Our Client

- Northrop Grumman is an aerospace and defense contractor. They operate in the following sectors:
  - **Armament Systems**
  - Space Systems
  - Defense Systems
  - Missions Systems

Harlan Mitchell

- Senior Systems Engineering Manager

Laurel Enstrom

- Principal Systems Engineer

NORTHROP GRUMMAN

System Diagnostic Process

These weapon systems produce a ton of complex data! Our clients use this to diagnose problems with their systems.

Diagnostic Process:

1. Broken product
2. Dispatch engineer from Phoenix, AZ with tool
3. Engineer works to resolve the problem, potentially coming back several times with more data/parts

Source: U.S. Army

The problem

- No end-user tool

    - Engineering tool is not easy to use, install, or understand

- Complex, insignificant data

- Lots of resources to dispatch engineers

- Must accommodate customers all over Arizona

Our Solution

Weapon → Status Updates → Controller → Raw Diagnostic & Fault Data → Software Product → Real Time GUI Display → Maintenance Laptop

We will develop a product to display the current condition of the weapon

- Product should have simplistic design

- Product should be easy to install and set up

- Product should require minimal IT support and maintenance

Plan for development

Project will be divided into phases

- **Phase 1** - Create class diagram and consider programming challenges

- **Phase 2** - Design simple GUI

- **Phase 3** - Connect to controller and read inputs

- **Phase 4** - Populate GUI with live updates

- **Phase 5** - Design system installer

Requirements

Multi-leveled requirements:

- Client
    - Simple need the client wants
- System
    - Needs to work on windows 10/11
- Software
    - Software requirements as we go on in development

Closing

- We are Team Controller

- Some challenges the client faces are travel times and complicated software

- Goal is to provide Northrop Grumman with a simple to use/install software

- This software can benefit both the Phoenix team and all teams around the United States