

SRS Frequently Asked Questions

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A list of Frequently Asked Questions are given below. The answer to the question is shown below the question, in italic font.

1. If we are solving an “intermediate problem,” should we state the output(s) of that step or we should only talk about the raw inputs of the software and ultimate outputs?”

Without any other qualifying information, I would say that the intermediate steps are not relevant in the SRS. The SRS should be abstract. It should say what we want, not how to calculate it. However, the world of requirements specification doesn't always lend itself to an absolute answer. :-) There are definitely cases where the best course of action is to describe how to get from a to c by first passing through b. The cases where specifying the intermediate steps makes sense are as follows:

- (a) If the intermediate steps have value on their own, then they should be included as a goal. For instance, in the Solar Water Heating System example the energy in the water and the PCM depends on the temperatures. If the ultimate goal was to know the energies, it still would make sense to output the temperatures, since they have value on their own.*
- (b) If the intermediate steps make the specification clearer, or easier to understand, they should be included. Although a specification should say what is desired, there are cases where the appropriate way to specify “what” is to say “how.” This is called an operational specification. An operational specification gives the steps for the intended behaviour. All other things being equal, our preference is still a descriptive specification. A descriptive specification*

says what is required in terms of the desired properties, without reference to how it will be done. As an example, a descriptive specification for finding the minimum of a list would describe what is meant by minimum. A descriptive specification would say that the output is the element of the list that is equal to or less than all other elements. The corresponding operational specification would give the algorithm for finding the minimum. The topic of operational versus descriptive specification is covered further in these [slides](#) (starting around slide 22). One of the points on operational specifications that sometimes confuses students is that the operational specification is phrased in terms of “how,” but the intention is still to say “what.” That is, the implementation is not required to use the steps given for how, as long as the results match the what. In the above example, the operational specification for the minimum of a list gives an algorithm, but the implementation is free to use any algorithm, as long as the output returned matches the output that would be returned by following the operational specification.

In the SRS intermediate calculations can come through supporting theoretical models, general definitions, instance models and/or data definitions. The short answer to the original question is that sometimes it makes sense to include an intermediate problem in the specification, and sometimes it doesn't. A generalization isn't really possible. The answer depends on the specific problem at hand.