

A PROMISING DIGITAL-BASED RADIO NETWORK OVER IP

Mahmoud A. Smadi* and Ahmed K. Majali
*Electrical Eng. Dept., King Faisal University
Ahsaa 31982, KSA
msmadi@kfu.edu.sa

Abstract— This paper illustrates the major software and hardware issues associated with a promising digital-based radio network station established in the Hashemite University (HU). The project can be considered as new and simple way to limited broadcasts. Modern broadcasting techniques are to be used; Stereo FM and HTTP stream broadcasting. This radio network is modern and all network devices and computers are to be designed to run without man's existence. Though, it can run with presence of man (semi-automatic). Those devices are connected to a main computer called sound engineering compute, and the overall network is managed by the administrator computer.

Keywords-component; digital radio; IP.

I. INTRODUCTION

Internet radio (also known as web radio, net radio, streaming radio and e-radio) is an audio service transmitted via the Internet. Music streaming on the Internet is usually referred to as webcasting since it is not transmitted broadly through wireless means. Internet radio involves streaming media, presenting listeners with a continuous stream of audio that cannot be paused or replayed, much like traditional broadcast media; in this respect, it is distinct from on-demand file serving. Internet radio is also distinct from podcasting, which involves downloading rather than streaming. Many Internet radio services are associated with a corresponding traditional radio station or radio network. Internet-only radio stations are independent of such associations [1-6].

The first Internet Radio Linking Project was started back in November of 1997 as an attempt to use the internet to link radio systems across Canada [1]. The first full time link that was established ran from Vancouver, BC to Saint John, NB. The link had many problems and was shut down in March of 1998 due to the numerous computer crashes and repeater lockups it was causing, and the lack of user control over the system.

Based on the above, senior students team (led by Ahmed Majali) in the Electrical Engineering (EE) Department at the HU proposing to build an internet radio station within the HU borders and through the internet to the whole world. As many universities in Jordan have established FM stations, it's now the time to build a station for HU called Hashemite Radio Network (HRN). The station is to be built in fully integrated functionalities. Also, the HRN is going to be semi-automatic, i.e., a staff will run the station during the day time, and after this an automatic system will run the station till the next working day.

II. PROJECT DESCRIPTION

HRN is modern and digital-based in the sense that all network devices and computers are designed to run without man's existence. Though, it can be run with presence of man; Semi-automatic. The network devices are connected to a main computer called sound engineering computer and all computers are managed by the administrator computer. The main objectives of this station are to emphasize communication between university, student's community and local community. Other purposes can be summarized as:

- Enrich project team experience since students are going to build all devices and components in the station. Such experience will open the floor for other students to present
- To build a direct channel running all the time between university administration and student's community even in vacations and out of formal working time.
- The station will act as a powerful gate for students to the decision makers to enable students to solve their problems in faster way than usual formal ways. Also, to enable decision makers in the university to reach students problems, thoughts, ideas and suggestions.
- Build social connectivity between students from different majors, as well as, open channels with people from other universities and stations.
- Present programs to fulfill students extra time in educational, cultural and entertaining programs.