Recommendation for Project Continuation

The WAV, MPEG, WMA Project was a success in its first year. We were able to successfully control the mp3 Player via a Bluetooth headset with voice commands. We were able to control all of the basic commands of the mp3 Player with the help of Bluetooth transmission of the voice command converted to text via Voice Recognition Software. This is great that we had all of the parts working together to control the mp3 Player via voice commands. However, the voice recognition software was run on a computer which communicated with the mp3 player via the serial port and hyperterminal. The Bluetooth was provided via a USB Bluetooth dongle connected to the computer and a Bluetooth headset paired with the dongle.

Ideally, we would like to have these entirely run on the mp3 player and have it be a standalone mp3 Player supporting Bluetooth and Voice Recognition. The first thing that would need to be accomplished next semester is to get the search function implemented into the mp3 Player firmware and to allow the voice recognition software to give the player a query for the mp3 Player to search the hard drive. In order to get the search function to work, we will need to cross check the query from the voice recognition software with information from the mp3 files id3 tags. Also, on the voice recognition side, we will need a way to convert speech to text which can be sent to the mp3 player via the serial port. The voice recognition software will most likely need a database to cross check the converted speech so that we know the software is converting the speech to the correct text.

Once the software is able to convert speech to text and the mp3 Player search function is implemented, the mp3 player should be tested thoroughly. Using use cases the player should be tested for speech sensitivity, search correctness, and correct functionality of the mp3 player.
These tests should assure correctness with the search function and the voice recognition software.

After the mp3 Player and voice recognition software have been tested with the new additions, it should be researched whether or not the whole system can be on the mp3 player board. To be able to include the voice recognition software on the mp3 player would be ideal. Of course this would also need Bluetooth to be installed and enabled on the mp3 player also. We currently have Bluetooth through a computer which speaks to the mp3 Player through the serial port. The mp3 Player would need to be able to support Bluetooth, voice recognition software, and the mp3 Players firmware, along with any mp3 files or playlists the mp3 Player will use.

Future work beyond what was mentioned above could possibly include using the Bluetooth capabilities and Voice Recognition Software to operate other electronic devices such as cell phones, computers, etc. Hands free capabilities are going to be not only essential but beneficial in the near future. Hands free capabilities could be used to help people with disabilities get things done and could also help make it safer to talk to cell phones with the need for using your hands minimal.