After an internal meeting of stakeholders, it was requested that InnovatED throw away their current prototype and develop a new prototype for Milestone 2. There were valid concerns regarding the quality of the product. InnovatED, therefore, held a separate meeting to review over this request. It is suggested that maintaining the current prototype, instead of throwing it away, can lead to a higher quality product than the rework.

InnovatED estimated that 60-80 combined hours of work was expended to develop the initial prototype submitted in Milestone 1. This time was spread across 4 weeks, and may need to be spread across the next time frame to complete a new prototype. The amount of rework requested may not be necessary after reviewing the current structure.

The design of this application was to follow Liskov’s Substitution Principle to reduce coupling and increase cohesion. While there are areas where improvements can be made, this prototype would need to be replicated for the upcoming prototype.

With less time spent reworking the prototype, InnovatED will be able to focus on the newly defined requirements. After an internal review of the requested features, there are some criteria that are already being accomplished. A couple of examples include the required GUI, which is already implemented, and multi-program execution.

Under the current design, the Processor is implemented using threading. To create a simulator that can handle two programs simultaneously, a scheduler and locking mechanisms would need to be implemented to manage threads and prevent race conditions.

The work put in to the current prototype allows InnovatED to focus more on the features that are not already completed and refine our work to further comply with UVU’s requirements. During the internal discussion regarding this request, the advantage of developing more compliant to the new requirements was discussed

In the new design, many of the elements in place are the same elements used in the original prototype. The changes being made would be to extend the current prototype (specifically the processor class). This extension is a sign of the quality that UVU is seeking, and allows InnovatED to improve the quality of the existing prototype further.

InnovatED would like to prevent unneeded rework, this alone can save time for both parties. Saving time will allow more focus on implementing new features (such as the new ALU operations and Memory extension). Lastly, while the idea of tossing the current prototype to design according to required specifications was discussed, it was decided that modifying the current design would be more desirable. These factors are why InnovatED is suggesting that maintaining the current prototype can lead to a higher quality product.