Project Plan
Cybersecurity Management System

The Capstone Experience

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Functional Specifications

• Application to help with automation of Aptiv’s cybersecurity processes
  ▪ TARA, Vulnerability/Penetration Assessments, Mitigation Remediation, Incident Response

• 4 Trackers for analysis and visualization of information collected by system
  ▪ Threat/Risks, Vulnerabilities, Incidents, Mitigations

• Task management
Design Specifications

• ASP.NET (C#) Web Application
• Simple interface for all users
  ▪ Dashboard
  ▪ Project Pages
  ▪ Cybersecurity Process Modules
  ▪ Data Trackers
  ▪ Task Manager
Screen Mockup: Product Dashboard
Screen Mockup: Project Dashboard
Screen Mockup: Incomplete Project Page
Screen Mockup: Vulnerability Assessment Module
### Screen Mockup: Task Manager

![Task Manager](https://cybsecgmt.aptiv.com)

#### Task Manager

<table>
<thead>
<tr>
<th>#</th>
<th>Title</th>
<th>Assigned To</th>
<th>Priority</th>
<th>Status</th>
<th>Due Date</th>
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<td>Setup Bench</td>
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<td>High</td>
<td>In Progress</td>
<td>Feb 02, Fri</td>
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Screen Mockup: Incident Tracker
Technical Specifications

• Microsoft Active Directory
  ▪ User authentication to define role in system

• Microsoft Azure
  ▪ Hosting SQL database and web application

• Many-to-many Database
  ▪ Stores all cybersecurity data input into system
  ▪ Used for tracker visuals and analysis

• Protecode API
  ▪ Detect vulnerabilities in source code
System Architecture

Internal Network

- SQL Database Server
- Application Server
- .NET Web Application
- Microsoft Azure
- Active Directory

APTIV

- Admin
- Product Engineer
- Cybersecurity
- Protecode SC
System Components

• Hardware Platforms
  ▪ Microsoft Azure server

• Software Platforms / Technologies
  ▪ Visual Studio
  ▪ ASP.NET (C#)
  ▪ Javascript
  ▪ HTML/CSS
  ▪ MS SQL Database
  ▪ Microsoft Active Directory
  ▪ Protecode API
  ▪ Jenkins
Risks

• Application Security
  ▪ Application/Database will hold all of Aptiv’s data (schematics, software, vulnerabilities, etc.) for all products
  ▪ Mitigation: Implementing best practice security measures as the system is developed, and perform dynamic code analysis on code developed using Protecode

• Database Implementation
  ▪ Application uses complex data structures and holds vast amounts of data
  ▪ Mitigation: Proper schema created and implemented to ensure only those authenticated can access data and the data is quickly accessible

• Knowledge of Client Procedure
  ▪ To fully design the functionality for the application a complete understanding of all of Aptiv’s cybersecurity processes, inputs, outputs, and integration is needed
  ▪ Mitigation: Weekly conference calls with client and constant communication if needed allows for questions and clarifications on project model

• Scalability
  ▪ Aptiv has 147,000 employees and develop hundreds of products a year; the application must be able to handle hundreds of users logged in and accessing data
  ▪ Mitigation: Application hosted on Microsoft Azure, MS SQL database hosted on Microsoft Azure; cloud servers have ability to scale immediately and automatically
Questions?