Assignment 1B – Address of the Peer Review done on our Assignment 1

Team 2: TNC MCU Design

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March 10, 2020

**Abstract:**

1. Comment: “two abstracts”

* **(agree to change)**
* Line: “Abstract— Abstract— Developed by Kaleb Leon, Kobe Keopraseuth, and David Cain with All Rights Reserved. The objective of this paper is to document and describe the design process of developing a software-based Terminal Node Controller (TNC).”

1. Comment: “it will also?”

* **(agree to change)**
* Line: “I will also be able to receive a packet via KISS from the PC, follow the AX.25 protocol to form it into a valid data packet for radio communication, translate it into an FM modulated audio signal tone and send the tone to the radio”

1. Comment: Spelling, “I”

* **(agree to change)**
* Line: “I will also be able to receive a packet via KISS from the PC, follow the AX.25 protocol to form it into an FM modulated audio signal tone and send the tone”

1. **Research Work Done By Others:**
2. Comment: “they are call?”

* **(agree to change)**
* Line: “However, there has been one other project that has accomplished this task of a software TNC and they are call their software TNC Direwolf”

1. Comment: “Ref[] Needed”

* **(agree to change)**
* Line: “However, there has been one other project that has accomplished this task of a software TNC and they are call their software TNC Direwolf.”

1. Comment: “our project mentors and list Ref[] -> Name and Credentials”

* **(agree to change)**
* Line: “According to the mentors of this project, the most common protocol used to communicate is the KISS protocol.”

**A. KISS Mode:**

1. Comment: “PC”

* **(agree to change)**
* Line: “It allows the pc to send a packet with a payload controlled by stop and start flags.”

1. Comment: “our project mentors and list Ref[] -> Name and Credentials”

* **(agree to change)**
* Line: “According to the mentors of this project, the most common protocol used to communicate is the KISS protocol.”

**B. HDLC (High-level Data Link Control):**

1. Comment: “prepare it for”

* **(agree to change)**
* Line: “After the KISS packet is received by the TNC it will have to translate it into another packet format to prepare it form transmission and this was the next obstacle.”

1. Comment: “Suggestion = Might be good to show the HDLC Diagram here.”

* **(agree to change)**

1. Comment: “Comma needed”

* **(agree to change)**
* Line: “To identify the difference between these flags and the rest of the message HDLC forbids more than 5 consecutive 1s.”

**D. AFSK (Audio Frequency Shift Keying)**

1. Comment: “Formatting”

* **(disagree to change)**
* What about formatting is wrong?

1. Comment: “I recommend showing a diagram where HDLC/AX.25/AFSK fit into your layered comm. Model for the TNC”

* **(agree to change)**

1. **Project Analysis**
2. **Project Feasibility**
3. Comment: “Ref Needed[]”

* **(agree to change)**
* Line: “In addition, a previous design has been successfully achieved by a project called Direwolf meaning the design is feasible on a technological standpoint.”

1. Comment: “Gnatt Chart, Describe how you analyzed the Gantt chart”

* **(agree to change)**
* Line: “According to the Gnatt Chart referenced in Appendix B.”

1. Comment: “are well documented”

* **(agree to change)**
* Line: “Also, the hardware and protocols we plan on using is well documented and already implemented in hardware so it is very feasible to make the shift to software related logic.”

1. Comment: “will be done using free software”

* **(agree to change)**
* Line: “In the terms of cost, the design required little to no physical devices or hardware so the price will be relatively low considering most of the work will be free software.”

1. **Alternatives and Tradeoffs Considerations**
2. Comment: “what does this sentence even mean?”

* **(agree to change)**
* Line: “Lastly, we had to look into transmitting one we have a binary packet how to translate that into FM audio tone.”

1. Comment: “Don’t see any software alternatives and T/o please fix!”

* **(agree to change)**
* Line: “In addition, a previous design has been successfully achieved by a project called Direwolf meaning the design is feasible on a technological standpoint”

**Appendix A**

**B. Functional Requirements**

1. Comment: “Any abstract requirements? If not, why not?”

* **(agree to change)**

1. **Objective Tree**
2. Comment: “objective tree is blurry,”

* **(agree to change)**

1. Comment: “and percentages aren’t clear, meaning not immediately clear why they only add up to 90 on the third row, but that’s more nitpicky”

* **(disagree to change)**
* “Power consumption” subfield does not extend to a third row, so percentage does add up to 100 %

1. Comment: “You need to explain the tree more thoroughly as to your rational for setting up the tree this way”

* **(disagree to change)**
* Objective is thoroughly above diagram

1. **Level 0 Functional Block Diagram**
2. Comment: “function”

* **(agree to change)**
* Line: “This diagram shows the inputs and outputs in our base design. As shown our design functions is half duplex meaning it can only receive at one time and transmit at a separate time.”

1. Comment: “incomplete sentence weirdly written paragraph”

* **(agree to change)**
* Line: “Never at the same time. When receiving different tasks are performed as well as when transmitting.”

1. Comment: “But are there any abstract requirements; if not, why not”

* **(disagree to change)**
* This comment will be addressed further in the functional requirements section

**Appendix B**

1. **Technological Analysis**
2. Comment: “reads weird; maybe change to: ‘Because the project aims to replace hardware originally developed in the 1980’s, the technical requirements are minimal.’”

* **(agree to change)**

1. Line: “With the goal of the project aiming to replace hardware that was originally developed in the early 1980s, this means the technical requirements are minimal.”

* Comment: “Should run some numbers and consider software too, not just whether or not it has been done before”
* **(agree to change)**

1. Comment: “more detail in to ‘working well’”

* **(agree to change)**
* Line: “The project is stated in a fashion that allows us to get the hardware working well, then begin adding useful features and ensuring documentation is sufficient/competent for successive developers to branch off.”

1. **Time Analysis**
2. Comment: “CPM analysis here would be appropriate”

* **(agree to change)**

1. Comment: “redundant”

* **(agree to change)**
* Line: “A goal of our project is to ensure documentation is sufficient for future groups to have a strong understanding of our system; to ensure this outcome, every three weeks we will dedicate time to ensuring the documentation current at that time is thorough and informative.”

**E. Gantt Chart**

1. Comment: “misspelled gantt”

* **(agree to change)**
* Line: “Gnatt Chart
* Line: “Figure B-2: Gnatt Chart Semester One”
* Line: “Figure B-3: Gnatt Chart Semester Two”

1. Comment: “Please include human resources in your Gantt chart”

* **(disagree to change)**
* When constructing our Gantt chart, we setup the chart to not include weekends as personal days.

**Appendix C**

1. **Alternatives and Tradeoffs Analysis**
2. Comment: “Note: Zero software alternatives considered”

* **(agree to change)**

1. **Microcontroller Comparison**
2. Comment: “Our mentor can aid us”

* **(agree to change)**
* Line: “The only downside is that we are not familiar with coding in embedded C, but our can aid us in that aspect.”

**2.** **PTT**

1. Comment: “On the other hand”

* **(agree to change)**
* Line: “The MOSFET on the hand definitely meets our specifications.”

**4. DAC**

1. Comment: “built in to our microcontroller”

* **(agree to change)**
* Line: “After comparing the options for the DACs, we decided to use the DAC built in our microcontroller”

1. Comment: “on our final design”

* **(agree to change)**
* Line: “The DAC IC would be very simple to use in our design, but it would take more space on final design and add more to our cost.”

1. Comment “weirdly worded”

* **(agree to change)**
* Line: “to this option is the simplicity and lack of components needed to generate waveform at low power cost.”

1. Comment “capitalize/complete”

* **(agree to change)**
* Line: “is the ease of use, only needing to generate digital values that will quickly be converted to sinusoidal waveform.”

1. Comment “capitalize”

* **(agree to change)**
* Line: “would be the requirement to create code to drive a resistor network meaning more time would be spent on the DAC”