



The Engineering Design Cycle

Making a Block Diagram

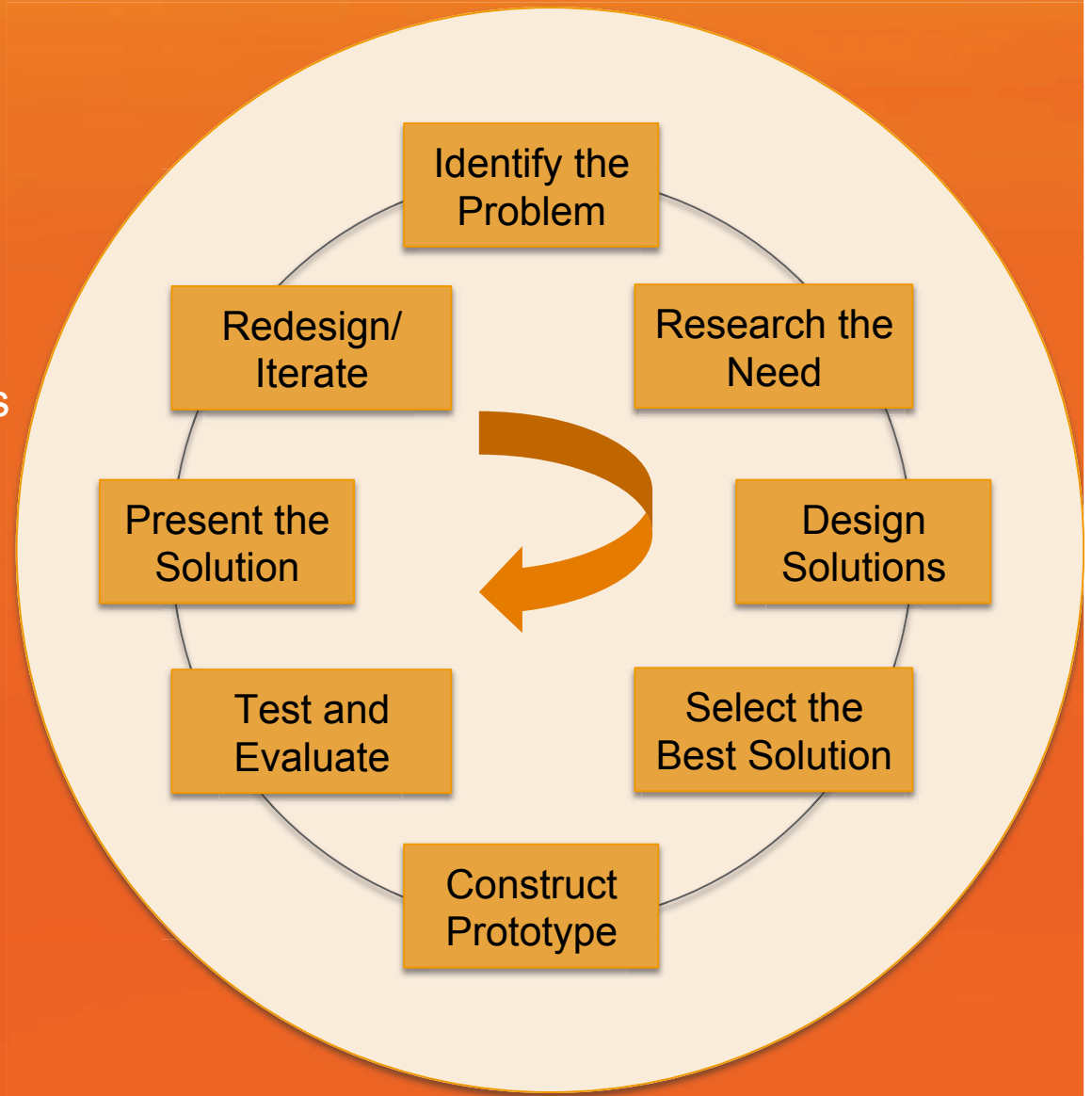
Once the best solution to the design problem has been selected, it's time to construct a block diagram that uses both visual and verbal elements to clearly convey the design to a broad range of users.



The Engineering Design Cycle

A problem has been identified. The problem has been researched. The need to solve it has been proven with credible sources. Several design solutions have been put forward, and a winner has been chosen!

Once a solution is selected, it's time to describe that solution with a block diagram. The block diagram will be a visual aid not only to the design team but those to outside the team to understand how the pieces of the design fit together into a meaningful whole!



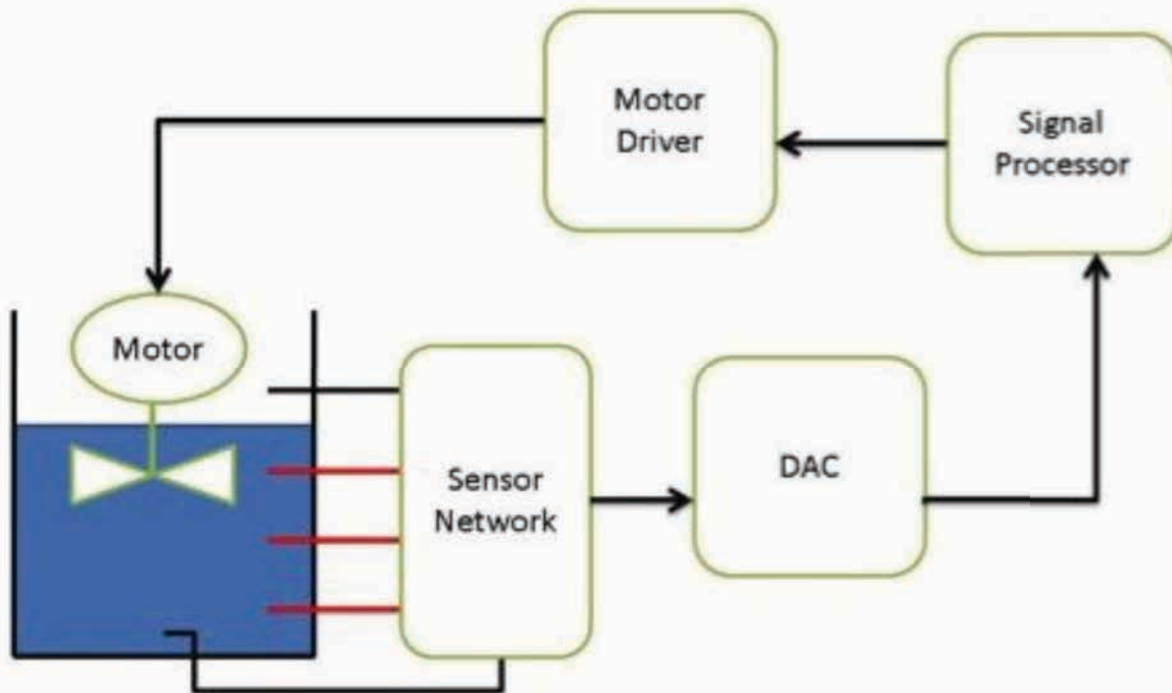


High Quality Block Diagrams

- Show every major component or stage in the design.
- Clearly identifies inputs to the system (where inputs are those signals obtained from outside the system).
- Clearly labels outputs from the system (where outputs are generated from within the system & provided to the user of that system).
- Places inputs and outputs at the beginning and end of the signal flow.
- Indicates major decisions and branches in the signal flow.
- Uses arrows to indicate proper direction of signal flow from one stage or component to the next.
- Minimizes the use of text and maximizes the use of visual presentation to ensure that the scope and structure of the design are readily communicated to the reader.
- Allows space for key performance metrics and constraints (e.g. the design specification).



Block Diagram Examples

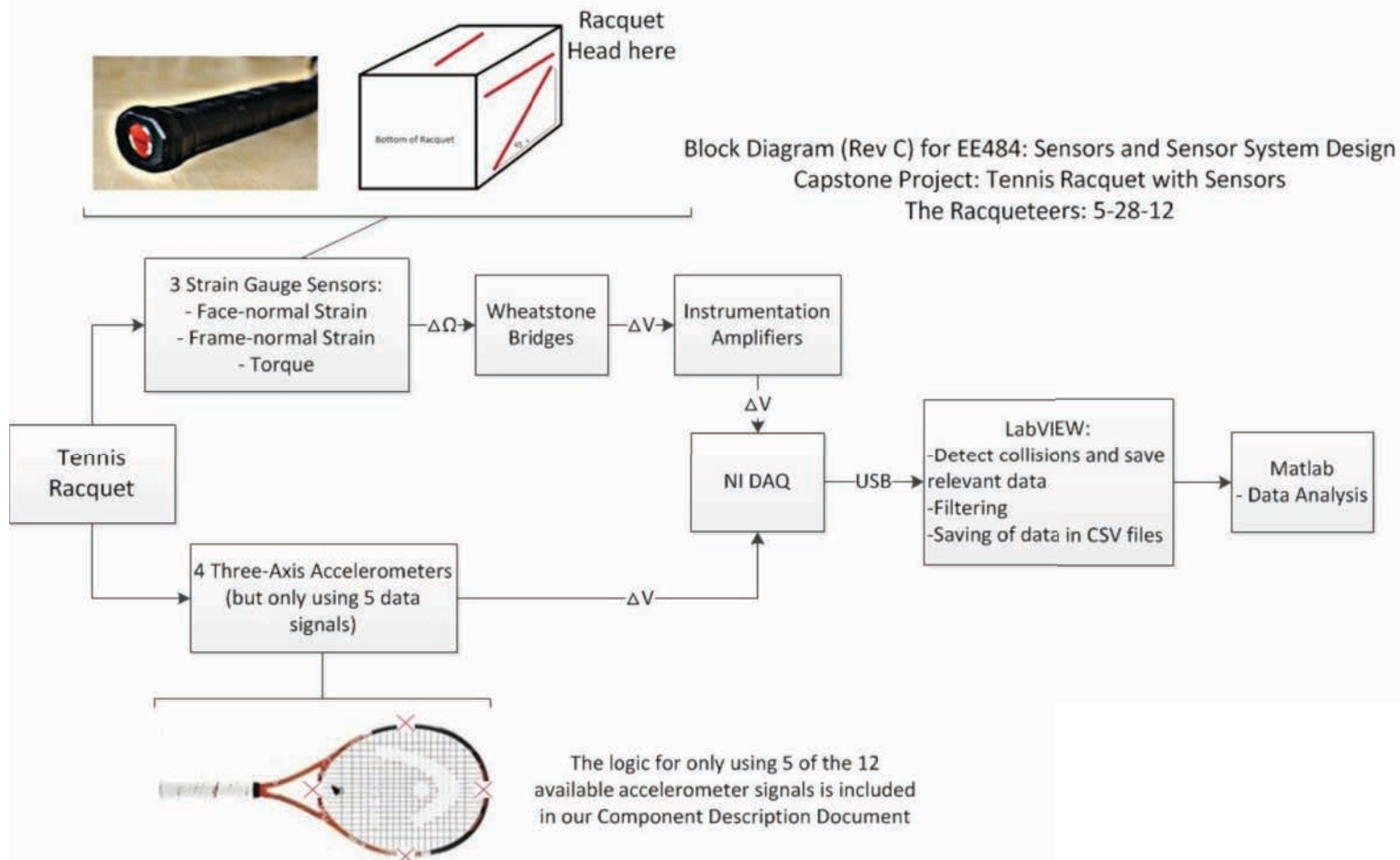


Complete?
Inputs?
Outputs?
Signal Flow?

Structure?
Visualization?
Minimized Text?
Communication?



Block Diagram Examples



Complete?
Inputs?
Outputs?
Signal Flow?

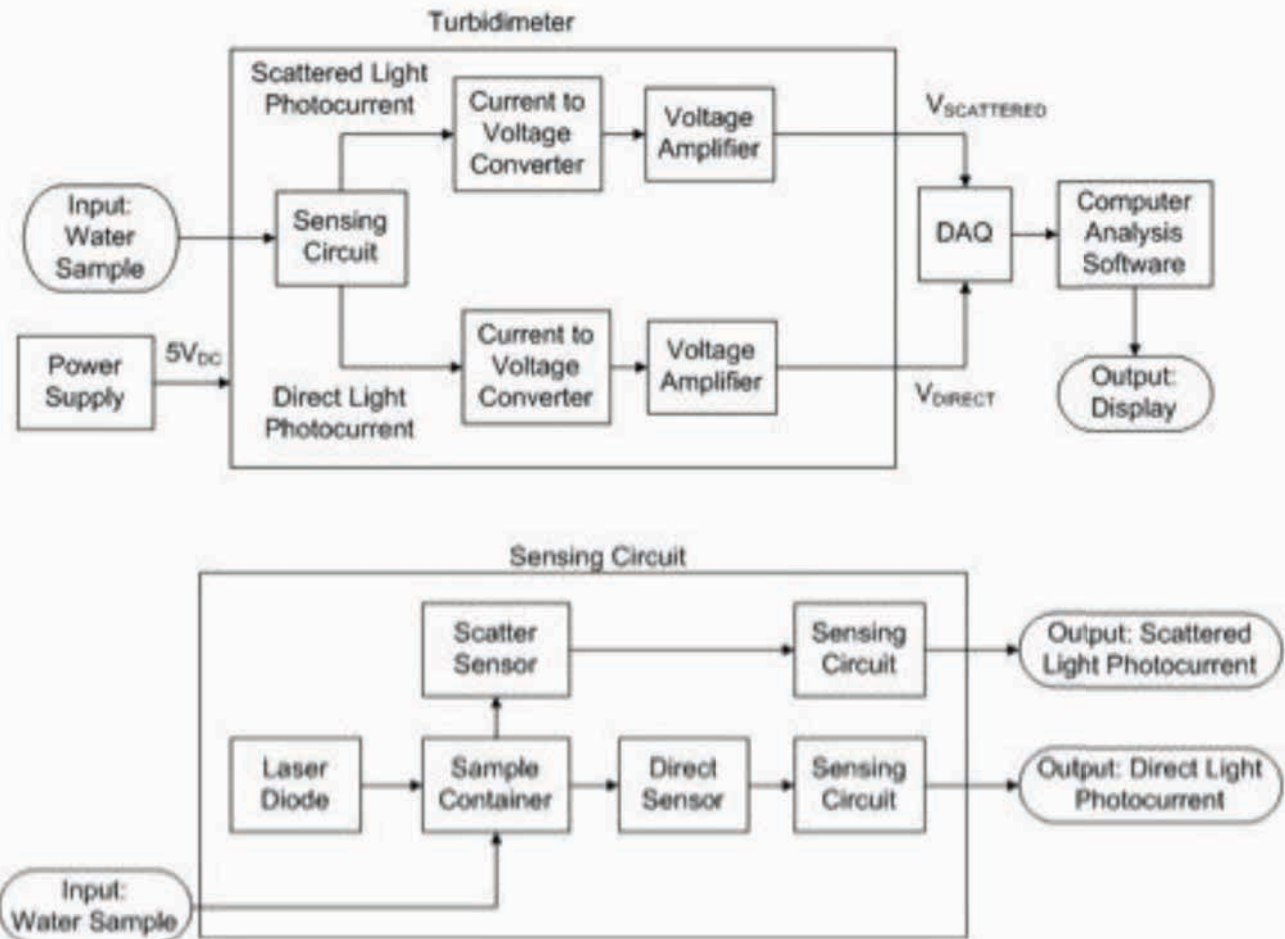
Structure?
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Minimized Text?
Communication?



Block Diagram Examples

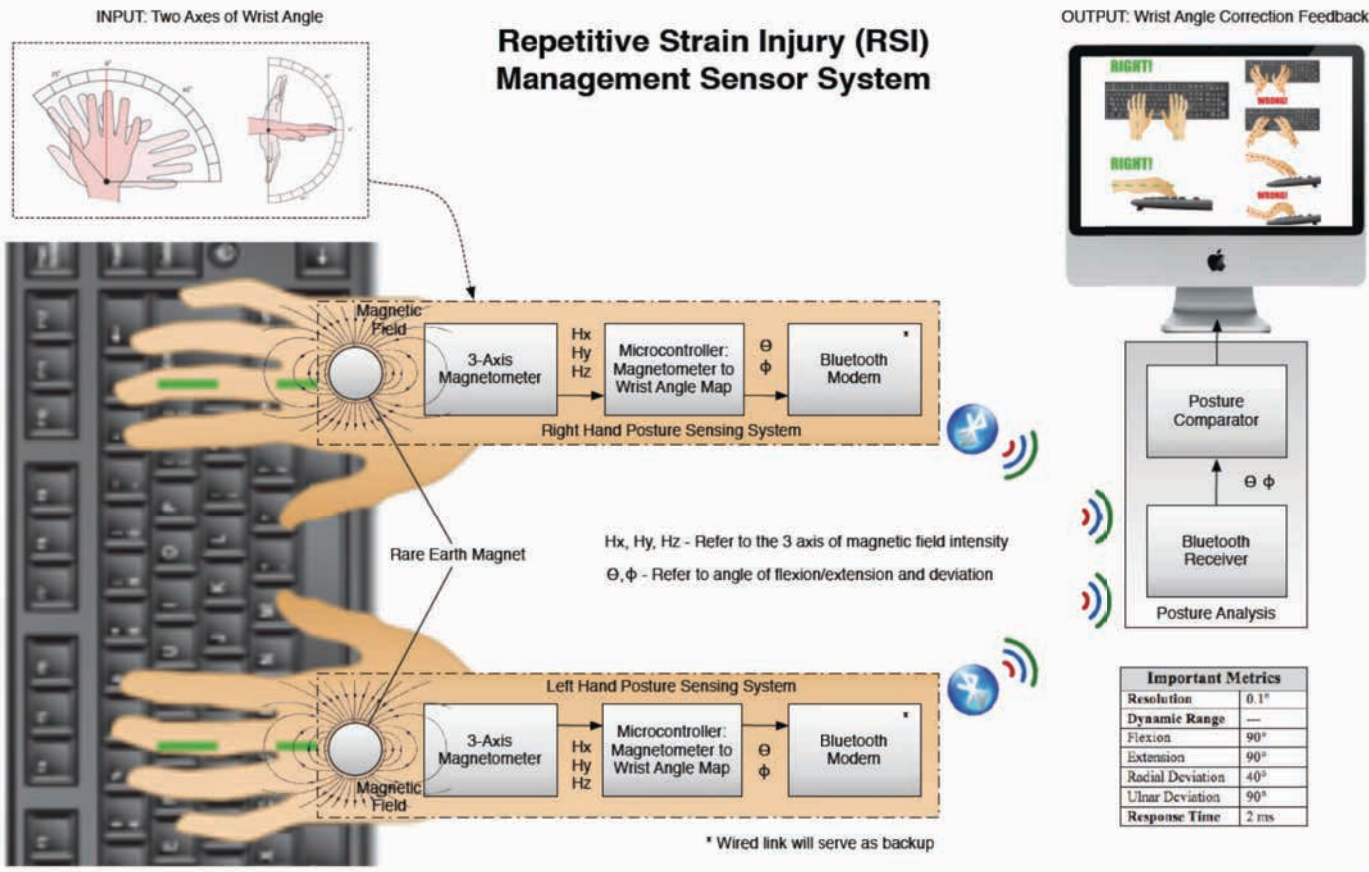
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Block Diagram Examples

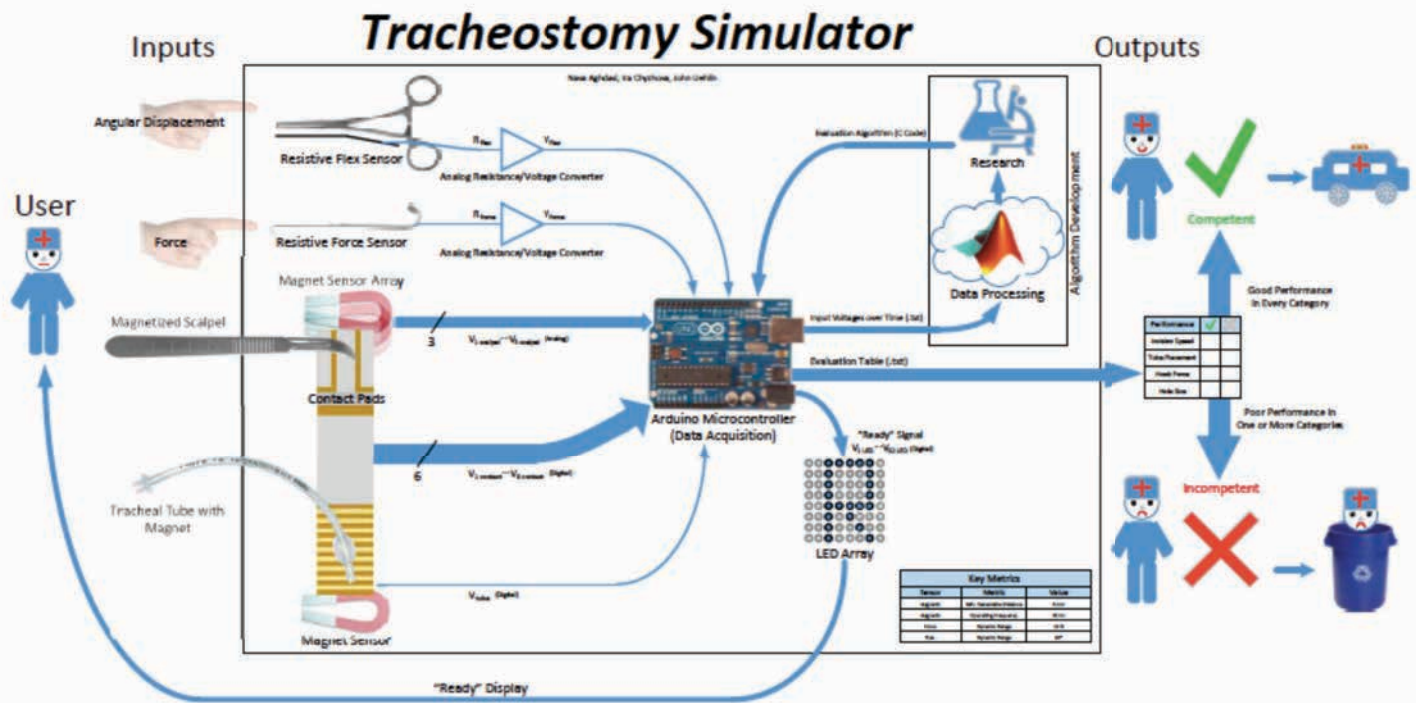


Complete?
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Block Diagram Examples



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Select the Best Solution

The Block Diagram

- A good engineering block diagram clearly communicates where a design begins and ends in terms that any reader can understand.
- The block diagram should communicate visually the basic structure and flow of a design in a way that the reader can clearly understand the purpose and function of the overall design.
- A good block diagram allows the reader to refer back to it when reading more in detail about different components of that design.

