



Embraccess

peace of mind . independence . control

01 Meet the Team



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Engineering



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Engineering



Amanda Mota
Product
Design



Guilherme Kok
Industrial
Engineering



Rodrigo Aquino
Computer
Engineering



Luiz Durão
Industrial
Engineering

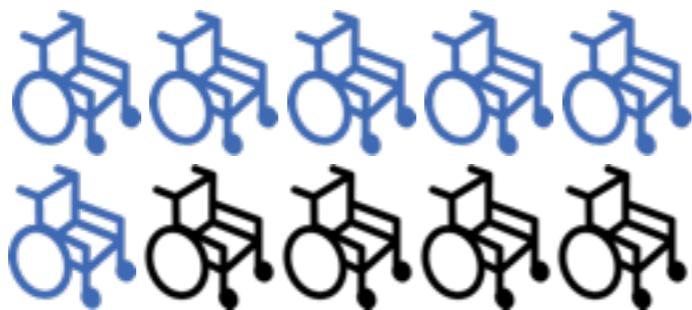
02 The Story

“ I’m not disabled **because** I use a mobility device, I’m disabled **when I don’t** have my mobility device. ”

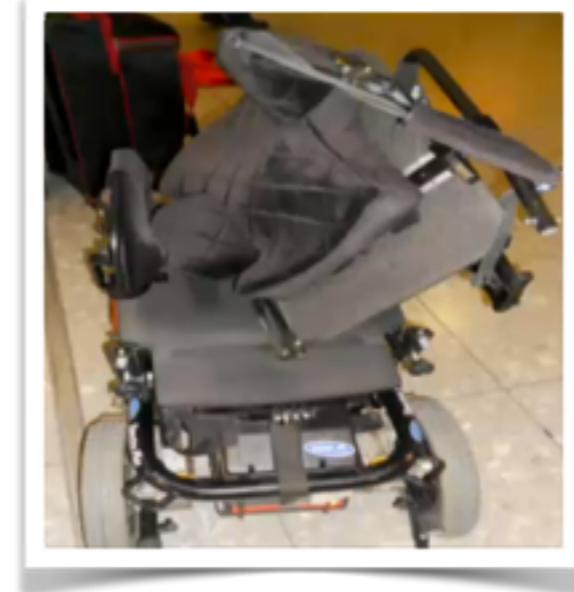
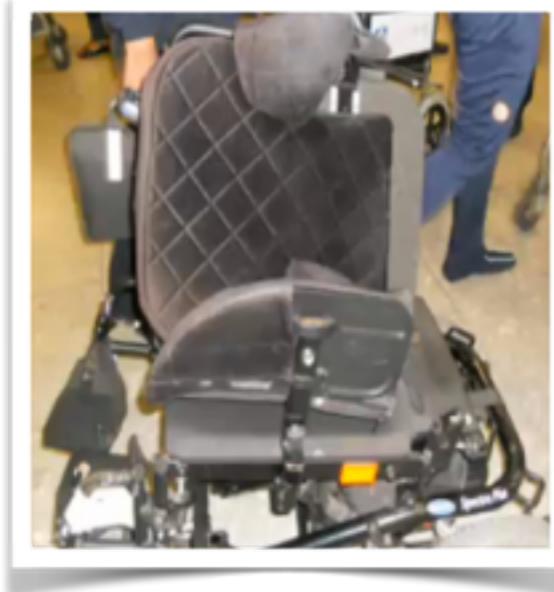
“ Passengers should be able to have the **same experience**, regardless of their **physical** or mental condition. ”

03 The Problem: Wheelchair Storage

“*The most **emotional** part of my flight is when I have to **give up** my wheelchair* ”,



60% of wheelchairs
suffer **damage** when flying



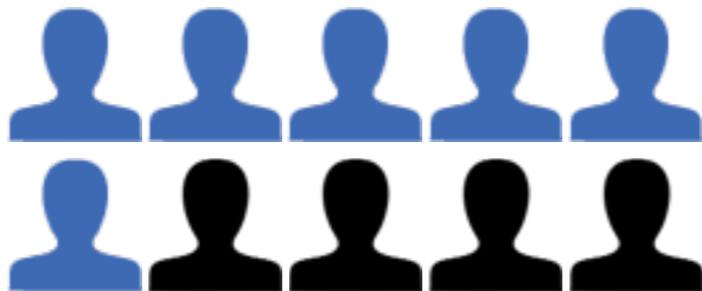
Josie Verghese @josieverg · 23 Oct 2012

Can laugh now but arriving in Sydney to find wheelchair left at H'row was traumatic at time& always fear it could happen again #noflybritain

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04 The Problem: Mobility Inside the Cabin



6 out of 10 passengers
feel unsafe when **transferred**
from wheelchair to airline seat



Esther Appleyard-Fox @AppleyardFox · 4 Sep 2012

@jonsnowC4 **#noflybritain** flying: one of the most undignified things:being manhandled over people's heads into a seat & propped up.

Expand

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05 The Problem



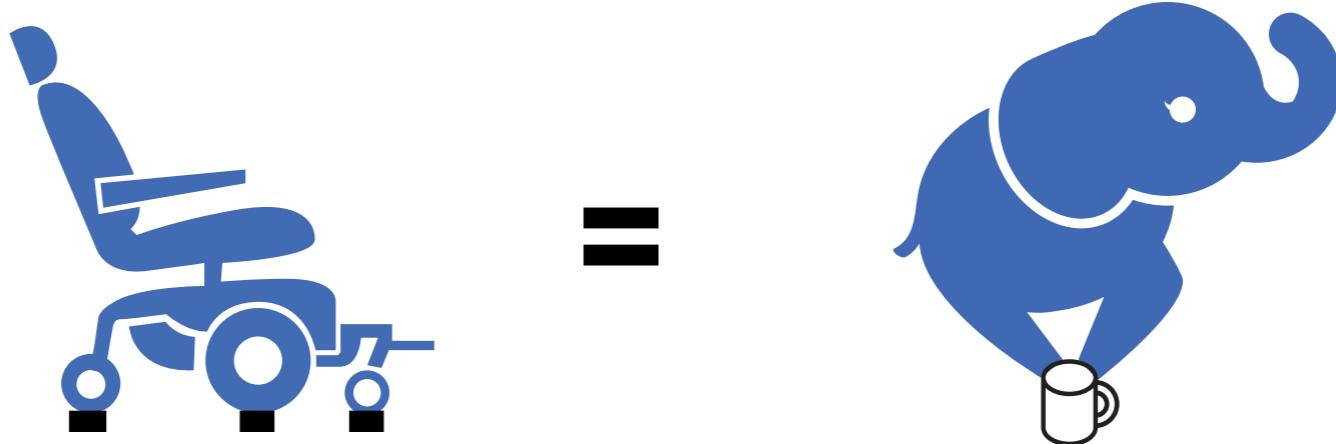
06 The Challenge

Independence

07 Wheelchair Storage



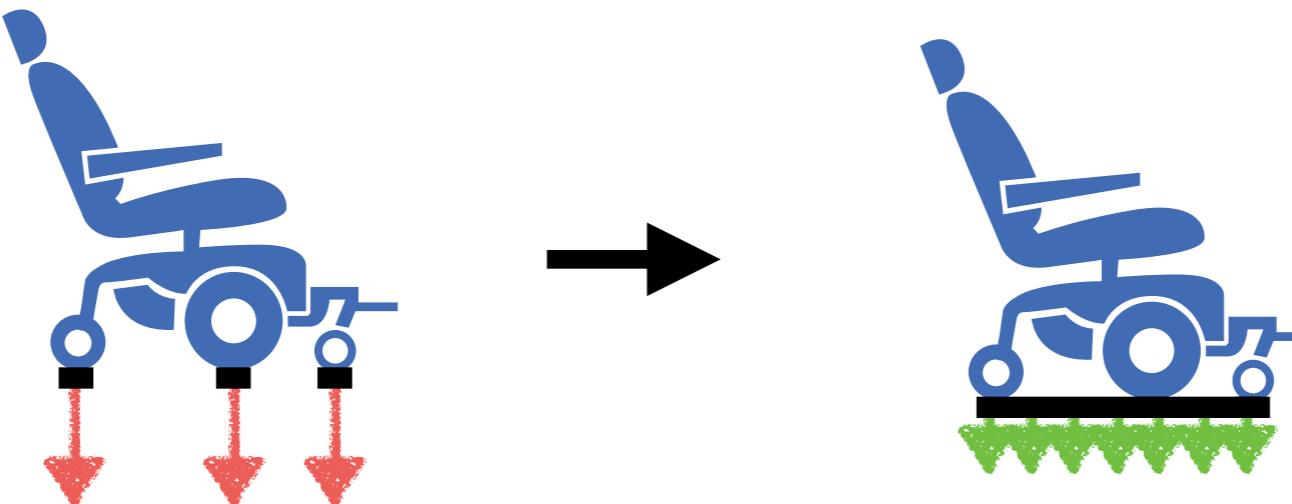
08 Structural Constraints: Cargo Hold



Wheelchair stress

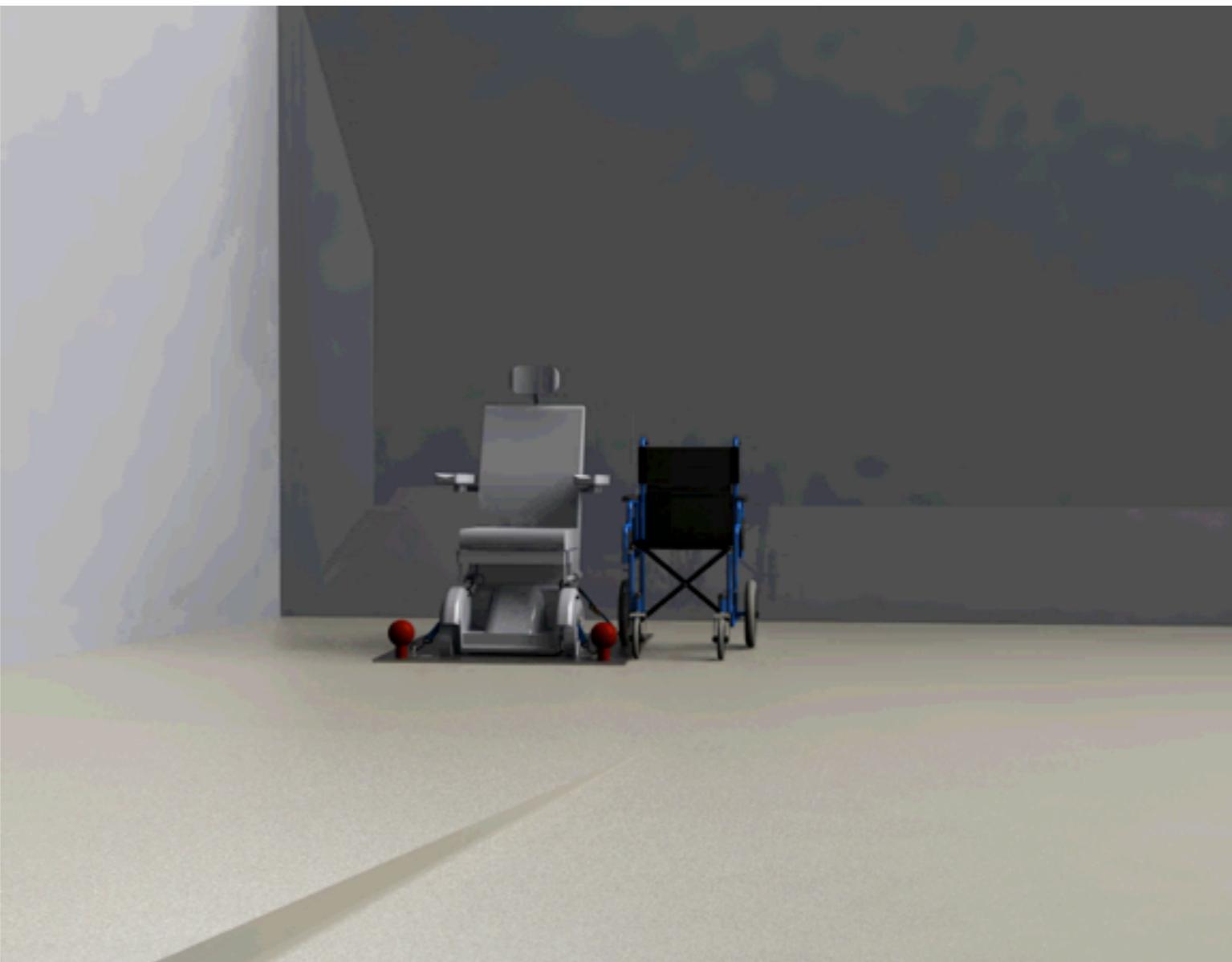
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Maximum allowable
stress in cargo hold



Minimum area in contact with the cargo hold floor: **8 in²**

09 Wheelchair Storage: Vision



Dimension
Constraints



Movable

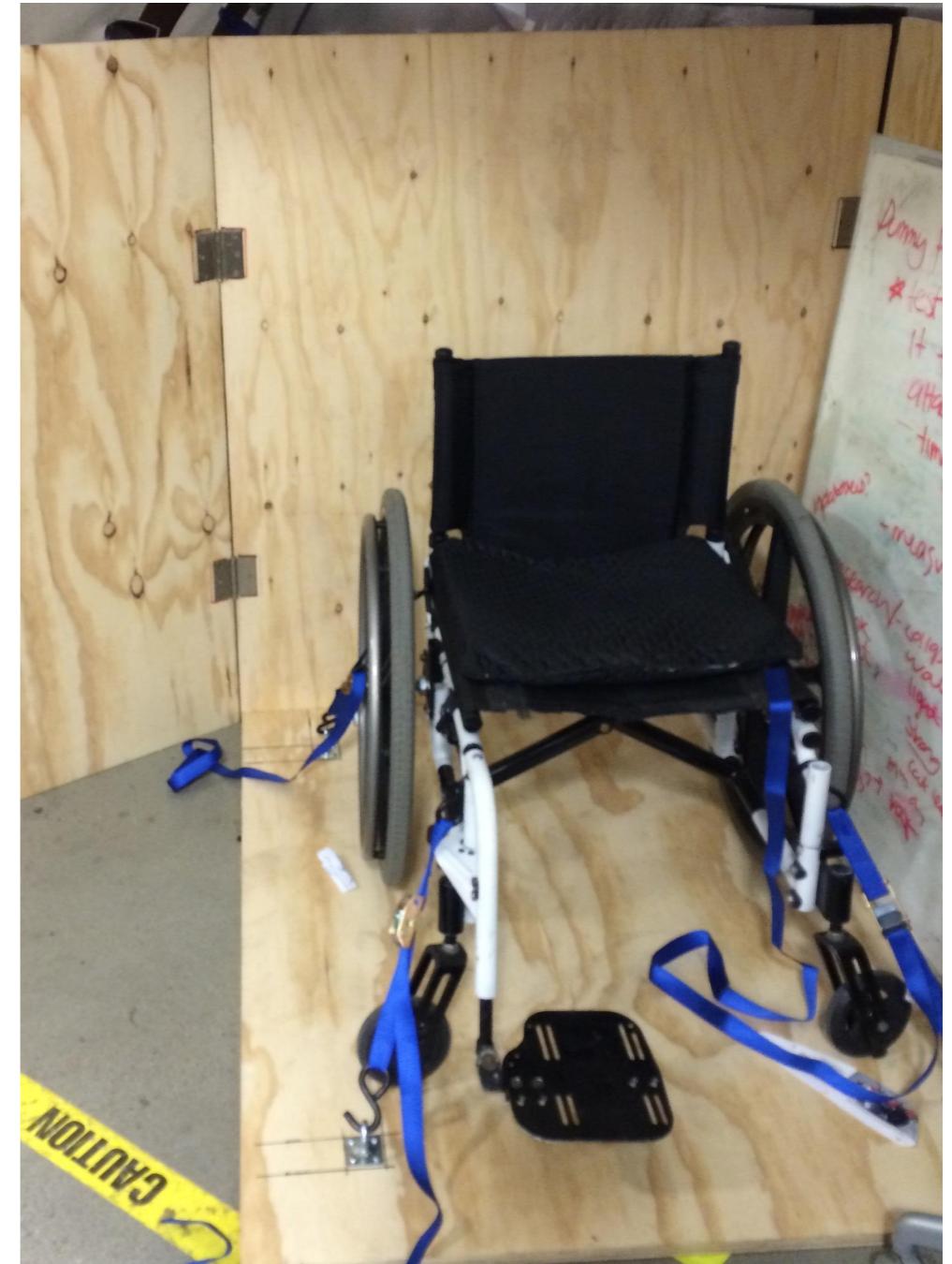
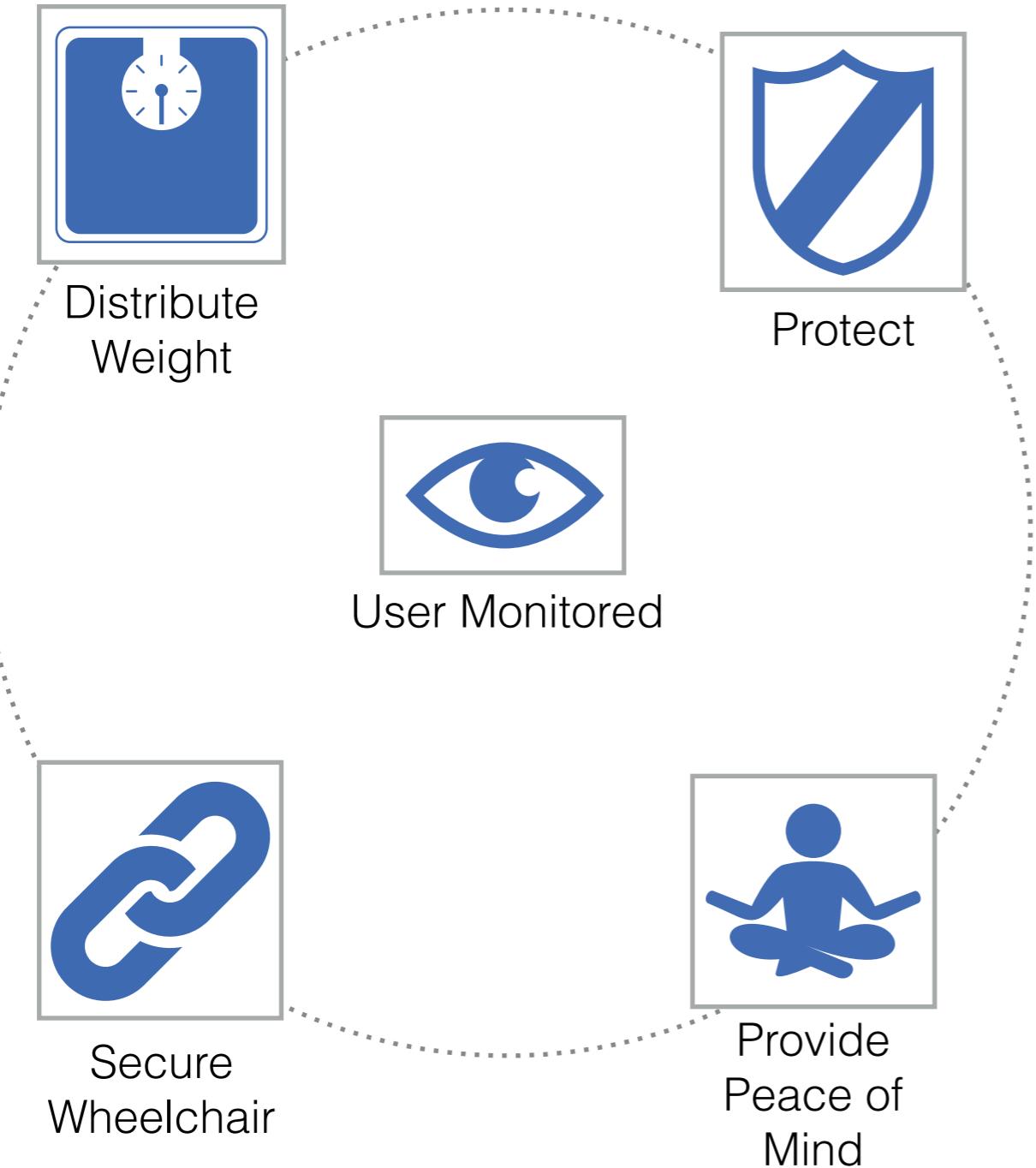


Evoke
Empathy

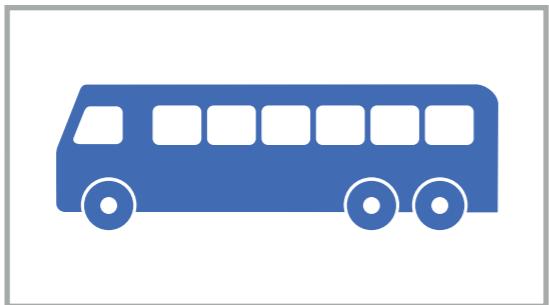


Light
weight

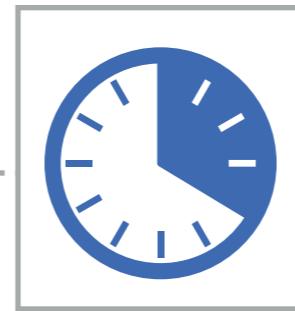
10 Wheelchair Storage: Prototype



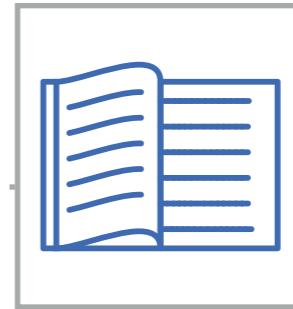
11 Wheelchair Storage: Learnings



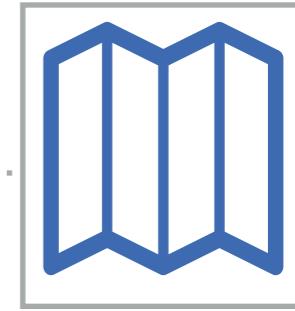
Familiar



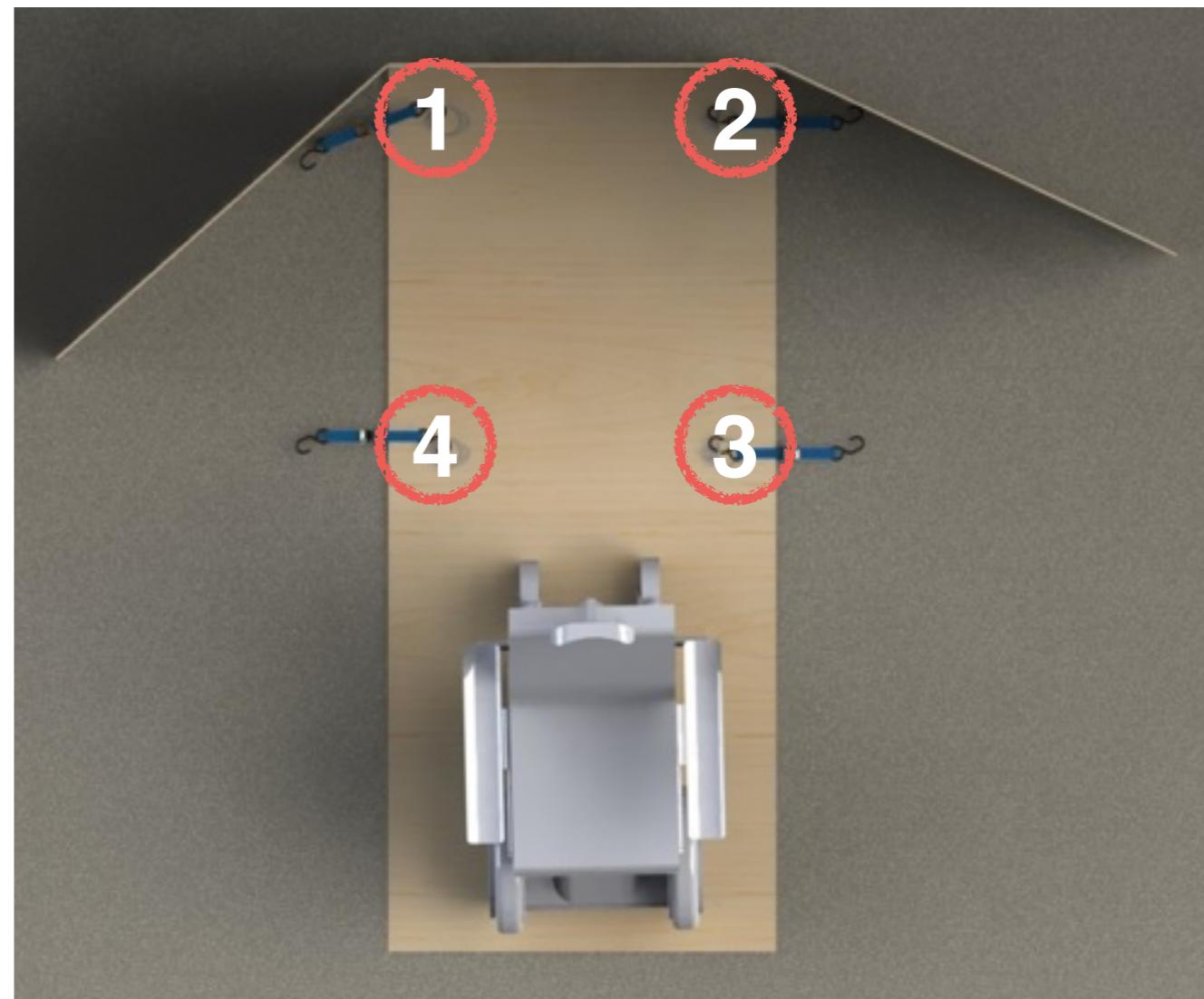
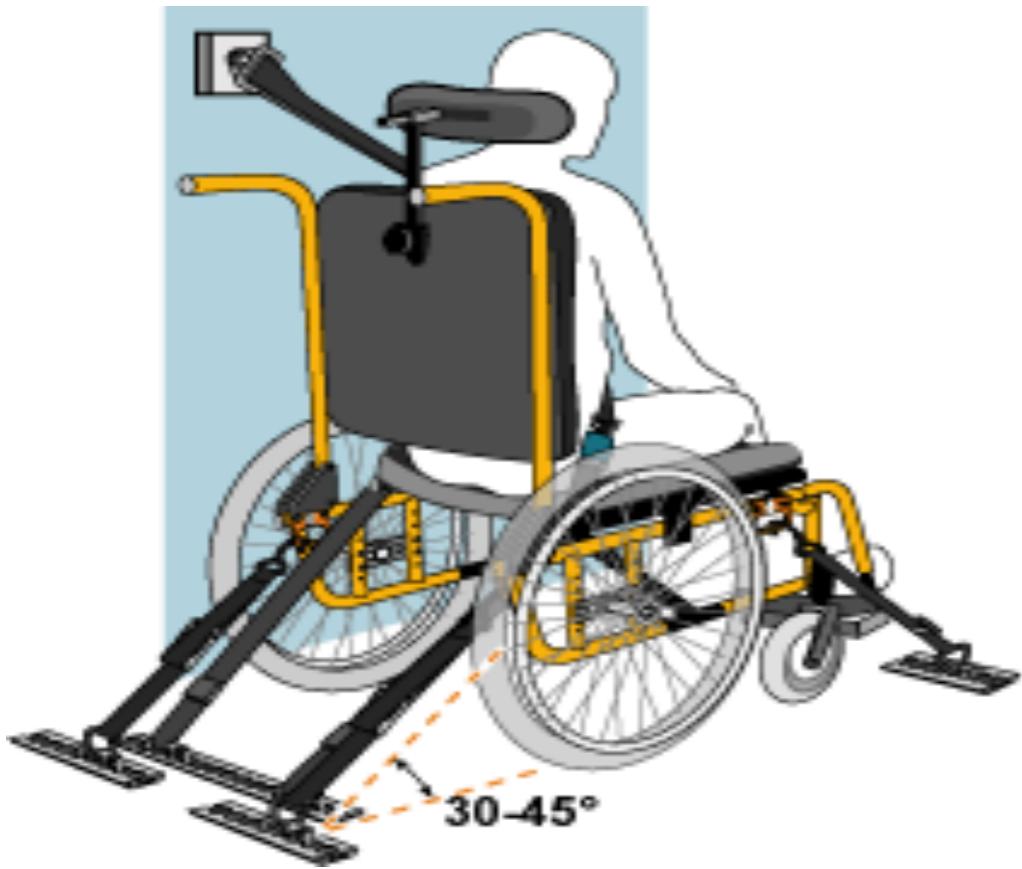
Time Efficient



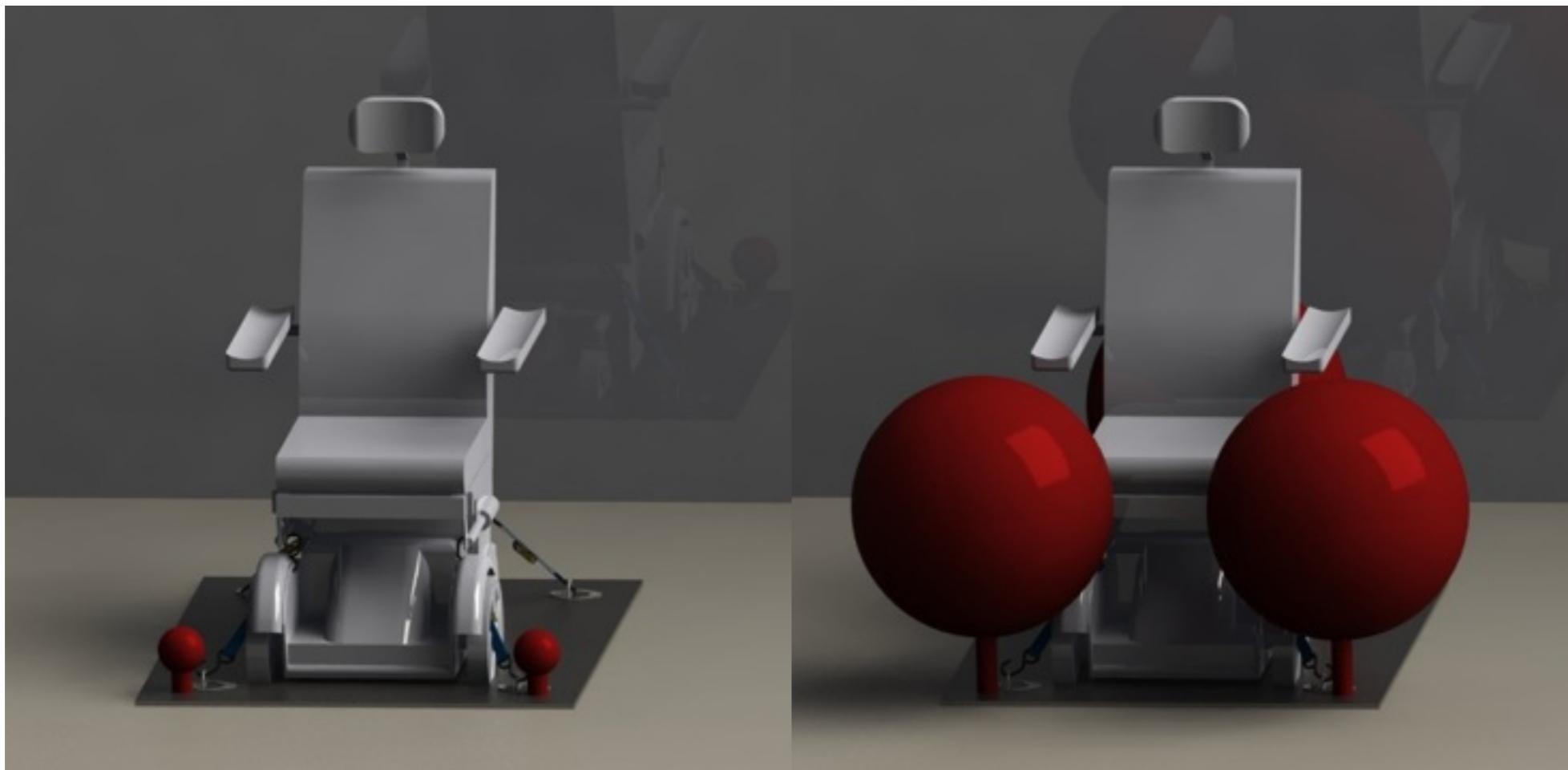
Clear Directions



Retractable Walls



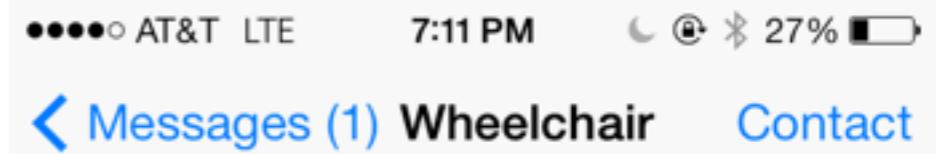
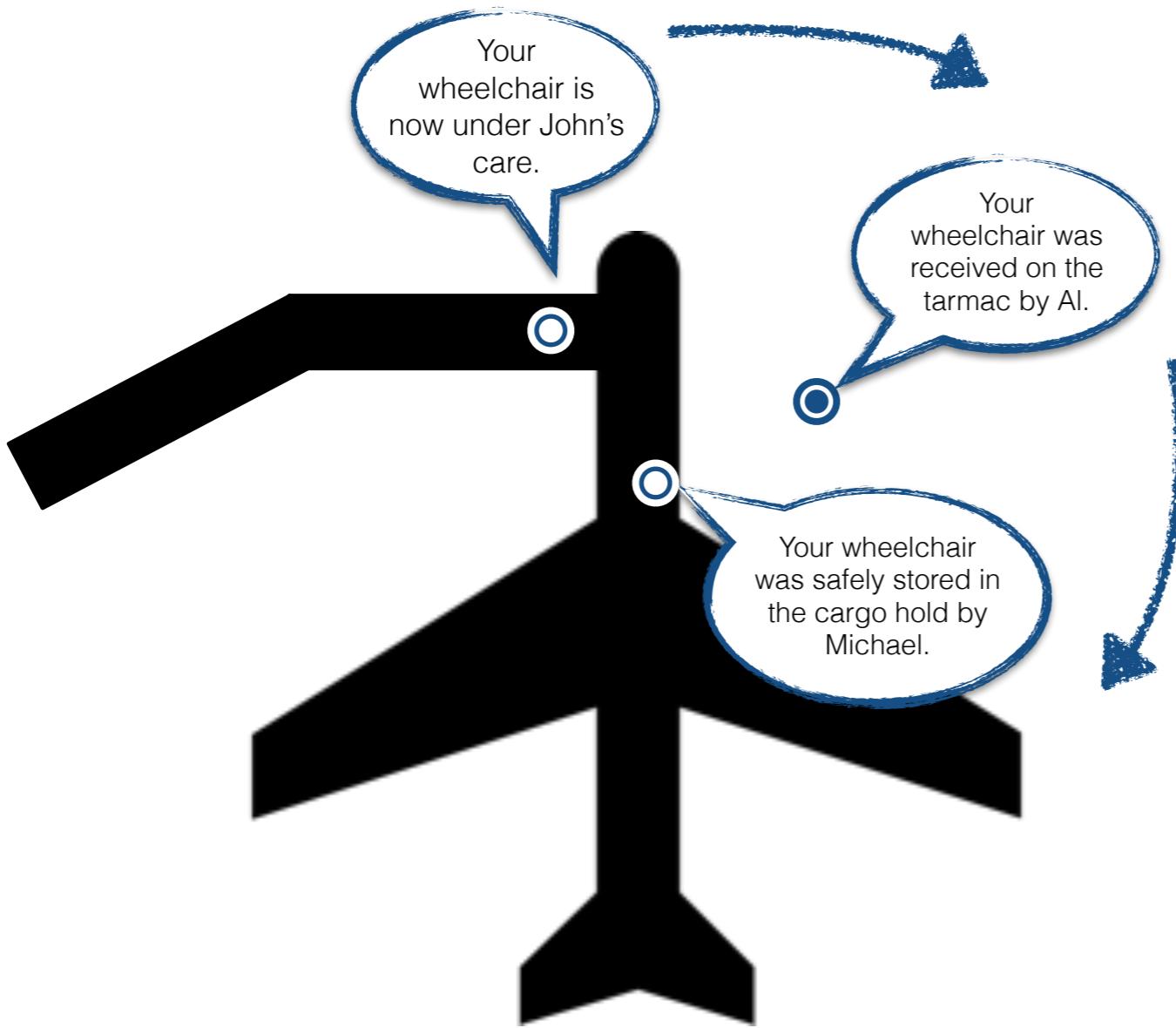
12 Wheelchair Storage Inflatable Walls



13 Inflatable Feasibility Test



14 Wheelchair Tracking



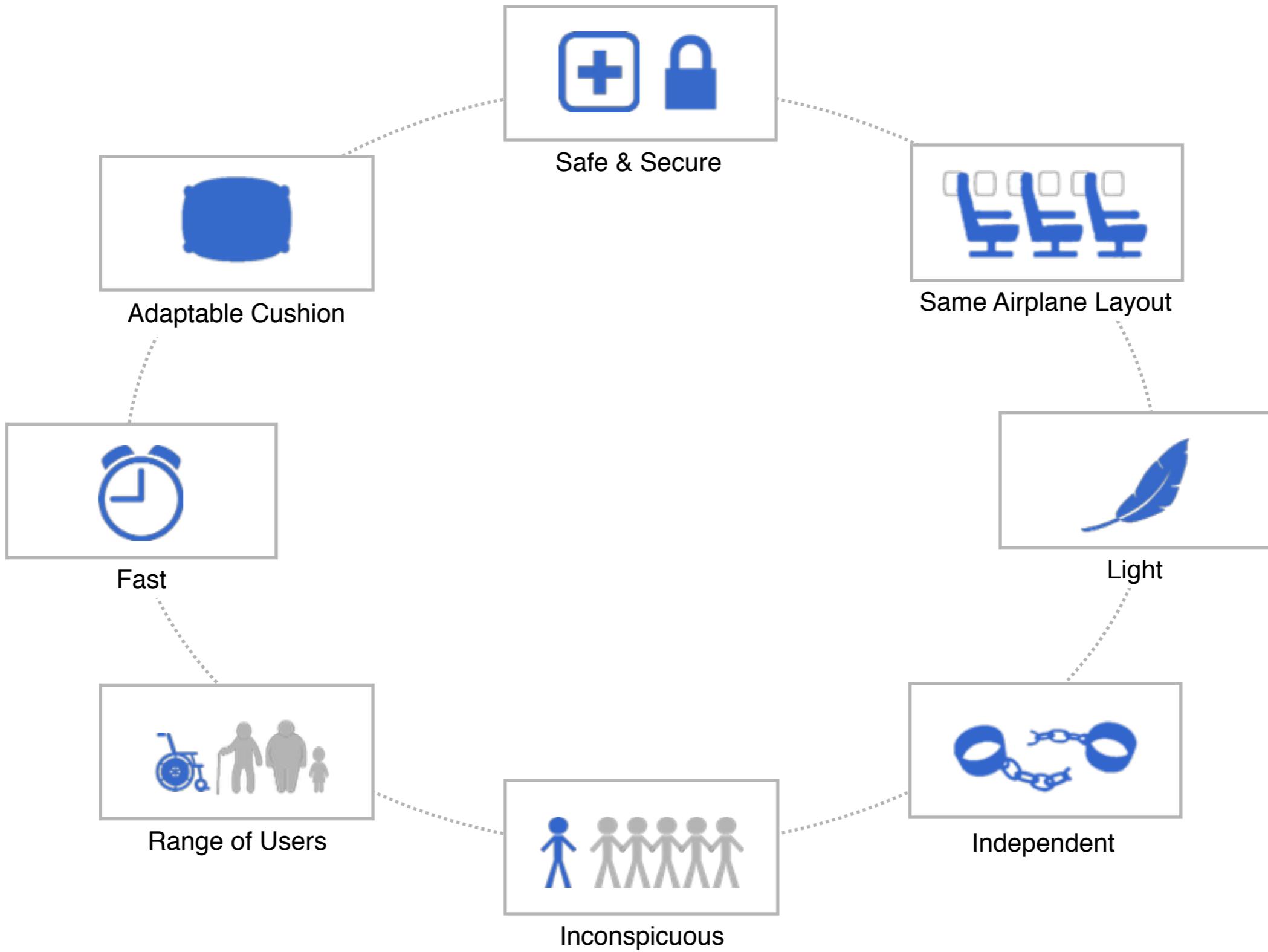
QR Code-enabled tracking

15 Aisle Transfer Wheelchair

Aisle
Transfer
Seat



16 Aisle Transfer Wheelchair: Requirements



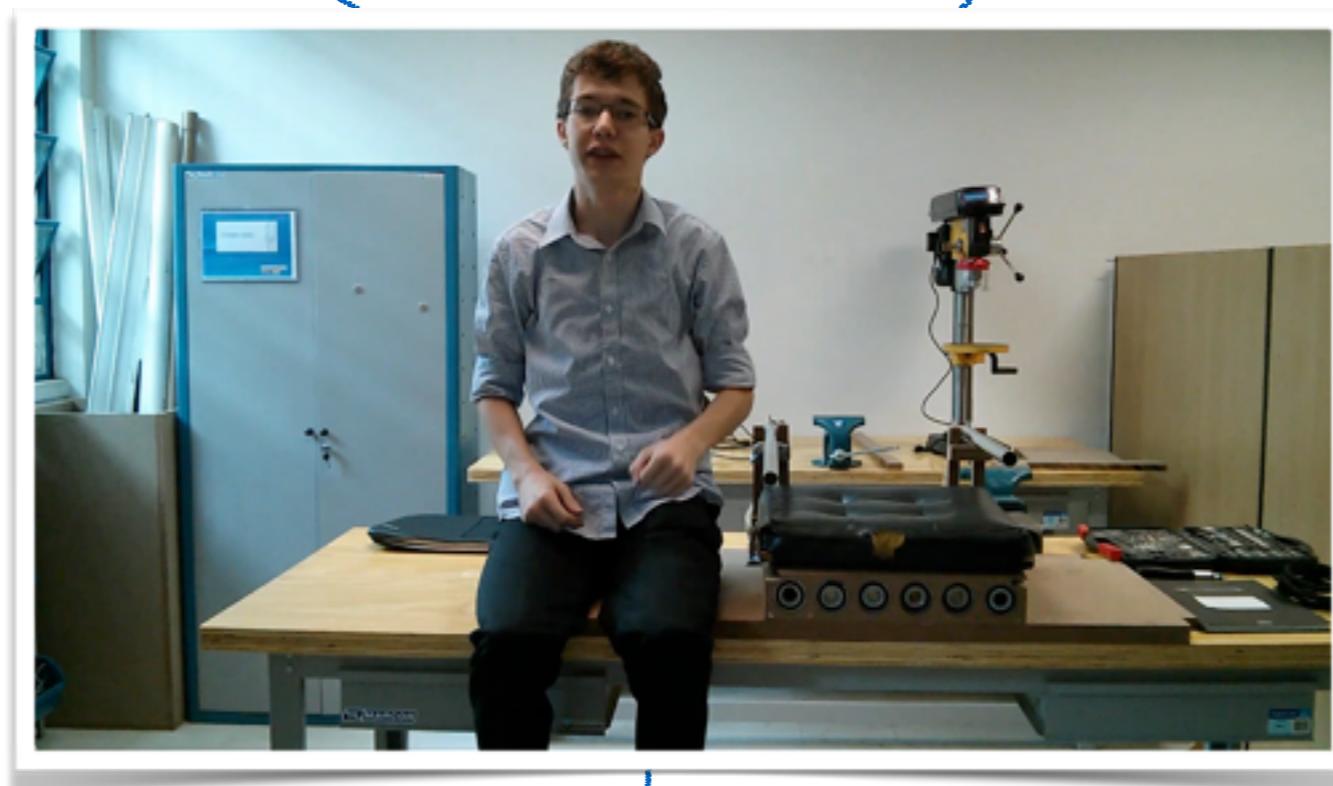
17 Aisle Transfer Wheelchair: Learnings



Easy and smooth lateral transfers are possible

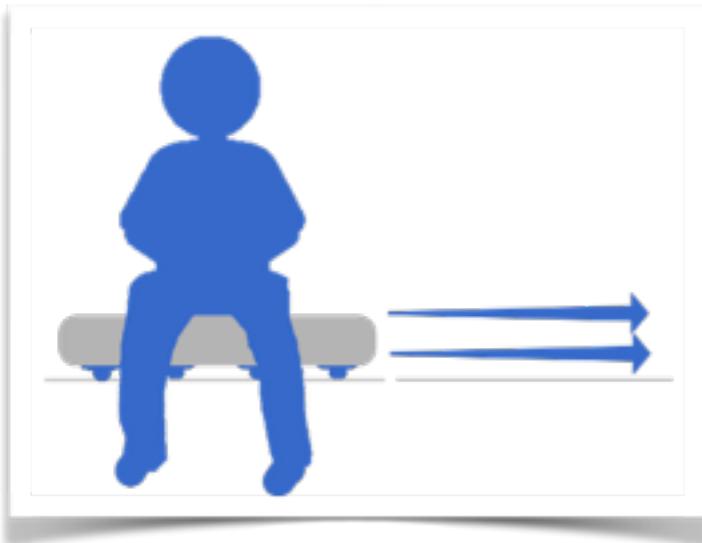


Simulate user interaction:
User-friendlier solutions

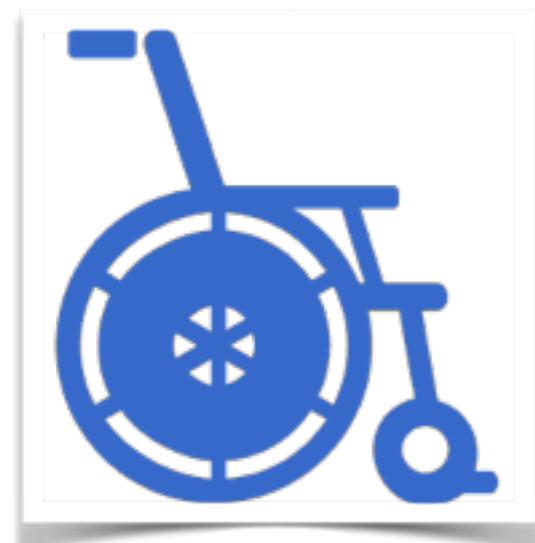
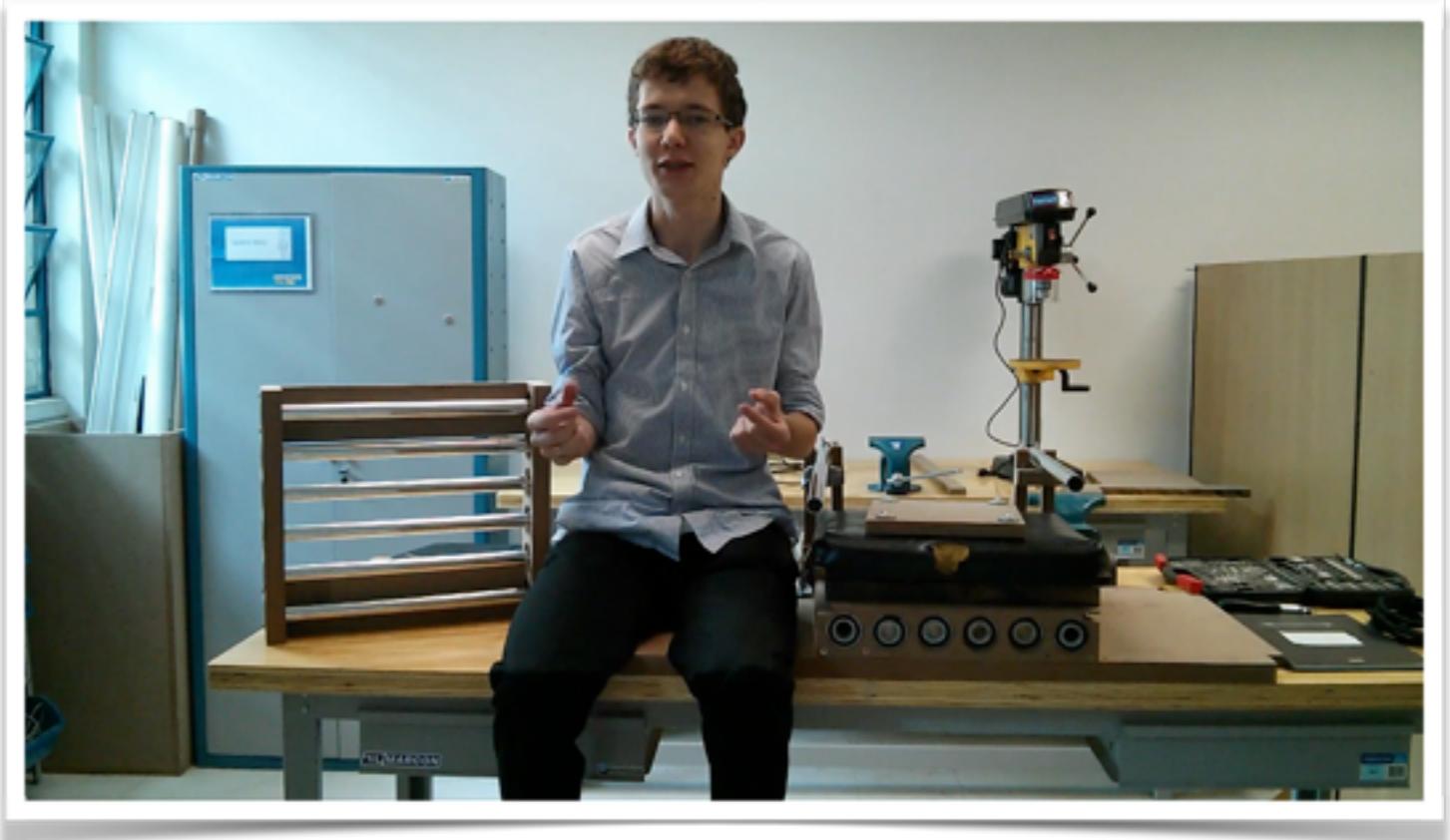


Mechanism:
Too heavy

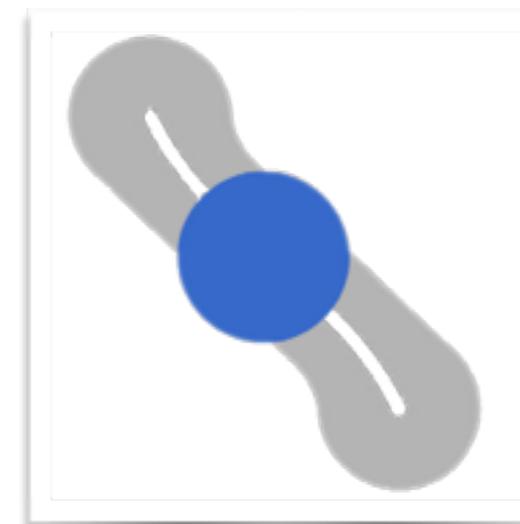
18 Aisle Transfer Wheelchair: Next Steps



Redesign Transfer Mechanism



Build Aisle Chair



Test Transfer Boards



Test with Target Users

19 Our Vision

Welcome to

airlines

20 Conclusion

A great experience for

~~most~~
all
passengers



Travel to
Sao Paulo



Build!
Build!
Build!



Shipping
Container



Iterate &
Iterate