Meeting Entry - September 5, 2023

Objective: Project Kickoff and Requirement Gathering

Summary:
Today marked the beginning of our project. Our initial discussions focused on understanding the scope of the project and outlining the requirements. The team brainstormed potential features and functionalities to be added, and we established a preliminary roadmap. We agreed to use the Digilent Nexys A7 development board for the initial implementation before porting it to the TVS.

Meeting Entry - September 7, 2023

Objective: Material Outlining and Dividing Work

Summary:
In this meeting, the team concentrated on outlining essential project materials and establishing a structured plan for dividing the workload. Discussions revolved around identifying key documents, resources, and research materials needed for different aspects of the project. Responsibilities were delegated, ensuring each team member had a clear understanding of their tasks. This session laid the groundwork for a well-organized and collaborative approach to tackling the project's diverse requirements.

Meeting Entry - September 12, 2023

Objective: Defining Architecture and Technical Specifications

Summary:
Building upon last week's discussions, today's meeting delved into the technical aspects of our project. We defined the architecture, emphasizing the integration of a Xilinx MicroBlaze soft-core CPU on the Artix 7 FPGA, and the FreeRTOS that would run the server. Vivado version was determined, and other necessary materials were either obtained or a plan for obtaining them was made. The team also identified potential challenges and outlined strategies to mitigate them.

Meeting Entry - September 14, 2023

Objective: Installing and Debugging Vivado Downloads For All Team Members

Summary:
In today's meeting, the primary focus was on ensuring that all team members successfully installed and debugged Vivado, a critical tool for our FPGA development. The session began with a step-by-step walkthrough of the installation process, addressing common issues that might arise. Each team member had the opportunity to troubleshoot and debug their installations, promoting a uniform and stable development environment. By the end of the meeting, all team members had a functional Vivado setup, setting the stage for efficient and collaborative coding sessions in the upcoming weeks.

Meeting Entry - September 19, 2023

Objective: Progress Update and Research Review

Summary:
This meeting focused on the progress made thus far. Coding efforts were discussed, with particular attention given to addressing Vivado problems encountered during implementation. The team shared insights gained from individual research on FPGA, MicroBlaze, and related topics. This exchange of information proved valuable in refining our approach and ensuring a cohesive understanding among team members.

Meeting Entry - September 21, 2023

Objective: MicroBlaze Tutorial And Research Explanation

Summary:
Today's meeting centered around a comprehensive exploration of MicroBlaze through tutorials and research. The team collectively engaged in a tutorial session, gaining hands-on experience with MicroBlaze implementation on the Artix 7 FPGA. Key concepts, functionalities, and potential applications were discussed. Team members shared their research findings, addressing nuances and potential challenges associated with integrating MicroBlaze into our project. This meeting laid a solid foundation for the subsequent coding and implementation phases, fostering a deeper understanding of the chosen soft-core CPU.

Meeting Entry - September 26, 2023

Objective: MicroBlaze Tutorial And Research Explanation Continued
Summary:
Building on our previous meeting, today's session extended the exploration of MicroBlaze through tutorials and continued research discussion. Team members had the opportunity to delve deeper into specific features and functionalities, addressing any lingering questions or uncertainties. Coding efforts related to MicroBlaze implementation were shared and discussed, with a focus on collaborative problem-solving. The team collectively worked through challenges and solidified their understanding of MicroBlaze, setting the stage for the next phase of the project.

Meeting Entry - September 28, 2023

Objective: GPIO, UArt, QSPI, and other IP Implementation Discussion
Summary:
In this meeting, the team delved into the implementation details of various IPs, including GPIO, UART, QSPI, and others crucial for our project. The focus was on understanding the configuration, integration, and potential interdependencies of these IPs within the system. Team members shared insights gained from research and began collaborative coding efforts to implement these IPs in the context of the overall project. Discussions revolved around optimizing configurations and ensuring seamless interaction between different IPs, laying the groundwork for the broader functionality.

Meeting Entry - October 3, 2023

Objective: Planning for Digilent Nexys A7 Implementation

Summary:
With the foundation laid, our focus shifted towards the transition to the Digilent Nexys A7 development board. We outlined a detailed plan for this migration, considering hardware compatibility and potential adjustments needed. The team discussed the importance of the transition and planned for testing procedures to validate the functionality on the new platform.

Meeting Entry - October 5, 2023

Objective: Discussion Of HTML design and Functionality

Summary:
Today's meeting honed in on the design and functionality of the HTML components within our project. The team engaged in a detailed discussion about the structure and layout of the interactive web server. We explored potential design patterns and user interface considerations to ensure a user-friendly experience. Conversations also revolved around the integration of dynamic content and real-time updates through HTML and JavaScript.

Meeting Entry - October 10, 2023

Objective: Discussion Of HTML design and Functionality Continued

Summary:
Team members shared their insights on creating responsive and visually appealing web interfaces that align with the project requirements. Aspects such as telemetry visualization, command input forms, and overall responsiveness were carefully considered. By the end of the meeting, we had a clearer vision of the HTML elements required for our project and a roadmap for the collaborative development of this crucial aspect of the system.

Meeting Entry - October 12, 2023

Objective: Intro Into Xilinx SDK and FreeRTOS implementation

Summary:
In today's meeting, the team delved into the essential tools for our project, focusing on an introduction to Xilinx Software Development Kit (SDK) and the implementation of FreeRTOS. The session commenced with an overview of Xilinx SDK, highlighting its features and capabilities for FPGA development. Team members gained hands-on experience navigating the SDK environment, laying the groundwork for efficient coding.

Meeting Entry - October 17, 2023

Objective: FreeRTOS Hello World Design and Implementation

Summary:
Today's meeting marked a significant milestone as the team focused on the practical implementation of FreeRTOS within our project. The objective was to create a "Hello World" design, a crucial step in ensuring the correct integration of the real-time operating system.

The session began with a walkthrough of the FreeRTOS "Hello World" template, emphasizing key functions and configurations. Team members actively participated in coding exercises, implementing and testing the basic functionalities of FreeRTOS within our project context.

Meeting Entry - October 19, 2023

Objective: FreeRTOS Hello World Design and Implementation Continued / Debugging

Summary:
Continuing from our last meeting, today's session extended the focus on the FreeRTOS "Hello World" design and its implementation. The team delved deeper into debugging techniques to address any issues encountered during the initial coding phase. Emphasis was placed on identifying and resolving potential pitfalls, ensuring a robust and error-free integration of FreeRTOS into our project.

Meeting Entry - October 24, 2023

Objective: 1PPS Discussion and Beginning of Implementation

Summary:
Today's meeting centered around the implementation of the 1 Pulse Per Second (1PPS) functionality within our project. The team engaged in a thorough discussion to define the requirements and specifications of this critical component. Conversations revolved around the precision and synchronization aspects required for working with time-sensitive data.

Meeting Entry - October 26, 2023

Objective: Implementation of 1PPS

Summary:
After the last discussion, the team initiated the coding phase, beginning the implementation of the 1PPS feature. Collaborative efforts were directed towards integrating this functionality seamlessly with the existing project structure. Challenges and potential optimizations were explored.

Meeting Entry - October 31, 2023

Objective: 1PPS Debugging and Constraint File Problems

Summary:
In today's meeting, the team delved into the debugging phase of the 1 Pulse Per Second (1PPS) implementation. The objective was to address any issues or anomalies identified during the initial coding of the 1PPS feature. Team members actively collaborated to troubleshoot and debug the code, ensuring that the timekeeping functionality met the required precision and synchronization standards.

Additionally, discussions revolved around constraint files, as team members encountered challenges related to them during the implementation. The session included a detailed exploration of constraint file problems, with the team collectively working through potential solutions.

Meeting Entry - November 2, 2023

Objective: 1PPS Debugging and Constraint File Problems Continued

Summary:
Continuing from our last meeting, today's session sustained the focus on debugging the 1 Pulse Per Second (1PPS) implementation and addressing ongoing constraint file issues. Team members actively engaged in collaborative problem-solving, sharing insights and potential solutions to the challenges encountered.

The debugging process involved a thorough examination of the code, with a specific emphasis on the connections of the 1PPS signal. Constraint file problems were revisited, and the team worked collectively to refine and optimize the file configurations.

Meeting Entry - November 7, 2023

Objective: Updating and Refining SDD, SRS, and Test Plan

Summary:
Today's meeting focused on the crucial task of updating and refining our Software Design Document (SDD), Software Requirement Specification (SRS), and Test Plan, incorporating essential diagrams for clarity and completeness.

The team began by revisiting the existing documentation and identifying areas that required enhancement or clarification. Attention was then turned to the inclusion of diagrams such as class diagrams to represent the structure of our software components, data flow diagrams to illustrate the flow of information within the system, and use case diagrams to showcase various interactions with the system.

Collaborative efforts were dedicated to ensuring that the documentation accurately reflected the current state of the project. This comprehensive update not only serves as a reference for current team members but also establishes a solid foundation for future contributors and maintenance.

Meeting Entry - November 9, 2023

Objective: Updating and Refining SDD, SRS, and Test Plan Continued

Summary:
Continuing from the previous meeting, today's session sustained the focus on updating and refining our Software Design Document (SDD), Software Requirement Specification (SRS), and Test Plan. The team engaged in collaborative efforts to ensure the documentation accurately captured the latest developments in the project.

Specific attention was given to incorporating additional diagrams, including class diagrams for a detailed representation of software structure, data flow diagrams to illustrate information pathways, and use case diagrams for various system interactions. The aim was to provide a comprehensive and accessible overview of the project's architecture and functionality.

Meeting Entry - November 14, 2023

Objective: FreeRTOS WebServer Implementation Begin

Summary:
In today's meeting, the team started on the implementation of the FreeRTOS WebServer. The objective was to initiate the integration of FreeRTOS with an interactive web server.

Challenges and potential optimizations were addressed collaboratively, fostering a dynamic and problem-solving atmosphere. By the end of the meeting, the team had successfully laid the groundwork for the FreeRTOS WebServer implementation, marking a significant step towards achieving the project's overarching goals.

Meeting Entry - November 16, 2023

Objective: FreeRTOS WebServer Implementation Continued

Summary:
Continuing from the previous meeting, today's session sustained the momentum in the implementation of the FreeRTOS WebServer. The team remained focused on refining and expanding the features of the web server within the FreeRTOS environment.

Collaborative coding efforts were intensified, with team members actively contributing to the development of interactive web server functionalities. Discussions centered around ensuring responsive user interfaces, efficient data exchange between the server and external computers via TCP over Ethernet, and secure handling of telemetry data from the onboard AXI bus and peripherals.

Meeting Entry - November 21, 2023

Objective: FreeRTOS WebServer Implementation Debugging and Finalizing

Summary:
Today's meeting focused on the crucial phases of debugging and finalizing the FreeRTOS WebServer implementation. The objective was to address any issues or inconsistencies identified during the development phase and ensure that the web server functionalities met the project requirements.

The team engaged in a comprehensive debugging process, examining the codebase for potential errors, and troubleshooting any issues that arose. Collaborative efforts were directed towards refining the user interface, optimizing data exchange mechanisms, and ensuring the secure handling of telemetry data.

Meeting Entry - November 23, 2023

Objective: Final Presentation and Documentation Creation and Practicing

Summary:
In today's meeting, the team embarked on the critical task of creating the final presentation and refining project documentation for a comprehensive wrap-up. The objective was to consolidate our achievements, challenges, and the overall project journey into an impactful presentation and well-documented set of materials.

Team members collaborated on crafting presentation slides that effectively communicated key milestones, features, and the architectural aspects of the enhanced Total Verification System. Emphasis was placed on creating visuals, including diagrams and code snippets, to enhance clarity and understanding.

Simultaneously, documentation, including the Software Design Document (SDD), Software Requirement Specification (SRS), and Test Plan, received final refinements to ensure accuracy and completeness.

The team engaged in practicing the presentation, focusing on a cohesive and engaging delivery. Feedback and suggestions were exchanged to further enhance both the presentation and accompanying documentation.