

Development of an Analysis Tool for Cybersecurity Assessment

Sprint 1
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Product Vision/Expectations

For this project, the objective is to research and develop a cybersecurity analysis tool for use in an Aerospace Technology environment. This tool will be supported by a MBsE (Model Based Systems Engineering) tool to be developed by the team. By the end of the term, the expectation is that there will be a functional Cyber Analysis environment that can be used to identify safeguards in physical and virtual aerospace environments to protect against the growing cybersecurity threats of today's world.

Sprint 1 Backlog

To Do

- Begin Researching Cyber Security Analysis Tools
- Determine Hardware and Software System Requirements

In Progress

- Acquire MagicDraw Licenses
- Analyze Provided Scholastic Papers for Project Direction
- Gain a Working Understanding of Capella Software
- Create Project Requirements
- Begin Learning About MBsE Processes and Procedures

Done

- Create Sprint 1 Backlog
- Create Product Vision Statement
- System Requirements Specification v1
- System Design Document v1
- Sprint 1 Demo

Major Functions of Product

The major functions of the system are as follows:

- Define network(s) of interest
- Define threats of concern
- Establish applicable conceptual data infrastructure and data structure
- Establish applicable data sphere and usage spheres
- Define cybersecurity strategies for specific threats
- Identify data acquisition methods (sensors, streaming, security log files)
- Identify current sensor vantage and blind spots (visual schemas)

Functionality Requirements

- The software shall import networks of concern from the user.
- The software shall import a prioritized list of threats of concern from the user.
- The software shall import an externally defined (Capella or MagicDraw) model
- The software shall perform analysis on the model (TBD)
- The software shall transfer analysis results when completed to the user interface module for display.

** These requirements are still in the making and can be modified/removed/adjusted at any time.

Model Based systems Engineering (MBsE)

Unlike standard written documentation, most of the systems represented using MBsE are more represented with diagrams and models. Models can be simple, or complex.

What we did so far

We completed the following:

- SRS
- SDD
- Product Vision Statement

We learned about the following:

- MBsE (Model Based Systems Engineering)
- MagicDraw
- Capella

How things went this sprint

What went well:

- Researching/learning/experimenting with the programs we will be working with the next sprint
 - Capella, MagicDraw
- Getting a rough draft of our requirements and other important functionalities down in writing for the project.
- Completing the SRS and SDD.

What didn't go well:

- Obtaining MagicDraw licenses
- System Complexity/Project Scope

What's next

- Our first technical step is to write a parser for Capella's project format
 - This will allow us to import externally defined models, which we can perform analysis on
- Research analysis approaches and implement with help of parser
- Determine the UX story. Do we want a GUI? TUI? How should the user interact with our application