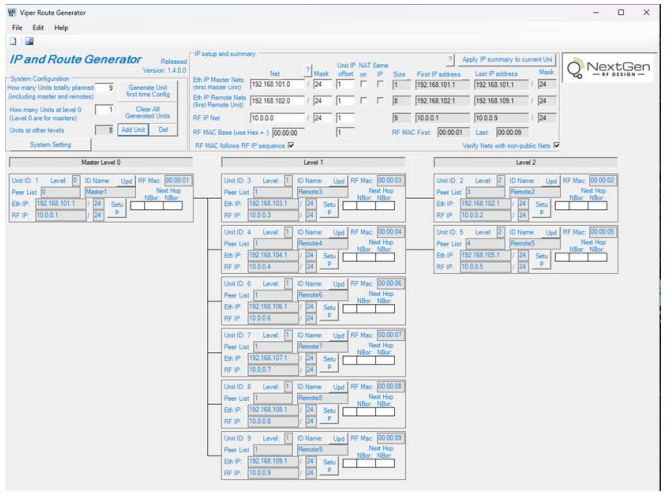
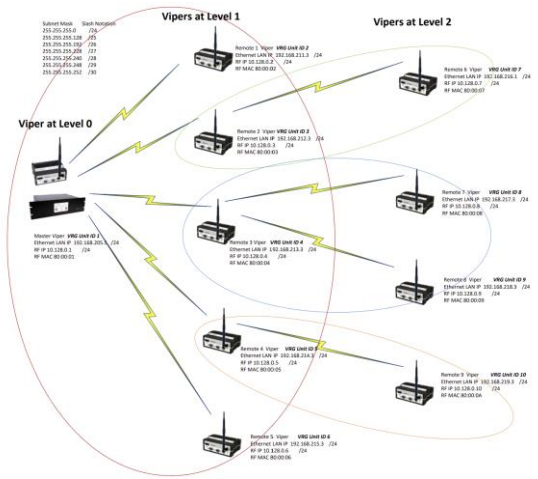
Project Description:
NextGen RF Design is a provider of wireless communication products and design services. One of our products, Viper SC+, is a wireless radio modem used for critical communications in oil, gas, electric grid and water and wastewater monitoring applications. The modems use IP protocols and can be configured for either router or bridge modes when used in large scale deployments. To aid in deployment, a software GUI named Viper Route Generator (VRG) was developed to create the configuration files necessary for programing the entire network of radios. The program was developed in Visual Studio .NET. There have been several requests for updates to the GUI to enhance the user experience. For example, the program does not save a configuration for future use, and each time the program is closed the user must start over.

The student project will focus on updating the GUI to allow users to save a current session, and import or export session configuration files as primary goal. Working with NextGen's technical staff, the students will create and document requirements for the data to be imported and exported. A secondary project goal is to create user interface enhancements so that the routing table can be changed by dragging and dropping the block generated by the routing table, allowing the users to manipulate the routes uses the mouse instead of entering data. Routing "rules" will be needed to ensure this is done correctly, so the student will need to learn about the system and limitations to the network to ensure optimal performance is achieved through creation of the routing configurations.

Students will need programming skills, along with project management and documentation skills to complete this project.

Project Manager – Ross Loven, ross.loven@nextgenrf.com
Lead Technical – Joe Laizure, joe.laizure@nextgenrf.com





Deliverables	Type of work	Activities	Resources	Tech Skills	Priority
Set up and compile existing Viper Route Generator project in Visual Studio, and deliver working executable.	Software Engineering, Computer Engineering, OS	-Install, and configure working host environment -Import existing project	NGRF VRG App Note VRG Source Code	C# Programming, .NET Framework, Visual Studio IDE	High
Update GUI to include Import / Export function of user sessions, and demonstrate functionality through a test document.	Software Engineering, Computer Engineering, OS	- Software Development - Validation Documentation	Example sessions to be provided by NextGen	C# Programming, .NET Framework, Visual Studio IDE, UI/UX Design, Debugging and troubleshooting, Documentation	High
Implement 'Drag and Drop' functionality and demonstrate functionality through a test document.	Software Engineering, Computer Engineering, OS, Documentation	- Software Development - Validation Documentation	NGRF VRG App Note NGRF Technical Staff	C# Programming, .NET Framework, Visual Studio IDE, UI/UX Design, Debugging and troubleshooting, Documentation	High
Deployment – deploy the solution as a installable executable	Software Engineering, Computer Engineering, OS	- Installation - Short term support and bug fixes	NGRF Technical Staff	C# Programming, .NET Framework, Visual Studio IDE, UI/UX Design, Debugging and troubleshooting,	High
Create detailed installation documentation	Software Engineering, Computer Engineering	- Create operating /support manual to be used for future integrations and support	NGRF Technical Staff	Documentation, Github	High