Practicum 1: Frequency management and allocation. The United States frequency allocation

The management of the radioelectric spectrum is a critical function of the different regulatory bodies at International, National and Local levels. The management of the radioelectric spectrum at the international level is coordinated by the International Telecommunications Union with input from the different national organizations. At the national level, the frequency management in the United States is coordinated by the FCC and the NTIA.

Procedures and questions to answer:

**Question 1.** Describe in your own words the need for the management of the radioelectric spectrum

**Question 2.** The ITU has divided the world into three different regions for frequency allocation. What is the region for the United States?

**Question 3.** What do the acronyms NTIA and FCC stand for?

**Question 4.** Write down the URL addresses for the ITU, FCC and NTIA

* Access the Web page for the NTIA

**Question 5.** Describe in your own words the mission of the NTIA's Office of Spectrum Management

* Read the section "Myth vs. Realities" in the NTIA Web page.

**Question 6.** Comment on the similarities and differences between the FCC and the NTIA
* Access the United States Frequency Allocations Chart in the NTIA. Alternatively, we have a hard copy of this chart if you prefer so. Consult with your instructor if you need it.

* There are listed in the chart a total of 30 different services -codified in the chart with different colors-, that are allowed the use of the radioelectric spectrum in the US. Keep in mind that this is an allocation chart that shows the permitted used for each frequency in the spectrum, and it does not imply that all the frequencies must be in used.

**Question 7.** Select five of the different services listed (different from the other groups selection). Describe briefly what you think this service is, and provide an example of user of this service. For example, the first service listed Aeronautical Mobile is used to provide communications between aircrafts and their support services such as the air traffic control system for example. Users of this service include commercial airlines, private airplanes, among others.

**Question 8.** How many of the previous radio services use satellites?

**Question 9.** List the frequency ranges for which Broadcasting Satellite, Meteorological Satellite, Inter-Satellite and Maritime Mobile Satellite services are allowed.

**Question 10.** In which one of these 30 different services does the GPS systems fit into?

**Question 11.** What are the lowest and highest frequencies for which any satellite service is allowed

**Question 12.** Comment on the technologies used to build systems in these two frequencies, how feasible it is, etc.

* Connect to the FCC Webpage

**Question 13.** Briefly describe the mission of each one of the FCC’s 7 Bureaus and 11 Offices (1 sentence or less for each one).

**Question 14.** Which one of the FCC’s Bureaus or Offices is in charge of spectrum management?

* Connect to the FCC Spectrum Inventory Table (http://www.fcc.gov/oet/info/database/spectrum/)
**Question 15.** Comment on the purpose of this document. What are the similarities and differences between this inventory of the radioelectric spectrum and the Table from the NTIA

**Question 16.** Select two frequency ranges from Question 9. Consult the FCC Inventory Table and break down, if possible, the frequency ranges as stated by the FCC Inventory Table

**Question 17.** Comment on this laboratory exercise: (how appropriate it was, difficult/easy, interest) with special emphasis on what you have learned.

Submit this lab with the answers to your instructor. Use as many additional sheets of paper as needed.

*Albert Lozano. May 2004*