CS 490: Engineering Notebook  
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Notes:

Aerospace Aircraft Domain Security Enhancement

Icao standards

Aircraft domain:

ACD – Aircraft Control Domain (high trust)

Complete avionics, controls, and automation

Afdx & arinc 429

AISD – Airline Information Services Domain (moderate trust)

Facilitate info for pilot and crew

Ipv4 ethernet and some aviation to acd

PIESD – passenger information and entertainment services domain (low trust)

Arinc standards

Arinc 429, A664p7 (afdx)

Linux box for network management

Design network topology for access point

Web server to access applications in node 2

QEMU

The group has come out of the first stages of the project and will begin towards development soon. An issue is that it is hard to get people to work on deadlines or together in any sense. I will issue a new work paradigm in the end of sprint 1 to be started with sprint 2.

Step 1: Finish Demo

Step 2: Decouple people from tasks

For a minimum viable product (first demo), I think it would make sense to have AISD machines on one network, and the Gate access machine works on the AISD network, and bridges to the host machines network to enable a 802.1x connection.

The 802.1x connection is not yet determined but we can use an ssh server on the GAP. Client computers will then use that connection to send files through.

Approaching the end of the first semester. We have effectively accomplished the first iteration of this project with a watered down emulated AISD network as well as an initial pentest to evaluate the security at a basic level. For the next semester, the development will focus on refining the work we have contributed through two ways:

1: Revising the emulated AISD network to pass first order security tests

2: Seeking out more threats the exploit

Some sub tasks include:

Investigating NIST standards to add more rigor to testing documents.

Using funding to order hardware for final tests.