

Heuristics that Move the Needle: Selection Strategies for Success

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Background

What Are Heuristic Evaluations?

In simple terms, a heuristic evaluation is:

- An expert review of a user interface against a set of guidelines called heuristics.
- A professional “gut check,” where subject matter experts look for areas that might confuse, slow down, or frustrate users.
- A fast way to surface usability problems, so teams can prioritize improvements based on severity.

Overall: It’s a complement to user research—not a replacement for observing real users.

When Should You Conduct One?

Heuristic evaluations can be used at different points in development, depending on your goals:

- Early in the process as an alternative to a formative study,
- Before detailed design to build confidence and identify issues early,
- Before and after a formative study to quantify improvements.

Overall: Heuristic evaluations are especially cost-effective and well-suited for comparing GUIs, IFUs, and software.

Do We Have Any Guidance On Them?

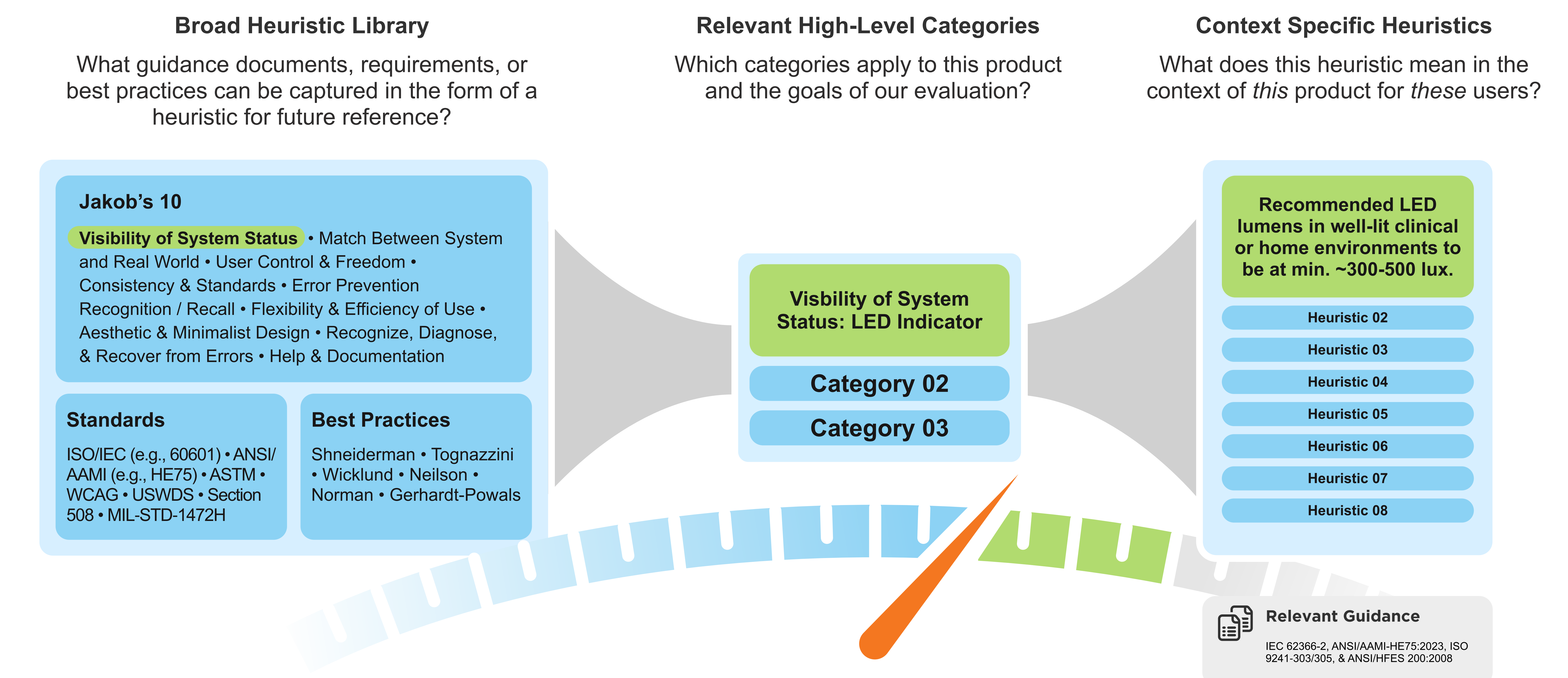
Short answer, no. Unlike many of the structured methods we use, heuristic evaluation doesn’t come with formal guidance or strict rules.

- That freedom can create uncertainty around best practices.
- That’s why creating clear, context-specific heuristics is essential to remove ambiguity and make the process more consistent and valuable.

Our Approach

Targeted Heuristics Mean Actionable Findings

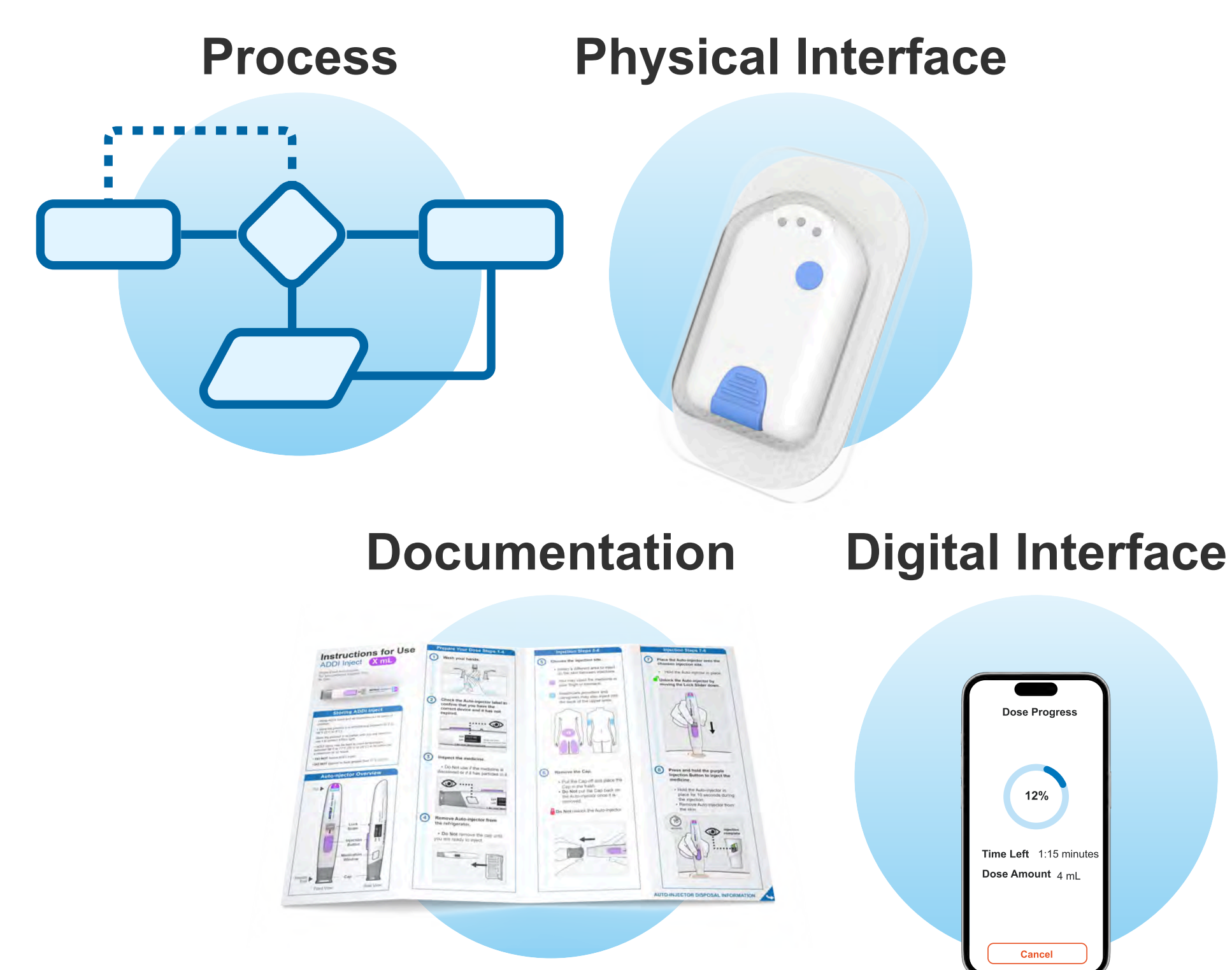
The quality of your findings depends on the quality of your heuristics. The more detailed and specific your heuristics are, the clearer and more meaningful your findings will be. The graphic below aims to visualize our approach to creating meaningful heuristics.



Putting It Into Practice

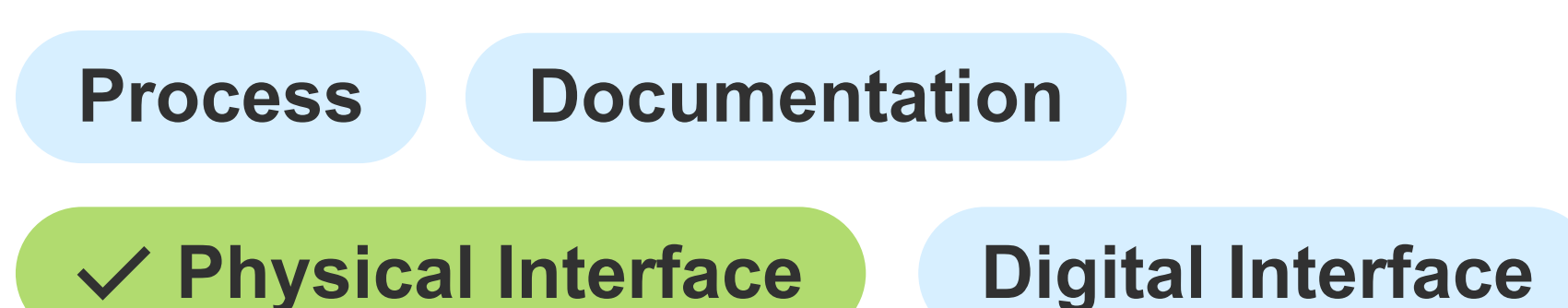
Build & Maintain Your Library

Start building your library with established sets of heuristics, or guidelines, (e.g., Nielsen, Shneiderman, etc) and then add domain-specific standards (e.g., ISO/IEC, ANSI/AAMI, ASTM). Add tags, references, and example heuristics for a head start when pulling for projects.



Identify The Interface

Define the evaluation scope and identify the heuristic categories from your library that are relevant to the type of interface you are evaluating.



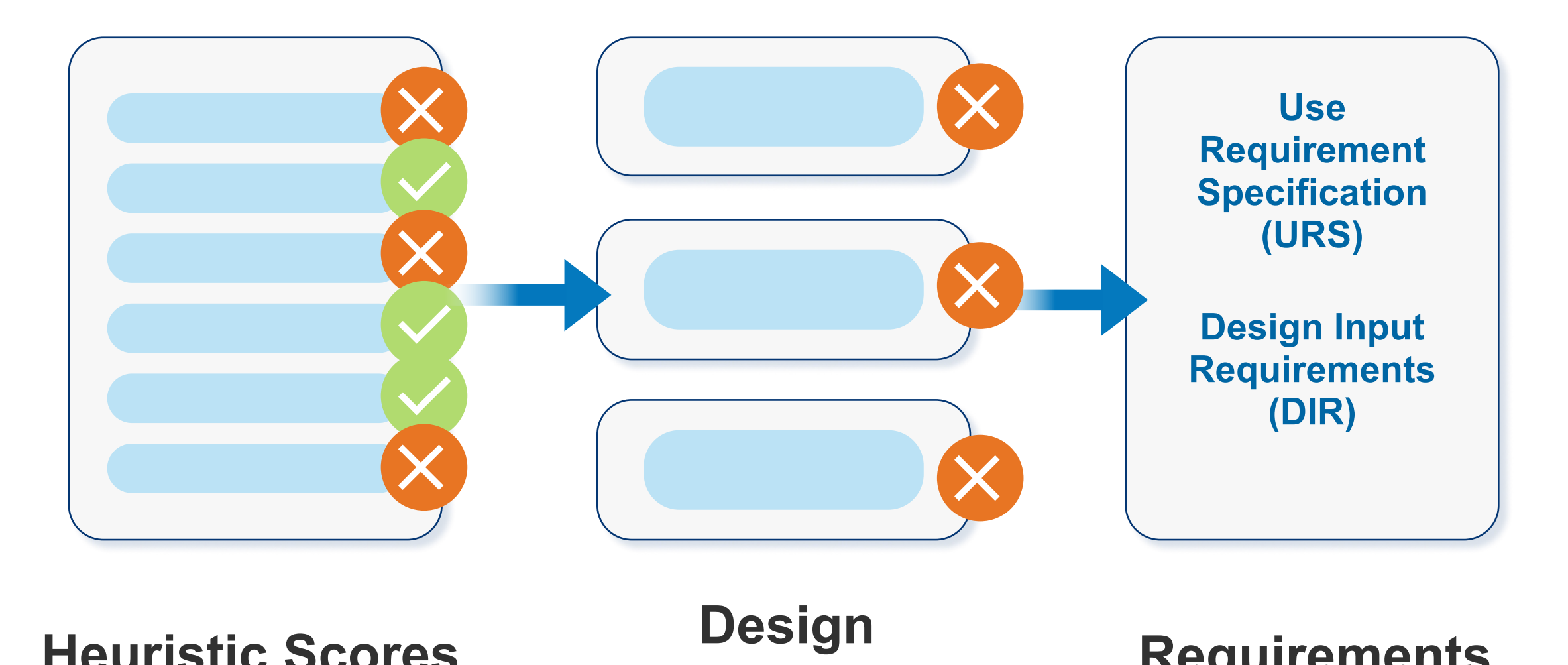
Develop Heuristics For Your Context



Visibility of System Status

- Recommended LED lumens in well-lit clinical or home environments at minimum ~300-500 lux.
- Critical indicators should have at minimum 5:1 luminance contrast ratio.
- Indicators intended to be seen at arm’s-length viewing (~50–75 cm / 20–30 in) or farther require higher output 500–800 lumens or lower lumens with strong contrast, favorable color, and sufficient angular size.

Drive Traceable Findings



- ID: H-23
- Violates “System Status”
- Score: 4, Major usability problem or frustration
- Evidence: Status LEDs not visible in intended use environment when worn on-body.
- It’s recommended to place the LED indicators on a top surface so it’s at a 45-degree viewing angle at a minimum of 500 lux.
- URS: Users must be able to see critical LED indicators at arm’s length viewing.
- DIR: Device LED indicators should have minimum lumens of 500 lux.