National Telecommunications Regulatory Commission (NTRC)

RADIO FREQUENCY SPECTRUM MANAGEMENT

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SPECTRUM MANAGEMENT

- The radio frequency (RF) spectrum is a valuable natural resource which consists of a finite number of frequencies lying between 9KHz to 30GHz

- Therefore, to accommodate the large number of persons using the radio spectrum with minimum interference, the spectrum must be regulated and managed.

- Spectrum management = planning, allocation, use, control of the radio frequency spectrum.

  The electromagnetic spectrum needs to be shared by many different users, both “passive” (receive-only) and active” (emitting).

Who is responsible for Spectrum Management

- The Grenada Telecommunications Act states that the Commission will "plan, supervise, regulate and manage the use of the radio frequency spectrum in conjunction with ECTEL

- The NTRC is responsible for the issuing of licenses and frequency authorizations.

The Objectives of Spectrum Management:

- ensure the optimized use of the radio frequency spectrum so as to maximize the benefits to the users
- meet the requirements of different users
- minimize harmful interference
- prevent unauthorized radio operation
- ensure that mobile telephone providers comply with international guidelines for the protection of the population from health risks due to radiation from microwave and cellular radio towers.

What is Used to Manage the Spectrum?

The principal mechanisms for managing the spectrum are :

- ✓ Spectrum Management Regulations
- ✓ Regional Spectrum Plan: Analyze the requirements for proposed frequencies for frequency allocation
- ✓ Data Base system
- ✓ Frequency Authorization:
  1. Involves the licencing of radiocommunication equipment and frequency assignments
  2. Strategies are used to ensure proper use, facilitate reuse, and achieve spectrum efficiency
- ✓ Spectrum Monitoring Unit

The above include actions to protect radiocommunication systems from harmful and obstructing interference. Frequency authorization

Harmful and Obstructing Interference

Harmful interference is defined as:

"Any emission, radiation or induction that endangers the functioning of a radio navigation service or other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunications service."

Causes of Interference

There are three types of Interference:

1. Noise: Interference cause by an electronic source such as a electric fence, power-line noise comp, computer system etc.

2. Overload: result from the inability of a consumer device to reject strong and nearby signals. (the device isn't supposed to received your signal, but it does). Correcting the problem by shielding and filtering)

3. Unwanted Emission: transmitters sometimes inadvertently transmit weak signals on frequency for which the transmitter was not intended

Current Issues

- Transmitters placed in unauthorized Location
- Radio signal received from neighboring islands
- Amplitude Bandwidth and High Power – broadcasters operating outside of the allocated bandwidth and high Tx power
- Equipment Compliance – uncertified equipment doest not meet the recognized standard

THANK YOU