



Initial Research

Identifying design opportunities through ethnographic research

1

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.



Interviews



Photo documentation



POV filming



Lisa



Gunnar

Research Findings

Tool safety vs. convenience

2

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

3

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

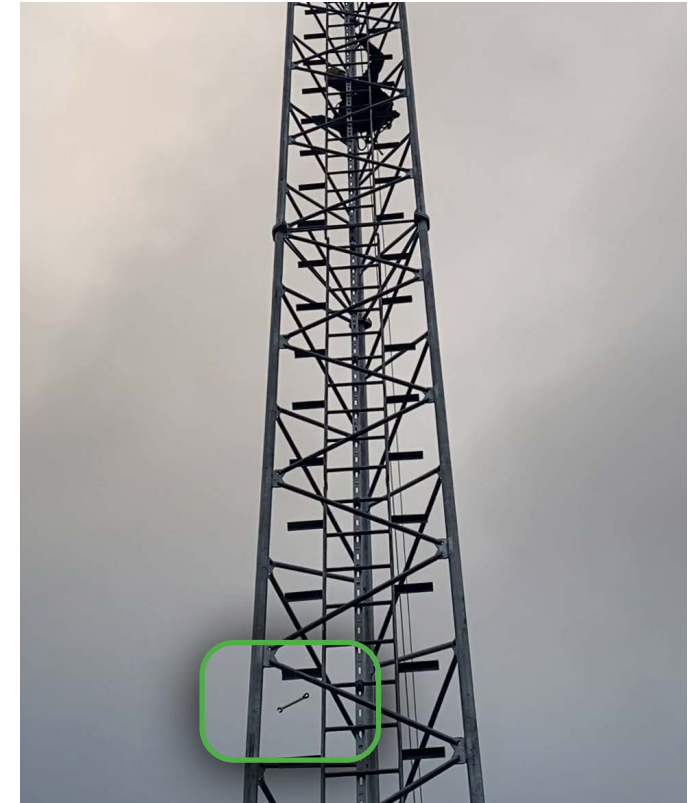
Never have tools detached while aloft

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

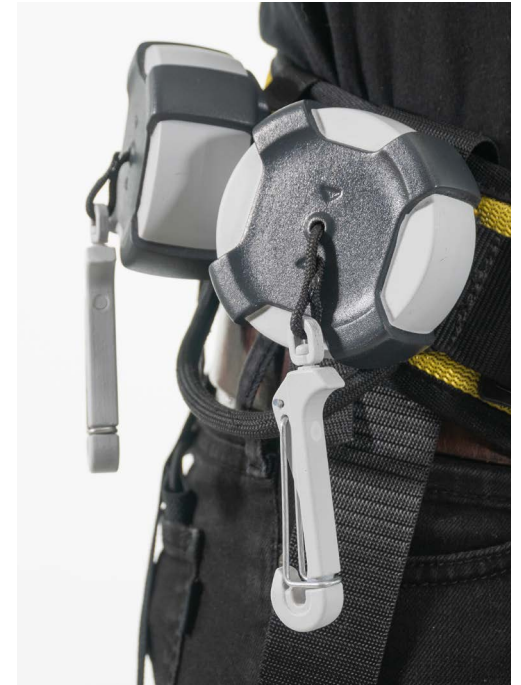
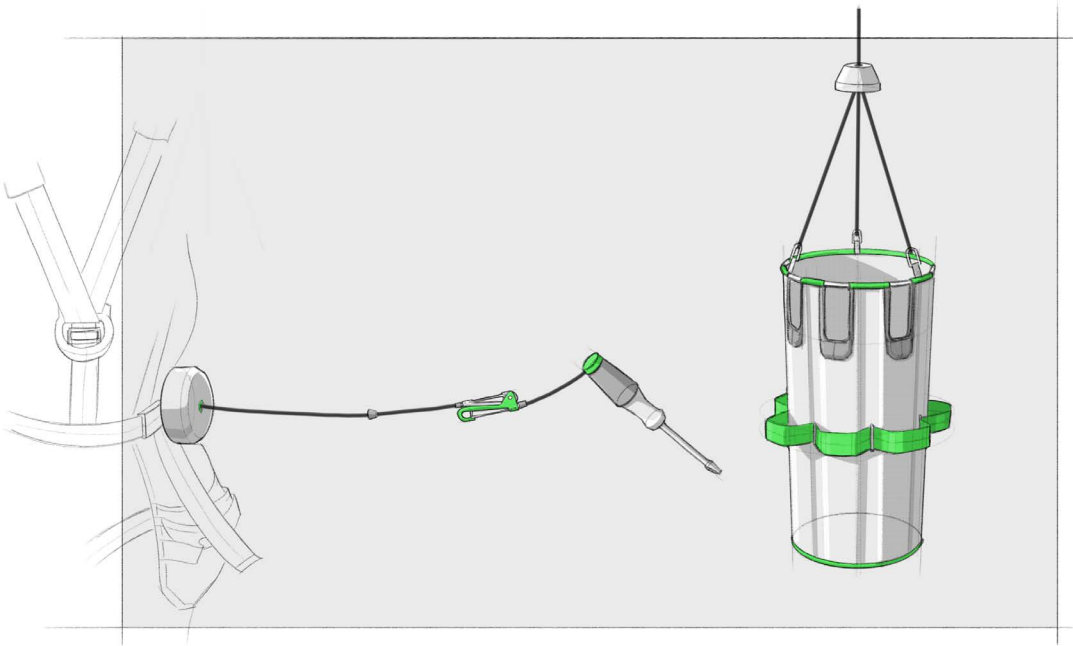
Minimize entanglement of tethers and other safety lines



Process

Concepting and iterative prototyping

4



Back to the Users

Testing the final prototype

5

On ground level



Climbing



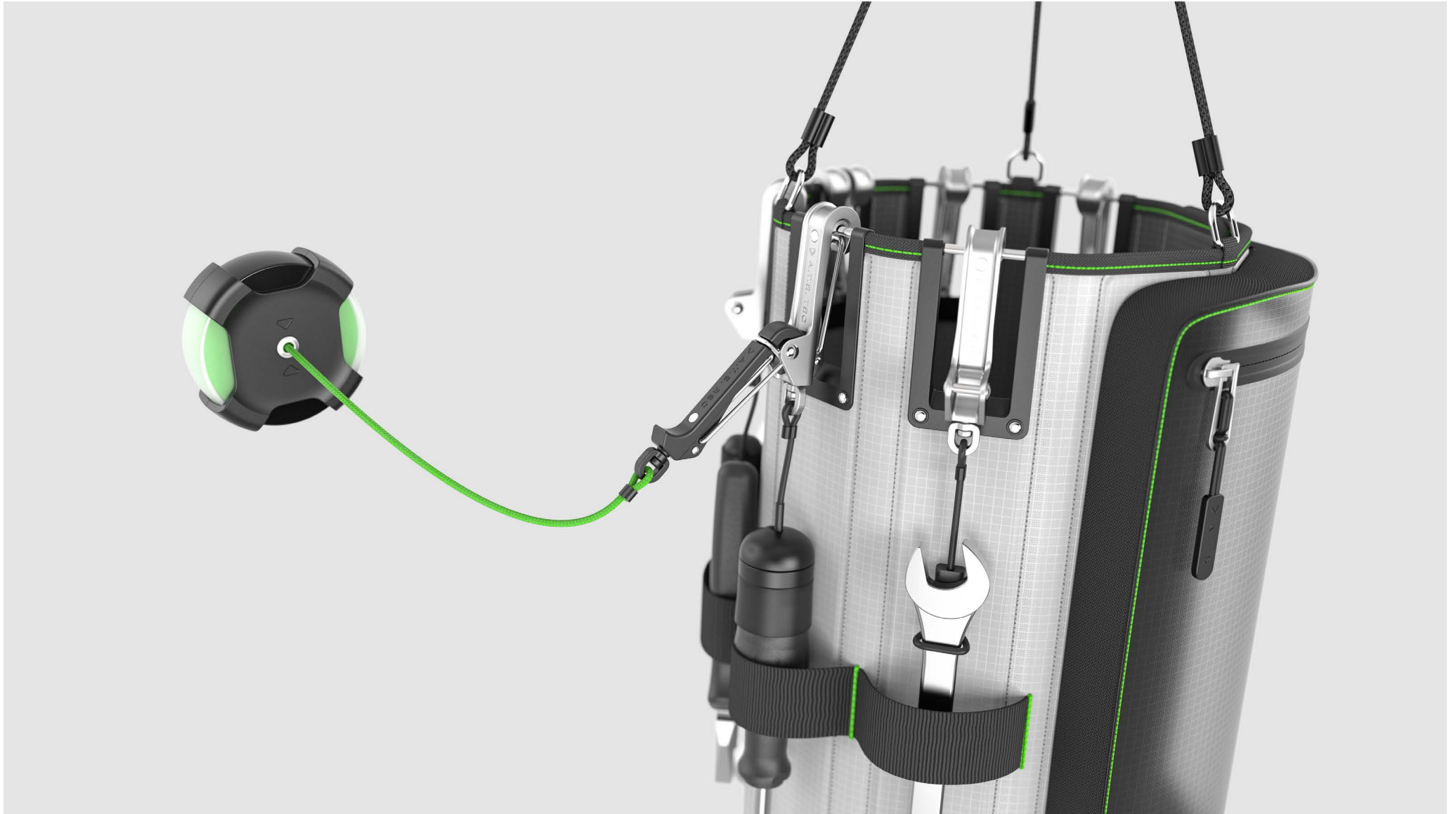
Aloft



Final Concept

Adaptive Tethering System

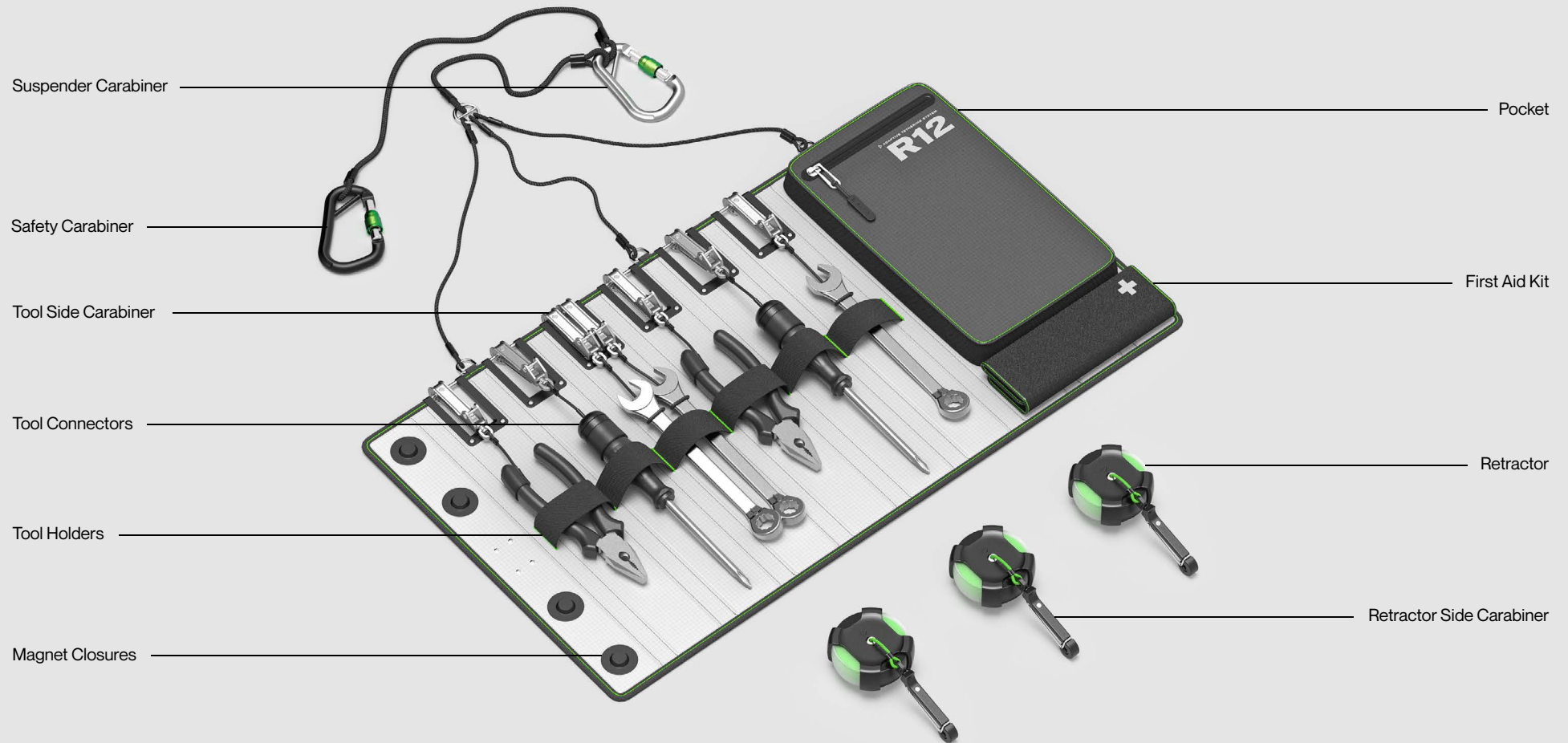
6



Overview

Parts and features

7



Toolbag

Four different modes

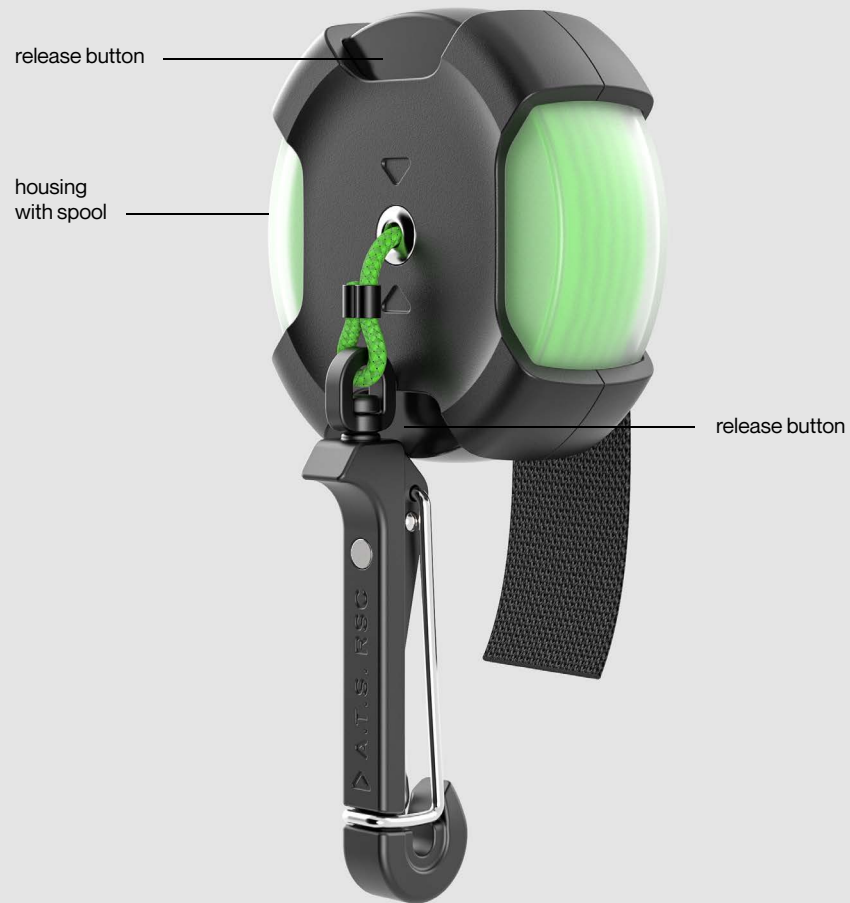
8



Retractor

Stores the tether line

9



Carabiners

Enable easy switching of tools

10

