5 Testing

Testing is an **extremely** important component of most projects, whether it involves a circuit, a process, power system, or software.

The testing plan should connect the requirements and the design to the adopting test strategy and instruments. In this overarching introduction, given an overview of the testing strategy. Emphasize any unique challenges to testing for your system/design.

For starters and for the record, our project split into two main parts and deliverables, the first being a well thought out and published research paper and the second being introductory labs to fill the hole GENI left.

5.1 Unit Testing

Our introductory Network and Security labs we create are the unit tests for the different PAWR Platforms we push to. We'll take our labs (the unit tests) and deploy them on the PAWR Platformsto see how they behave and determine if the platform is a good fit.

Since the creation of our labs ARE the unit tests, we can focus on breaking them down and looking at the different units of the lab modules, and any of the network protocols and security algorithms used in our labs. One idea for how we can evaluate these is looking at the internal logic and functionality of these components and monitor their expected behavior. We can also use tools like JUnit or PyTest for certain components to test the metrics of each component and determine if they're best suited for our introductory labs.

5.2 Interface Testing

We'l look at our introductory labs and test the connection strength and adaptability of the different PAWR Platforms and determine if their servers are capable and compatible for our needs of other Network and Security courses.

5.3 Integration Testing

We'll have to look at how we can connect and integrate our lab designs and concepts and see how they behave and react with the specific PAWR Platform. We'll have to connect to their servers & APIs as well as their sandbox servers. We won't have any Hardware integration or aspects within our project.

5.4 System Testing

In general, our creation of the introductory labs are limited to the complexity we make them, but our duty first is the lab document and justification. We are bound by the PAWR Platform system and sandbox. While we create our Unit Tests (our introductory labs), we'll be testing the strength and system statistics of the platform.

5.5 Regression Testing

With the loss of GENI, we are building from scratch and using pre-existing labs to mold and shift into the pre-existing platforms. We'll abide by their policies and guidelines to ensure our labs do cause harm or conflict with their current system.

5.6 Acceptance Testing

Our acceptance testing won't be focused on acceptability, but rather usability from students and professors as well as applicality. We'll look at students success and their ease of access with our introductory labs on different PAWR Platforms.

5.7 Results

Our results are going to look abnormal and not your standard project, we'll first have a complete Research Paper in conjunction with several introductory labs on various PAWR Platforms that focus on Network and Security. Our results and acceptance will be measured in the quality and quantity of our labs and the success they have with students and professors. Positive results will show that these various PAWR Platforms will be able to accommodate Iowa State's needs, as well as other universities.