As for our work last year, Waqar and I tested the optical modems and the DVL. Most of my work was with the optical modems. I worked on wireless video transmission using the Hydromea LUMAX modems provided by Prof. Birk.

Since the optical link established is prone to fluctuations and disconnections underwater, my initial aim was to use adaptive parameters to get a steady and smooth video output. But firstly, we will go through on how to get started with the modems. You may find a user manual in the sub folder named *“guide”*. I’d recommend you read it extensively.

Both the modems connect to two different systems. You will find a Raspberry pi in the research 119A. It has already been setup to be used with the LUMA modems. This Pi will have a camera attached via a ribbon cable and will act as the server side in the optical communication. I had been testing some code in that Pi so you will find some python files.

The modems were tested of the bandwidth in the sub folder *“testing\_bandwidth”.*  While I tested the modems in only one settings, there are several parameters you may select which you can adjust via python API or the ***“parameter page of the web-based configuration-UI”****.* Consult the user manual to set and adjust modem parameters.

I started with setting up the modems to send and receive bits and bytes of data(sub folder ***“/testing\_code/code/sockets”***).

Sending the camera feed from pi to the server computer was done next. You may find the relevant code in the sub folder ***“/tessting\_code/code/rough\_work”****.*

Most of the testing was done in air. However, to simulate fluctuations in the network quality just as you may expect to happen in water where the modems are not directly faced at each other or are at relative speeds, I used a repository from GitHub. You may find that in the subfolder ***“simulate network traffic”****.* I didn’t really use this much since it wasn't working properly for me.

In the sub folder ***“/code/Adaptive\_stream(developing)”***, I was testing and developing code for an adaptive streaming system. It was a work in progress.