

Team Volvo CE

EXPE 2017

The logo for 'trace' is centered on the right side of the slide. It features the word 'trace' in a bold, lowercase, sans-serif font. The letter 'i' is replaced by a vertical orange bar with a gradient. The text is set within a white hexagonal shape with a thick grey border. Four orange triangular shapes point towards the corners of the hexagon, creating a dynamic, geometric effect.

trace

VOLVO



Chen
Zhong



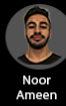
Naser
Dehaibi



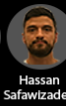
Alex
Gruebele



Shenli
Yuan



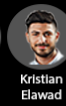
Noor
Ameen



Hassan
Safawizadeh



Louise
Karlsson



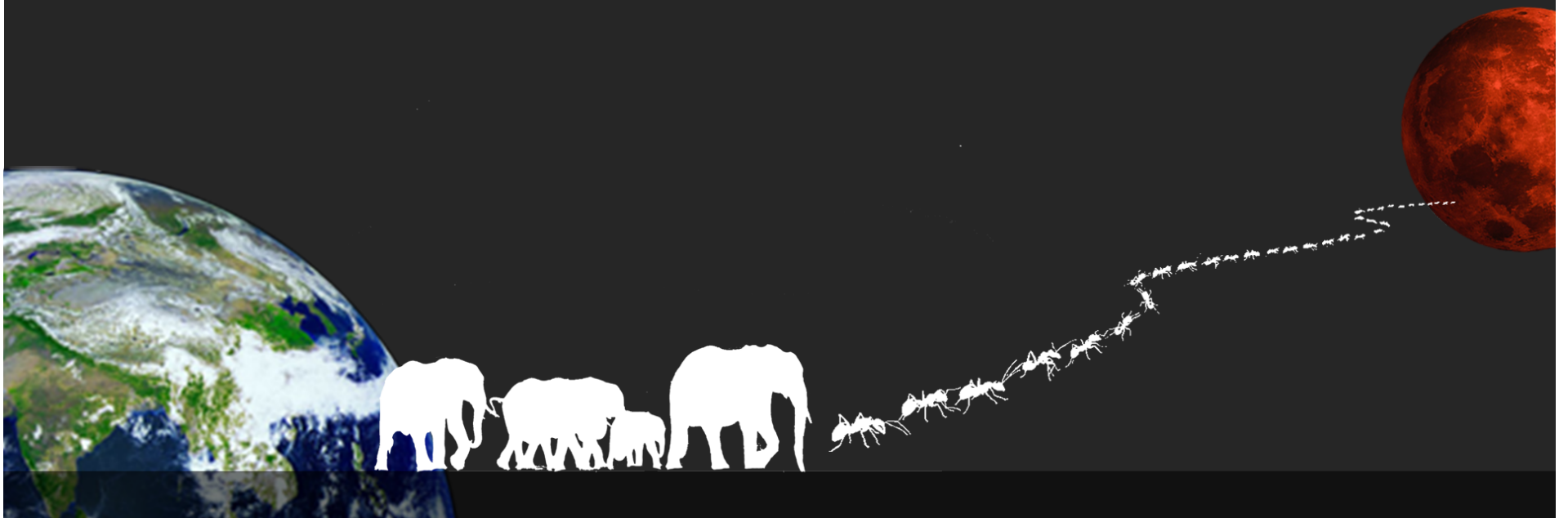
Kristian
Elawad



Exploration initiative in collaboration with
Volvo Construction Equipment

The Prompt

- Look into the future of construction
- “From Elephants to Ants, from Earth to Mars”



The Prompt

- Swarms make something bigger than the individual
- Why hasn't this happened?



The Problem

- Dynamic construction sites
- Packed with materials
- It turns out that this is also a problem for workers

The time is **now.**





OWNER: JIM
SC: BUILD CO
CELL: 1227640831
ITEM: WOOD G884
STRT: 2017-01-07
END: 2017-09-13

What do you see?

OWNER: STEVEN
SC: PIPES CO
CELL: 2687560831
ITEM: PIPES 025
STRT: 2017-05-15
END: 2017-05-20

OWNER: JOHN
SC: PIPES CO
CELL: 4592260831
ITEM: PIPES P022
STRT: 2017-01-10
END: 2017-05-22

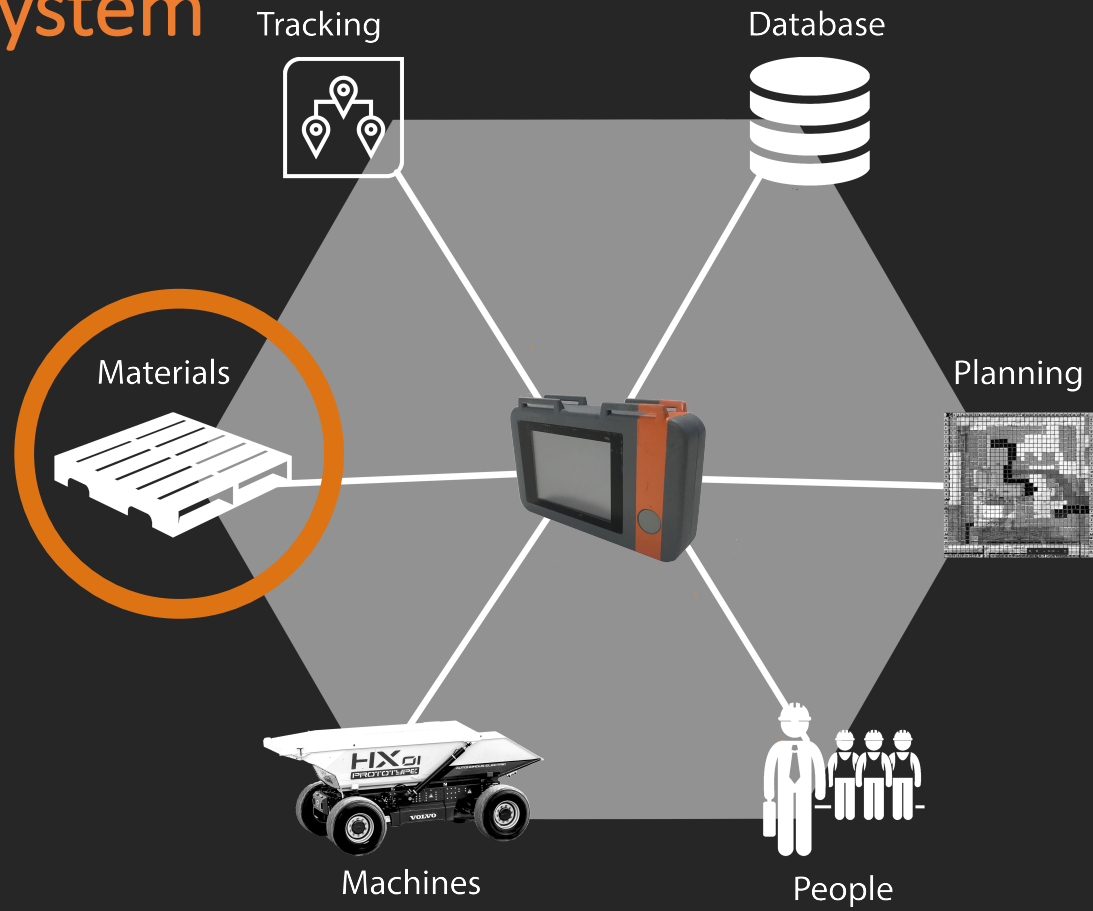


Big Impact

- Will revolutionize all phases of a project
 - Planning
 - Production
 - Finalizing
- Bring value to the industry and society



The System



1

Setup

2

Place

3

Track

Overview: Setup

- Material comes in through loading dock
- Upload information to tag



Overview: Place



4 key storage uses:

- Pallets
- Georgia Buckets
- Sheetrock carts
- Pipe bundles

Overview: Track

- Track
- Plan
- Manage



System: Tag

Displays critical info

Low power mode lasts months

Unique barcode

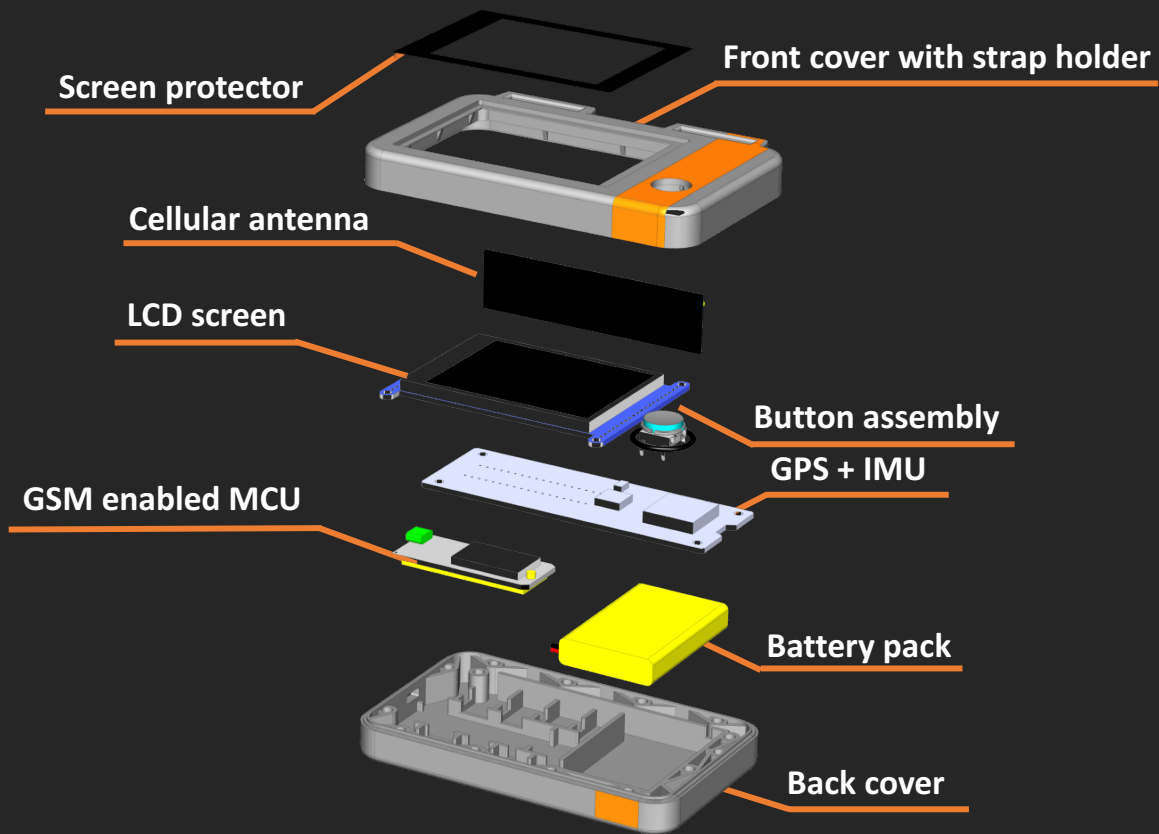
Versatile loops for straps

Water resistant case

Button activates screen



System: Tag



System: Hub

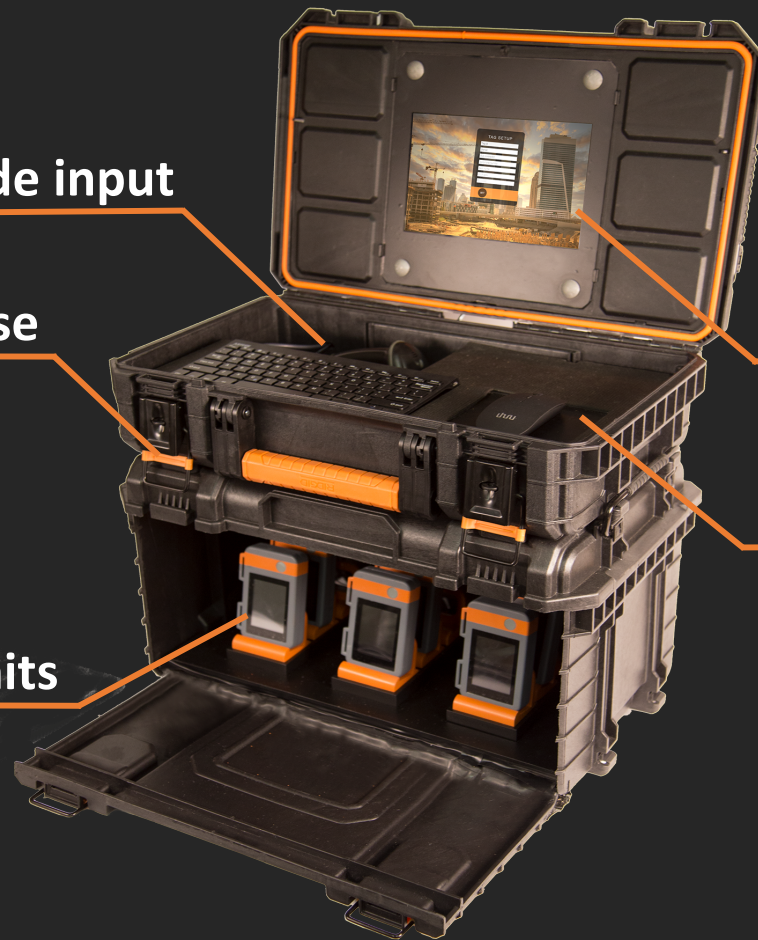
Barcode input

Rugged mobile case

Charges units

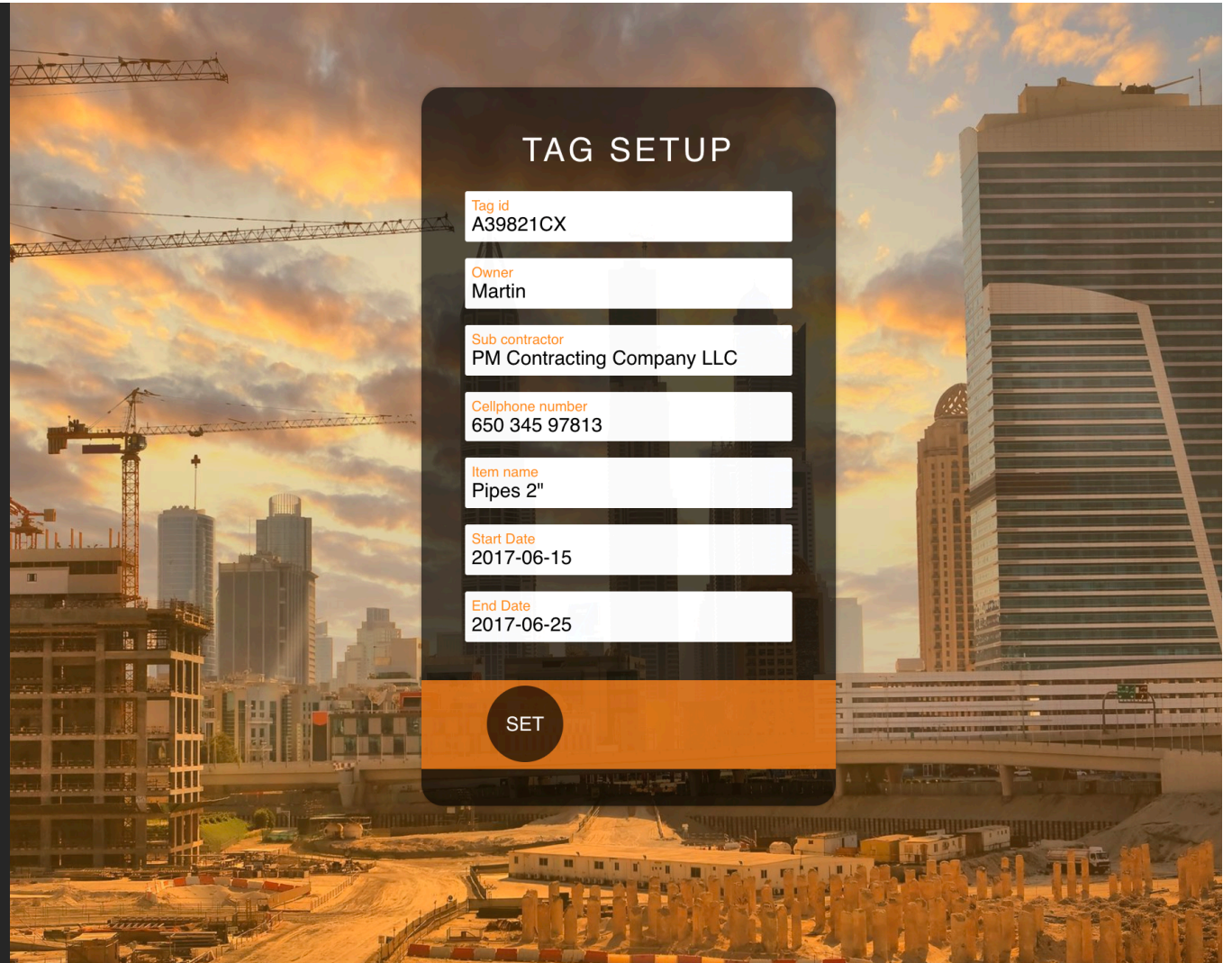
App pushes info to tag

Keyboard + mouse input



System: Hub

- Integrates delivery
- Upload to device



SET

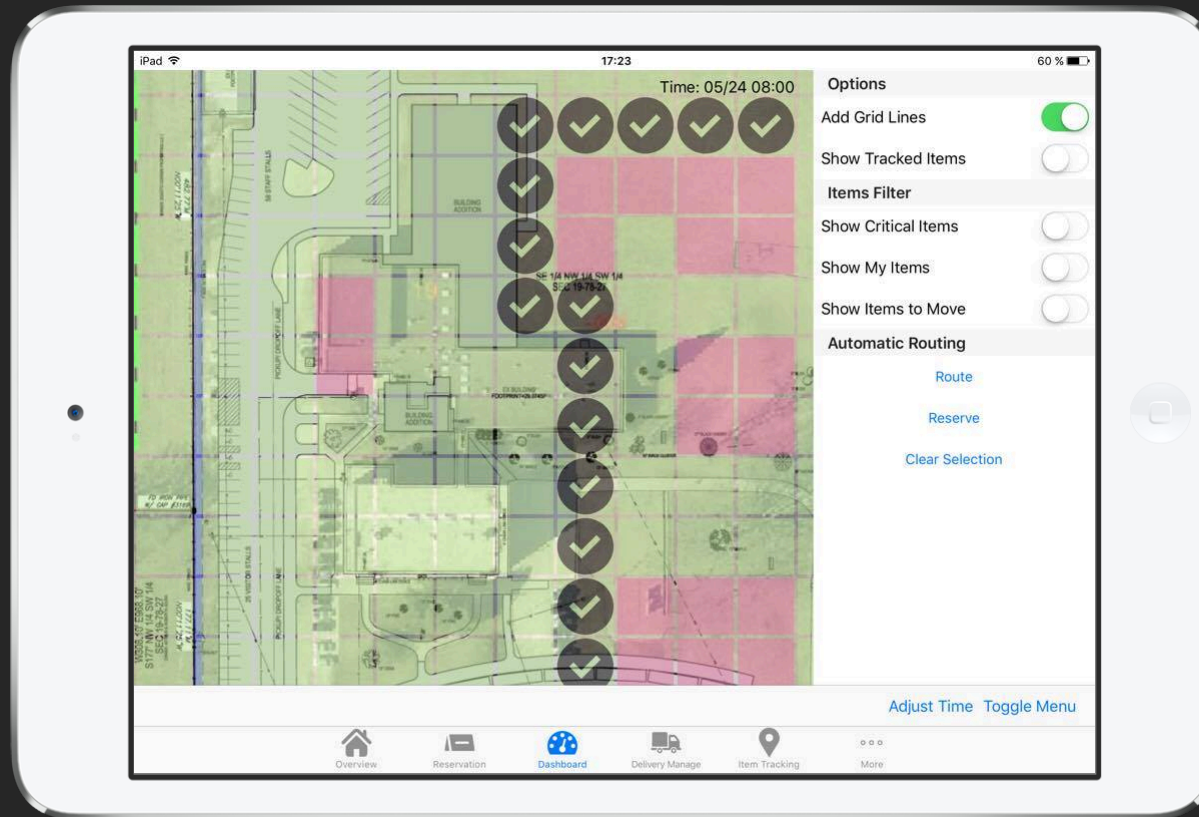
System: Inform



System: Reserve Space

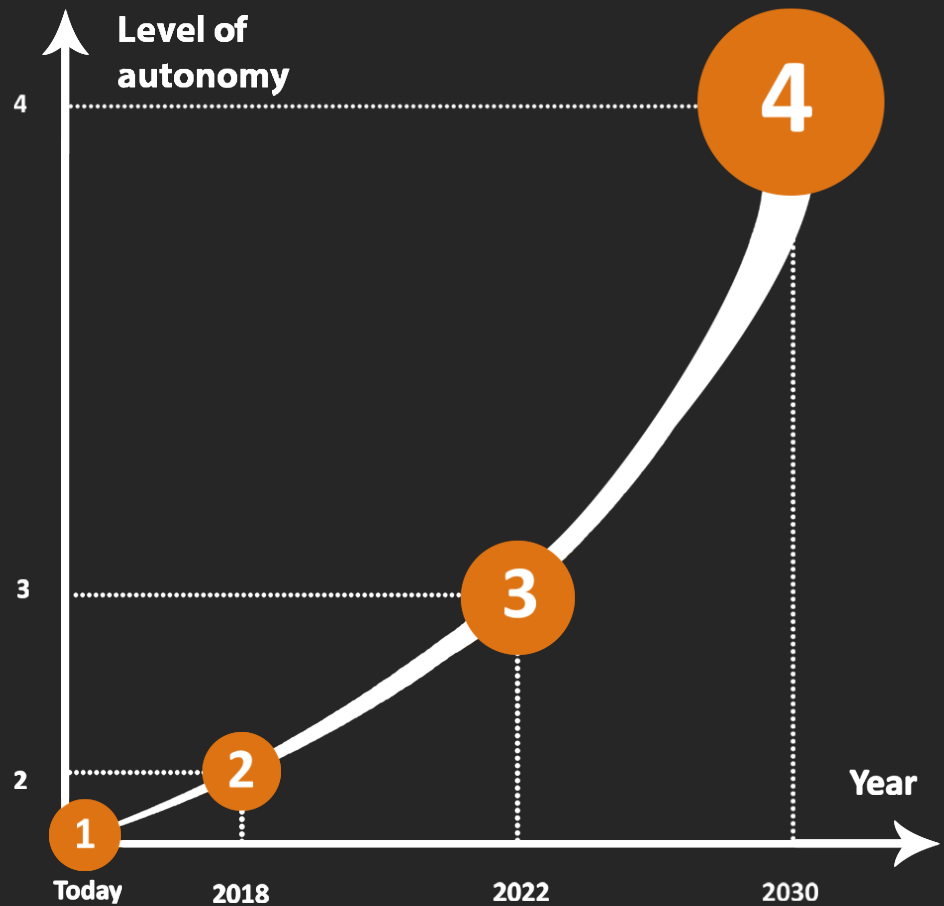


System: Plan routes



Going Forward

1. Prototype, **ME310 EXPE**
2. Product in use **globally**
- Laying the **foundation**
3. Automated machines deployed
- Utilize **infrastructure**
4. Work site fully **digitalized**
- **10x** site operation reached



1. EXPE prototype

1



2. Smaller & bundled to material

2



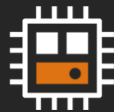
3. No power needed

3



4. System on a chip

4



Thanks

Teaching team:

- George Toye
- Larry Leifer
- Kate Stephenson
- John Richardson
- Christian Johansson
- Samuel Frishman
- Nick Azpiroz
- Danee Kenyon
- Teresa Tombelli
- Ryan Ruvald

Sponsors:

- Jenny Elfsberg
- Martin Frank

DPR partners:

- Jonathan Mayfield
- Salman Usmani

Questions?

For more, please stop by our booth across the street!