Final Individual Project Report: SYS 625

"Provide Features and Maintenance" for an ATM System

Introduction

In this project, I focused on the "Provide Features and Maintenance" function for an ATM system, a core component in both the functional and physical architectures of ATM systems. This report details my approach, from understanding the chosen function to compiling resources, drafting, and finalizing the project deliverables using GENESYS modeling tools.

1. Topic Selection and Understanding

Chosen Function Analysis I started by identifying the key aspects of the "Provide Features and Maintenance" function, which include routine maintenance, software updates, hardware integration, and new feature deployments. Understanding these operations was crucial as they form the foundation of both the functional and physical architectures of ATM systems.

2. Research and Resource Compilation

Resource Gathering To deeply understand the ATM system functionalities, I compiled resources related to: - ATM system functionalities and variations - The system engineering process, including functional decomposition and system integration - Techniques for creating sequence diagrams and IDEF0 process models using GENESYS

Suggested Resources Used - I utilized textbooks and course materials from SYS 625, alongside research papers and articles on ATM system design and maintenance. - I accessed tutorials and official documentation for GENESYS software to prepare for the modeling tasks.

3. Task Breakdown and Plan Execution

Week 12 Tasks - **Review and Understanding:** I reviewed example projects and guidelines provided in PowerPoint format, ensuring a clear understanding of the requirements for sequence diagrams and IDEF0 process models. - **Initial Drafts:** I sketched out the functional decomposition for the maintenance function and developed an initial outline for the physical architecture. These included rough drafts for input, output, and functional requirements for the Maintenance and Test Interface subsystem. - **Modeling:** I began modeling the functional decomposition and physical components using GENESYS.

Week 13 Tasks - **Refinement and Integration:** I refined my initial drafts and integrated the architectures in GENESYS, ensuring a one-to-one mapping between the functional and physical structures. - **Diagram Development:** I developed the sequence diagram and IDEF0 tracings for the customer cash withdrawal scenario, serving as a validation of the modeled architecture. - **Finalization and Peer Review:** I finalized the PowerPoint presentation, incorporating all project elements, and had a peer review it for clarity and completeness. I revised the presentation based on the feedback received.

4. Checklist Before Submission

Before submitting my project, I ensured: - All parts of the project aligned with the operational needs of an ATM system. - The GENESYS models were accurate and effectively represented the system hierarchies. - The sequence diagrams and IDEF0 models were complete and checked for errors. - Compliance with the Code of Conduct was reviewed and included in the submission.

Conclusion

This project allowed me to thoroughly apply the system engineering processes learned in SYS 625 to a practical scenario. The task of modeling the "Provide Features and Maintenance" function of an ATM using GENESYS tools provided invaluable hands-on experience in system design and documentation. The final deliverable showcased my ability to integrate theoretical knowledge with practical application, adhering to a structured project management approach.

This format provides a clear and professional presentation of your project work, from inception through completion, reflecting a comprehensive understanding of the system engineering principles applied to ATM systems.