The objectives of Machine Design are to design and construct a physical sorting machine by solely using the parts in the provided Fisher Technik construction kit and to define the System Level Requirements, which consists of use cases, user constraints and safety properties.

Use cases: description of a usage scenario of the machine. Use cases also clarify the features and observable qualities of the machine.

User constraints: description of the expected behaviour of users, with the assumption that the system works properly.

Safety properties: specification of a set of relations between inputs and outputs written in English, but later expressed using UPPAAL.

In the document “Machine Design”, the System Level Requireents, as well as the connections between different parts of the machine and the microcontroller, the so-called machine interface, must be completely and accurately described.

For Software Implementation and Integration, the Java program written in the previous phase is converted into Assembly code. Then it is compiled and integrated into the PP2 processor and the Fisher Technik machine. In order to be able to do this, it is required that a representation is chosen of all variables and datastructures from the Java program and that a uniform coding standard is developed. Both the data representation and the coding standard are detailed in a document called “Software Implementation”.