Validation Policy

In our documents we have validated every element of contents in a separate Validation section at the end of the document or near to it.

Machine Design will have at the end of the document a Validation section which includes the Validation of High Level Specifications and the Validation of the System Level Requirements, also adding Validation to Design Priorities.

Software Specification Document will have a Validation section that will contain the validation of the Inputs and Outputs, the Relation of Inputs and Outputs, the Description of States, the State Transitions, the Finite State Automaton and the UPPAAL model.

Software Design will have a Validation section close to the end of the document being afterwards followed by the Program Code. The Validation will contain the validation of the java code to the transition table( from the Software Specification), validation of the timerMange function ( this function needed separate formal proof for its inner loop) and Control flow validation.

Software Implementation and Integration Document will have at the end a Validation section containing validation of the PHP code to java and the validation of the Assembly code to the PHP compiler.

Validating the machine to the priorities.

We validated the machine to be reliable by making it run and sort 100 discs, the results of multiple test concluded that the machine had faulted once in sorting one disc during the 100 discs test, thus exceeding the 95 % reliability we determined the machine needed to be considered reliable .  
 Throughout tests of the machine we determined that a full container of 12 discs, 6 black and 6 white randomly placed in the container, is sorted in 11 seconds. This results meets our expectancy to sort more than a disc per second.  
During previous tests the machine didn’t break physically, thus we consider the machine to be robust.  
The machine is user accessible, once set up as described in the documentation the user is only required to utilize two push buttons and insert all the discs in the container. During testing all push buttons worked as intended and the sorter didn’t create problems of any sort, due to carefully placed walls and the movement direction imposed by the feeder and conveyer belt the discs during testing ended up only in their specific trays, most of the machine is opened so if the machine is aborted any discs is in reach.  
The machine was built on only one floorboard indirectly limiting our space and such obtaining a normal sized machine.  
The machine was built in time to respect the group established dead line. Thus we consider easy to build.  
The overall machine doesn’t use more parts then necessary, the machine contains a conglomerate of pieces that replaces a single piece, with the same functionality, only in the case that the single piece is unavailable or doesn’t offer the same advantage as the conglomerate when querying trough the higher priorities, the most common is that a single part doesn’t provide enough robustness or might make the machine fault.

Conclusion

The machine delivers satisfactory results, it accomplishes the project goal and fulfilled the group expectations.