



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

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July 10 2009	Second Consultative Draft based on comments received in the 1st round of consultation	0.2
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## List of Abbreviations

CCTL	Columbus Communications Trinidad Limited
CICs	Carrier Identification Codes
CO	Central Office
ERC	Easily Recognizable Codes
IMSI	International Mobile Subscriber Identifiers
INC	Industry Numbering Committee
ISPC	International Signalling Point Codes
ITU-T	International Telecommunications Union – Telecommunications Standardisation Sector
MCC	Mobile Country Code
MNC	Mobile Network Code
MSIN	Mobile Station Identification Number
NANPA	North American Numbering Plan Administrator
NPA	Numbering Plan Area
TSTT	Telecommunications Services of Trinidad and Tobago
USSD	Unstructured Supplementary Service Data
VSCs	Vertical Service Codes

# **1 Introduction**

## **1.1 Rationale**

The National Numbering Plan: CO codes and HNI assignments, is one of a series of national numbering plans that will govern the administration of numbering resources in the Republic of Trinidad and Tobago, in accordance with the draft Telecommunications (Numbering) Regulations (TATT 2011). The number resources addressed in this Plan are Central Office (CO) Codes and Home Network Identifier (HNI) assignments. This revised Plan considers market developments since it was last published, and takes into account possible future developments.

The Authority has recognized that the increase in the allocation of telephone numbers, via the assignment of CO codes, can lead to the exhaust of the codes available in the Numbering Plan Area (NPA) assigned to the Republic of Trinidad and Tobago. CO codes, being a finite numbering resource, must therefore be managed carefully to guard against premature exhaust. Although the Authority has the option of requesting an additional NPA from the North American Numbering Plan Administrator (NANPA), should the existing 868 NPA be entirely depleted, it must be evident that the numbers were efficiently utilized and that the exhaust of the numbers was not pre-mature.

Prior to the establishment of the Telecommunications Authority of Trinidad and Tobago (hereinafter called “the Authority”), the number assignments were made solely to the incumbent authorised service provider of public telecommunications services—Telecommunications Services of Trinidad and Tobago (TSTT). Subsequent to the introduction of competition, number assignments were made to new authorised service providers in the domestic fixed and mobile markets. The market has experienced a decline in the fixed line market of 2% and growth of 2% in the mobile market, year on year (TATT 2016). It is expected that the introduction of fixed and mobile service provider number portability will reduce the demand for new CO codes.. If a new market entrant or existing operators offer new services (for example, a fixed operator who earns authorisation to offer mobile services) they will be assigned CO codes as well as HNIs in accordance with this Plan.

## **1.2 Purpose**

This document examines the current allocation of numbers for public fixed (wired/wireless) and mobile telephony (telecommunications) services in the Republic of Trinidad & Tobago. It presents allocation and administration guidelines for the CO Codes and HNIs.

### 1.3 Background

The North American Numbering Plan (NANP) follows the guidelines of the Telecommunications Standardisation Bureau (ITU-T) Recommendation E.164 – The International Public Telecommunications Numbering Plan ([ITU-T 2015](#)) with regard to the number structure of an international telephone number. The ITU-T 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 digits (15 – n, 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 Republic of Trinidad & Tobago is a participating country in the NANP, which is the basic numbering scheme used throughout the US, Canada, the Bahamas and 17 other Caribbean countries. The structure of the numbers is illustrated here:

Country Code	Area Code	Directory Number	
		Central Office Code	Station Number
<b>1</b>	<b>NXX</b>	<b>NXX</b>	<b>XXXX</b>

**Where N = 2 to 9 and X=0 to 9. A Trinidad and Tobago example is 1-868-652-1014.**

All NANP participating countries use a single digit country code which is 1.

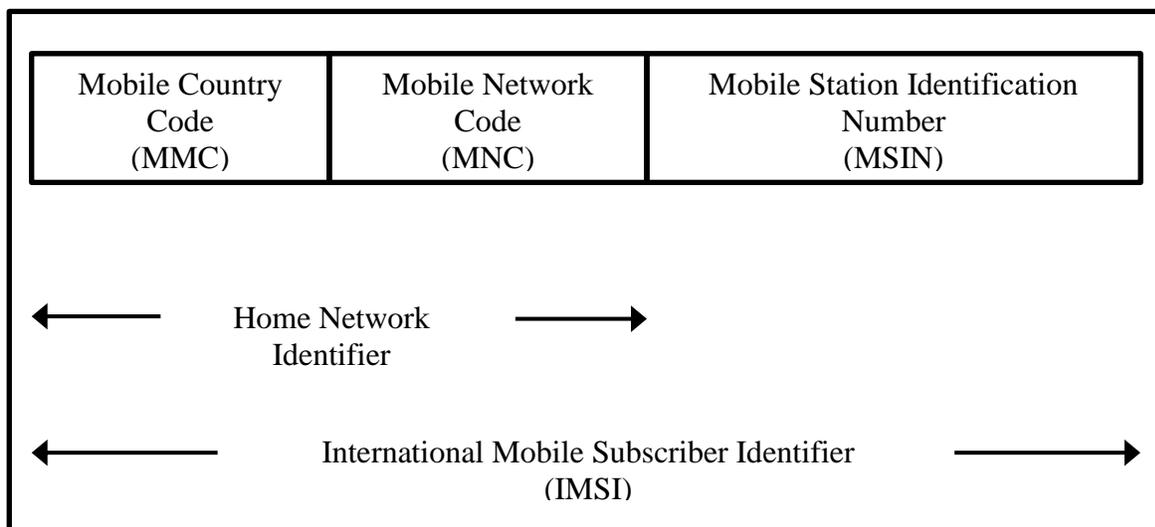
The Area Code identifies the particular country, state or province (for countries with more than one area code) within the NANP. It is also termed the Numbering Plan Area (NPA) code, or simply the NPA. It comprises 3 digits. For example, the Republic of Trinidad and Tobago is assigned to NPA 868.

A CO Code is a three (3) digit number, ranging from 200 to 999, each of 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 Authority also administers HNIs to authorised service providers of public domestic mobile telecommunications networks and services 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 that is to an authorised service provider of a public mobile telecommunications network. The International Mobile Subscriber Identifiers (IMSI) is administered in North America by the iconectiv IMSI

Administrator, based on guidelines developed by the Alliance for Telecommunication Industry Solutions (ATIS 2014).

The HNI is a 6-digit number, that is, 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 authorised service provider, to whom the MNC is assigned, directly administers the remaining segment of the IMSI, that is, the Mobile Station Identification Number (MSIN). The format of the IMSI is as illustrated below.



(Version 15.0 March 2014)

## 1.4 Objectives

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

- i. 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).
- ii. Articulate the principles that inform the administration of CO codes and, by extension, the Numbering Plan Area (NPA).
- iii. Provide guidelines for administering CO codes and, by extension, the Numbering Plan Area (NPA).
- iv. Identify any obligations which apply to authorised service providers assigned CO codes (e.g. number conservation methods).
- v. Articulate the principles that inform the administration of HNI assignments.
- vi. Provide guidelines for administering HNI assignments.

## 1.5 Relevant Legislation

The Telecommunications Act 2001, as amended in 2004 (Chapter 47:31), provides the legislative framework 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:

- i. The Authority shall develop a plan for the numbering of telecommunication services and shall administer and manage such numbers.
- ii. Subject to subsection (5), numbers shall be made available to providers of telecommunications services on an equitable basis.
- iii. The Numbering Plan may establish procedures by which providers of telecommunications services may assign or re-assign telephone numbers to users.
- iv. The Numbering Plan shall be made available to the public in the manner prescribed by the Authority.
- v. In developing the Numbering Plan referred to in subsection (1), the Authority shall preserve to the extent feasible, the assignment of numbers made previously.
- vi. The Authority shall notify all local service providers of any new numbering assignments made.

## 1.6 Review Cycle

This document will be modified periodically to meet changing and unforeseen circumstances. The Authority will review and modify this Plan as necessary and in consultation with stakeholders to ensure that the Plan is relevant and meets with their needs. Questions or concerns regarding this Plan may be directed to the Authority.

## 1.7 Consultation Process

In accordance with its *Procedures for Consultation in the Telecommunications and Broadcasting Sectors of Trinidad and Tobago* ([TATT 2010](#)), the Authority sought the views of the general public and industry stakeholders. Two rounds of consultation were held.

Public comment on the first draft was invited for the period 31<sup>st</sup> July 2015 to 28<sup>th</sup> August 2015. The closing date was subsequently extended to 14<sup>th</sup> September 2015.

The Authority received responses from the following parties:

- i. Columbus Communications (Trinidad) Limited
- ii. Digicel (Trinidad and Tobago) Limited
- iii. Telecommunications Services of Trinidad and Tobago (TSTT)

On 22<sup>nd</sup> January 2016, the Authority published a revised draft of this document which took into consideration the comments and recommendations from the first consultation round. These comments and recommendations with the Authority's decisions are presented in Annex 1: Decisions on Recommendations.

The Authority received responses to the revised draft document from the following parties:

- i. Columbus Communications (Trinidad) Limited
- ii. Digicel (Trinidad and Tobago) Limited
- iii. Telecommunications Services of Trinidad and Tobago (TSTT)

Annex 2: Decisions on Recommendations provides all comments and recommendations received in the second consultation round and the Authority's decisions in respect of those.

This document represents the final version of the National Numbering Plan: Central Office (CO) Codes and Home Network Identifier (HNI).

## 1.8 Other Numbering Resources

Examples of other national numbering resources that are not addressed in this Plan, but which will be addressed in separate consultations as the need arises are:

- i. Carrier Identification Codes
- ii. International Signalling Point Codes
- iii. Any other numbering resource that the Authority may identify from time to time.

## 1.9 Definitions

- i. Carrier Identification Code (CIC) – Carrier Identification Codes (CICs) are used to route and bill calls in the public switched telephone network. A CIC code is a seven-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.
- ii. International Signalling Point Codes (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. It is defined by ITU Q.708 Rec.

## **2 North American Numbering Plan**

### **2.1 Basic Model**

Historically, the Central Office (CO) Code assigned to fixed line networks in Trinidad and Tobago usually identified a rate area within the incumbent's fixed line network. However, with new technology, this situation has changed somewhat. Today, fixed line CO codes may not be confined to any specific rate area. Additionally, the Central Office codes assigned to mobile networks usually identify the mobile network to which the customer subscribes. With the introduction of service provider number portability, the CO code can no longer be used as an identifier of the operator on whose network the telephone number resides.

The NANP 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, for example emergency services. They are never used as area codes or CO codes. The quantity of assignable area codes and CO codes are therefore reduced by the number of possible N11 codes.

In Trinidad and Tobago, non-geographic toll free codes and premium services use CO codes that are easily recognizable, whilst the NANP uses the NPA for such services. The Authority plans to revisit the current application of such codes. As an example, a separate plan for toll free services in Trinidad and Tobago has been developed and has been issued for public consultation.

### **2.2 Importance of Numbering**

Numbers are an indispensable means for identifying subscribers and directing calls and connections through interconnected circuit switched telecommunications networks. Numbers are critical to the provision of public telecommunications services. The introduction of IP technology applications permits users of Voice over Internet Protocol (VOIP) to be contacted without the need for the traditional telephone number. Since the majority of the world's telephone service subscribers use numbers, telephone numbers in the ITU E.164 format are supported by VOIP systems for routing and terminating calls between users of an IP network and the subscribers of a circuit switched network.

The manner in which the numbering resource is managed is of direct concern to subscribers in many ways and may have 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 of changing providers.

### **2.3 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 (7,810,019) numbers available for assignment. Though the supply of numbers is finite, the exhaustion of such a resource is not likely in the near future. However, without well-defined numbering allocation and assignment practices, the resource may become difficult to manage, and may eventually be exhausted.

### 3 Current CO Code Assignments

Table 1 lists the CO code number assignments to authorised service providers of public telecommunications services in Trinidad and Tobago as of September 2016, and is inclusive of CO codes assigned to the incumbent, TSTT, prior to the introduction of competition in the mobile and fixed line markets.

**Table 1: CO Code Number assignments to providers of Public Telecommunications Services**

Mobile	Fixed	Unallocated	Comments
	201		Open Telecom Ltd
		202	
	203		Wireless Technology Ltd
		204 – 210	
		212 – 220	
	220 – 229		Assigned to Columbus Communications Trinidad Limited
	230 – 239		Assigned to Digicel (Trinidad and Tobago) Limited
		240 – 265	
266 – 279			Assigned to Digicel (Trinidad and Tobago) Limited
280 – 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
		401 – 410	Reserved for mobile services
		412 – 459	
460 – 499			Assigned to TSTT
		501 – 554	
	555		Assigned to TSTT
		556 – 599	
		601 – 606	
	607		Lisa Communications Ltd
		608	
	609		Massy Communications
620, 678	610 – 679		Assigned to TSTT 611 - unassignable

Mobile	Fixed	Unallocated	Comments
			666 – currently unassigned
680 – 689			Assigned to TSTT
	690 – 699		Assigned to TSTT pre-liberalization. 699 (Inbound and Outbound International Call Testing – DMS 300)
701 – 719			Assigned to TSTT. 711 is unassignable
720 – 799			Assigned to TSTT
		801 – 819	800 (Local Toll Free Service) 811 ambulance service.
	821 – 822	820, 823	Assigned to TSTT. 821 and 822 assigned to Direct-Inward-Dialling services.
	824		824 (TSTT Customer Care Services). Assigned to TSTT
		825 – 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) 996 Children’s Authority Helpline

The dialling scheme currently used in the Republic of Trinidad and Tobago is presented in Table 2.

**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 (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
<b>Short codes</b>	
Tobago information service	211
iGovtt	311
Ministry of National Security	555
Law Enforcement Information Service	511
Office of Disaster Preparedness and Management	996
Children's Authority Helpline	
Emergency	
- Police	999
- Fire	990
- Ambulance	811

The Authority shall maintain the current dialling scheme which establishes the format to be used when dialling a telephone number in Trinidad and Tobago.

## 4 Numbering Scheme for CO Code Allocation

### 4.1 Guiding Principles for Numbering Scheme

The following principles undergird the numbering scheme for CO code allocation:

- i. Equitable distribution of and access to the numbering resource for all public telecommunications service providers;
- ii. Regularisation of ad hoc numbering allocations to maximise the lifespan of the numbering resource, without creating unnecessary changes to current number allocations;
- iii. Allocation of numbers for each type of service in accordance with the estimated long-term requirements of different public telecommunications services;
- iv. Preservation of existing assignments, as far as possible, to minimize inconvenience to consumers;
- v. Preservation of current number assignments, which do not conform to the proposed numbering allocation plan (i.e. non-standard assignments), until re-assignment is absolutely essential.

### 4.2 Numbering Scheme for CO Code Allocation

Table 3 presents the 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.

**Table 3: Numbering Scheme for Co Code Allocation**

Central Office Code	Service Type	Comments and Exceptions
201 - 259	Fixed (wired/wireless) Services	211 assigned as Tobago House of Assembly (THA) Information services
260 – 499	Mobile Services	311 assigned to iGovtt. . 411 reserved for directory services.
501 - 599	Reserved for Future Services	555 assigned as Ministry of National Security Law Enforcement Information Service.

Central Office Code	Service Type	Comments and Exceptions
		511 assigned to Office of Disaster Preparedness and Management
601 - 699	Fixed (wired/wireless) Services	620, 678, 680 - 689 currently assigned to Mobile services. 666 reserved indefinitely. 611 reserved for repair services.
701 – 799	Mobile Services	711 reserved for persons with physical challenges
801 – 899	Unallocated	811 assigned as Public Emergency Services (Ambulance). 824 – TSTT One number service for customer care. 821 and 822 - Direct inward dialling service used by TSTT 848 and 874 – incoming calls in DMS 300, TSTT House and Couva respectively. 866 and 877 – Interim local-only toll free services for authorised service providers of Public Telecommunications Service, other than TSTT. 888 – Previously Companion Card Call services, TSTT. Discontinued.
901 – 949	Premium and Special Services (fixed and mobile)	911 reserved for Public Emergency Services (Police) alongside 999
950 – 979	Operator and Plant Test Services	950, 958 – TSTT Internal Routing for 800 and 900 service 959 – TSTT Standard Plant Test Codes

Central Office Code	Service Type	Comments and Exceptions
		976 –Information services offered by TSTT
980 – 989	Government & Public Services	
990 – 999	Abbreviated Dialling Codes	990 assigned as Public Emergency Services (Fire). 999 assigned as Public Emergency Services (Police). 996 assigned to Children’s Authority Helpline 997 used as Silent switchman in one operator’s network. 998 assigned as Automatic Number Announcement Service.

#### 4.2.1 Reserved Central Office Codes

Table 4 lists the Reserved N00 CO codes.

**Table 4 - List of Reserved Central Office Codes**

Central Office Code	Purpose and Notes
N00 – XXXX <ul style="list-style-type: none"> <li>Central Office Codes 200, 300, 400, 500, 600, 700, 800, 900</li> </ul>	<ul style="list-style-type: none"> <li>Total of 80,000 numbers available</li> <li>Special services <ul style="list-style-type: none"> <li>Toll free services: 800</li> <li>Premium service codes: 900 and 976 are in use by TSTT</li> </ul> </li> </ul>

### 4.3 Capacity Analysis

Table 5 summarizes the quantum of numbers available for assignment to subscribers, based on the quantum of CO codes allocated to each service type. Column headings have the following meanings:

- i. Service Type – the type of telecommunications service to which the CO Code has been allocated.
- ii. CO Code Allocation – the range of CO Codes that has been allocated to the particular Service Type, which the Authority can assign to relevant authorised service providers.
- iii. Total Assignable Numbers – the quantum of possible telephone numbers that can be derived from a CO Code allocation, which a relevant authorised service provider can assign to a subscriber.

**Table 5: Capacity Analysis based on Co Code Allocation**

Service Type	CO Code Allocation	Total Assignable Numbers
Unallocated	250-259, 801 – 899 (excluding 811), 930 - 979	1,580 ,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, 620, 678, 680-689)	1,330,000
Mobile Services	260 – 299, 301 – 399, 401 – 499 & 701 – 799, 620, 678, 680-689 (excluding 311, 411 and 711)	3,460,000
N00 Numbers	200, 300, 400 ,500 ,600, 700, 800 & 900	80,000
Translation Services, Operator Services, Plant Test Codes and Network Switching Services	920 - 929	100,000
666 numbers	666	10,000
Premium and Special Services	901 – 919 (excluding 911)	180,000
Government and Public Services	980 – 989	100,000
Abbreviated Dialling Codes	211, 311, 411, 511,555, 611, 711, 811, 911, 990, 991 – 997, 998, 999	19
<b>Total</b>		<b>7,810,019</b>

Table 6 reflects changes to the allocations implemented in the updated (2017) version relative to the first version (2011) of this plan.

**Table 6: Changes to Allocations**

Allocation	Version 1, Sept. 2011	Current Version Dec. 2016
Mobile Services	3,440,000	3,460,000
Fixed ( wired /wireless)	1,450,000	1,330,000
Number Translation Services, Operator Services, Plant Test Codes and Network Switching	600,000	100,000
Unallocated	980,000	1,580,000

## 5 Considerations: CO Code Allocation and Assignment

### 5.1 Numbers not in Conformance

CO Codes must be managed in such a way as 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. The impact of expanding the numbering resource by adding digits and/or changing the format of the numbers is costly to the industry and users. It must be pointed out, however, that currently there is an adequate reserve of numbers and, as such, there is no need for drastic number conservation methods such as those previously utilized in North America, where some operators were given numbers in thousand block (1000) rather than ten thousand block (10000) assignments. Many improvements on the existing numbering scheme can maximize the lifespan of the 868 NPA. The main reasons for the inefficiencies in the existing numbering allocations are an inadequate numbering scheme for CO code allocation as well as technical limitations of the switching technology prior to the formation of the Authority and the formulation of this Numbering Plan. Many of the changes envisaged would affect the incumbent, TSTT, which existed as the sole telecommunications service provider prior to the establishment of the Authority. The CO codes and numbers which may potentially be affected are:

- i. TSTT's CO codes: 620, 678 and 680 – 689.
- ii. Directory Services: 6411
- iii. TSTT's Fixed CO codes: 821 and 822
- iv. Customer Care Service Numbers: 824-TSTT and 223-FLOW
- v. TSTT's Premium Services CO codes: 800, 900
- vi. TSTT's Information Services CO code: 976
- vii. TSTT's International Switch CO Code: 699
- viii. TSTT's Routing CO codes: 950 and 958
- ix. TSTT's Audio Text Service CO codes: 848, 874.
- x. TSTT's Wholesale International Toll Free service CO code: 938

### 5.2 North American Numbering Plan (NANP) Expansion

The October 2014 NANP Exhaust Projections estimates the NANP to exhaust beyond 2044. This is based on an average assignment of 4600 CO codes per year and an availability of 667 NPAs (ATIS 2014). The efficient use of the Numbering Resources in Trinidad and Tobago and other NANP territories will extend the NANP to beyond 2044 and forestall the need to implement the 'Recommended Plan for expanding the capacity of the North American Numbering Plan: ATIS-0300071' (ATIS 2001) .

### 5.3 Future Services

The Authority is mindful that number resources may need to be made available for new services. These CO Codes have been identified as unallocated in Table 5. The Internet of Things (IoT) and its potential impact on number resources is currently engaging the attention of the ITU-T Study Group 2 at this time. The Authority shall continue to monitor developments in this area.

### 5.4 Vertical Service Codes

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

VSCs have been used traditionally by public fixed telecommunications service providers, using a format that is user-friendly for a touch-tone telephone. Where rotary dial telephones are still in use, the customer is advised to dial “11” before the vertical service code, for example instead of \*91, the rotary dial user will dial 1191. 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 telecommunication providers generally conforms to the standard formats of the technology employed and may be equipment specific. For example, a public mobile telecommunications service provider using a GSM network can utilize Unstructured Supplementary Service Data (USSD) codes to offer features such as mobile-money services, location-based content services, menu-based information services and additional services similar to VSCs.

Section 44(5) of the Telecommunications Act, 2001 (Chapter 47:31), requires the Authority to preserve, to the extent feasible, the assignment of numbers made before the promulgation of the relevant sections of the Act. The Authority recognizes that authorised service providers use different VSCs and USSDs for common services, for example customer care services. Authorised service providers are advised to publish the VSCs and USSDs, where applicable, in order to advise their customers of the VSCs and USSDs in use on their network. Fixed line operators are further advised that they should adhere to the North American Numbering Plan Administrator (NANPA) guidelines for VSCs as far as technically possible to minimize customer confusion. The Authority is not aware of any problems caused by the current use of the VSCs and hence does not propose any changes to the VSCs currently in use.

## **6 Number Conservation Methods for CO Code Numbering Resources**

The following conservation methods have been or will be implemented to ensure a more efficient use of the CO code numbering resources.

### **6.1 Numbering Fees**

The Authority will continue to use numbering fees to promote the efficient use of telephone numbers and discourage under-utilization of numbers. In view of the fact that telephone numbers are allocated to authorised service providers 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 an authorised service provider to maximize the use of the code, before requesting any additional CO codes. Also, this numbering fee will serve as a cost recovery mechanism in the administration of this numbering resource. The numbering fee structure will be based on the service categories of numbers, 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:

- i. Fixed (Wired/Wireless) Services;
- ii. Mobile Services;
- iii. N00 Numbers;
- iv. Information/Premium/Number Translation Services;
- v. 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 every three years to ensure that it is fair, and that the desired result of conserving numbers is achieved.

### **6.2 Telephone Number Recycle Policy**

The Authority has instituted a telephone number recycle policy for authorized providers of public telecommunications services. This policy obliges an authorised service provider to make available for re-assignment to a new subscriber a telephone number that was previously assigned as follows:

Prepaid mobile telephone numbers which have been inactive for six (6) months are usually removed from service by the operator. Inactive in this context means the telephone number does

not originate or terminate a call, text message or session. Also, prepaid accounts which are not topped up in a specified period are terminated. Prepaid mobile telephone numbers shall be recycled in no less than six (6) months from the date the account is flagged as inactive.

Post-paid mobile telephone numbers may be terminated for non-payment of their invoice or by the subscriber. Sufficient time should be allowed for the post-paid telephone numbers to be removed from public circulation and to reduce the possibility of calls to the previous user. The post-paid mobile telephone number shall be recycled in no less than six months from the date the account is terminated.

All post-paid fixed telephone numbers may be terminated for non-payment of their invoice or by the subscriber. Fixed line telephone numbers shall be recycled in no less than six months from the date of termination of service in order to reduce calls meant for previous subscriber and to permit directory assistance and directory publications to be updated.

### **6.3 Number Utilisation Threshold**

Criteria have been established in the NANP for issuing additional (growth) codes for fixed and mobile services as specified in the *Central Office Code (NXX) Assignment Guidelines (COCAG)* (ATIS 2015):

- i. 75% utilization of current number stock; and
- ii. The current stock of telephone numbers will exhaust within six months.

In Trinidad and Tobago, consideration has been given to the NANP guidelines and the growth patterns of the fixed line and mobile markets to determine the appropriate thresholds for the assignment of growth codes. The following thresholds shall be satisfied for growth codes to be issued to the authorised service providers:

- i. Growth codes (fixed)
  - a. Utilisation of current stock of fixed numbers equal to or greater than 80%
  - b. Current stock of fixed numbers will exhaust in six months or less
- i. Growth codes (mobile)
  - a. Utilisation of current stock of mobile numbers equal to or greater than 75%
  - b. Current stock of mobile numbers will exhaust in six months or less

### **6.4 Number Portability**

Service Provider Number Portability for fixed line and mobile services is currently being implemented. In October 2016, a Determination (Notice of Determination 2016/01) was issued by the Authority, which required mobile operators to implement Mobile Number Portability no later than October 31<sup>st</sup> 2016 and fixed wired and wireless operators to implement Fixed Number Portability no later than November 28<sup>th</sup> 2016. Number portability implementation has the potential to conserve numbers as the same subscriber number is moved from the current operator

to another operator, therefore eliminating the need to issue a number to a new customer to the network.

## 6.5 Proposed Number Treatments

In the development of a sustainable numbering scheme, there may be need for the re-assignment of numbers associated with existing services. Such number re-assignments would result in a change in the telephone number or abbreviated dialling code.

The Authority shall consult with authorised service providers, who are assigned CO code numbering resources, and other relevant stakeholders in the development of re-assignment plans to align the numbers assigned to telecommunications services to the numbering scheme. The Authority will undertake a re-assignment process **only when deemed necessary**. The Authority shall exercise reasonable measures to reduce inconveniences to consumers (i.e. subscribers), where a re-assignment is deemed necessary. Appropriate campaigns to advise the public of any changes will be undertaken where necessary.

Number re-assignment may be necessary to numbers allocated to TSTT and FLOW. The potentially affected CO codes and numbers and proposed suggestions are as follows:

- i. Existing Mobile Ranges: The CO codes 620, 678 and 680 – 689 are currently allocated to mobile services. A suggested approach is the gradual retirement of these numbers for Mobile Services when they become inactive, that is when the existing customers give up these numbers on their own accord. The service provider will then simply not re-allocate these numbers to any new customers. This activity will not cause any customer discomfort and will allow the gradual re-allocation to the Fixed Services category.
- ii. Directory Services (6411): Currently, TSTT and Columbus Communications Trinidad Limited (CCTL) provide directory assistance to their customers at this number. In order to conform to the NANP, a three-digit number (411) must be used. This can be introduced by employing a permissive dialling period during which subscribers who dial the four digit number will be informed of the new access code by a voice announcement, and would still be able to access the service.
- iii. Fixed Services (821, 822): TSTT currently has this allocation for fixed services - Direct Inward Dialling (DID). 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.
- iv. Customer Care Services: TSTT currently offers customer care services via 824-TSTT whilst CCTL uses 223-FLOW. Considering that this service is currently a local toll free service (to the respective FLOW and TSTT customers only), and should be accessible

either on the network that 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 is currently assigned to TSTT for Premium (toll free) services. FLOW has the option of utilising 877-FLOW.

- v. Premium Services (800, 900): These CO codes are being used for premium services such as local toll free (800, 888) and pay services (900) by TSTT. At this time, the manner in which these CO codes are used is consistent with the current numbering scheme. The only caveat to this will be whether these codes remain exclusive to TSTT or are shared with other authorised service providers who may have subscribers who request a local toll free or pay service. In the interim, the CO codes 877 and 866 have been assigned to Columbus Communication Trinidad Limited and Digicel (Trinidad and Tobago) Limited respectively for the provision of local toll free services. This issue will be addressed using the Authority's approved consultation procedures with operators.
- vi. TSTT's Information Services (976): This CO code is currently 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 proposes 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.
- vii. TSTT's International Switch Code (699): This was used for International Inbound and Outbound ISDN trunk loop back testing at the TSTT House International Switch. The Authority may consider the migration of this service to one of the blocks proposed for Plant Testing (958, 959), or an operator services block.
- viii. Routing of 800 and 900 calls: The CO codes 950 and 958 have been assigned and used by the incumbent, TSTT, as routing codes to facilitate the local 900 and 800 services respectively. 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. This issue will be addressed via the development of appropriate plans for consultation with TSTT, in accordance with the Authority's consultation procedures.
- ix. Audio Text Service (848, 874): Based on information submitted to the Authority, these codes are being used for international inbound audio text services by TSTT. There have been cases in the region of service providers who 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 billing, to ensure that consumers are protected from predatory services. The Authority may exercise the right to not assign a CO Code to this service.

- x. Wholesale International Toll Free Service (938): This service facilitates customers, for example, a local airline or bank, who want their customers to reach them toll free from overseas. The overseas carrier 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 findings may consider a block of NXXs (possibly the same) be allocated for such wholesale international toll free services.

At this time, TSTT has indicated that it still wishes to utilise the aforementioned codes, although 888 – its Companion Card Service – has been discontinued.

## **7 Guidelines for the Assignment of CO Codes**

The guidelines followed by the Authority for the administration of Central Office Codes (COCs), are based on those developed by industry consensus under the aegis of the Industry Numbering Committee (INC). To ensure that the regulatory requirements and unique circumstances of Trinidad and Tobago are considered, the Authority has reviewed, modified and/or adopted INC guidelines, associated with NANP numbering resources. The INC guidelines are regularly amended and the Authority shall ensure that its guidelines maintain consistency, where applicable, with the latest version of the *Central Office Code (NXX) Assignment Guidelines (COCAG)* (ATIS 2015).

## 8 Considerations: HNI Assignments

### 8.1 International Mobile Subscriber Identifier (IMSI)

The administration of HNIs by the Authority is derived from the administration guidelines of IMSIs, as described below.

The IMSI format and function are based on ITU-T Recommendation E.212. (2016). 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 to 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, that is retrieving, providing, changing, and updating subscription data for a specific mobile user.

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

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

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

The three digit 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).

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 Number for their assigned MNC.

The visited network will use the 374-MNC combinations to identify the home network of the visiting mobile station from Trinidad and Tobago. The assignment process for HNIs in Trinidad and Tobago can be found on the Authority's website ([www.tatt.org.tt](http://www.tatt.org.tt)).

## **8.2 Guidelines for the Assignment of HNIs**

An authorised service provider of public domestic mobile telecommunications networks desirous of offering international roaming capabilities will require a Home Network Identity (HNI). The HNI forms part of the International Mobile Subscriber Identity (IMSI) which is used to uniquely identify a subscriber's cellular mobile handset. The Authority participates in the management of all segments of the IMSI, but directly administers only the Home Network Identity (HNI) segment. The assignment guidelines and procedures therefore pertain only to the assignment of the HNI segment of the IMSI and are based on the IMSI Oversight Committee's International Mobile Subscriber Identity (IMSI) Assignment and Management Guidelines and Procedures 2014) ([ATIS](#)). The Authority shall amend the guidelines for applying for an HNI in Trinidad and Tobago as required. These guidelines can be found on the Authority's website (<https://tatt.org.tt>). Concessionaires requiring an HNI shall complete the HNI application form (HNI-01) in accordance with the guidelines and submit to the Authority for processing.

## References

Alliance for Telecommunications Industry Solutions (ATIS). 2001. Recommended Plan for expanding the capacity of the North American Numbering Plan: ATIS-0300071

------. 2014. International Mobile Subscriber Identity (IMSI) Assignment and Management Guidelines and Procedures. Accessed December 02, 016.

[https://www.atis.org/01\\_committ\\_forums/IOC/Docs/IMSI-Guidelines-v15.pdf](https://www.atis.org/01_committ_forums/IOC/Docs/IMSI-Guidelines-v15.pdf).

------. 2014. Number Resource Utilisation Forum.

------. 2015. Central Office Code (NXX) Assignment Guidelines (COCAG).

International Telecommunications Union: Standardisation Sector (ITU\_T). 2015. E.164: The international public telecommunication numbering plan. Accessed December 02, 016.

<https://www.itu.int/rec/T-REC-E.164/en>.

------. 2015. E.164: E.212 : The international identification plan for public networks and subscriptions. Accessed December 02, 016.

<https://www.itu.int/rec/T-REC-E.212-201609-P/en>.

TATT.2010. Procedures for Consultation in the Telecommunications and Broadcasting Sectors of Trinidad and Tobago. Accessed December 02, 2016.

<https://tatt.org.tt/Portals/0/documents/Procedures%20for%20Consultation%20in%20the%20Telecommunication%20and%20Broadcasting%20Sectors.pdf>

TATT.2011. Draft Telecommunications (Numbering) Regulations. Accessed December 02, 2016.

<https://tatt.org.tt/Portals/0/Numbering%20Regs.pdf>

\_\_\_\_\_.2016. Quarterly Market Update-Q.2. Accessed December 02, 2016.

[https://tatt.org.tt/DesktopModules/Bring2mind/DMX/Download.aspx?Command=Core\\_Download&EntryId=855&PortalId=0&TabId=222](https://tatt.org.tt/DesktopModules/Bring2mind/DMX/Download.aspx?Command=Core_Download&EntryId=855&PortalId=0&TabId=222)

## Annex I – Decisions on Recommendations Matrix for First Consultation Round

The following summarises stakeholder comments and recommendations received from stakeholders to the *Consultative Document on the National Numbering Plan: Central Office (CO) Codes and Home Network Identifier (HNI) (First Round)* and the decisions made by the Telecommunications Authority of Trinidad and Tobago have been incorporated in the second consultative version, January 2017, where applicable.

Section	Stakeholder	Comments	Recommendations	TATT's Decision
Introductory comments	CCTL	CCTL welcomes the opportunity to provide input to this consultation process. The views expressed herein are not exhaustive. Failure to address any issue in our response, does not in any way indicate acceptance, agreement or relinquishing of Flow's rights.		Noted. The Authority shall consult on this document in accordance with its established consultation procedure
General	TSTT	TSTT, is pleased to respond to the Authority's consultation on yet another interpretation of its <i>Draft Revised National Numbering Plan: Central Office (CO) Codes and Home Network Identifier (HNI)</i> . TSTT expressly states that failure to address any particular issue does not necessarily signify its agreement in whole or in part with the Authority's position. TSTT reserves the right to comment on these matters at a later date.		Noted. The Authority shall consult on this document in accordance with its established consultation procedure

Section	Stakeholder	Comments	Recommendations	TATT's Decision
Executive Summary	TSTT	<p>TSTT notes that, as in the 2011 document, the Authority is proposing to treat with the following matters in "future Plans":</p> <ul style="list-style-type: none"> <li>• Carrier Identification Codes</li> <li>• International Signalling Point Codes.</li> </ul> <p>On review of the Authority's Table of Consultation and its Schedule undertaken of Consultation for 2015, TSTT notes that there has been no consultation on these matters, and that further, there is no consultation on these matters scheduled.</p> <p>Since its acquiring a concession in 2005, TSTT utilised CIC's and ISPC's based on established international practice. Given that the period of concession renewal is nigh, TSTT as a holder of an International Network Concession, would like clarity on:</p> <ul style="list-style-type: none"> <li>(i) the scope of the considerations to be discussed in the proposed "future plans"; and</li> <li>(ii) how the Authority seeks to treat with these issues going</li> </ul>	<p>the Authority should clarify:</p> <ul style="list-style-type: none"> <li>(i) the scope of its proposed interventions in these areas, and</li> <li>(ii) the schedule in which these consultations are intended to be.</li> </ul>	<p>The Authority stated in its document that it will consult on these topics in separate consultations.</p> <p>Carrier Identification Codes are not considered a priority at this time as the sole operator who requested Indirect Access (as far as the Authority is aware) has ceased operating in T&amp;T.</p> <p>International Signaling Point codes are assigned by the ITU and administered by the Authority. There are currently no issues requiring resolution at this time.</p> <p>The Authority has modified the wording in the document on this issue.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
Section 4 Pg 12	TSTT	<p>TSTT notes the Authority's statement that pg 12. <i>"... historically, the Central Office (CO) Code assigned to fixed line networks in Trinidad and Tobago usually identified a rate area within the incumbent's fixed line network. However, with the advent of modern technology deployed by new fixed line operators, this situation has changed somewhat. Today, fixed line CO codes may not be confined to any specific rate area within Trinidad and Tobago, particularly with recent network deployments."</i></p> <p>TSTT believes that the Authority's own culpability to the retention of the rating areas distinction in our own situation should be reflected in this discourse. The Authority would recall that TSTT has before tried to eliminate these distinctions so as to better compete in the fixed arena, efforts which have been met with some frustration due to intervention of the Authority.</p> <p>TSTT does note that of late, the Authority has not been as resistant to TSTT's efforts to eliminate the linking of rating areas and CO Codes.</p>		<p>The Authority wishes to clarify that the issue of a single national rate was not so much the elimination of rate areas, but as to the actual price point of the proposed national rate. The Authority notes however that TSTT has begun to implement rate adjustments and has advised the public.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
Section 4 Pg 12	TSTT	<p>TSTT notes the Authority's statement that pg 12. <i>"... historically, the Central Office (CO) Code assigned to fixed line networks in Trinidad and Tobago usually identified a rate area within the incumbent's fixed line network. However, with the advent of modern technology deployed by new fixed line operators, this situation has changed somewhat. Today, fixed line CO codes may not be confined to any specific rate area within Trinidad and Tobago, particularly with recent network deployments."</i></p> <p>TSTT believes that the Authority's own culpability to the retention of the rating areas distinction in our own situation should be reflected in this discourse. The Authority would recall that TSTT has before tried to eliminate these distinctions so as to better compete in the fixed arena, efforts which have been met with some frustration due to intervention of the Authority.</p> <p>TSTT does note that of late, the Authority has not been as resistant to TSTT's efforts to eliminate the linking of rating areas and CO Codes.</p>		<p>The Authority wishes to clarify that the issue of a single national rate was not so much the elimination of rate areas, but as to the actual price point of the proposed national rate. The Authority notes however that TSTT has begun to implement rate adjustments and has advised the public.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
Section 4.3	TSTT	<p>TSTT notes the following statement:  "Currently, 868-NXX-XXXX defines the range of numbers available to Trinidad &amp; Tobago, where NXX can fall within 200-999, and XXXX can fall within 0000-9999."  This statement seems to suggest that the Authority does not have the discretion to change the Area Code utilised by parties in Trinidad and Tobago. However, TSTT also notes that in its recent consultation to treat with Toll Free Services in Trinidad and Tobago, The Authority proposed to use an Area Code of 800 in Trinidad and Tobago. TSTT commented in that consultation on the legitimacy of that proposal. While TSTT's comments at that time seem to be validated by the statement quoted above, it is essential that the Authority clarify the position of its legitimacy with regard to its proposal elsewhere to unilaterally adopt an Area Code of "800" in Trinidad and Tobago, where NANP has identified an Area Code of "868" to Trinidad and Tobago.</p> <p>TSTT further notes the following statement:  <i>"This provides almost 8 million (7,810,019)</i></p>	<p>The Authority needs to clarify whether it has legitimate Authority to assign an Area Code of "800" to Trinidad and Tobago, as proposed in a complementary consultative document.</p> <p>Given that the changes proposed may cause confusion</p>	<p>This comment is applicable to the Toll free document consultation and will be dealt with in that document.</p> <p>The Authority will review other documents to ensure consistency. Numbers are a finite resource and can be exhausted if not managed properly.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
		<p><i>numbers available for assignment. Though the supply of numbers is finite, the exhaustion of such a resource is not currently under threat. "</i></p> <p>Given this statement, that there is no threat of exhaustion of the numbering resource, the Authority needs to justify many of the statement in this and other consultation regarding apparent scarcity in the resource</p> <p>This paper is at best woefully deficient in several areas in that:</p> <p>a. It does NOT provide a cost benefit analysis of the proposed changes</p> <p>b. It does NOT clearly identify what is expected to be gained given that the exhaustion of the resource is not under threat.</p> <p>c. It does NOT clearly identify and/or assess the cost, across the market, to execute these changes.</p> <p>d. It is NOT in line with international best practice which demonstrates that it is incumbent that responsible sector regulators undertake such studies to validate that their interventions do not</p>	<p>to the public, negatively impact customer churn, and result in man-hours on the part of operators to make these adjustments, since there is limited threat of exhaustion of the resource, the Authority should consider whether these proposals are of such merit to incur such costs.</p> <p>The Authority should present a cost benefit analysis of the impact of these changes, and</p>	<p>The Authority replies as follows: Only minor changes have been made. These will not affect the industry. As such it will not be necessary to conduct a cost benefit analysis.</p> <p>Table 5 states the quantum of numbers assigned to the various services.</p> <p>a. The Authority opines that the assignment of CO codes to various services is in itself a key objective of the document and is useful for all operators and the general public.</p> <p>b. The capacity of the general stock of numbers has not been expanded. What has been changed is the size of the blocks assigned to the various services, based on experience gained and expected market demand.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
		<p>have a net negative impact on the sector. Without undertaking such analysis, and without demonstrating to the market that there is a net positive impact of these changes, these proposals should be deferred, if not scrapped.</p> <p>e. It does NOT compare the current available capacity with how much additional capacity is being created. To this end, the Authority should have used its Table 5 to show a before and after capacity analysis.</p>	<p>demonstrate a net positive impact on the market. The methodology of that analysis should be shared with the market to ensure that the proposed assessment is balanced.</p> <p>If the analysis demonstrated a net negative or neutral effect, the proposed adjustment in CO Code plan should be abandoned as the resource is not at risk of exhaustion, as declared by TATT.</p> <p>The Authority should clearly show how much additional capacity is being created based on its</p>	

Section	Stakeholder	Comments	Recommendations	TATT's Decision
			proposed course of action.	
Section 4.4	TSTT	<p>TSTT notes that reference to Vertical Service Codes have been removed from the document. The Authority should clarify whether it is proposing to exclude such Codes from its administration, or whether whatever pertained in the 2011 document is expected to be maintained going forward.</p> <p>TSTT reminds the Authority of the significant detail that was provided in Tables 3 and 4 of the 2011 version of this document with respect to VSC's. The Authority argued previously that it was deemed important to have a common suite of VSC's across operators to reduce customer confusion. The Authority has not dismissed this prior concern in its discourse in the revised document. As such, the Authority's policy on this matter has become unclear.</p> <p>The Authority should clarify whether there will be absolutely no definition of standardised VSC's in the marketplace, or whether some key VSC's will be maintained</p>	The Authority to clarify whether Vertical Service Codes are being exempted from its oversight.	<p>The Authority shall maintain oversight on the Vertical Service Codes (VSCs) used by the operators. It is recognized that standardization is key to avoid confusion by users as they switch from network to network. The NANP has a recommended list of VSCs which has not been followed faithfully by operators in T&amp;T. As far as the Authority is aware this issue has not caused any customer confusion and the Authority has not received any complaints concerning same. As such, it was not deemed to be of a critical nature. Operators are referred to the VSCs recommended by the NANPA and adherence to same is recommended as far as technically possible.</p> <p>The Authority will adhere as far as possible, to the definitions used by the NANPA. The document has been modified accordingly.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
Section 4.5	TSTT	<p>TSTT notes that reference to the following have been removed from the document:</p> <ul style="list-style-type: none"> <li>• Local ANSI SS7 Point Codes.</li> <li>• System Identifier (SID) numbers.</li> <li>• Data Network Identification Codes (DNICs).</li> </ul> <p>The Authority should clarify whether it is proposing to exclude such Codes from its administration, or whether whatever pertained in the 2011 document is expected to be maintained going forward.</p>	<p>The Authority to clarify whether Vertical Service Codes are being exempted from its oversight altogether.</p>	<p>With regard to local ANSI SS7 point codes, the Authority notes that operators have purchased such codes as necessary from the North American administrator. It seems that local operators are satisfied with the current arrangement. If operators would prefer the Authority to undertake such administration, the Authority would welcome suggestions.</p> <p>Given that CDMA technology has not been made available on the local market the Authority will not manage SID numbers at this time.</p> <p>Data Network Identification codes are applicable to Frame Relay and ATM networks which are being or have been migrated to IP/MPLS networks. Given the above, the administration of these Codes will remain status quo.</p>
5.0 Modification of Document	CCTL	<p>The Section commences with a comment that the document has been modified to update the numbering resources for to the authorized service providers in Trinidad and Tobago. The consultation process could be improved if the</p>	<p>Where a published document is being revised or updated, the Authority should give a list of the</p>	<p>Noted. The Authority has now provided a summary of changes in Section 6 of the document.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
		Authority provided stakeholders with a list of the specific changes made to the document.	specific changes made to the document.	
6.0 Consultation Process	CCTL	Given the technical nature of the subject and the issues involved, we believe the decision making process could be improved by first discussing the issues with the operators to get the benefit of operators' input and explore the possible solutions. The output from these meetings would provide a more informed basis for the proposed changes. The initial draft with input from operators could then be subject to wider public consultation.	We recommend the TATT meet with network service providers and solicit their input to inform the initial draft document. This draft could then be subject to wider public consultation	The Authority is mandated by the Act to produce a National Numbering Plan. The Authority also shall abide by its own consultation process in effect at this time.
8.0 Considerations CO Code Allocation and Assignment	CCTL	We reiterate here the points made in the Section above on Consultation Process. Issues related to toll free numbers is already the subject of separate consultation process. To ensure clarity, consistency and efficiency of the decision making process CCTL believes that issues related to toll free numbers should be addressed in a single process.	We recommend the TATT meet with network service providers and solicit their input to inform the initial draft document. This draft could then be subject to wider public consultation.	See comment above. The Authority opines that meeting with the operators at this stage of the consultation will not necessarily be more efficient. Toll free numbers are being addressed in a separate consultation.

Section	Stakeholder	Comments	Recommendations	TATT's Decision
			Issues related to toll free numbers should be addressed in a single process.	
Section 8.1 Part a	Digicel	<p>The Authority identifies CO codes which are currently being used for mobile services by TSTT (620, 678, 680-689), but which are to be “gradually retired” and transitioned to fixed services. The Authority gives itself the absolute discretion to decide when this is to be undertaken. In the almost ten years which have elapsed since liberalisation, it is unclear whether the Authority has taken any steps to “gradually retire” these numbers.</p> <p>At this time, the Authority is working with the operators to facilitate the implementation of number portability. It is submitted that, should the Authority decide to retire these codes after the implementation of number portability when some or all of these numbers have ported, the impact to the affected consumers as well as the beneficiary network would be significant. The resulting situation, which would have been attributed solely to the Authority’s failure to act, will be manifestly unfair to both parties.</p>	<p>The Authority should issue a detailed statement regarding the status of its efforts to reclaim these codes for fixed services. If the Authority has not yet taken any action on this front, it should issue a statement setting out the justification for its inactivity/delay in acting.</p> <p>The Authority should ensure that these exercises are completed as soon as possible and in any event prior to the</p>	<p>Noted. The Authority is of the view that, given the previous Numbering Plan, the substantive code holder of the identified CO codes would have taken steps to ensure that once numbers in these codes were taken out of service either by termination by the user or operator, death of the user, or otherwise, then they would not be reassigned to any new mobile customers. In a situation where these codes have been ported as mobile numbers, when the service has been terminated and the numbers returned to the substantive block holder, they should not be reassigned as mobile numbers after the aging period. In this way, the codes would have been slowly decommissioned from mobile use without any customer discomfort.</p> <p>The Authority has not made a final decision on how to migrate numbers used</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
		<p>We recognize that consumers would be inconvenienced at the first instance when asked to port with their number. However, the situation would only be exacerbated if these customers are induced to port so as to keep their number, and then subsequently are asked to surrender same. Such a situation may also potentially have a commercial impact on the beneficiary network which will be seen as culpable by consumers.</p>	<p>implementation of mobile number portability. If the Authority fails do so, it should formally reclassify these numbers for mobile use.</p>	<p>for mobile services. Numbers in use must still be ported.</p>
<p>Section 8.1 Part a</p>	<p>Digicel</p>	<p>The migration from 6411 to 411 should be carefully managed to as to minimize the impact to consumers</p>	<p>The Authority should embark on a public education campaign on the switch to 411 at its own expense, so that operators and consumers are not unduly prejudiced by the actions of the Authority.</p>	<p>Noted. The Authority is mindful of its obligations to both the operators and the users. No decision has been taken as to when this will be done.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
Section 8.1	TSTT	TSTT notes that these considerations for CO code migration were also outlined in the 2011 Co Code Plan, however the Authority has taken limited steps to rationalise these matters. In any instance, TSTT would like to highlight concerns with the proposals (a) through (j).		
Section 8.1(a)	TSTT	<p>The Authority has given no rationale for the need to move the CO Codes identified. These numbers have been in the market for over 20 years, and there has been no instance of customer confusion. Such changes would have limited positive market impact but result in significant man hours within TSTT to modify databases, billing records etc. to facilitate. A cost-benefit assessment of this change is recommended.</p> <p>TSTT is of the firm view that this kind of gradual change may take years, and may never be realized, meaning that the Authority may never reach its objectives. In this regard, the Authority needs to clarify the following:</p> <ul style="list-style-type: none"> <li>i. The mechanisms that would put in place if customers are determined to retain their allocated number.</li> <li>ii. In such situations as in i. above, would the</li> </ul>	<p>The Authority should identify a cogent rationale for this change, otherwise it should be abandoned</p> <p>The Authority needs to clearly articulate the mechanism it intends to put in place where customers are determined to retain their number.</p>	No decision has been taken as to when this will be done.

Section	Stakeholder	Comments	Recommendations	TATT's Decision
		<p>Authority seek to force a change, and if so, in what timescale.</p> <p>iii. If a customer ports his/her number in this range, will the Authority allow the port or force a number change? -which in itself is against the philosophy of Number Portability</p>		
Section 8.1(b)	TSTT	It is TSTT's understanding that all major operators interconnecting with TSTT utilise 6411 for Directory Services. Other than "conformance to NANP" the Authority has not provided a cogent technical reason for this proposed migration which will have an impact on a variety of retail and wholesale services.	The Authority should identify a cogent technical rationale for this change, otherwise it should be abandoned.	No decision has been taken to proceed with this migration.
Section 8.1(d) and others	TSTT	While TSTT endorses a comprehensive exercise to rationalise the use of the 8XX and 9XX CO codes, it is our belief that the approach proposed in (d), (e), (f), (h) and (i), seems piecemeal. It is recommended that going forward the Authority first undertake comprehensive consultation with stakeholders to facilitate the rationalisation of the	The Authority should withdraw proposed modifications pursuant to more robust, holistic consultation with	Noted. The Authority is consulting on this document consistent with the agreed consultation procedures. The information presented in the document was specifically targeted and written in such a way that meaningful comment could have been provided by TSTT. TSTT has

Section	Stakeholder	Comments	Recommendations	TATT's Decision
		<p>assignment of 8XX and 9XX CO codes.</p> <p>Further, these proposals seem at odds with the Authority's earlier its consultation on Toll Free Services. It is advisable that the Authority's Numbering Plans are reviewed for internal consistency, taking into consideration the views of operators during the consultation on the Plan for Toll Free Services, so that there is coherence between the Plans proposed.</p>	<p>stakeholders and the best reallocation/reassignment of resources in the 8XX and 9XX CO codes.</p> <p>The Authority should ensure that its Numbering Plans present a coherent, consistent approach to managing the numbering resource.</p>	<p>responded by basically saying that the proposals should be withdrawn without providing any meaningful alternative recommendation, which in fact was invited. The Authority opines that such a response does not provide a framework for moving forward and would prefer that TSTT provide alternative suggestions so that fruitful discussions can be held.</p>
Section 9.1	TSTT	<p>TSTT opines that the proposals explicitly fails the very first of its "Guiding Principles for Numbering Scheme", and this is detailed in our careful and critical analysis of Section 9.2</p> <p>Additionally, as earlier stated in our comments on Section 8. 1 (a), TSTT reiterates its viewpoint that the Authority's goal in this matter may never be achieved, nor does it conclusively prove (or even demonstrate) how it is achieved in this document.</p>	<p>The Authority needs to redefine its "Guiding Principles for Numbering Scheme" in order to make them more credible and achievable.</p>	<p>The Authority disagrees with TSTT's recommendation. The proposed Numbering Scheme does afford all operators access to all numbering resources in their respective categories and care was taken to have sufficient numbers for the anticipated demand.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
Section 9.2	TSTT	<p>TSTT raises objection to the proposed numbering scheme as on review of the proposals, the only parties who stand to be materially impacted by the proposals would be TSTT's bmobile product and its customers.</p> <p>The Authority's strategy seems to studiously seek to maintain the numbering allocation of Columbus' Fixed Services and Digicel's Mobile Service. TSTT must inquire as to why such due care is not afforded TSTT's fixed and mobile customers.</p> <p>As examples, there seems to be no attempt to aggregate all fixed and mobile number ranges into a continuous blocks. On review:</p> <ul style="list-style-type: none"> <li>(i) there are two distinct blocks assigned for fixed (wired/wireless) services from 201-259 and 601-699. Why could these not be aggregated into a single contiguous range from 201 to 399?</li> <li>(ii) there are two distinct blocks assigned for mobile services from 260-499 and 701-799. Why could these not be aggregated into a single contiguous range from 601 - 799?</li> </ul>	<p>The Authority should discontinue the proposals to demand such drastic changes to the allocation of numbers to subscribers for, as they stand, they seem unduly prejudicial against TSTT which is counter to the Authority's mandate to be non-discriminatory.</p> <p>If the Authority insists upon this course of action, there should be continuous blocks for fixed and mobile numbers.</p> <p>Any burden of</p>	<p>Noted. However, the Authority has clarified in a previous comment that there will be no forced migration of bmobile customers from the 6XX range. Hence no unduly prejudicial action can be ascribed to the Authority. It is hoped that this course of action will satisfy TSTT's concern on this matter.</p> <p>The Authority sought not to change but to grandfather the older existing ranges that had previously been assigned. The new ranges that were assigned were those that were available then.</p> <p>With regard to fixed services, the Authority opines that given the historical circumstances and the current situation with relatively small operators, that the fixed number block allocation is a better fit.</p> <p>With regard to mobile services, The Authority opines that due to historical circumstances and the current situation, that the current block allocation is a good fit.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
		<p>The proposed plan remains disjointed with the absence of contiguous blocks, and as a result, offers no improvement in the customer understanding of the numbers.</p> <p>Instead the proposed ranges negatively impact only one carrier, TSTT. Given that the disruption associated with reassigning numbers for subscribers, the commercial risk associated with such disruption (which may increase churn) should be shared equally among operators, so there is no appearance of undue bias or favoritism in sector policy development.</p> <p>At this juncture, with competing service providers in the fixed and mobile markets for ten years, it is no longer sufficient to claim TSTT is "the incumbent", as all operators with significant subscriber bases are at this time incumbents. TSTT sees this proposal as a cloaked attack on its commercial operations specifically in both the fixed and mobile markets. TSTT further questions the relevance of these proposals in the context of the expected implementation of number portability.</p> <p>TSTT expresses the view that the changes are complex from a customer perspective and will be</p>	<p>customer migration should be shared equitably between all incumbent operators</p> <p>The existing plan should be scrapped as it unduly burdens TSTT to the exclusion of all parties in the implementation of this revised CO Code Plan, and can be construed as unbalanced and unfair.</p> <p>All incumbents should be equally impacted by these</p>	<p>NANPA's exhaust prediction is as a result of inputs for all regions that fall within the NANP. The Authority still has a responsibility to ensure that numbers are used in a responsible and efficient manner and as far as possible within the guidelines of the NANP.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
		<p>difficult to communicate, with a resulting high risk of customer confusion, and associated costs and call failures</p> <p>Further, given the earlier statements that there is no fear of exhaustion of the number resource, the need for this disruption to the customer is not evident.</p> <p>The Authority has attempted to give the impression that its management of the numbering resource has an effect on the number resource management of the NANPA region as a whole (section 8.2 refers) and thereby tried to deflect responsibility away from itself. However, that is not the case. Number exhaustion in T&amp;T would not affect the overall number exhaustion predictions put out by NANPA, which in themselves predict no exhaustion until 2044.</p> <p>Lastly, when re-designing a countries NNP the aim is to give a life span of 25-30 years, the NANPA already meets that criteria.</p>	<p>changes. If these changes affect one party overly much, this plan should be abandoned as imbalanced and unfair, given the negative impact on consumers.</p> <p>The Authority needs to define the number exhaustion timeline predicted for T &amp;T as part of the cost</p>	

Section	Stakeholder	Comments	Recommendations	TATT's Decision
			benefit study already requested by TSTT.	
Section 9.2.2	Digicel	Can the Authority please direct us to where we can find more details on the proposed use of "611"? Is this meant to be mandatory?	Details on the proposed use of "611" should be provided to operators	The recommended use of N11 codes can be found on <a href="http://www.nanpa.com/number_resource_info/n11_codes.html">http://www.nanpa.com/number_resource_info/n11_codes.html</a> .
Section 10.1	Digicel	<p>The Authority talks at length about numbering fees but conveniently neglects to state that the net effect of these fees in an environment that number portability exists in, is that operators are paying for numbers that no longer reside on its network.</p> <p>The Authority also fails to mention that these very resources which are being paid for by operators are being hijacked by number based OTT services, who currently enjoy all of the benefits of being an operator without bearing any</p>	The charging of numbering fees should be aborted as it is unfair to operators	The Authority notes that the operators have chosen to assign new numbering administrative duties to the Authority with regard to Clearinghouse payment for Number Portability. At this point in time the current numbering fee is relatively small. The Authority is reviewing the fee structure to determine whether the current minimal numbering fees adequately recover a reasonable percentage of the costs associated with the administration of

Section	Stakeholder	Comments	Recommendations	TATT's Decision
		<p>of the responsibilities and obligations of same. The Authority, thus far, has stood by and allowed this to take place, and as such has tacitly consented to the appropriation of this resource by OTT operators.</p> <p>In light of the foregoing, why should operators continue to pay numbering fees when they are either not using the numbers in question, or no longer have the exclusive right to use same?</p> <p>The Authority is legally obligated to act reasonably, and must ensure that the benefits of any course of action it undertakes, outweigh the costs, particularly when imposing fees on concessionaires.</p> <p>It is our submission that numbering fees are not only archaic, but are oppressive and unfair to operators who already pay disproportionately high fees (such as for spectrum as well as concession fees).</p>		<p>numbers.</p> <p>The issue of numbers being utilized by number based OTT services will be addressed in the OTT document consultation process.</p> <p>The issue of Numbering fees for ported numbers is being addressed at the NP sub-committee level.</p>
Section 10.1	TSTT	<p>TSTT has raised the issue of the propriety of the existing approach to administering Numbering Fees given the proposed advent of number portability.</p> <p>Number portability (NP) raises questions of cost</p>	<p>The Authority should clarify how the administration of numbering fees will work in the context</p>	<p>These questions raised have been adequately addressed by the Number Portability committees comprising operators and the Authority.</p> <p>The Authority has done some</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
		<p>causality in the existing Numbering Fees framework. Some of these questions/ issues include:</p> <p>(i) in the context of NP, which party should be responsible for paying the fees for a ported number, the donor operator (DO) or the recipient operator (RO)? Once a number is ported, the RO is the party that receives material benefit from the continued use of the number. The RO does not reimburse the DO for the use of the number, however, the DO would be responsible for paying the fees for that number so that it can continue to be used. In this scenario, the DO is incurring a cost for which it does not benefit. This materially breaches the principle of cost causality cited in the Fees Methodology as a justification for a Numbering Fee. The Authority must adjust the framework so that the party that benefits from the use of the number (i.e. the RO) must pay for the continued authorisation of that</p>	<p>of ported numbers.</p> <p>(i) which operator will be responsible for remitting fees for ported numbers (DO or RO)?</p> <p>(ii) will fees for ported numbers be an inter-carrier (reimbursement) charge or otherwise? Under what regulatory framework will this be administered?</p> <p>(iii) At what</p>	<p>investigations in the NANP with regard to porting of numbers and assignment of CO codes to operators. Information gleaned suggests that there has never been an example of operators having to transfer the assignment of a CO code due to Number Portability. Even if such an action is contemplated, it is fraught with international administrative and routing issues, as overseas databases with ownership and routing information of CO codes will have to be updated. The very real possibility of lost calls will be a carrier and customer nightmare in such a scenario. Hence the Authority opines that such a course of action as operators transferring CO codes due to large porting out of numbers not be contemplated. The Authority will not consider the assignment of 1000 block codes to operators. This course of action was done in the US to conserve numbers at a critical juncture. It is not relevant to our current scenario and therefore unnecessary.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
		<p>number.</p> <p>(i) The Authority must determine, in treating with the issue in (i) above, whether the RO would pay the fees for ported numbers directly to TATT or, alternatively, reimburse the DO for numbers ported. In the latter instance, there is the concern associated with whether this should be covered in the Interconnection Agreement of the operators, or should be treated with distinctly. In either instance, there has to be clarity of inter-carrier settlement in the instances where a ported number reverts to the DO, or whether a port is reversed or blocked due to non-settlement of outstanding charges.</p> <p>(i) Given the issue raised in (i) above, TSTT in a previous consultation, raised the question of the continued wisdom of allocating numbers in 10,000 number blocks. It was proposed that there also be the option to purchase numbers in smaller blocks (e.g. 1,000) so that there would be better</p>	<p>junction will TATT consider an entire CO code has been ported, and who will be responsible for administrativ e oversight of such ported CO code? (iv) Will T ATT consider adjusting its assignment framework to facilitate the assignment of smaller ranges of numbers (e.g. 1,000</p>	<p>The Authority disagrees with this suggestion. The issues relating to NP have been resolved at the committees specifically established for the implementation of NP.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
		<p>administration and tracking of the cost causality concern raised in (i) above. the Authority should state when a CO code is deemed ported as opposed to a subset of a CO Code.</p> <p>The NP implementation must be put on hold whilst these NNP issues are being resolved. The launch of NP prior to any regulatory imposed number changes would add another level of complication and cost to the number change project for operators. It would also exacerbate the level of customer confusion leading to a poor customer experience. Customers would not understand the message being given out to the effect -change operator without changing your number, but oh by the way you have to change your number.</p> <p>These issues are but some of the issues that are not addressed in this section, and these issues are critical for the administration of the numbering resource upon implementation of number portability. Indeed, there are considerable issues relating to NP which are not addressed in this CO Code Plan.</p>	<p>numbers blocks) to facilitate easier administration of numbering fees with respect to NP?</p>	

Section	Stakeholder	Comments	Recommendations	TATT's Decision
			<p>The NP implementation must be put on hold whilst these NNP issues are being resolved. The launch of NP prior to any regulatory imposed number changes would add another level of complication and cost to the number change project for operators.</p>	

Section	Stakeholder	Comments	Recommendations	TATT's Decision
Section 10.2	Digicel	If the Authority is mandating that numbers cannot be recycled unless 6 months have elapsed from termination, then the Authority needs to make the relevant adjustments to its process for applying for new CO codes.	<p>The Authority's process for the application for new CO codes should reflect the realities associated with recycling numbers in no less than 6 months; i.e.</p> <ol style="list-style-type: none"> <li>1. The Authority should become more efficient when processing applications i.e. shorter processing times</li> <li>2. Lower utilisation thresholds should be considered</li> </ol>	<p>The recycle policy is to protect users from receiving calls to a previous user of their telephone number.</p> <p>Operators may have to review their current assignment policies where mobile numbers are assigned but not activated for months. The CO code application procedure now asks for Active numbers rather than Assigned numbers to improve the efficiency of telephone number utilization. The Authority has reworded the recycle time period for mobile services.</p> <p>The Utilisation thresholds used by the Authority are in line with that used by NANPA. The fixed line threshold is slightly higher due to the current low growth of fixed line installations in Trinidad and Tobago.</p> <p>The Authority shall be pro-active in the timely assignment of CO codes but notes to some extent that this depends on operators supplying the requested information and answers to queries in a timely manner.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
Section 12.2	Digicel	<p>It is unclear what the reason and benefit is for the Authority assigning LRN's to operators.</p> <p>It is also unclear why the Authority is dictating the form the LRN takes.</p>	<p>Operators should have the sole discretion to select an LRN as it falls within the codes already assigned to operators.</p> <p>Further, the LRN should be any 10 digit number within the operator's assigned range and not limited to the 868-NXX-0000 format being prescribed.</p>	<p>The Authority disagrees. The Authority took the initiative to streamline the LRN format and enable the LRN to be easily identifiable. The Authority has the legal remit to make such decisions and exercise its prerogative. As it stands, the Authority's decision as to the format of the LRN in a predominantly NANP/ANSI network has been acknowledged as the best practice by an internationally recognized NP consultant.</p> <p>It must be pointed out that the LRN format was determined in collaboration with NP committees of which all operators were a part and there was consensus.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
Section 13.1	TSTT	<p>The last paragraph of this section seems out of place.</p> <p>The Authority would need to clarify whether this paragraph is related. to the issue discussed in Section 13.2</p>	<p>Clarify whether the last paragraph in Section 13.1 is associated with the issues discussed in Section 13.2.</p> <p>Otherwise, this paragraph should be deleted.</p>	<p>The Authority disagrees. This section is intended to provide some context to readers from the public who may not have knowledge in this area.</p>
Conclusion	TSTT	<p>TSTT thanks the Authority for the opportunity to participate in the consultation document provided. TSTT has reviewed the consultation and offered comments and recommendations on those prime areas of concern. This does not indicate TSTT is in general agreement with those areas to which TSTT did not provide any comments.</p> <p>While it is expected that the Authority will from time to time review the various policy frameworks that aid in the regulation of the industry, it is expected that this will be done in a structured way after careful analysis, and taking into consideration all players in the industry in an equitable manner.</p>		<p>Noted. The Authority thanks TSTT for its comments. .</p> <p>The Authority shall consult on this document in accordance with its established consultation procedure.</p> <p>Notwithstanding, the Authority wishes to remind operators that the overall objective of the revised numbering plan is to ensure that Numbering resources are effectively and efficiently administered for the benefit of all stakeholders.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
		<p>This document is deficient in several areas, first of which is the lack of any proper cost-benefit analysis relative to the impact of the proposed changes. It does not clearly identify the overall positives to be derived from this course of action, and in some instances, places TSTT at a decided disadvantage.</p> <p>Some of the proposals therein, if not properly checked, can lead to confusion among our customers, which has the potential to translate itself into customer churn.</p> <p>Finally, the impact of this document does not sufficiently address the Authority's ongoing thrust relative to Number Portability, and has the potential to derail advances in this area, if not the entire effort.</p> <p>TSTT explicitly reserves the right to comment at a subsequent stage once the Authority had an opportunity to review our comments and revise its document.</p>		

## Annex II – Decisions on Recommendations Matrix for Second Consultation Round

The following summarises stakeholder comments and recommendations received from stakeholders to the *Consultative Document on the National Numbering Plan: Central Office (CO) Codes and Home Network Identifier (HNI) (Second Round)* and the decisions made by the Telecommunications Authority of Trinidad and Tobago have been incorporated in the final approved version, August 2017, where applicable.

Section	Stakeholder	Comments	Recommendations	TATT's Decision
Introductory comments	CCTL	CCTL welcomes the opportunity to provide input to this consultation process. The views expressed herein are not exhaustive. Failure to address any issue in our response, does not in any way indicate acceptance, agreement or relinquishing of CCTL's rights.		The Authority expresses its gratitude for the responses received and welcomes the opportunity to engage with all the relevant stakeholders in regard to this Plan.
	TSTT	TSTT welcomes the opportunity to provide our views on the 2 <sup>nd</sup> round of consultation of the draft revision of the second approved version of the National Numbering Plan: Central Office (CO) Codes and Home Network Identifier (HNI). TSTT expressly states that failure to address any issue raised in this Consultation does not necessarily signify its agreement in whole or in part with any position taken on the matter by the Authority or any respondents. TSTT reserves the right to comment on any issue raised in this Consultation at a later date.		The Authority expresses its gratitude for the responses received and welcomes the opportunity to engage with all the relevant stakeholders in regard to this Plan.

Section	Stakeholder	Comments	Recommendations	TATT's Decision
Executive Summary	TSTT	<p>In the prior round of consultation, TSTT sought clarity on TATT's plans with respect to Carrier Identification Codes and International Signaling Point Codes. TATT in response has reworded the relevant section to refer to consultation on these matters "as the need arises"</p> <p>While on the face of it this seems reasonable, TSTT notes that TATT states in the Decision on Recommendations that Carrier Identification Codes "...are not considered a priority...as the sole operators who requested Indirect Access,,has ceased operating in T&amp;T." In this context, TSTT would like TATT to confirm that Indirect Access, and network preparation from same is effectively off the table for concessionaires at this time, so that our efforts, and limited resources, may be appropriately focused on more pressing network configuration issues which are on the agenda of TATT.</p> <p>However, if TATT were to argue that despite its statements in the DoRs that Indirect Access is a necessity today, TSTT would like to point out to TATT that network operators' ability to conform to such is limited without TATT's definition of Carrier Identification Codes. As such, TSTT</p>	<p>TATT to confirm that concessionaires are not required at this time to provide for Indirect Access.</p> <p>TATT to affirm that Indirect Access will not be required of concessionaires before prior consultation on the form, structure and application of Carrier Identification Codes to ensure that any process of regularization does not negatively</p>	<p>The Authority has required operators to be ready for Indirect Access from November 1, 2010, pursuant to the completion of public consultation, in September 2009, on its document entitled, "Framework for the Implementation of Indirect Access in Trinidad and Tobago."</p> <p>The approved document stated that the carrier identification codes shall conform to the NANP format as Trinidad and Tobago is a participating country of the NANP. As such, the form/format, structure and application of CICs is effectively already established, hence further consultation would not be necessary. Subsequently, the Authority's intention was to collaborate with all Operators in the assignment of CICs. However, this was not pursued as there was no request made for such numbers by any Operator.</p> <p>Nonetheless, the Authority is aware that there may still be interest in this service. The Authority affirms that Indirect Access is still required of Concessionaires.</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
		<p>would endorse TATT's affirmation that Indirect Access will not be required of concessionaires before prior consultation on the form, structure and application of Carrier Identification Codes to ensure that any process of regularization does not negatively impact one operator more than any other.</p>	<p>impact one operator more than any other.</p>	
<p>Section 4 page 12</p>	<p>TSTT</p>	<p>TSTT notes that TATT has not acted on our suggestion that TATT's own culpability in the retention of rating areas by only one operator in the market should be addressed in this section. Further, TSTT notes that TATT sought to make the case that it was not against the elimination of rate areas, but instead expressed concerns of the price point of the proposed national rate. While this may have some validation in the past, TSTT is constrained to remind TATT that as recently as October 2015, TATT has used its powers under S.29 of the Act to halt TSTT's process towards the definition of a single national rate. TSTT would also like to point out that in its action TATT has studiously ignored the reality that in this market TSTT faces competition from, at this time, two national competitors and a number of niche operators. In this regard, TATT</p>	<p>Despite its concern of the "price point" of the rationalized national rate, TATT should allow TSTT to continue this process, and let market forces determine the appropriateness of any "price point" in a sub market with vibrant competitive entrants. Otherwise, TATT can be charged with being an agent of undue market distortion.</p>	<p>The Authority wishes to advise that the reference to rating areas in this document serves only as a historical account of CO Code usage by fixed line networks. The Authority prefers to address the 2015 private "request for change in pricing" between TATT and TSTT within the appropriate forum, as it is not a matter for public consumption. The Numbering Plan sets out the administrative framework for numbering resources for the local telecommunications sector. The Authority has not mandated the pricing and/or retention of rating areas by any local operator. The issue TSTT has raised regarding the single national rate is not affected by the contents of this Numbering</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
		<p>has not allowed market forces to determine the natural allocation of customers, if such is deemed warranted due to an inappropriate “price point.”</p> <p>The effect of TATT’s action has been to stymie the move by TSTT to make its product competitive on the verge of number portability. This, along with other failings of TATT as the deadline to number portability approaches, seems to not reflect consideration of the commercial well-being of TSTT or the wider marketplace.</p>		Plan.
Section 4.3	TSTT	<p>TSTT notes that TATT remains unphased to pursue its reassignment of CO Codes without the undertaking of a Cost Benefit Analysis to ensure a net positive impact on the market.</p> <p>Amazingly, TATT argues in the DoRs that “...Only minor changes have been made that will not affect the industry. As such it will not be necessary to conduct a cost benefit analysis”</p> <p>How can seeking the reassignment of all bmobile customers with the CO Code 6XX ever be considered a “minor” change? Again, the actions of TATT in this regard, regardless of requests for basic due diligence to be undertaken reinforces TSTT’s concern about TATT’s apparent recklessness on this matter.</p>	<p>TSTT insists that given the nature of the changes and with the advent of Number Portability in the market in the near future:</p> <ol style="list-style-type: none"> <li>1) The changes proposed are not minor; and</li> <li>2) A Cost Benefit Analysis is an absolute</li> </ol>	<p>Please note that Section 8.1(a) has been revised, as follows, “<i>A suggested approach for this migration is the gradual retirement of the use of these numbers for Mobile Services when they become inactive. This activity will allow the gradual re-allocation of these number allocations to the Fixed Services category.</i>”</p> <p>The document has also been re-structured in order to separate the identification of the CO Code assignments that do not conform to the Numbering Scheme and the options for rectification.</p> <p>A CBA is not necessary for the</p>

Section	Stakeholder	Comments	Recommendations	TATT's Decision
			<p>requirement</p> <p>We therefore strongly suggest that any course of action which excludes a published CBA, may be considered to be inherently reckless behavior by TATT.</p>	<p>Authority's proposal, as the cost of implementation is zero dollars.</p> <p>It is noteworthy that the suggestion put forward in this Section for the retirement of mobile service CO codes in the fixed service allocation would not have caused any customer discomfort nor incurred any cost to operators, as it would only occur when those CO Codes became inactive, at the request of the customer. As outlined in the Plan, the Authority shall convene meetings separately with affected Operators, when it becomes necessary to effect such a migration.</p>
6. Consultation Process	CCTL	<p>In the previous round of this process CCTL recommended that based on the technical nature of the issues being addressed TATT should meet with network service providers and solicit their input to inform the initial draft document. TATT's response is that it shall abide by its own consultation process at this time.</p> <p>It is unclear what TATT means by this response. We refer to Section 2.2 in document published on TATT's website, Procedures for Consultation in</p>	<p>For issues of a technical nature CCTL recommends that TATT meet with network service providers and solicit their input to inform the initial policy document. This initial draft could then be subject to wider public</p>	<p>In order to provide further clarity to TATT's previous response on this matter, while the Authority notes that Section 2.2 of the Consultation procedure states that the Authority may call the affected stakeholders in for discussions, the Authority also recognizes that the formal written method is an effective mechanism to address changes to the Numbering Plan.</p> <p>TATT finds merit in face-to-face meetings with relevant stakeholders, where there is</p>

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		<p>the Telecommunications and Broadcasting Sectors of Trinidad and Tobago, January 2013, which clearly includes meeting with group meetings as a form of consultation. It is noted that this form of consultation is useful when discussing issues of a technical nature. CCTL's recommendation is consistent with TATT consultation process. We therefore reiterate our recommendation as the efficiency of the process and the quality of the decisions would benefit from the approach recommended.</p>	<p>consultation.</p>	<p>the introduction of or substantive changes to the policies, principles, rules and/or guidelines of a document. This revision, which seeks to solely update the Numbering Plan based on the use of numbers since its last approved version, does not require such extensive consultation.</p> <p>As such, the Authority sees no disadvantage in using the formal written method of consultation.</p>
Section 8.1	TSTT	<p>TSTT notes TATT's responses to Digicel and TSTT in this regard.</p> <p>TSTT is amazed that TATT would seek ratification of a numbering plan which proposes significant changes which could affect operators and customers, yet when clarity is sought, TATT's answer is either "No decision has been taken as to when this will be done" or "no decision has been made on how to migrate numbers...".</p> <p>TATT is effectively seeking carte blanche support to implement a plan that will negatively impact the market where it has not in any way</p>	<p>The only responsible thing that TATT can do at this time is to withdraw the recommended changes until there is a plan for the mechanism and timeframe within which these migrations are to be effected.</p>	<p>In order to provide more clarity to our previous response, the Authority wishes to confirm that no changes were made to Section 8.1, based on the approved version 1.0 of this Plan.</p> <p>Also, as stated in the Plan, " The Authority shall consult with authorised service providers, who are assigned CO code numbering resources, and other relevant stakeholders in the development of re-assignment plans to align the numbers assigned to telecommunications services to the numbering scheme. The</p>

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		<p>considered the impact of these changes.</p> <ul style="list-style-type: none"> <li>• TATT offered no cogent rationale, be it technical, economic or arithmetic, for the change given that there is no risk of exhaustion of the numbering resource</li> <li>• TATT offered no reasonable mechanism to guide the reclaim of numbers before and/ or after the numbers have ported.</li> </ul> <p>The only responsible thing that TATT can do at this time is to withdraw the recommended changes until there is a plan for the mechanism and timeframe within which these migrations are to be effected.</p> <p>Further, in response to a request for a comprehensive review of the plan, TATT tacitly agrees that the approach is piecemeal before demanding that this plan is ratified by operators without any attempt on its part to answer any of the relevant questions raised. Further, TATT seeks to put the burden on TSTT - an operator – to propose solutions to a problem that TATT has not even bothered to adequately identify. TATT's attempt to ignore its own responsibility as resource administrator is stunning.</p>	<p>TSTT reminds TATT that TATT is the numbering administrator, not TSTT. TSTT further reminds TATT that by TSTT advising TATT of the weaknesses of the incomplete framework proposed, TSTT has fulfilled its responsibility in this regard.</p>	<p>Authority shall exercise reasonable measures to reduce inconveniences to consumers (i.e. subscribers), where a re-assignment is deemed necessary. Appropriate campaigns to advise the public of any changes will be undertaken where necessary”</p> <p>From the above, the Authority wishes to re-emphasize that it has no current intention to migrate these non-aligned CO codes to conform to the Plan. However, it is important to completely account for the use of all CO Codes in this document and, as such, this section was included to identify that there exists CO Codes that are currently not aligned to the Plan.</p> <p>As outlined in the Plan, the Authority shall convene meetings separately with affected Operators, when it becomes necessary to effect such migration.</p> <p>Please note that the former Section 8.1(a), now 6.5(a), has been revised as follows, “A suggested approach is the gradual retirement of these numbers for Mobile Services when they become inactive, that</p>

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				<p>is when the existing customers give up these numbers of their own accord. The service provider will then simply not re-allocate these numbers to any new customers. This activity will not cause any customer discomfort and will allow the gradual re-allocation to the Fixed Services category.”</p> <p>It is noteworthy that the suggestion put forward for the retirement of mobile service CO codes in the fixed service allocation does not cause any customer discomfort nor incur any cost to operators, as it would only occur when those numbers become inactive.</p>
Section 8.5	CCTL	<p>The Authority identifies number portability (NP) as one of the issues that will influence the allocation of central office codes, as it will serve as a number conservation method. Numbering fee is based on the numbers allocated to a provider. As customers port their numbers different operators will be either a net beneficiary or a net loser of numbers.</p> <p>The NP rules provide for ported numbers to be returned to the block operator under specified</p>	<p>We recommend that the Numbering Plan document make appropriate references to the relevant sections of NP Customer Procedures and other documents that address the treatment</p>	<p>The Authority wishes to clarify that, in the Plan,“...Number portability implementation has the potential to conserve numbers as the same subscriber number is moved from the current operator to another operator, therefore eliminating the need to issue a number to a new customer to the network.”</p> <p>The Authority does not agree that this Plan should incorporate the NP Customer</p>

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		<p>conditions, however, to ensure equity in the actual fees charged to operators, allowance should be made to adjust the fees based on net numbers ported to an operator that is a net beneficiary of NP. A similar adjustment should apply to an operator with a net loss in the numbers assigned. This would allow for equity in payments as an operator would pay fees that reflect net loss or gain of numbers related to number portability.</p> <p>To ensure completeness and clarity, the Numbering Plan should contain appropriate references to the relevant information in the NP documents such as NP Customer Procedures.</p>	<p>of numbers, e.g. the return of numbers to the block operator and adjustment to number fees to reflect impact of NP.</p>	<p>Procedures or references to it. The NP Customer Procedures deal specifically with the movement of individual numbers between Operators. This Plan deals with the allocation and assignment of CO Codes to services and operators, i.e. blocks of 10,000 numbers. These two concepts are separate and it is better treated separately, in its entirety. The issue of Numbering Fees is addressed in the Authority's Fee Methodology document. It should be noted that numbering fees are set to cover the administrative cost associated with Number Administration.</p> <p>The issue of reconciliation of net loss or gain of numbers, based on NP porting during a given period is being discussed and will be decided in the meetings being held with Operators in the implementation of NP.</p> <p>The Authority reiterates its findings in the NANP with regard to porting of numbers and assignment of CO codes to operators. Information gleaned suggests that there has never been an example of operators</p>

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				<p>having to transfer the assignment of a CO code due to Number Portability. Even if such an action is contemplated, it may be fraught with international administrative and routing issues, as overseas databases with ownership and routing information of CO codes will have to be updated. The very real possibility of lost calls will lead to operator and customer confusion in such a scenario. Hence, the Authority does not agree that such a course of action, i.e. the transferring of CO codes between operators, due to large porting-out of numbers, should be pursued.</p> <p>These comments have been adequately addressed by the Number Portability committees comprising operators and the Authority.</p>
Section 9.2	TSTT	TSTT notes that despite its claims, TATT remains unphased in carrying out its blatantly repressive and targeted persecution of TSTT through this proposed numbering plan. TATT's defense is that "there would be no forced migration of mobile customers"...but that is not explicitly articulated anywhere in the plan.	TATT must withdraw this plan, and undertake a proper process to ensure that these changes benefit the market as a whole	The Authority wishes to assure that it is not attempting to solely identify TSTT for special treatment with regard to numbering changes. It is important to note that CO Code assignments made to other Operators were subsequent to the establishment of the Authority and, thus,

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		<p>Further, TATT has gone to great lengths to not provide a timeframe by which a migration would be essential. Together, this establishes a framework where this Numbering Plan presents the platform for TATT to arbitrarily direct the migration of customers' numbers en masse, to the detriment of the consumer and TSTT exclusively. TATT has not provided any justification why TSTT's mobile and fixed customers alone are negatively affected. TATT has demonstrated a great willingness to shy away from impacting the customers of other operators (its rationale for not changing VSC's are notable in this regard) – but it insists –without justification, mechanism or timeframe to demand upon this market a numbering scheme which will negatively impact TSTT only.</p> <p>TSTT is forced to ask, why is TATT comfortable to propose a plan that will negatively impact TSTT only when there is no pressure to make this change at this time. Further, given the statement that number portability will increase the conservation of the numbering resource, the strident demand for this change is noteworthy. In light of this, TATT's reluctance to undertake</p>	<p>and does not disadvantage any one party. The process should include at a minimum:</p> <ul style="list-style-type: none"> <li>- A published Cost Benefit Analysis underscoring the impact of these changes to the market, and the assessment of the relative impact of each player in the market;</li> <li>- A continuation of the process only if the CBA validates that</li> </ul>	<p>would be in conformance with the Plan. However, assignments made to TSTT, the incumbent, would have been prior to the establishment of the Authority.</p> <p>The Authority disagrees that it should withdraw this Plan. As stated in its response to 8.1 above, it is evident that the Authority has no current intention to migrate these non-aligned CO codes to conform to the Plan. However, it is important to completely account for the use of all CO Codes in this document and, as such, this section was included to identify that there exists CO Codes that are currently not aligned to the Plan.</p> <p>The Authority will not arbitrarily direct an operator to carry out an action to the detriment of the public, as well as the operator.</p>

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		<p>and publish a Cost Benefit Analysis takes a more sinister import. Indeed, in light of other developments in the market with respect to telecommunications resources, TATT's willingness to recklessly disadvantage TSTT seems a consistent theme of action.</p> <p>TSTT demands that the proposed migration of numbers (as outlined in 8.1) and the proposed CO Code ranges in section 9.2 are abandoned until:</p> <ul style="list-style-type: none"> <li>- A Cost Benefit Analysis is published underscoring the impact of these changes to the market, and the assessment of the relative impact of each player in the market;</li> <li>- This process is only continued where the CBA validates that no operator is more severely disadvantaged than any other;</li> <li>- Only where the CBA demonstrates no comparative disadvantage, should a clear mechanism and timeframe for these migrations be proposed;</li> <li>- Only after the presentation of the CBA, the mechanism and timeframe for migration to the operators, should this revised Numbering Plan be issued for</li> </ul>	<p>no operator is more severely disadvantaged than any other;</p> <ul style="list-style-type: none"> <li>- Where the CBA demonstrates no comparative disadvantage, a clear mechanism and timeframe for these migrations should then be proposed;</li> <li>- Only after the presentation of the CBA, the mechanism</li> </ul>	

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		<p>public consultation according to TATT's procedures to seek ratification.</p> <p>This proposed Numbering Plan is patently unfair, imbalanced and improper. TATT has again failed to undertake proper due diligence. Given the critical concerns raised by concessionaires, TSTT trusts that TATT will act objectively and not seek to roundly ignore the concerns raised.</p>	<p>and timeframe for migration to the operators, should this revised Numbering Plan be issued for public consultation according to TATT's procedures to seek ratification.</p> <p>As withdrawing the plan will not negatively impact the implementation of Number Portability, TSTT strongly believes that such an action is the only responsible</p>	

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			alternative for TATT	
Section 13.2	TSTT	All guidelines and procedures for the application for numbering resources should be included in relevant regulations, and no aspect of these procedures, forms or processes should be enshrined in documents with questionable regulatory force on the TATT website.	All guidelines and procedures for the application for numbering resources should be included in relevant regulations	<p>The procedures will be guided by the Regulations. It is not required that procedures be included in Regulations. The Authority is responsible for establishing and enforcing such procedures, with respect to numbering resources.</p> <p>The Authority has instituted an application process for numbering resources by new and/or existing operators who require numbers. Operators must submit applications for new CO codes via the prescribed application form on the Authority's website. Once applications are received, they are processed in accordance with the Authority's internal procedures. The maximum stipulated timeframe for processing of such applications, once all the required information has been submitted, is three (3) months.</p>

