

# THAILAND SPECTRUM MASTER PLAN



2016 - 2020

## National Broadcasting and Telecommunications Commission – Spectrum Master Plan

The spectrum master plan is a platform for the regulator to provide greater transparency with regard to its spectrum management policies and planning process. This is a forward looking document for charting the spectrum management roadmap over the next five years.

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## 1. Introduction

Spectrum planning is an international activity influenced by technology development, social requirements and economics benefits. Collectively, regulators and industry players work together through international bodies such as the ITU to plan ahead so as to meet future spectrum demand. For instance, at the World Radiocommunication Conference 2015 (WRC-15), decisions on agenda item 1.1 help to pave the way for future mobile communications also known as IMT2020 or 5G. Working within the international framework is crucial to achieve global harmonisation of spectrum allocation which can enable equipment standardisation and economies of scale.

Once an allocation is made at the international level, national regulatory authorities (NRAs) will make plans for spectrum awards based on domestic demand. Each country's NRA will lay down its own spectrum principles and vision. In Thailand the vision stated in the Spectrum Management Master Plan (SMMP) is:

*“To manage the radiofrequency spectrum to achieve the maximum benefit for Thai citizens both in national and local levels based on free and fair competition and nationwide spectrum utilisation in the areas of education, culture, national security and other public interests”*

The Master Plan also sets out six key goals – international frequency coordination, refarming, spectrum for national security agencies, spectrum for public protection and disaster relief (PPDR), digital TV broadcasting migration and spectrum allotment of broadcasting services. Frameworks have been developed around these goals which form crucial foundation for spectrum management in Thailand. Going forward, Thailand is preparing a revised SMMP taking into account international best practices.

This report aims to help the National Broadcasting and Telecommunications Commission (NBTC) develop the new SMMP. The report highlights the key challenges NRAs face in adjusting spectrum allocation with rapidly changing demand. Chapter 2 discusses new approaches to overcome these challenges and to achieve greater flexibility and efficiency in spectrum usage. Chapter 3 and 4 provide an analysis of spectrum demand for various radio applications and potential spectrum allocations in the next 5 years. Finally, Chapter 5 provides key recommendations for NBTC to further strengthen spectrum management in Thailand.



## 2. Global Trends in Spectrum Management

### 2.1 Introduction

The growing demand for mobile communications and the changing pace of technology advancement are putting pressures on regulator to ensure that there is sufficient spectrum to meet the consumer and industry demand. In most cases, the spectrum management and allocation framework remains rigid and changes to spectrum allocation require a considerable amount of time to take effect.

Over the past decade, the mass adoption of mobile services around the world has driven the demand for more spectrum. The usage of mobile services shifted from primarily voice communications to mobile broadband. Mobile networks have seen several upgrades to offer better service quality and faster broadband speeds.

In coping with the changes in the market which are often difficult to predict, regulators are introducing more flexibility to spectrum management. The enhancement of wireless technology enables better sharing of spectrum thereby improving spectrum efficiency. The subsequent sub-sections of this report describe some of the approaches to introduce greater flexibility and reduce regulatory controls.

In addition, regulators need to look ahead and consider the future of spectrum management so that new services can be introduced in a timely manner and existing users have sufficient time to upgrade/migrate to alternative technologies. Besides monitoring industry development internationally, regulators need to engage domestic players and take their feedback into consideration in spectrum planning and decision making. It is also imperative to give industry players sufficient time for planning, capital budgeting and implementation.

Some regulators have put forth a long-term spectrum management planning document to provide greater transparency in their thinking, highlight new opportunities and use it as a platform for engaging various stakeholders. Some of the examples are:

- Australia Communications and Media Authority (ACMA) – Five-year spectrum outlook 2015 – 2019
- Industry Canada – Commercial Mobile Spectrum Outlook
- Information and Communications Authority of Singapore (IDA) – Radio Spectrum Master Plan
- Ministry for Communications and Information Technology New Zealand – Radio Spectrum Five Year Outlook 2012 – 2016.
- Office of Communications Authority, Hong Kong – Spectrum Release Plan for 2015 – 2017

The need for a spectrum master plan is not limited to the developed countries. Wireless technologies now help to bridge the digital divide providing telephony and internet access in developing countries where there have been a lack of fixed telecommunications infrastructure. It is becoming more urgent for developing countries to have a structured approach to ensure efficient use of the radio spectrum resource.