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MakuSafe Wearable Device Testing

Client: MakuSafe Corporation, West Des Moines, Iowa

Problem Statement

- MakuSafe Corporation needs data collected on the strength and comfortability of the holster for their wearable safety device.

Objective(s)

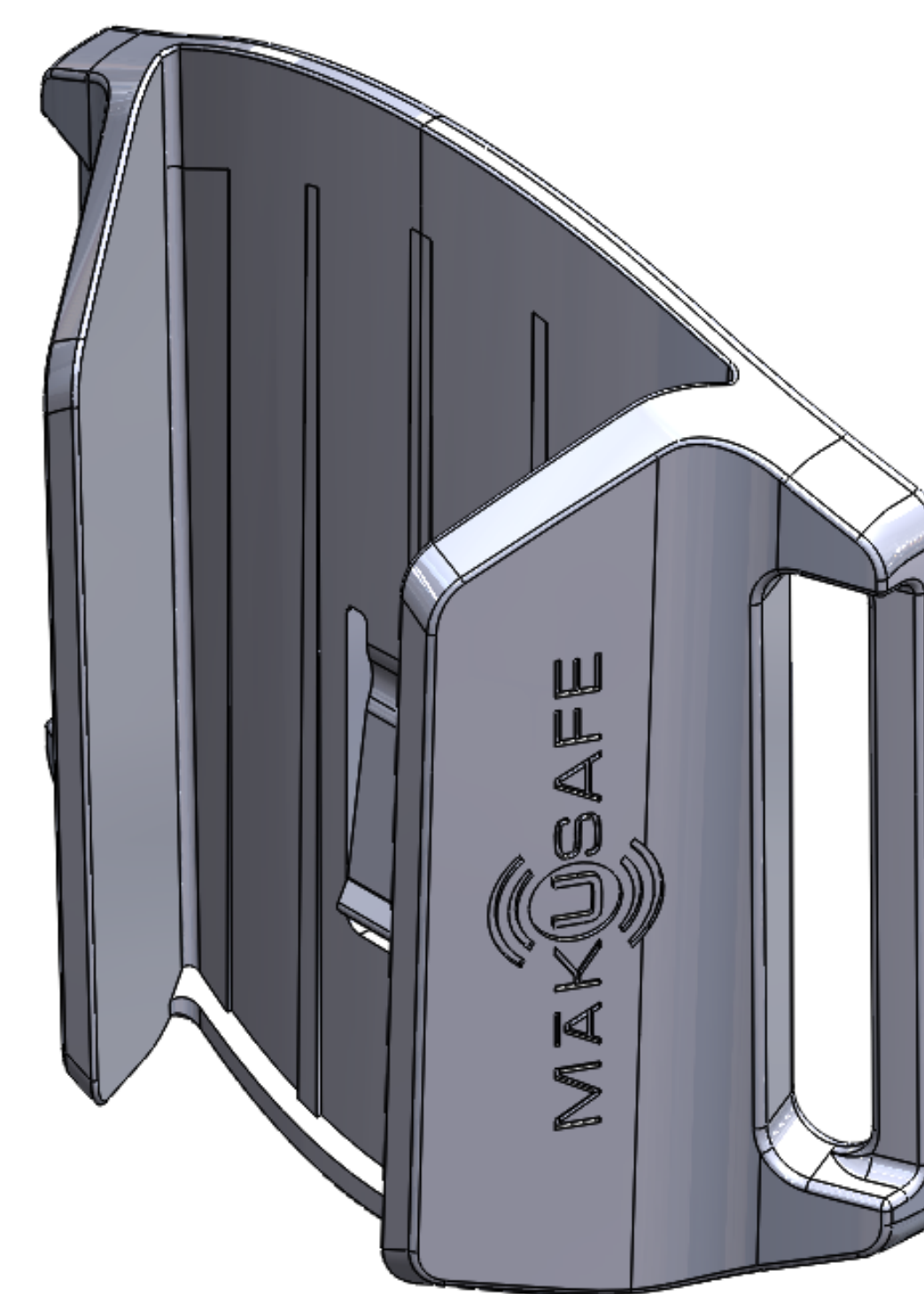
- Determine the force required to break the holster
- Evaluate the comfortability of the holster and armband
- Make recommendations for any design changes

Constraints

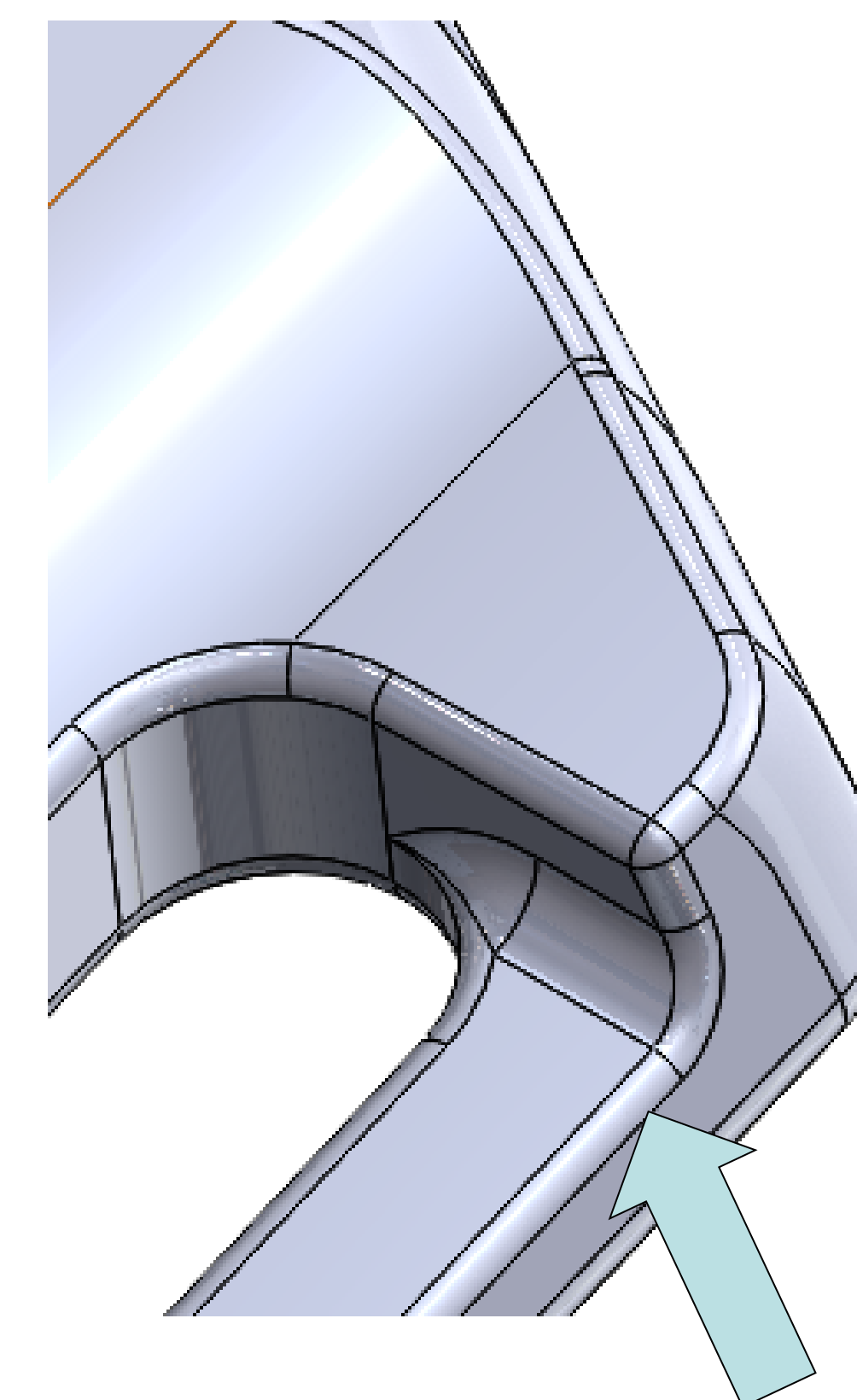
- \$1000 material budget for testing
- Timeline: Testing, analysis, and recommendations will be completed by March 18th
- Criteria to be met:
 - Design will be safe for workers to wear
 - Holster will be found comfortable to wear

Scope

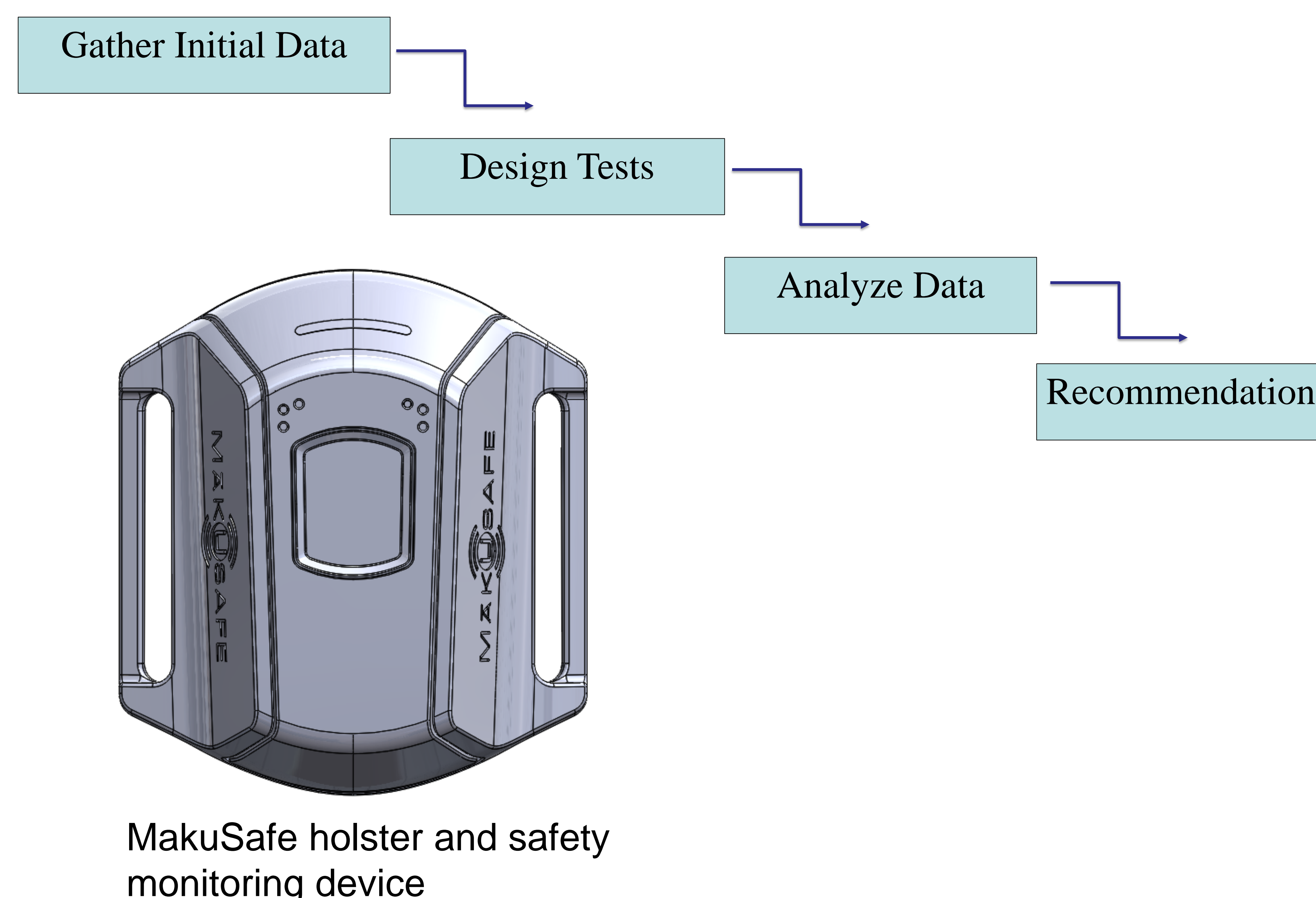
- Develop, test, and analyze the strength and comfortability of the holster. Make design change recommendations.



MakuSafe holster



Breakaway tab



Methods

- Research materials
- Develop test procedures
- Test and analyze data
- Conduct cost analysis of design changes
- Use Solidworks for conducting FEA

Proposed Solutions

- Change the shape or size of the breakaway tabs
- Change the holster material
- Change the band material
- Add a clasp to the band

Major Outcomes

- Safe design
- Comfortable design
- Cost effective design
- Final Report
- Final Presentation

Benefit to Client

- MakuSafe will be able to ensure worker safety while wearing the device