Area Code	Directory Number	
	Central Office Code	Station Number
NXX(X)	(X)NXX	XXXX

Where,

N represents digits 2 through 9, and

X represents digits 0 through 9

It is proposed by the INC that during the transition period (one year) both the new and old plans need to be supported. The values of the fourth digit in the existing ten-digit NANP (historic D digit) cannot be a 0 or 1. Using the 0 or 1 value in the D digit position will provide the necessary indication for all switching equipment and operational support systems to ensure identification of an expanded twelve-digit NANP number.

Expansion is facilitated by adding the digits (00, 01, 10, 11) in the fourth and fifth positions of a ten-digit NANP number, immediately after the existing three-digit NPA, except for special use codes. Once the switching system has determined that the end user dialed an existing ten-digit number, the switch can be instructed to insert the appropriate combination in the fourth and fifth digit positions and forward this number on to subsequent switching systems. Signaling and billing systems can be arranged to transition to the twelve-digit NANP number long before the customers need to dial the twelve-digit number.

During the permissive dialing period, network switches will be able to determine whether the caller was dialing a ten-digit or twelve-digit number by checking the value of the D digit.

It is recommended that a one-year permissive dialing period be used to effect a transition. After the transition period is over, four-digit NPA codes and four-digit CO codes can then be assigned using other digit values (2-9) in the fourth and fifth digits.

One of the constraints made by the INC is that the expansion plan must apply throughout the NANP serving area subject to the appropriate regulatory or governmental procedures and constraints. In order to remain part of the NANP, each country must implement the accepted NANP expansion plan. Trinidad and Tobago, being a NANP participating country, would create the policy directives required to ensure the timely implementation of NANP expansion for the benefit of all telecommunication users, when the time arises. The Authority will also seek comment from all segments of the industry, and other interested parties, on the NANP expansion proposal by the Industry Numbering Committee at that time.

7.3 Future Services

The need for translation between existing closed user group telecommunication service codes such as marine radio services, data services and international special services may become pronounced, especially as various services and inter-working of traditionally disparate networks become prevalent. As such, allocations of unassigned number blocks with room for massive expansion need to be reserved for such services to be interconnected to the PSTN.

An example of such systems where interconnection and associated number mappings may need to be made is in interfacing with anticipated services such as Electronic Numbering (ENUM) or for implementing local number portability. The allocation of CO codes, and by extension numbers, for the provision of future services will need to be considered in the numbering scheme.

7.4 Vertical Service Codes

Vertical service codes (VSCs) are customer-dialed codes that provide access to features and services provided by public telecommunications service providers. Services invoked by VSCs include voicemail, call forwarding, automatic callback, customer originated trace, and many others.

VSCs have been used traditionally by public fixed telecommunications service providers, using a format that is user-friendly for a touch-tone telephone. The use of some of these ‘fixed-line’ VSCs have been adopted by public mobile telecommunications service providers. For example, *91 has been used in Trinidad and Tobago for voice mail for fixed and mobile public telecommunications services. However, the format used by public mobile telecommunications service providers generally conform to the standard formats of the technology employed. For example, a public mobile telecommunications service provider using a GSM network can utilize Unstructured Supplementary Service Data (USSD) codes to offer features and services similar to VSCs.

The Authority notes Section 44(5) of the Telecommunications Act, 2001, which requires the Authority to preserve to the extent feasible, the assignment of numbers made before the promulgation of the relevant sections of the Act. In light of this, the Authority shall consult with concessionaires of public telecommunications services before it publishes a comprehensive list of VSCs for both public fixed and public mobile telecommunications services, in the interest of minimizing consumer confusion and providing a standard service access approach for features and services common amongst concessionaires of public fixed telecommunications services.

In the interim, the concessionaires should conform to the following list of VSCs, where applicable:

National Numbering Plan: Central Office (CO) Codes and Home Network Identifier (HNI)

The following list applies to Concessionaires of Public Telecommunications Services:

Table 3: Vertical Service Code List for Public Fixed Telecommunications Services

Feature	Description	Code
Voice Mail Access	Provides the subscriber access to his voice mail from landline or mobile phone	(*91)
Advanced Call Waiting Deluxe	Allows a subscriber to specify, in advance of incoming calls, the termination treatment on incoming calls that arrive while the subscriber is engaged in another conversation.	(*76)
Anonymous Call Rejection	(*77 Activation, *87 Deactivation) Allows Customers to reject calls from parties who have a privacy feature that prevents the delivery of their calling number to the called party	(*77 Activation, *87 Deactivation)
Automatic Callback	(*66 Activation, *86 Deactivation) Allows a subscriber to automatically place a call to the last station called by the subscriber when that station becomes idle.	(*66 Activation, *86 Deactivation)
Automatic Recall	(*69 Activation, *89 Deactivation) Allows a subscriber to automatically place a call to the last station that called the subscriber, when that station becomes idle.	(*69 Activation, *89 Deactivation)
Call Forwarding	(*72 Activation, *73 Deactivation) Allows a subscriber to redirect calls intended for his/her station (base station) to another station (remote station).	(*72 Activation, *73 Deactivation)
Call Forwarding Busy Line/Don't Answer	(*68 Activation, *88 Deactivation) Allows a subscriber to forward calls intended for the subscriber's busy line, or idle line after a predetermined number of rings, to another directory number entered by the subscriber at the time of activation.	(*68 Activation, *88 Deactivation)
Calling Number Delivery	(*65 Activation, *85 Deactivation) Provides the subscriber with the directory number (DN) of the calling party during the ringing cycle.	(*65 Activation, *85 Deactivation)
Calling Number Delivery Blocking	(*67) Allows the subscriber to temporarily change the permanent public/private status indicator of his/her directory number (DN) and thus control its availability to the called party.	(*67)
Cancel Call Waiting	(*70) Provides the subscriber the ability to disable the Call Waiting feature for the duration of a telephone call.	(*70)
Change Forward-to Number for Customer Programmable Call Forwarding – Busy Line	(*40) Access Code followed by directory number is used to change the forwarded-to number for Call Forwarding Busy Line (CFBL). The state of CFBL is not changed when this access code is used. This feature will utilize the activation code of *290 and deactivation code *291 with the following exceptions: activation will not require/allow the identification of a forwarded-to directory number and deactivation will not clear the forwarded-to directory number.	(*40)

National Numbering Plan: Central Office (CO) Codes and Home Network Identifier (HNI)

Feature	Description	Code
Change Forward-to Number for Customer Programmable Call Forwarding – Don't Answer	(*42) Access Code followed by directory number is used to change the forwarded-to number for Call Forwarding Don't Answer (CFDA). The state of CFDA is not changed when this access code is used. This feature will utilize the activation code of *92 and deactivation code *93 with the following exceptions: activation will not require/allow the identification of a forwarded-to directory number and deactivation will not clear the forwarded-to directory number.	(*42)
Change Forward-to Number for ISDN Call Forwarding	(*56) Access code followed by directory number (DN) is used to change the Forward-To number for Call Forwarding Variable feature button. The state of Call Forwarding Variable feature button is not changed when this access code is utilized.	(*56)
Customer Originated Trace	(*57) Provides the recipient of an obscene, harassing, or threatening call the ability to request an auto-trace of the last call received	(*57)
Deactivation/Activation of In-Session Activation (ISA) on a per line basis	(*02) Allows a subscriber to deactivate or activate (i.e., toggle) the In-Session Activation feature on a per line basis. ISA is feature that gives the caller a menu of call completion services using voice prompts when the call encounters a busy or no-answer condition.	(*02)
Deactivation of In-Session Activation on a per call basis	(*03) Allows a subscriber to deactivate the In-Session Activation feature on a per call basis. When the call is completed, ISA reverts back to the active state. ISA is a feature that gives the caller a menu of call completion services using voice prompts when the call encounters a busy or no-answer condition.	(*03)
Distinctive Ringing/Call Waiting	(*61 Activation, *81 Deactivation) Allows the subscriber to have incoming calls from a limited number of calling parties identified using distinctive alerting treatment.	(*61 Activation, *81 Deactivation)
Do Not Disturb	(*78 Activation, *79 Deactivation) Provides the subscriber the opportunity of having all calls intercepted by the CO switch whenever the line is programmed for Do Not Disturb. The calling party will receive a message indicating the station is in Do Not Disturb condition	(*78 Activation, *79 Deactivation)
Drop last member of Six-Way Conference Call	(*43) Provides the subscriber establishing a six-way conference to terminate the last party added to the call. This frees the port for an additional party when the last party wasn't reachable.	(*43)

National Numbering Plan: Central Office (CO) Codes and Home Network Identifier (HNI)

Feature	Description	Code
Inward Voice Activated Services	<p>(*00) IVAS enables a subscribing business to provide automated voice activated routing for inbound English or French speaking calls (i.e., separate codes for the same service in each language). IVAS will initially consist of the following services</p> <ul style="list-style-type: none"> • Voice Activated Premier Dialing (VAPD) which allows customers to contact subscribing businesses by speaking the business name or service. • Voice Activated Blue Pages (VABP) which allows customers to request access to government services. • Voice Activated Auto Attendant (VAAA) which provides enhancements to Auto Attendant applications by providing a voice recognition interface in place of Touch Tone. • Voice Activated Audio Text (VAAT) provides users ability to request specific information from a business. • Voice Activated Interactive Voice Response (VAIVR) which allows the caller to interact with a subscriber's specific application in a prescribed manner. 	(*00)
Line Blocking Deactivation	<p>(*82) Line Blocking Deactivation allows a caller to dial a delivery feature access code before dialing a complete telephone number to temporarily override the presentation status of both the caller's directory number and the calling name. If the caller enters the delivery code, then the calling identity presentation status will be shown as "public" for both caller directory number and calling name.</p>	(*82)
Override Do Not Disturb	<p>Allows a subscriber to override the Do Not Disturb feature which has been activated on a line. After receiving a message indicating the station is in a Do Not Disturb condition, the subscriber may override the condition by dialing *48 and then a Personal Identification Number (PIN) thus allowing the call to be completed in the normal manner.</p>	(*48)
Override Feature Authorization	<p>Allows a subscriber to override a Feature Authorization activated on a line which restricts 1+ calls from that line. Feature Authorization may be overridden by dialing *47 and a Personal Identification Number (PIN) and then dialing a 1+ call after receiving a second dial tone.</p>	(*47)
Over-the-Air Service Provisioning	<p>OTASP will enable the Service Provider to activate a potential service to a subscriber's wireless unit by downloading over the air required parameters, such as phone numbers, into the handset. Activation of the OTASP code, followed by supplemental digit strings, also provides the ability to securely load an Authentication Key into a subscriber's wireless phone which is used to confirm and validate the identity of the wireless handset.</p>	(*228)

National Numbering Plan: Central Office (CO) Codes and Home Network Identifier (HNI)

Feature	Description	Code
Selective Call Acceptance	Provides the subscriber the ability to block calls from all but a predetermined list of directory numbers specified by the subscriber. Unaccepted callers may receive an announcement or be routed to a predetermined directory number	(*64 Activation, *84 Deactivation)
Selective Call Forwarding	Allows the subscriber to have incoming calls from a limited number of calling parties forwarded to a pre-specified remote station.	(*63 Activation, *83 Deactivation)
Selective Call Rejection	Allows the subscriber to have incoming calls from a limited number of calling parties rejected by the terminating switching system	(*60 Activation, *80 Deactivation)
Selective Call Waiting	Provides the subscriber the ability to provide a Call Waiting signal to a predetermined list of directory numbers specified by the subscriber. Callers not on the predetermined list will receive busy tone.	(*62)
Single Line Variety Package (SVP) – Call Hold	Gives the subscriber the capability of placing a call on hold so that the call may be continued from another extension.	(*52)
Single Line Variety Package (SVP) – Distinctive Ring B	Allows a subscriber to select, by way of distinctive ringing, the particular person or extension that the subscriber wishes to alert.	(*53)
Single Line Variety Package (SVP) – Distinctive Ring C	Allows a subscriber to select, by way of distinctive ringing, the particular person or extension that the subscriber wishes to alert.	(*54)
Single Line Variety Package (SVP) – Distinctive Ring D	Allows a subscriber to select, by way of distinctive ringing, the particular person or extension that the subscriber wishes to alert.	(*55)
Six-Way Conference Calling Activation	Allows the subscriber to originate a six-way conference call. Customers will enter this code prior to the first directory number added into the conference. Each subsequent member of the conference is added with a flash hook. This code is used to eliminate action conflicts with other flash hook originated features.	(*41)
Speed Calling	Allows a subscriber to assign his/her own speed calling codes directly and immediately from his/her own telephone by dialing a change speed calling list access code, an abbreviated code, and a new telephone number.	(*74 Speed Calling 8-Change List, *75 Speed Calling 30-Change List)
Usage Sensitive Three-Way Calling	Allows a subscriber, by dialing an access code, to request the capability of adding a third party to the two-way connection that is established by subsequent dialing.	(*71)
Voice Activated Dialing	Access to the Voice Activated Dialing (VAD) directory. Customers will dial this code to access their VAD directory in order to add, delete or review the names and numbers	(*44)
Voice Activated Network Control	Access to Voice Activated Network Control (VANC). Customers will dial this code to access VANC so that they can say a name or command that will be activated, deactivated or to access a service.	(*50)

National Numbering Plan: Central Office (CO) Codes and Home Network Identifier (HNI)

Feature	Description	Code
Voice Dialing Extended Dial Tone	Extend dial tone for Voice Activated Dialing (VAD). Customers will dial this code to extend the length of time in which dial tone is heard after going off-hook so that various Customer Premise Equipment (e.g.CPE, fax and modems) will work properly.	(*45)
Wireless Priority Service	Access to Wireless Priority Service (WPS) - a nationwide cellular priority access capability in support of national security and emergency preparedness telecommunications.	(*272)
Who Called Me?	Provides the subscriber with the directory number (DN), date, and time of unanswered calls	(*51)

The following list is applicable to Concessionaires of Public Mobile Telecommunications Services:

Table 4: Vertical Service Code List for Public Mobile Telecommunications Services

Feature	Description	Code
Voice Mail Access	Provides the subscriber access to his voice mail from landline or mobile phone	(*91)
Pre-Paid Account Top-Up	Allows the subscriber to add credit to its pre-paid account	(*123)
Pre-Paid Account Balance	Provides the subscriber access to his pre-paid account credit total.	(*120#)

7.5 Further Considerations

The following issues may influence the CO code allocation to various services in the numbering scheme. However, determination of the level of influence of these issues will require further consideration and consultation with the relevant stakeholders before a position can be put forward by the Authority. For this reason, these issues will be consulted upon separately. However, due to the possible influence on CO code allocation; these issues are identified, as follows, with their impact on the proposed numbering scheme to be determined in the near future:

- **Number Portability** – The increasing importance of mobile telephone numbers to users means that the achievement of a successful implementation of number portability is

critical to ensuring the benefits of a liberalized market. Therefore, the involvement of industry in developing the detailed specifications – and in some cases the high-level specifications – for introducing number portability is clearly important. Some key issues to consider would be:

- The types of portability to employ (e.g. geographic portability, portability between public telecommunication service providers);
- The cost associated with the various types of portability methods;
- The cost recovery mechanism to be implemented.

Number portability implementation may also place further constraint on the CO code allocations for CO codes may need to be assigned for number translation services for the porting of numbers.

- **NANP Expansion** – Trinidad and Tobago, being a NANP participating country, will be required to conform to the NANP Expansion Plan, when finalized by the NANP Administrator. The Authority shall seek comments from all stakeholders, in order to conform to the finalized expansion plan.
- **ENUM** - ENUM is a protocol that is the result of work of the Internet Engineering Task Force's (IETF's) Telephone Number Mapping working group. The charter of this working group was to define a Domain Name System (DNS)-based architecture and protocols for mapping a telephone number to a Uniform Resource Identifier (URI), which can be used to contact a resource associated with that number. The protocol itself is defined in the standards track document "E.164 number and DNS" (RFC 2916) that provides facilities to resolve E.164 telephone numbers into other resources or services on the Internet. ITU-T Recommendation E.164 is the international public telecommunication telephony numbering plan. The syntax of Uniform Resource Identifiers (URIs) is defined in RFC 2396 (1998). ENUM makes extensive use of Naming Authority Pointer records defined in RFC 2915 in order to identify available ways or services for contacting a specific node identified through the E.164 number. The Authority will consult with all stakeholders to investigate the use of the ENUM protocol for Trinidad and Tobago.

8 Considerations: HNI Assignments

In order to understand the administration of Home Network Identifiers (HNIs), an understanding of International Mobile Subscriber Identifiers (IMSI), from which HNIs are derived, may be necessary. The administration of HNIs by the Authority is derived from the administration guidelines of IMSIs, as described below.

8.1 International Mobile Subscriber Identifier (IMSI)

The IMSI format and function are based on ITU-T Recommendation E.212. The Authority recognises that IMSI enables mobile users to roam among public networks, domestically and internationally, by providing a uniform and unique home network and mobile user identification that is recognizable by all conforming public networks. When transmitted between visited and home networks, the IMSI enables the exchange of subscription and billing information for the visiting mobile station. Specifically, the IMSI is used for:

- Determination of the mobile user's home network,
- Mobile user identification when information about a specific mobile user is to be exchanged between visited and home networks,
- Mobile station identification on the radio control path for registering a mobile station in a visited wireless network,
- Mobile station identification for signaling on the radio control path,
- Identification of the mobile user to allow for charging and billing of visiting mobile users, and
- Subscription management, i.e., retrieving, providing, changing, and updating subscription data for a specific mobile user.

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The IMSI format used in the North American area is as shown below:

IMSI (15 digits)		
MCC (3 digits)	MNC (3 digits)	MSIN (9 digits)

The Mobile Country Code (MCC) assigned to Trinidad and Tobago by ITU-T Recommendation E.212 is 374.

The Mobile Network Code (MNC) identifies the home network of the visiting mobile station. The Authority shall administer the Mobile Network Codes within the assigned MCC (374). Currently GSM-based wireless networks can handle only 2-digit MNCs. This limitation is accommodated until such time as GSM-based wireless networks will be modified to support 3-digit MNCs by assigning 2-digit MNCs followed by a trailing 0.

The Mobile Subscriber Identification Number (MSIN) uniquely identifies the mobile user within its home network. The 9-digit (XXXXXXXXXX) MSIN format, where X is any number from 0 to 9, provides a potential of 1,000,000,000 MSINs. The service provider shall administer the Mobile Subscriber Identification Codes for their assigned MNC.

The visited network will use the 374-MNC combinations to identify the home network of the visiting mobile station.

Currently in the region, mobile service providers have been reusing a single MCC in all the countries in which they have rolled out mobile networks. AT&T Wireless has been using their North American Home Network Identifier (HNI = MCC + MNC), while Digicel has been using their Jamaican HNI throughout the region. Both companies have put forward various arguments to support the use of single HNIs in the region; however the governments and regulators in the region do not have a unified position on this matter.

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The Authority, with other members of the Caribbean Telecommunications Union (CTU), will continue to investigate the use of single HNIs in the region to ensure that visiting networks here and internationally can accurately identify the individual Caribbean home networks of roaming subscribers. In the interim, until notified otherwise, the Authority will adhere to the above format and the IMSI Administration guidelines (Section 7.3) when assigning IMSIs in Trinidad and Tobago.

9 Proposed Numbering Scheme for CO Code Allocation

9.1 Guiding Principles for Numbering Scheme

The following principles were employed to guide the development of the numbering scheme for CO code allocation:

- To ensure the equitable distribution and availability of the numbering resource for all public telecommunications service providers.
- To regularize the existing ad hoc numbering allocations to maximize the lifespan of this numbering resource, without creating unnecessary changes to current number allocations.
- To proportion the allocation of numbers for each type of service in accordance with the estimated long-term requirements for different public telecommunications services.
- To retain existing assignments, as far as possible, to minimize inconvenience to consumers (subscribers).
- To allow current number assignments, which do not conform to the proposed numbering allocation plan (i.e. non-standard assignments), to exist until re-assignment is absolutely essential.

9.2 Proposed Numbering Scheme for CO Code Allocation

The table below is the proposed numbering scheme for CO codes allocation. This scheme identifies the types of telecommunications services for which CO codes are allocated and the quantity of CO codes that are allocated to these services. The quantum of CO codes allocated to each service takes into consideration the recommendations of the CO Code Exhaust Analysis for Mobile Services Report (June – December 2007) published by the Authority.

Table 5: Proposed Numbering Scheme for CO Code Allocation

Central Office Code	Service Type	Comments and Exceptions
201 - 249	Fixed (Wired/Wireless) Services	211 assigned as Tobago House of Assembly (THA) Information services.
250 – 499	Mobile Services	411 reserved for abbreviated dialling services.
501 - 599	Reserved for future services	555 assigned as Ministry of National Security Law Enforcement Information Service. 511 assigned for Public Emergency Services (Office of Disaster Preparedness and Management).
601 - 699	Fixed (Wired/Wireless) Services	620, 678, 680 - 689 currently assigned to Mobile services (migration of these Mobile Services number allocation to be investigated, in order to recover the use of these CO codes for Fixed Services). 666 reserved indefinitely. 611 reserved for abbreviated dialling services.
701 – 799	Mobile services	711 reserved for abbreviated dialling services

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Central Office Code	Service Type	Comments and Exceptions
801 – 899	Unallocated	<p>For future growth</p> <p>811 assigned as Public Emergency Services (Ambulance).</p> <p>824 – TSTT One number service (possible migration to 924 in operator services range)</p> <p>821 and 822 - Direct inward dialing service used by TSTT</p> <p>848 and 874 – incoming calls in DMS 300, TSTT House and Couva respectively.</p> <p>866 and 877 – Interim local-only toll free services for Concessionaires of Public Telecommunications Service, other than TSTT.</p> <p>888 – International and Local Prepaid Call Card services by TSTT</p>
901 – 949	Premium and Special services (fixed and mobile)	911 reserved for abbreviated dialling services
950 – 979	Operator and Plant Test Services	<p>950, 958 – TSTT Internal Routing for 800 and 900 services</p> <p>958, 959 – TSTT Standard Plant Test Codes</p> <p>976 –Information services offered by TSTT</p>
980 – 989	Government & public services	

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Central Office Code	Service Type	Comments and Exceptions
990 – 999	Abbreviated Dialing Codes	990 assigned as Public Emergency Services (Fire). 999 assigned as Public Emergency Services (Police). 998 assigned as Automatic Number Announcement Service.

9.2.1 Reserved Central Office Codes

Table 6: List of Reserved Central Office Codes

Central Office Code	Purpose and Notes
N00 – XXXX	<ul style="list-style-type: none"> • Central Office Codes 200, 300, 400, 500, 600, 700, 800, 900 • Total of 80,000 numbers available • Special services <ul style="list-style-type: none"> ○ Toll free services: 600, 700, and 800 - A total of 30,000 numbers has been allocated for toll-free services. In addition, if demand for such services increases, central office codes 200, 300 and 400 can be utilized in the first instance, with further growth utilizing the 910 and 912-919 range of central office codes, providing a possible total pool of 150,000 numbers. ○ Premium service codes: 900 - If the demand for such premium 900 services grows beyond the 10,000 numbers presently allocated, central office codes 901 – 919 (except 911) can be utilized for these purposes, giving a total pool of 180,000 numbers. ○ Personal (Portable) Communications Services: 500 proposed

9.2.2 Abbreviated Dialing Services

- 211 to be used for accessing Information Services from the Tobago House of Assembly (THA).
- 311 have been assigned for accessing Information Services from the Government of the Republic of Trinidad and Tobago.
- 411 have been assigned for Directory Services among all concessionaires of public telecommunications services.
- 511 have been assigned for Public Emergency Services (Office of Disaster Preparedness and Management).
- 555 have been assigned for access to the Ministry of National Security Law Enforcement Information Service.
- 611 to be used for Repair Services among all concessionaires of public telecommunications services.
- 711 to be used for Telecommunications Relay Services.
- 811 have been assigned for Public Emergency Services (Ambulance).
- 990 have been assigned for Public Emergency Services (Fire).
- 911, 999 have been assigned for Public Emergency Services (Police).
- 998 have been assigned for the Automatic Number Announcement Service
- 991 – 997 to be used as abbreviated dialing codes for new services such as location finding.

All concessionaires of public telecommunications services shall be mandated to accommodate access to the above abbreviated dialling services.

9.2.3 Reservation for Government Use

It is proposed that certain central office codes be reserved by Government to provide services over a uniform numbering scheme. In the proposed numbering plan, central office codes 980 – 989 have been allocated for providing public and government telecommunications services.

9.3 Capacity Analysis

The following table summarizes the quantum of numbers available for assignment to subscribers by the concessionaire, based on the quantum of CO codes allocated to each service type. A description of the column headings are as follows:

- Service Type – The type of telecommunications service to which the CO Code has been allocated.
- CO Code Allocation – the range of CO Codes that have been allocated to the particular Service Type, for which the Authority can assign to relevant Concessionaires.
- Total Assignable Numbers – the quantum of possible telephone numbers that can be derived from a CO Code Allocation, for which a relevant Concessionaire can assign to a subscriber

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Table 7: Capacity Analysis based on CO Code Allocation

Service Type	CO Code Allocation	Total Assignable Numbers
Unallocated	801 – 899 (excluding 811)	980,000
Reserved for future services	501 – 599 (excluding 511 and 555)	970,000
Fixed (Wired/Wireless) Services	201 – 249 & 601 – 699 (excluding 211, 611 & 666)	1,450,000
Mobile Services	250 – 299, 301 – 399, 401 – 499 & 701 – 799 (excluding 311, 411 and 711)	3,440,000
N00 Numbers	200, 300, 400 ,500 ,600, 700, 800 & 900	80,000
Translation Services, Operator Services, Plant Test Codes and Network Switching Services	920 - 979	600,000
666 numbers	666	10,000
Premium and Special Services	901 – 919 (excluding 911)	180,000
Government and public services	980 – 989	100,000
Abbreviated Dialing Codes	211, 311, 411, 511,555, 611, 711, 811, 911, 990, 991 – 997, 998, 999	19
Total		7,810,019

10 Number Conservation Methods for CO Code Numbering Resources

The Authority has recognized that the increase in the allocation of telephone numbers, via the assignment of CO codes, to the concessionaires in the sector can lead to the exhaust of the codes available for assignment in the NPA assigned to the Republic of Trinidad and Tobago. CO codes, being a finite numbering resource, must therefore be managed in such a manner to mitigate inefficient use, which may lead to its premature exhaust. Although the Authority has the option of requesting a new NPA from NANPA, should the existing 868 NPA be entirely consumed, it must be evident that the exhaust of the numbers was not pre-mature.

As a result, number conservation methods can be employed to encourage the efficient use of numbers and, more importantly, mitigate pre-mature exhaust of telephone numbers. The following conservation methods have been or will be implemented in order to achieve a more efficient use of the CO code numbering resources.

10.1 Numbering Fees

The Authority has introduced numbering fees, which is geared to promoting the efficient use of telephone numbers and discourage underutilization of numbers. In view of the fact that telephone numbers are allocated to concessionaires of public telecommunication services via the assignment of CO codes, the introduction of a fee for telephone numbers in a single CO code (i.e. 10,000 numbers) would encourage a concessionaire to maximize the use of the code, thereby not underutilizing it, before requesting an additional CO codes. Also, this numbering fee will serve as cost recovery mechanism in the administration of this numbering resource. The numbering fee structure will be based on the service categories of numbers to be administered by the Authority, since some categories of numbers are considered more valuable than others.

The Numbering Scheme for CO Code Allocation identifies various service types for which CO codes are allocated. The service types or number categories in this scheme for which a fee will be levied at this time are:

- a. Fixed (Wired/Wireless) Services
- b. Mobile Services.
- c. N00 Numbers.
- d. Information/Premium/Number Translation Services.
- e. Plant Test Code Services.

All other CO codes will not attract a fee at this time. The tariff scheme for the numbering fees constitutes the third schedule of the Telecommunications (Fee) Regulations, 2006. The Authority will adopt the global practice of reviewing the fee structure on a three-year basis, to ensure that it is efficient and that its implementation is effective.

10.2 Telephone Number Recycle Policy

The Authority has instituted a telephone number recycle policy for public telecommunications services concessionaires who are assigned CO codes. This policy obligates a concessionaire to make available for re-assignment to a new subscriber, a telephone number that has already been assigned to a subscriber but has been inactive for six (6) months. Inactive in this context means the telephone number does not originate or terminate a call, text message or session. Examples of this are:

- a. Disconnection of a subscriber of fixed (wired/wireless) services or post-paid mobile services.
- b. No occurrence of a call made to or made from the cellular handset of a pre-paid mobile services subscriber.

A recycle policy of six (6) months will allow a concessionaire the ability to re-assign numbers no longer being used to new subscribers, thereby optimally utilizing its number allocation and reducing the need to request additional CO codes from the Authority. A period of six (6) months should also allow the recycled number to be removed from public circulation, so that the assignment to a new subscriber would not result in received calls for the previous assigned subscriber of this number.

10.3 Number Utilisation Threshold

In order to effectively manage the CO code numbering resource, there must be a number utilization threshold that will initiate the issuance of additional CO codes. In the Republic of Trinidad & Tobago, it is estimated that the growth of numbers allocated to fixed (wired/wireless) services is slowing as the demand for fixed telephone service is being satisfied by mobile telephone service. The growth of mobile telephone services has been exponential and the rate of assignment exceeds that of fixed line. NANPA CO code utilization requirement before a new CO code could be assigned is currently 75% **for** both fixed line and mobile services and the current stock of numbers held by the concessionaire must exhaust in less than six months. Considering the above, it is recommended that the following thresholds be satisfied before additional CO codes (i.e. growth code) can be assigned to a concessionaire:

- a. Fixed (Wired/Wireless) Service – 80 % ;
- b. Mobile Service – 75 %; and
- c. The concessionaire's available numbers will exhaust in six months or less. Available numbers are numbers that are available for assignment to new subscribers to enable them to access the public telecommunications services provided by a concessionaire.

11 Guidelines for the Administration of the National Numbering Plan: CO Codes and HNI

The guidelines followed by the Authority for the administration of Central Office Codes (COCs), will be based on guidelines developed by industry consensus under the aegis of the Industry Numbering Committee (INC), which describes the assignment of number resources in the North American Numbering Plan (NANP) area. To ensure that the regulatory requirements and unique circumstances of Trinidad and Tobago are considered in the administrative processes, the Authority has reviewed, modified and/or adopted INC guidelines, associated with NANP numbering resources for application in Trinidad and Tobago. The INC guidelines are constantly amended. For this reason, this chapter will only highlight those sections of the INC Guidelines that are not applicable to the local environment.

Readers are encouraged to refer to the INC website <http://www.atis.org/atis/clc/inc/incdocs.htm> for the guidelines for each number category presented here. The reader must consider the latest update that the Authority has reviewed as indicated in the respective sections.

The Authority will also adopt industry guidelines for the administration of Company Codes (OCNs) and HNIs as pointed out in the respective sections.

The supporting appendices and forms referred to by these guidelines are also available on the respective websites and can be used until such time that the Authority has developed and published comparable forms.

11.1 Company Code (OCN) Assignment Procedures

A Company Code (OCN) is a four place alphanumeric code that identifies providers of international telecommunications service. The American National Standards Institute (ANSI) Standard T1.251-2000, Section 3.3, refers to this code as an alphanumeric “Company Code”.

The Alliance for Telecommunications Industry Solutions (ATIS) through the ANSI Standard T1.251 designated NECA Services, Inc. (NECA Services) as the Maintenance Agent of this code set. Under this standard, Company Codes are assigned to international Telecommunications Service Providers for unique identification. Company Codes are used in mechanized systems throughout the telecommunications industry to facilitate the exchange of information. Applications of the Company Code may include, but are not limited to:

- Call Routing and Rating Purposes
- Ordering, Billing, and Provisioning of Access Service
- Inter-exchange Carrier Systems used to audit Exchange Access Bills

Company codes are used for the exchange of information among companies and/or public use. Company codes will not be assigned for the exclusive use of internal company operations.

The information required by a telecommunications service provider in Trinidad and Tobago to apply for an OCN is available on the NECA website at <https://www.neca.org>. This information includes the following:

- International Company Code Procedures
- International Company Code Request Form
- International Company Code Certification Letter

The Authority will provide the necessary information to NECA to support the application of any service provider authorized to operate within Trinidad and Tobago.

11.2 Central Office Code Assignment Guidelines

The purpose of these Guidelines is to provide direction to the Authority, Code Applicants, and Code Holders with respect to the administration, assignment, activation, and use of CO Codes and the numbering resources contained therein.

11.2.1 INC Website Identification

Document ID: ATIS-0300051

Description: Central Office Code (NXX) Assignment Guidelines (COCAG)

Latest Version: June 10th, 2011

11.2.2 Constraints and Assumptions

The administration of Central Office Codes in Trinidad and Tobago follows Section 2.0 of the INC COCAG except for the following:

1. The CO Code Administrator in Trinidad and Tobago is the Telecommunications Authority of Trinidad and Tobago (hereinafter called the Authority). Currently, a Pooling Administrator is not required in Trinidad and Tobago, as number pooling is not implemented at this time. Therefore, all assumptions or constraints pertaining to number pooling do not apply.

11.2.3 Assignment Principles

Section 3.0 of the INC COCAG applies to Trinidad and Tobago except for the following:

1. Section 3.1 shall instead read:

“CO codes (NXXs) are assigned to entities for use at a Switching Entity or Point of Interconnection they own or control. CO Codes, as part of NANP telephone numbers, are to be assigned only to identify initial destination addresses in the Public Switched Telephone Network (PSTN), not addresses within private networks.”

2. Section 3.5 shall instead read:

“Code Applicants for CO Codes must comply with all applicable Trinidad and Tobago telecommunications regulations that apply to the services that they wish to provide.

3. Delete Section 3.6. Refer to Section 2.4 of this Numbering Plan for the Appeals Process.
4. Delete Section 3.9. Number Porting is not yet implemented in Trinidad and Tobago.”

11.2.4 Criteria for the Assignment and Reservation of Central Office Codes

Section 4.0 of the INC COCAG applies to Trinidad and Tobago except for the following:

1. Section 4.1 shall instead read:

“CO codes (NXXs) are assigned to entities for use at a Switching Entity or Point of Interconnection they own or control. Assignment of the initial code(s) will be to the extent required to terminate PSTN traffic as authorized or permitted by the Authority, and provided all the criteria in Sections 4.1.1 through 4.1.3 are met. An initial code assignment will be based on a unique rate center consistent with regulatory restriction. Utilization criteria or projection will not be used to justify an initial NXX assignment. The applicant must demonstrate authorization and preparation to provide service before receiving initial numbering resources.”

2. Delete Sections 4.1.4 and 4.1.4.1. Thousands-block number pooling has not been implemented in Trinidad and Tobago.

3. Section 4.2.1 shall instead read:

“Evidence that demonstrates the Concessionaire has a concession issued by the Authority is required. The Concessionaire may attach a copy of the concession to the application.”

4. Delete Section 4.3.2. Thousands-block number pooling has not been implemented in Trinidad and Tobago.
5. Section 4.6 shall also include the Emergency Codes 990 and 999 as unassignable CO Codes.

11.2.5 CO Code (NXX) Assignment Functions

The CO Code assignment functions of the Authority shall comply with Section 5.0 of the INC COCAG except for the following:

1. Section 5.2 shall instead read:

“Receive and process applications (CO Code (NXX) Assignment Request Form Part 1) for CO Codes within the geographic NPA(s) for which the Authority is responsible.”

2. Section 5.2.1. Replace the use of “U.S. carrier” with “carrier”.

3. Delete the following from Section 5.2.2.

“For an NXX assigned to a pool, the CO Code Administrator shall also set the "Pool Indicator" on the CO Code ACD screen in BIRRDs to designate that the NXX is assigned to a pool. For those NXXs in respect of which the "Pool Indicator" has been set, the CO Code Administrator shall provide a Central Office Code (NXX) Assignment Request - Part 3 (Administrator's Response/Confirmation) directly to both the PA and the LERG Routing Guide Assignee whose OCN appears on the request form.”

Replace the use of “U.S. carrier” with “carrier”.

4. Delete Section 5.2.10. Thousands-block number pooling has not been implemented in Trinidad and Tobago.

11.2.6 Responsibilities of Code Applicants and Code Holders

Code Applicants and Code Holders are especially responsible for adhering to the guidelines in Section 6.0 of the INC COCAG, except for the following:

1. In Section 6.1.1, delete “, including the PA,” in the first line. Also delete “SPs requesting codes in a rate center that is transitioning to pooling should not meet the criteria in Section 5.0.”
2. Delete the fourth paragraph of Section 6.3.1 that reads:

“SPs participating in number pooling must submit changes or disconnects for pooled NXXs to the PA. Changes or disconnects for non-pooled NXXs in a pooling rate area should be sent to NANPA, unless the PA received the original request for the non-pooled NXX. SPs’ requests for changes to the rate center on NXX codes assigned for pooling will be denied if any block assignments within the NXX have been made to a service provider other than the LERG Assignee.”

3. Section 6.3.4 shall instead read:

“In the absence of state commission actions, a Concessionaire who file tariffs for a rate center consolidation must notify the Authority at the time of filing.”

4. Section 6.5 shall instead read:

“All Concessionaire assigned a CO Code agree to abide by the code reclamation guidelines outlined in Section 8.”

11.2.7 Criteria for the Transfer of Central Office Codes

The Criteria for the Transfer of COCs shall comply with Section 7.0 of the INC COCAG.

11.2.8 Reclamation

The Reclamation procedure adopted by the Authority shall comply with Section 8.0 of the INC COCAG, except for the following:

1. Section 8.1 shall instead read:

“A Concessionaire shall return a CO Code, if:

- It is no longer needed for the purpose for which it was requested and assigned,
- The service it was assigned for is disconnected, or
- The CO Code was not placed in service within six months from the original effective date of grant by the Authority.

The Concessionaire may apply to the Authority for an extension of a further six (6) months, in the event that six months has elapsed and the CO Code was not placed into service. The Authority shall not unreasonable withhold such request for extension.”

2. Section 8.2 shall instead read:

“For any Codes identified as not having been returned to the Authority for reassignment, the Authority will contact any Concessionaire who was assigned a CO Code.

The Authority may request CO Codes be returned by a Concessionaire for the following reasons:

- Assigned, but no longer in use by the Concessionaire or less than 1% CO Code Utilisation,
- Assigned to a service no longer offered by the Concessionaire,
- The CO Code was not placed in service within six months from the original effective date of grant by the Authority.
- Assigned, but not used in conformance with these assignment guidelines.”

3. Section 8.2.2.

4. Delete Section 8.2.3. Local Number Portability has not yet been implemented in Trinidad and Tobago.”

11.2.9 CO Code Conservation Methods

The Authority shall employ its Central Office Code Exhaust Analysis Methodology periodically in order to analyse the utilisation rate and date of CO code exhaust. The results of this exercise shall be published in a report and the decisions arising from this report may prompt a revision to the numbering scheme for CO Codes Allocation in this National Numbering Plan.

11.3 Home Network Identity (HNI) Assignment Guidelines

This section contains the guidelines and procedures for the assignment and use of a Home Network Identity (HNI) to concessionaires of public domestic mobile telecommunications networks and services in the Republic of Trinidad and Tobago who offer international roaming capabilities. The HNI forms part of the International Mobile Subscriber Identity (IMSI) which is used to uniquely identify a subscriber's cellular mobile handset. Refer to Section 8.3 for the format and functionality of IMSIs. The Authority participates in the management of all segments of the IMSI, but directly administers only the Home Network Identity (HNI) segment. These assignment guidelines pertain only to the assignment of the HNI segment of the IMSI.

The HNI segment comprises the Mobile Country code (MCC) and Mobile Network Code (MNC). The HNI is a 6-digit number, i.e. a 3-digit MCC plus a 3-digit MNC. In the Republic of Trinidad and Tobago, the MCC assigned for use in the HNI is 374. The MNC uniquely identifies the home network of a public mobile telecommunications service subscriber within a country's MCC. The concessionaire, to whom the MNC is assigned, directly administers the remaining segment of the IMSI, i.e. the Mobile Station Identification Number (MSIN).

The IMSI Oversight Council (IOC) was formed to manage the IMSI resource in the United States and to oversee the performance of the IMSI-A. This IOC's document on the management of the IMSI resource contains the guidelines and procedures for the assignment and use of International Mobile Subscriber Identities (IMSI) in the United States with consideration given to other North American Numbering Plan (NANP) countries, and is based on the content of International Telecommunications Union – Telecommunications' (ITU-T) Recommendation E.212, *The International Identification Plan for Mobile Terminals and Mobile Users*. The IOC's *IMSI Assignment and Management Guidelines and Procedures* is available at <http://www.atis.org/ioc/guidelines.asp>. The latest version accessed by the Authority is Version 6. The Authority has used the IOC document as a benchmark in setting its own guidelines, as co-ordination of HNI assignment with the US Administrator is not required provided that the MCC assigned to the country is used.

These guidelines apply throughout Trinidad and Tobago and do not supersede the regulations, procedures or requirements of the Authority or any other appropriate legal or regulatory authority.

11.3.1 Assumptions and Constraints

These guidelines are based on the following assumptions and constraints:

1. These guidelines and procedures should provide the greatest latitude to those providing public mobile telecommunications services with international roaming capability, while permitting the effective and efficient management of a finite resource.
2. The Authority, the administrator of this National Numbering Plan, will perform the function of the local Administrator.
3. The guidelines and procedures for HNI assignment, as set forth in this section, remain in effect until there is either industry consensus or regulatory policy direction to change them.
4. These guidelines do not describe the method by which IMSIs are transmitted across and processed by networks. Inter-Networking arrangements may be contained in other standards, documents, or business agreements.

11.3.2 Assignment Principles

These assignment principles allow concessionaires the greatest possible latitude in providing public mobile telecommunications service with international roaming, and the subscribers of these services, the widest possible roaming capabilities.

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1. HNIs are to be assigned to concessionaires of public domestic mobile telecommunications networks offering mobile services with international roaming capability.
2. Upon application, the Authority will assign one HNI for each valid concessionaire. Nothing shall preclude a concessionaire, however, from aggregating multiple or merged networks within a single HNI.
3. The 6-digit HNI (374+MNC), as part of the 15-digit IMSI, is to be assigned so as to uniquely identify the home network of the mobility service user worldwide.
4. Concessionaires shall assign MSINs to their subscribed mobile terminals/users. An IMSI is unique to a single mobile terminal/subscriber, but a mobile terminal/subscriber may have multiple IMSIs.
5. IMSIs and HNIs shall be assigned to permit the most effective and efficient use of a finite resource in order to maximize the existing allocated resource inventory and to defer, as long as practical, the need for the Authority to request additional MCC resources.
6. IMSIs are an international public resource. The assignment of any portion of an IMSI (i.e., HNI, MSIN) does not imply ownership of the resource by either the entity to which it is assigned or by the entity performing the administrative function.
7. Should an assignee transfer control of a wireless license, the use of the assigned HNI is transferable to the new license owner.
8. The Authority will:
 - a. Assign HNIs in a fair, timely and impartial manner to any applicant that meets the criteria for assignment;

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- b. Assign HNIs on a first come, first served basis from the available pool of unassigned HNIs;
 - c. Make all assignments based on the procedures outlined in Section 9.3.3; and
 - d. Treat sensitive information received from applicants as proprietary and confidential, and not to be shared with non-administrator personnel.
9. Information that is requested of applicants in support of an HNI application shall be uniform and kept to a minimum.
10. Assigned HNIs should be deployed as soon as possible, but no later than twelve months after assignment. If the assignee can demonstrate that an assigned HNI has not been deployed solely due to delays beyond its control, the time period can be extended for up to 90 days. At the discretion of the Authority, three additional 90-day extensions may be granted.
11. An entity which is denied an HNI assignment or extension under these guidelines, has the right to appeal that decision, in accordance with Telecommunications Act, 2001.
12. These guidelines have no effect on HNI assignments made prior to their approval. Use of all assigned resources shall be consistent with these guidelines.
13. An HNI recovered or returned to the Authority for reassignment will remain dormant for a period of not less than 1 year, from the date of return to the HNI pool, before reassignment.
14. As required, applicants for HNIs must comply with all applicable local regulations relative to the provisioning of mobility service with international roaming capability.

11.3.3 Criteria for HNI Assignment

The following assignment criteria should be considered by any potential HNI applicant before submitting an HNI application, and will be used by the Authority in reviewing and processing the application:

1. The HNI applicant shall be a concessionaire of public domestic mobile telecommunications network offering public mobile services with international roaming capabilities, for which an HNI is requested.
2. A single concession for the provision of a public domestic mobile telecommunications network shall not be assigned more than one (1) HNI, save and except the first assigned HNI has been exhausted. It should be noted that the HNI is associated with the concession granted.

11.3.4 Responsibilities of HNI Applicants and Assignees

Entities requesting HNI assignments and concessionaires already assigned one or more HNIs shall comply with the following:

1. HNI applicants and assignees must meet all conditions specified in these guidelines.
2. Applicants must apply in writing to the Authority, until such time that the Authority publishes application procedures for HNIs.
3. HNI assignees shall:
 - a. Assign and efficiently manage the MSINs (last nine digits of the IMSI) associated with the assigned HNI and maintain up-to-date and accurate assignment records that match MSINs to mobile terminals/users. These records may be required for audit purposes.

- b. Inform the Authority of changes in the information associated with an HNI assignment. Changes may occur because of the transfer of an HNI, through merger or acquisition, to a different network. The initial assignee of the HNI involved in a transfer occurring through merger, acquisition or other means must immediately inform the Authority when such a change becomes effective. Timely submission of change information enables the Authority to maintain accurate HNI assignment records.
- c. Participate in the IMSI audit process, when requested.
- d. Deploy any HNI, assigned either directly by the Authority or obtained through merger or acquisition, within the time period specified and inform the Authority of HNI deployment.
- e. Apply to the Authority for an extension if the deployment requirement cannot be met and the HNI is still required.
- f. Return to the Authority:
 - i. Any HNI no longer needed for the provision of mobility services with international roaming capability,
 - ii. Any HNI not deployed within the time period specified, including extensions, or
 - iii. Any HNI not used in conformance with these assignment guidelines.

11.3.5 Responsibilities of the Authority

The role of the Authority is to manage the entire IMSI resource and to directly administer the HNI segment of the IMSI. In this context, the Authority shall:

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1. Provide to the industry, general and specific information on the structure and proper use and management of IMSIs.
2. Provide copies of these guidelines and forms to HNI applicants and assignees, and assist them in completing the required forms.
3. Review and process HNI applications as follows:
 - a. Review the application to determine if all requested information is provided and credible. If not, return the application to the applicant requesting that any deficiency be corrected.
 - b. Inform applicants of the status of their requests. There are three possible dispositions: approved, denied, or additional information required. Notify the applicant in writing of the disposition within ten (10) working days from receipt of application. The response will include:
 - i. If assigned, the specific HNI(s) assigned,
 - ii. If denied, the reasons for denial and instructions on how and where to appeal the decision,
 - iii. If additional information is required, the specific information required.
4. Use the following HNI assignment procedures:
 - a. The Authority shall generally assign HNIs in numerical sequence within the MCC, as far as practical.
 - b. There may be technical considerations or limitations on the part of the applicant that require a specific assignment or preclude them being able to use the next consecutive HNI assignment. The following HNIs are not available for assignment in order to support internetworking with wireless network licensees requiring backward

- compatibility for existing mobile networks only identified by 10-digit Mobile Identification Numbers (MINs): 374–000 through 374–009.
- c. When reassigning an HNI that has been returned or reclaimed, the Authority will ensure that the HNI has remained dormant for the required period, as specified in the HNI Assignment Principles in Section 11.3.2 – part 13, above.
5. Maintain accurate and current HNI assignment records. Update the records as required to respond to requests for changes in assignment information reported by HNI assignees. Respond to these requests within twenty (20) working days of the date the request was received.
 6. Publish, at least monthly, via the agreed medium, a list of assigned HNIs. The list will include, at minimum, the HNI number and the HNI assignee.
 7. Investigate any HNI that has not been deployed within the required time frame, and issue extensions if appropriate. Notify the appropriate industry forum if an assignee fails to deploy an assigned HNI within two extensions.
 8. Reclaim assigned HNI, as needed.
 9. Direct the IMSI conservation programme and conduct periodic audits, if required, of HNI assignee records.
 10. Inform the Trinidad and Tobago telecommunications industry, via the agreed method, of any evasions to these guidelines.

11.3.6 HNI Return and Reclamation Procedures

1. Assignees will return HNIs that are no longer required, not deployed, or not used in conformance with these assignment guidelines. Assignees will cooperate with the Authority in carrying out its reclamation and auditing responsibilities.
2. The Authority will contact any HNI assignee identified as not having returned to the Authority, for reassignment, any HNI no longer required, not deployed, or not used in conformance with these assignment guidelines.
3. The Authority will first seek clarification from the assignee regarding any alleged nonuse or misuse. If the assignee provides an explanation satisfactory to the Authority, and in conformance with these assignment guidelines, the HNI will remain assigned. If no satisfactory explanation is provided, the Authority will request a letter from the assignee returning the assigned HNI for reassignment. If a direct contact cannot be made with the assignee to effect the above process, a registered letter will be sent to the assignee's address on record requesting that they contact the Authority within thirty days regarding the alleged HNI non-use or misuse. If the letter is returned as non-delivered, the Authority will make the HNI available for reassignment following the required dormant period (Section 9.3.2 – part 13).

11.3.7 IMSI Resource Conservation and Assignment Audits

1. Assignment and management of the IMSI resources in Trinidad and Tobago are undertaken to efficiently and effectively administer/manage a limited resource through code conservation, and to eliminate or delay the exhaust potential for the MCC currently assigned to Trinidad and Tobago. The process to achieve these objectives should not impede the introduction of competitive services utilizing IMSI station identifiers.

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2. To promote the efficient and effective use of numbering resources, audits of HNI assignments may be performed to ensure consistent compliance with these guidelines.
3. The Authority will track and monitor IMSI assignments and assignment procedures to ensure that all segments of the IMSIs are being used in an efficient and effective manner. Ongoing procedures that foster conservation shall include, but not be limited to, the following:
 - a. An active reclamation program to reclaim unused or misused HNIs;
 - b. Strict conformance with these guidelines by those assigning HNIs and MSINs;
 - c. Appropriate and timely modifications to these guidelines to enhance text that may have allowed inefficient use of IMSIs and HNIs; and
 - d. Periodic specific and random audits of assignments and assignment procedures.
4. The Authority may conduct an audit of an HNI assignee's assignment records. The audit may be precipitated by a complaint from outside the Authority's organization or by the Authority. The purpose of an audit will be to verify the HNI assignee's compliance with the provisions set forth in these guidelines.
 - a. These audits will be conducted at the HNI assignee's premises or at a mutually agreed location and at a mutually agreed time.
 - b. The Authority will not copy or remove the information from the premises nor will they disclose the information to non-IMSI administrator personnel.

- c. The Authority will expect to review the following information to ensure conformance with these guidelines and the proper use of the IMSI resource:
 - i. Verification that not more than one HNI is assigned per network or wireless license,
 - ii. Verification of assignment for each working MSIN,
 - iii. Date of assignment of each working MSIN,
 - iv. Activation date of each working MSIN,
 - v. Indication of MSIN assignment to end users, and
 - vi. Status and status date of each MSIN unavailable for assignment; i.e., MSINs assigned for testing, reserved, aging, pending and/or, suspended.
5. Audit results should be used to identify and initiate specific corrective actions that may be necessary. Examples of specific corrective actions which may be proposed or taken are as follows:
 - Modifications to these assignment guidelines to reflect the specific circumstance revealed by the audit;
 - Additional training for HNI assignees concerning the assignment guidelines;
 - Return of assigned HNIs;
 - Requirements for supporting documentation of future HNI requests in non-compliant situations; or
 - Modifications to the process in which records are maintained or HNIs are assigned.
6. Audit results with respect to HNI assignee information and/or recommended HNI assignee process modifications shall be treated on a proprietary and confidential basis.
7. Failure to participate/cooperate in an audit shall result in the activation of HNI reclamation procedures.

11.4 Assignment Guidelines for Other Numbers used for Network Identification and Signalling

Assignments are also made to public telecommunications network and service providers in order to uniquely identify the entire network or a part of the network. These numbers are not used by subscribers, but they are an integral part of the provision of service to subscribers.

The HNI resource discussed in this document is an example of a number assigned to a public mobile telecommunications network or service provider to uniquely identify that provider. Other numbers for which a unique assignment is required include:

- Carrier Identification Code (CIC) – A CIC code is a four- digit numeric code assigned to a public telecommunications network provider for the provisioning of selected switched services. The numeric code is unique to each provider and is used to route a call from an originating provider to the trunk group designated by the provider to which the code was assigned.
- International Signalling Point Code (ISPC) – An ISPC is a signalling point code with a unique 14-bit format used at the international level for signalling message routing and identification of signalling points involved. The ISPC is used in signalling messages containing the Network Indicator NI=00. ISPCs are assigned to international public telecommunications network providers;
- SS7 Point Codes – Point codes are 24 bit binary codes which are needed for all signaling points using the SS7 (Signaling System 7, also known as Common Channel Signaling) network. They identify network nodes in order that the SS7 network can route calls properly. Point codes consist of 9 digits. The first three digits represent the network, the second three the cluster, and the third three the member. Large networks start at network 254 and are decrementing. Small networks are assigned from network code 002, and point code blocks are assigned from network code 005;

- System Identifier (SID) numbers - The SID is a 15-bit binary number that translates into a five-digit decimal number. In all ANSI-41-based systems, the SID is used to notify wireless users as to whether they are in their home area or roaming. When operating, the mobile handset compares the SID initially programmed into the handset to the SID broadcast by the serving system's cell sites. If the SID broadcast by the cell site matches the SID programmed into the handset, then the "home" indicator on the mobile handset will be illuminated. If the SID broadcast by the cell site does not match the SID programmed into the mobile station, then the "roam" indicator on the mobile handset will be illuminated. The intent of the "roam" indicator is to notify the wireless user that additional roaming-based charges may be applied for usage on the serving system.

The number resources above are not assigned from the CO code allocation, but from their own unique ranges. Like CO codes, these numbers are only assigned to concessionaires of public telecommunications network and services. Therefore, the administration of these numbers by a neutral entity, for example the Authority, will ensure the impartial and transparent assignment of these resources.

The assignment guidelines for the abovementioned numbers shall be addressed in other National Number Plans for these respective number resources, in accordance with the numbering regulations.

Annex I – Decision on Recommendations Matrix (1st Consultative Round)

The following summarises the comments and recommendations received from stakeholders on the first consultative version of this document (dated December 2005), and the decisions made by TATT as incorporated in this revised document (dated September 2008).

Document Sub-Section	Submission Made By: Stakeholder Category²	Comments Received	Recommendations Made	TATT's Decisions
General				
The numbering plan shall be made available to the public on payment of the prescribed fee	Telecommunications Services of Trinidad and Tobago (TSTT)	The Amendment Act 2004 suggests that the Numbering Plan shall be made available to the public in the manner prescribed by the Authority.	Regulators around the world make its numbering plan available at no cost on their respective websites. It is recommended that the Authority follows suit accordingly.	The Public Consultation Procedures has identified that all public documents of the Authority can be found on its website (www.tatt.org.tt)
Section 2				
5. The Authority shall preserve to the extent feasible, the assignment of numbers made before the commencement of the Telecommunications Act, 2001	TSTT	The plan itself proposes changes to existing numbering assignments, which contradicts this provision of the Act.	In consideration of this prescription, agreement with the existing operator should be made	The Authority has added Section 9.1 “Guiding Principles for Proposed Numbering Scheme” in order to assure concessionaire that changes to these number assignment will not be unreasonable.

² Regional regulatory or Governmental agencies, Existing service and/ or network provider and affiliates, Potential service and/ or network providers and affiliates, Service/ Network Provider Associations/ Clubs/ Groups, General Public

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Document Sub-Section	Submission Made By: Stakeholder Category²	Comments Received	Recommendations Made	TATT's Decisions
Section 3				
3.2: Importance of Numbering “...By assigning numbers to various regions, the tariff that are charged to calling parties can be determined empirically...”	TSTT	The capability of number portability and fixed wireless local loop begs to question the validity of this statement. Further, a simplified rating structure is the preferred approach in most jurisdictions.	The Operator may desire to remove its existing distance rate structure, proposing instead that calls be charged at a common per minute rate, irrespective of distance traveled. In this way, subscribers from rural areas would not be unfairly disadvantaged to make calls to commercial areas.	The statement in this section is used as an example of the importance of numbers to a subscriber, which still holds true today.
3.4 NANPA Resources	TSTT	The Plan discusses how the North American Numbering Plan resources will be administered by the Authority, but omits the administration of Vertical Service Codes, in which a plan has been defined in the document.	It is recommended that the Authority clarify who will administer the Vertical Service Codes.	Please note that this section has been revised to indicate that should the Authority seek to manage VSCs, a Plan will be produced. Nonetheless, a minimum list of VSCs shall be maintained.
Section 6				
6 Current allocations of 730-799 are prepaid	TSTT	730-799 are not exclusively for prepaid services currently. The code 611 has not been assigned to existing operators.	The table should be corrected	Change made: see Section 6 in revised National Numbering Plan

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Document Sub-Section	Submission Made By: Stakeholder Category²	Comments Received	Recommendations Made	TATT's Decisions
Section 7				
<p>7.1: Central Office (CO) codes – Migration of Numbers.</p> <p>“... Where it may be necessary for TSTT to migrate its services, the Authority shall exercise reasonable measures to minimize the unavoidable inconvenience that will be imposed on subscribers.”</p> <p>Migration of Post Paid Mobile numbers. Re: 678 and 620 from mobile to Fixed. And conditional upon 30% utilization rate, the reallocation of 680-689 from mobile to fixed (Bullet point 1 page 19)</p>	<p>TSTT</p>	<p>The transitional provisions for migrating of existing numbering assignments to the proposed code allocation have not been discussed. There has not been any mention of time frames or concessions, especially in consideration of the inconvenience that would be caused to subscribers, who will be required to change numbers.</p> <p>We are concerned with the Authority’s proposal to migrate numbers as existing, especially where the Telecommunications Authority Act in Section 44(5) states “...the Authority shall preserve to the extent feasible, the assignment of numbers made before the commencement of the Act.”</p> <p>The exchange codes 950, 958, and 976, which the Plan proposes to migrate to the operator services allocation, already lie in the allocation of codes proposed for operator services.</p>	<p>It is recommended that the issues of migration be discussed in detail with existing operators before any policy and regulations be formulated. Since migration of numbers will affect the operations of many stakeholders, it is recommended that the migration plan be discussed and all views taken into account before any policy and regulations be formulated.</p>	<p>Agreed: see Section 7.1, paragraph 3, in the revised National Numbering Plan for change. It is proposed that a migration plan be developed in consultation with the relevant stakeholders in the event that numbering migration is necessary.</p>

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Document Sub-Section	Submission Made By: Stakeholder Category²	Comments Received	Recommendations Made	TATT's Decisions
Section 8				
8.1 TSTT uses 12 as its MNC, since becoming a member of the GSM Association. The Authority may need to ensure that TSTT conforms to the 3-digit MNC (120) North American IMSI Format, by determining whether the first number in the MSINs assigned is a '0'.	TSTT		You are advised that the first digit of the ten-digit MSIN is not zero in all cases.	This paragraph has been removed in the revised National Numbering Plan as TSTT now conforms to the IMSI format.
Section 9				
9.2.3 Reservation for Government use. It is proposed that certain central office codes be reserved by Government to provide services over a uniform numbering scheme. In the proposed numbering plan, central office codes 980 – 989, 991, 992, 993, 994, 995, 996 and 997 have been allocated for providing public and government telecommunications services.	TSTT		It is recommended that exchange codes 991 to 997 should remain as short dialing codes, and not be used for seven digit directory numbers, as proposed by the plan, in consideration that additional short number codes may be needed for various new services such as location finding, necessary handicapped services (such as relay services for hearing impaired people) and other related functions.	Agreed. Change made in revised National Numbering Plan.

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Document Sub-Section	Submission Made By: Stakeholder Category²	Comments Received	Recommendations Made	TATT's Decisions
9.3 The Capacity Analysis indicates the Total allocations as 7,870,000	TSTT	This number is incorrect. The number should be 7,890,000	The table should be corrected	Section 9.3 has been revised with the correct total numbers for assignment, based on the revised numbering scheme.

Annex II – Decision on Recommendations Matrix (2nd Consultative Round)

The following summarises the comments and recommendations received from stakeholders on the second consultative version of this document (dated July 3, 2009), and the decisions made by TATT as incorporated in this revised document (dated September 7 2009).

Document Sub-Section	Submission Made By: Stakeholder Category³	Comments Received	Recommendations Made	TATT's Decisions
Section 6				
6. Current CO code Assignments	TSTT	It is observed that the CO codes 701 – 719 are shown in the current consultation as being allocated to fixed services. In the last notification of Central Office Code Assigned to Providers of Fixed and Mobile Telecommunications Services (May, 2008) these codes were shown in the mobile service category. Indeed, TSTT confirms that the said codes are apportioned for mobile customers.	TSTT recommends that the Authority amends the numbering plan accordingly.	This error is noted and has been rectified in the final version.
	TSTT	It is submitted that the mobile CO Codes 401 - 410 and 412 - 421 initially assigned to LaqTel Limited should be shown as unallocated within the “ <i>Current CO Code Assignments</i> ” table.	The current CO Code table should be amended accordingly.	TATT does not agree, for the said CO codes have been withdrawn, The subject table represents assignments only, as indicated in the section title.
Section 7				
7.1. Central Office (CO) Code – Migration of Numbers	TSTT	TSTT notes the Authority’s intention to migrate the existing mobile ranges outlined in the current consultation into the Fixed Service Category. Indeed TSTT agrees with the concerns express by the Authority of the inherent challenges in such	TSTT recommends that the Authority makes adequate provision for the migration of these numbers.	TATT has not suggested that the migration of the said CO Codes will occur. The purpose of this section was to identify that there may be need for migration of existing CO

³ Regional regulatory or Governmental agencies, Existing service and/ or network provider and affiliates, Potential service and/ or network providers and affiliates, Service/ Network Provider Associations/ Clubs/ Groups, General Public

National Numbering Plan: Central Office (CO) Codes and Home Network Identifier (HNI)

Document Sub-Section	Submission Made By: Stakeholder Category³	Comments Received	Recommendations Made	TATT's Decisions
Part (a)		<p>migrations and as raised by itself in the initial consultation, “[M]igration of these numbers may take a period of time, beginning with the discontinuance of reuse of numbers in these ranges followed by a phased transfer...(page 19, Consultation 1)”.</p> <p>Currently there are two mobile operators in Trinidad and Tobago: BMobile and Digicel. However the migration of CO Codes 620, 678 and 680 – 689 solely affects TSTT and is tantamount to the placement of a ban on the issuance of new numbers in these codes. In particular TSTT notes that no provision has been made for the allocation of additional CO Codes to facilitate such migration. It is submitted that it would have been equitable for an equivalent number of CO Codes to be made available to TSTT.</p> <p>In the previous consultation (2004) the Authority made mention of a ‘phased transfer;’ the Authority would expect that changing a few customer codes from time to time will not have the effect of large scale customer dislocation that wide ranging code changes do have. The code changes being proposed, nonetheless, by the Authority will result in major dislocation, predominantly to TSTT’s valued business customers.</p>	<p>Any migration process should therefore necessarily take this into consideration.</p>	<p>Codes used by TSTT for it is the only operator who currently has CO Codes assigned that are inconsistent with the proposed CO Code Numbering Scheme.</p> <p>TATT has made it clear in paragraph 3 of this section that any migration will be consulted upon by way of a migration plan. The comments TSTT has made may very well need to be considered, only when it is deemed necessary that such a migration is necessary. To-date, this is not the case.</p>
Part (c)	TSTT	<p>TSTT notes migration would be costly to consumers having to change numbers.</p> <p>Business customers that may be captured in the 821 and 822 blocs may incur significant cost such as, reprint of business cards, stationery, and advertising material or modify signage to notify customers of the change of number. The burden of cost would ultimately be borne by the customers particularly business consumers during migration.</p>	<p>It is submitted that, as with the mobile ranges above, the numbers in these CO Codes should be gradually retired when they become inactive.</p>	<p>Please see above.</p>

National Numbering Plan: Central Office (CO) Codes and Home Network Identifier (HNI)

Document Sub-Section	Submission Made By: Stakeholder Category³	Comments Received	Recommendations Made	TATT's Decisions
7.2. North American Numbering Plan (NANP) Expansion	TSTT	We agree with the Authority to consult with the stakeholders regarding the North American Numbering Plan Expansion. This matter of expanding the capacity of the NANP should be examined in greater detail by the Authority engaging providers and through discussions to formulate a comprehensive plan would only benefit the sector.	This matter of expanding the capacity of the NANP must be treated as a separate consultation. TSTT also recommends that the Authority conduct presentations and workshops on this matter to inform the sector of the developments of the NANPA plans	As articulated in the last paragraph of this section, if and when this NANP expansion becomes a reality, the Authority will take the necessary steps to inform and consult with the industry.
7.5 Further Considerations	TSTT	Given the technical, economic and legal nature of Number Portability. TSTT believes this concept should be investigated and published in a separate consultation when the need arises to honour a full discourse relating to the subject matter.	TSTT recommends that a consultation should be developed for Number Portability separate and apart from the proposed numbering plan.	Please note that Number Portability was only identified in this Plan for it may require an allocation of CO Codes for implementation. TATT recognizes that this is a separate issue as implicated in this section and it will be treated via a separate consultation. For ease of understanding, a statement shall be added to this section to make it explicit that all issues under this section would be treated as separate consultations.
	TSTT	Given the fact that the Authority made mention of the possibility of ENUM in the current consultation should indicate to the Authority that additional codes would be needed to facilitate the likelihood of this service becoming a reality in Trinidad and Tobago.	Given ENUM there would undoubtedly be an increased demand for CO Codes and as such the Authority should consider making more CO Codes available.	See decision above.
Section 9				
9.2. Proposed Scheme for CO Code Allocation	TSTT	TSTT is in general agreement with the proposed numbering scheme for CO Code allocation but questions the provision made for mobile services (250 – 499). From the Authority's update in the Central Office	Consistent with the above, the Authority should consider the need for more codes to be opened to the concessionaires.	The Authority will consider allocating additional CO codes to services based on the results of CO Code Exhaust exercises and the utilization rate by Concessionaires.

National Numbering Plan: Central Office (CO) Codes and Home Network Identifier (HNI)

Document Sub-Section	Submission Made By: Stakeholder Category³	Comments Received	Recommendations Made	TATT's Decisions
		<p>Codes Assigned to Providers of Fixed and mobile document (May, 2008) shows: Digicel being assigned CO Codes 290 – 299; 301 – 310 and 312 – 399; TSTT mobile service is assigned 620, 678, 680 – 689; 701 – 710; 712 – 799 and 460 – 499.</p> <p>From this it could be clearly seen therefore that the only codes remaining (and assumed) for assignment are Co Codes 250 – 289 and 401 – 459. Indeed, if TSTT is required to migrate codes 620, 678 and 680 – 689 into this range it further constrains the availability of these numbers.</p> <p>This situation would be exacerbated if another mobile provider enters the market.</p>		<p>Based on the last CO Code Exhaust exercise conducted in accordance with the CO Code Exhaust Analysis Methodology (published on October 21st 2008), there is no immediate need to allocate additional CO Codes to Mobile Services.</p> <p>Should there be a need in the future to do so based on any migration plan, the Authority will take due consideration at that time.</p>
9.3 Capacity Analysis	TSTT	<p>The Column named “Total Assignable Numbers” is misleading as some of the numbers in the respective service type categories are already in use and therefore not available for assignment.</p>	<p>Replace “Total Assignable Numbers” with “Total Number of CO codes”</p>	<p>TATT does not agree, for the values represented in this column are numbers that can be assigned to a subscriber, by a concessionaire, based on the assignment of CO Codes to the concessionaire, by TATT. TATT recognizes however that they is an error in the summation and calculation in this table, which has be corrected in the final version. TATT shall define these column headings for clarity.</p>
Section 10				
10.1 Numbering Fees	TSTT	<p>TSTT notes the need for including numbering fees but questions how providers would be compensated for the return of numbers especially in the case of a forced migration.</p>	<p>There should be an established mechanism for compensation of numbers.</p>	<p>As stated above, TATT does not expect that the issue of migration will arise in this instance, at this time. However, if it does arise, TATT may consider the issue of compensation.</p>