The manager of the team just listed some of the pre-work I can do:

1) What libraries in VPP can we use to add Red Dwarf (BGP) fast failure detection?

2) Latest methods and protocols used for fast failure detection for BGP routing (for example BFD)

3) How other vendors perform BGP failure/fast failure detection

So for the independent project, I make a three-stages plan:

1) Do a small survey about the latest methods and protocol used for the fast failure detection for BGP.

2) Form a prototype that can build an environment on VPP that can support BGP protocols, and those hosts can communicate to each other.

3) Try to implement any of the fast failure detection method for BGP in this prototype, and use a form a test to verify the function of these procedures.

The reason I want to do the above things in the independent project:

1) Last year's internship at Cisco Meraki taught me a lot about the open-source networking platform VPP. Its high performance and scalability in handling network packets made me interested in the platform, so I want to continue to learn more about VPP.

2) This year's internship continue with the CNHE team at Cisco Meraki. The team manager gave me a lot of pre-work so that I could get up to speed when I started my internship. So much of the independent project is based on the requirements given to me by the manager.

3) For my future career plan, I am looking to continue to work as a network engineer or in a network security related direction. So I think it's important to understand and deploy the BGP protocol, both network engineers and network security can not do without the processing of BGP packets. I hope that this independent project will help me to have a deeper understanding of networking so that I can find a job after graduation.