**SCADA Home Automation**

**Progress Report**

**Team Members:**

* Jon Beason - Project Manager/Cybersecurity Engineer
* Chad G Bryan - Computer Engineer
* Ben Calvert - Cybersecurity Engineer
* Ben Curths - Computer Engineer
* Simone Gbouomou - Cybersecurity Engineer
* Ben McAnulty - Cybersecurity Engineer

**Project Summary:**

The SCADA Home Automation project will design and develop an interactive physical model that simulates some common components in today’s smart home systems and demonstrates how those systems may be vulnerable to malicious actors via targeted cyberattacks. The purpose of this model is to educate and generate interest in the cybersecurity discipline amongst prospective students and young professionals entering the field by clearly demonstrating the physical effects of and real-world vulnerabilities created by digital cyberattacks.

To accomplish this demonstration, the project will incorporate a set of microcontrollers that includes two Raspberry Pi’s and an Arduino running the open-source ScadaBR and OpenPLC software packages, respectively. The ScadaBR devices will connect to an LCD panel to serve as a human-machine-interface, and the OpenPLC device will be connected to and manage the external sensors and actuators that simulate the common home automation components. These simulated components will include an IR sensor for alarm and intrusion detection, an electronic lock for access control, and a DC-motor controlled door for remote opening/closing.

**Current Project Status:**

As of this report, the project specifications and requirements have been defined, and a basic component layout has been designed. In addition, a test bed has been created by installing OpenPLC on a Raspberry Pi4 and a preliminary scaled physical model has been constructed to test structural integrity of potential building material.

Short-term goals for Phase II of the project include the selection and sourcing of the specific components for the design as well as the construction of the outer casing and physical representative model. Once the components are sourced, the team can begin the programming and configuration necessary to integrate the individual components into the overall system.

Individual team member responsibilities should be more clearly defined as the project moves into Phase II.

**Individual Responsibility Record:**

| **Team Member:** | **Estimated Hours:** | **Application:** |
| --- | --- | --- |
| Jon Beason | 12-16 | Scheduling meetings, Document Preparation, Attending Meeting/Discussions, Created scaled model |
| Chad G Bryan | 4-6 | Meeting and discussions for project planning |
| Ben Calvert | 5-8 | Attended meetings, Assisted in project planning and documentation |
| Ben Curths | 8-10 | Meetings/Discussion, Document Preparation |
| Simone Gbouomou | 5-7 | Attending meetings, Assisting in project planning and documentation. Checking Grammar/ Editing |
| Ben McAnulty | 6-8 | Attended meetings, Assisted in Deliverable Documentation and Project Planning, Participated in Group Discussions |