



# **The National Spectrum Plan**

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# Table of Contents

<b>TABLE OF CONTENTS .....</b>	<b>3</b>
<b>1 INTRODUCTION.....</b>	<b>4</b>
1.1 OBJECTIVES .....	5
1.2 RELEVANT DOCUMENTATION .....	5
<b>2 BACKGROUND .....</b>	<b>6</b>
<b>3 THE NATIONAL SPECTRUM PLAN .....</b>	<b>7</b>

# 1 Introduction

The Telecommunications Authority of Trinidad and Tobago (The Authority) is required to develop a National Spectrum Plan in order to regulate the use of the spectrum in accordance with the Telecommunications Act (2001), sections 41(2), (3) & (4), which state:

41. (2) *The Authority shall develop a spectrum plan in order to regulate the use of spectrum.*
- (3) *The National Spectrum Plan shall be made available to the public in the manner prescribed by the Authority.*
- (4) *The National Spectrum Plan shall state how the spectrum shall be used and the procedures for licensing frequency bands.*

The Authority has developed a draft Spectrum Management Policy, draft Radio Spectrum Regulations and several spectrum plans and other related documents to facilitate the liberalisation of the relevant markets in the Telecommunications and Broadcasting Sectors. The Authority has also developed the Trinidad and Tobago Frequency Allocation Table (TTFAT) which identifies which spectrum bands are allocated for specific services and this document is a core element of the National Spectrum Plan (NSP).

Trinidad and Tobago is a signatory to the ITU convention and the Authority has ensured that the TTFAT is consistent with the ITU's Recommendations and Radio Regulations (RR).

Further to the TTFAT, band plans have been developed for the provision of specific telecommunications and broadcasting services. For example, the Spectrum Plan for the Accommodation of Public Mobile Telecommunications Services was the first spectrum plan produced as the cellular mobile market was the first market opened to competition in Trinidad and Tobago by the Authority. To date, spectrum planning documents have also

been developed for free-to-air Radio (FM) broadcasting Services, Free to Air Television broadcasting services, as well as broadband wireless access (BWA) services.

The main purpose of the National Spectrum Plan (NSP) is to provide a framework in order to regulate the use of spectrum and allow its efficient use in an orderly manner in accordance with the Authority's mandate. This includes the allocation, reallocation, assignment and re-assignment of spectrum.

## **1.1 Objectives**

The objectives of the National Spectrum Plan are:

1. To define spectrum bands to be allocated and reallocated for telecommunications and broadcasting services.
2. To provide information to licensees and applicants on what bands can be used to provide telecommunications and broadcasting services.
3. To define frequency assignment plans within the various bands for the particular services.
4. To provide guidelines on licensing and the procedures for telecommunications and broadcasting services.
5. To identify the technical requirements and limits for telecommunications and broadcasting services.

## **1.2 Relevant Documentation**

The National Spectrum Plan is consistent with other policies, plans and regulations prepared by the Authority including the following:-

- Draft Spectrum Management Policy
- Draft Radio Spectrum Regulations
- Framework for the Authorization of Telecommunications Networks and Services and Broadcasting Services in Trinidad and Tobago

## 2 Background

The radio frequency spectrum is a scarce national resource that is essential to the provision of a wide range of activities, including national defence, public safety, air, land and sea transportation, broadcasting and commercial telecommunications services. Careful management of the radio spectrum is essential to ensure that the unique social and economic benefits that it provides are fully realised.

Under the Telecommunications Act 2001, frequency spectrum is defined as “*the continuous range of electromagnetic wave frequencies used for telecommunications*”. The allocated radio spectrum, as defined in the ITU Radio Regulations, covers the frequency range 9 kHz to 1,000 GHz.

Use of the radio spectrum is indispensable for the provision of a wide range of telecommunications services and over the past few years the developments in telecommunications technologies and the demand for new telecommunications services have placed an even greater demand on the use of the radio frequency spectrum.

It is widely agreed that the availability of a good telecommunications infrastructure and high quality cost effective telecommunications services are considered essential to the social and economic development of a country, so it is therefore imperative that the frequency spectrum resource be effectively managed to optimize the delivery of telecommunications services in Trinidad and Tobago and thereby realize the potential benefits to facilitate the social and economic objectives of the country.

### 3 The National Spectrum Plan

The National Spectrum Plan is the collection of all spectrum planning documents developed by the Telecommunications Authority of Trinidad and Tobago. The draft Spectrum Management Policy and draft Radio Spectrum Regulations provide the foundation for the National Spectrum Plan which is administered through the Framework for the Authorization of Telecommunications Networks and Services and Broadcasting Services in Trinidad and Tobago.

Spectrum planning may include, but are not limited to, frequency band plans, frequency assignment plans, procedures for licensing, allocation and re-allocation of spectrum (re-farming plans), and assignment and re-assignment of frequencies. It may also identify the procedure for licensing and any restrictions or limits on the use of the spectrum. These documents may include spectrum plans, authorisation frameworks and frequency allocation tables.

The National Spectrum Plan (<http://www.tatt.org.tt/ddocs/nationalspectrumplan.pdf> ) currently comprises the following documents developed by the Authority:

1. **[Trinidad and Tobago Frequency Allocation Table](#)**

This document is the core document in the NSP and currently covers the range 88 MHz to 5850 MHz. Spectrum in the range 9 KHz to 88 MHz and 5850 MHz to 400 GHz will be addressed over the next two years, but until that time, the latest allocations of ITU-R Region 2 should be followed wherever possible for all other bands not covered in the TTFAT.

2. **[Licence Application Procedures](#)**

These procedures are to assist applicants in filling out their forms and gives general guidelines on how to fill out their applications and the number of copies to be submitted. It also indicates some of the documents that must accompany the application for it to be considered complete.

3. **[Framework for the Authorisation of Amateur Radio Services](#)**

This document contains the requirements for amateur licensing and explains the different classes of licences that can be obtained. It addresses the renewal period as well as the certification needed for such licences. This overall guide shows the frequency bands that can be used for which class of Amateur licence and should be referred to for Amateur Licensing issues.

4. **[Spectrum Plan for Accommodation of Public Mobile Telecommunications Services](#)**

This plan outlines the allocation of spectrum for cellular mobile services. It contains information about the bands to be used, the bandwidth of each block and the procedures for licensing. This was the guiding technical document used in the Auctioning process for liberalising the Public Domestic Mobile Services market in Trinidad and Tobago.

5. **[Spectrum Plan for the Accommodation of Broadband Wireless Access Services](#)**

This document addresses the need for BWA spectrum to accommodate BWA services. It looks at the licensing approach for the various bands assigned for BWA services and includes a proposed band plan for BWA. It also specifies the maximum technical operating conditions and specifications to be imposed on the licensed radiocommunication systems in the allocated frequency ranges.

6. **[Refarming Plan for Broadband Wireless Access Services in the 2.3 GHz, 2.5GHz and 3.5 GHz Bands](#)**

This document looks at the availability of spectrum for new spectrum users in the 2.3 GHz, 2.5 GHz and 3.5 GHz. It identifies the terms and conditions which will govern the use of these bands for the provision of BWA services and indicates the

authorization process to be implemented for spectrum that can be licensed to new spectrum users.

Any future spectrum planning documents that may be developed by the Authority will be part of the National Spectrum Plan and will indicate such in the document with the following statement:

*“This document is a subset of the National Spectrum Plan and should be considered as part of the entire National Spectrum Plan”.*