**Recommendation for project continuation:**

The simulation result shows that our system achieved 5.5 SNR at 432MHz which is unsatisfactory for the modems to work. There are many options to continue working on this project to achieve a better data link.

1. Build an array of antennas at both ends. For each element added in the array, 3 dB is achieved in excess of current SNR.

2. Develop the modems to work at low SNR and then it could be developed to use one of the coding schemes which could results in doubling SNR. For example, the modems could be designed to send each bit 2 times which results in doubling the SNR but the minimum required SNR must be achieved.

3. On the applications side, this data link could be utilized to control the remote site (cabin). This link could be designed to control the heating system in the cabin and to control water level on the lake available at that site. Also, it could be used as a communication link since there is no cellular service at the remote site. This cabin is not accessible at winter season and most of spring season due to snow. So, this link could be designed to check the snow level and whether it is accessible.

4. The main obstacle that we faced in this project is the poor location of the cabin since it is located 3km away from Green Mountain which is on the line-of-sight path. To overcome this problem, a repeater at the mountain summit would increase SNR by more than 10 dB. This repeater would make this link as a line of sight path for the short distance from the cabin to the mountain and then another long line of sight path from the mountain’s summit to the receiver end in Fort Collins. Also, the long line of sight path might take advantage of tropospheric scattering since the scatter angle will be much lower than before.