Initial Research

Identifying design opportunities through ethnographic research

This project focused on the daily challenges faced by telecom technicians at the worksite. We took a human-centered approach to identifying design opportunities based on their needs and pain points and explored new and relevant product solutions.

Lisa

Gunnar

Interviews

Photo documentation

POV filming

Research Findings

Tool safety vs. convenience

Small tools are left untethered

"We only tether the really big and really heavy tools because otherwise there would be too many safety lines which is also a hazard for us. Not to mention annoying."

— Lisa

Bad visibility inside bags

"We are still searching for the perfect tool bag."

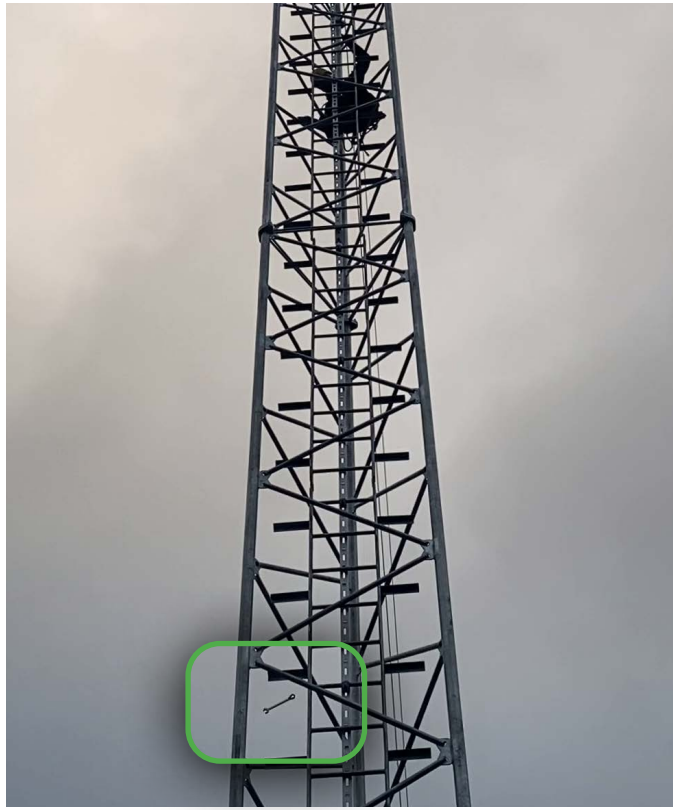
— Gunnar

Opportunity

Design question and requirements

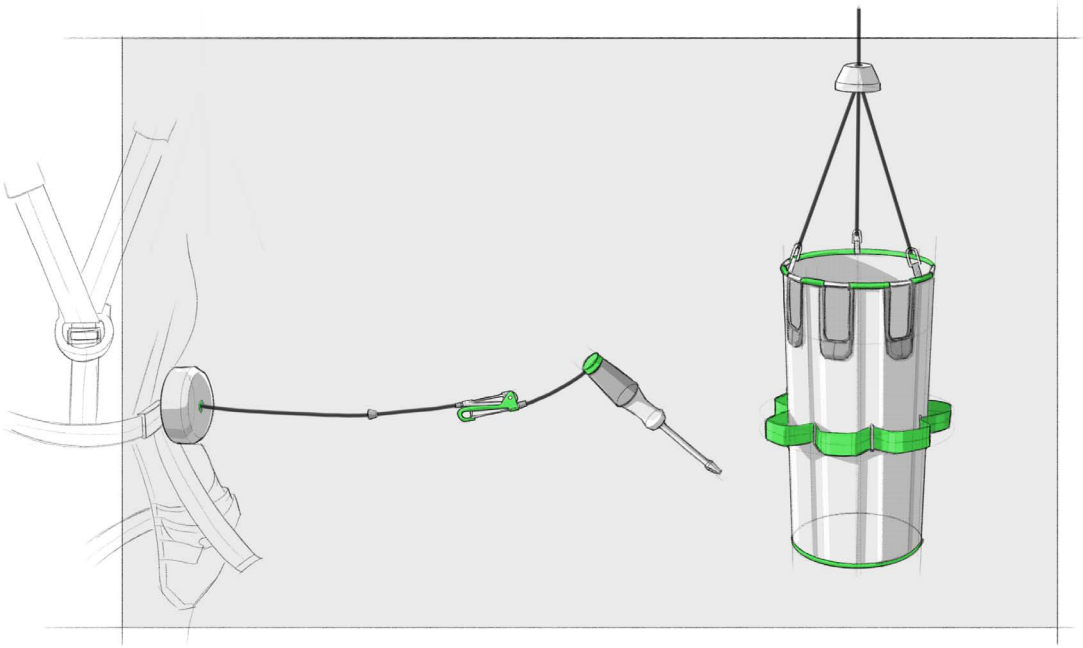
How might we create a safer worksite environment by keeping tools from falling when working aloft while maintaining a smooth workflow?

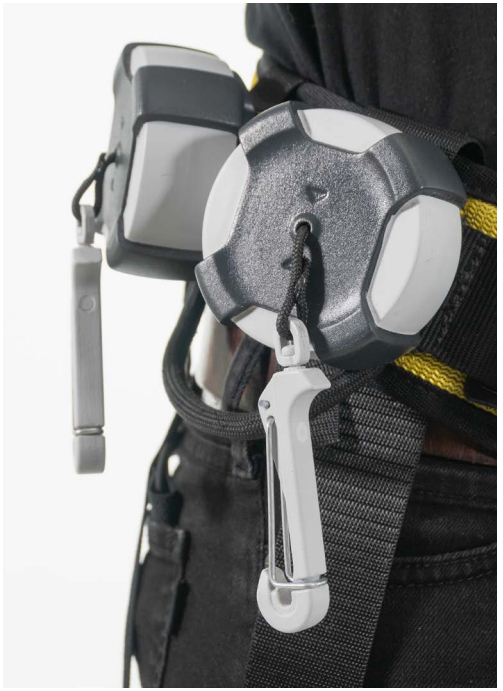
- Preserve complete function of the tools while connected to tethering system
- Never have tools detached while aloft
- Minimize risk of tools dropping
- Tools can be used as normal when detached from the tethering system
- Single handed tool retrieval and replacement while aloft
- Minimize entanglement of tethers and other safety lines

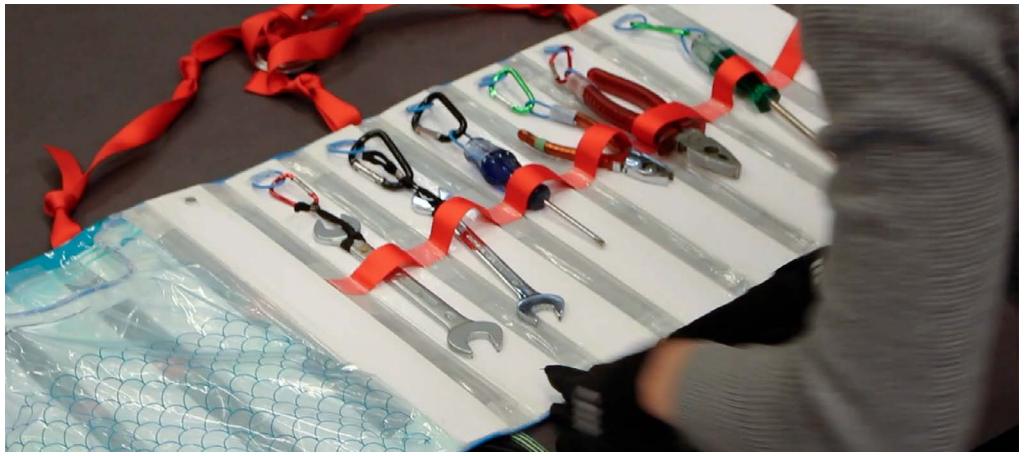


Process

Concepting and iterative prototyping



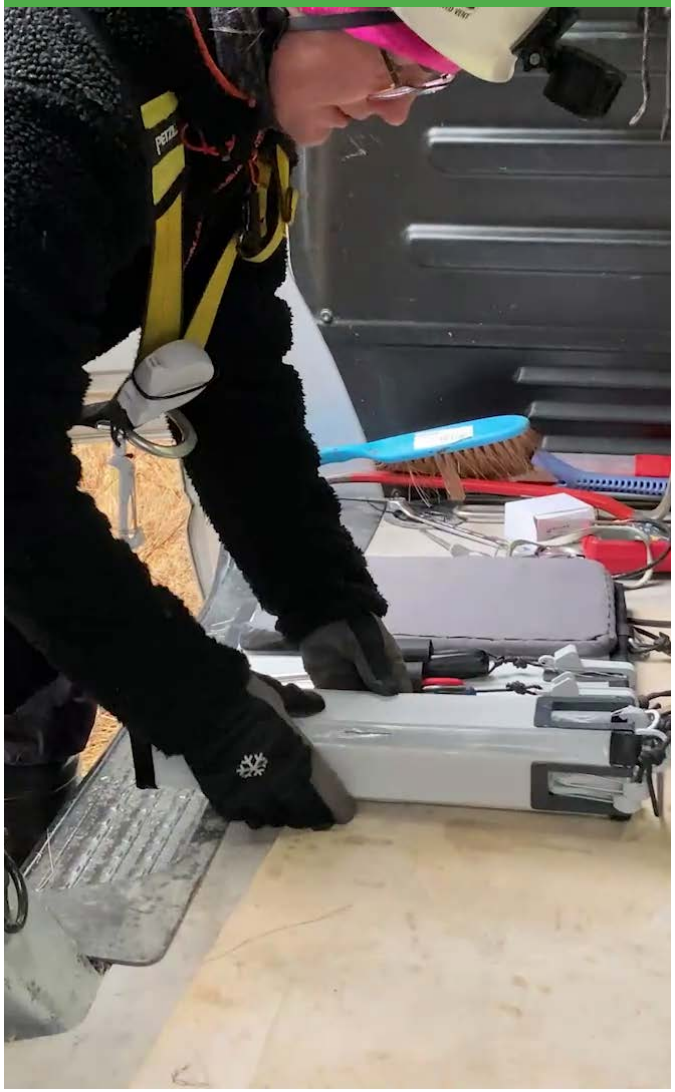




Back to the Users

Testing the final prototype

On ground level

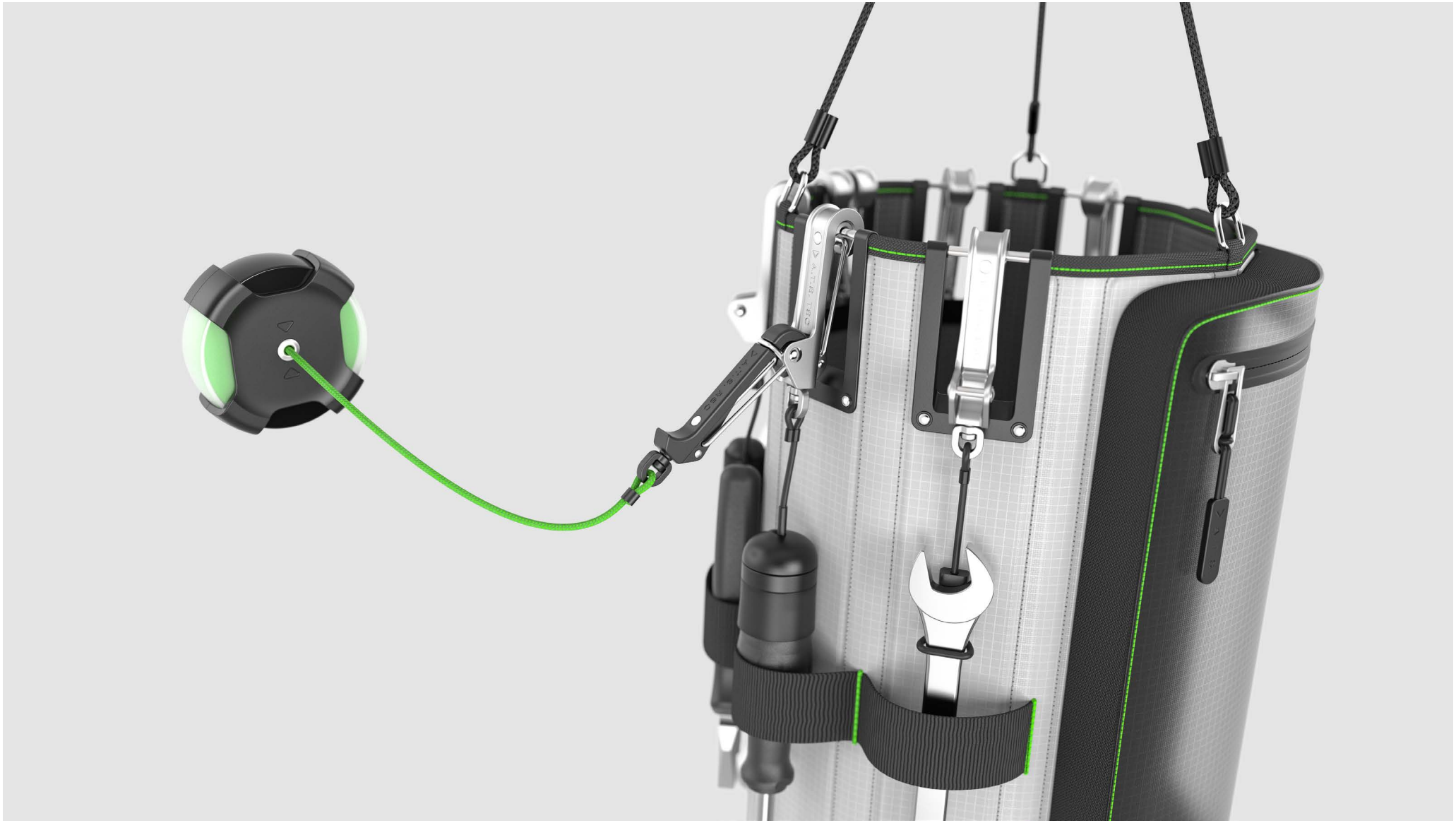


Climbing

Aloft

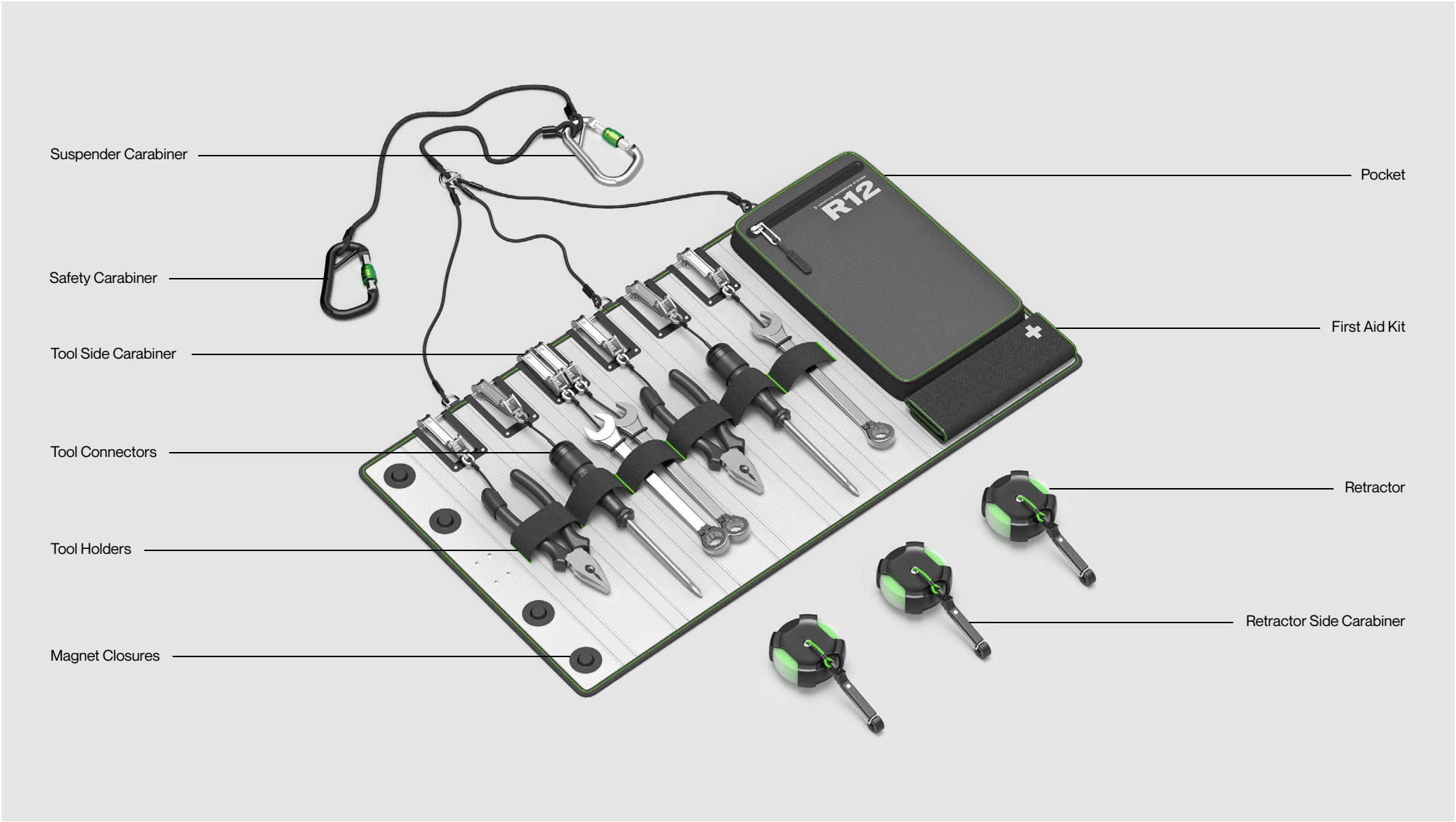
Final Concept

Adaptive Tethering System



Overview

Parts and features



Toolbag

Four different modes

Retractor

Stores the tether line

Carabiners

Enable easy switching of tools