

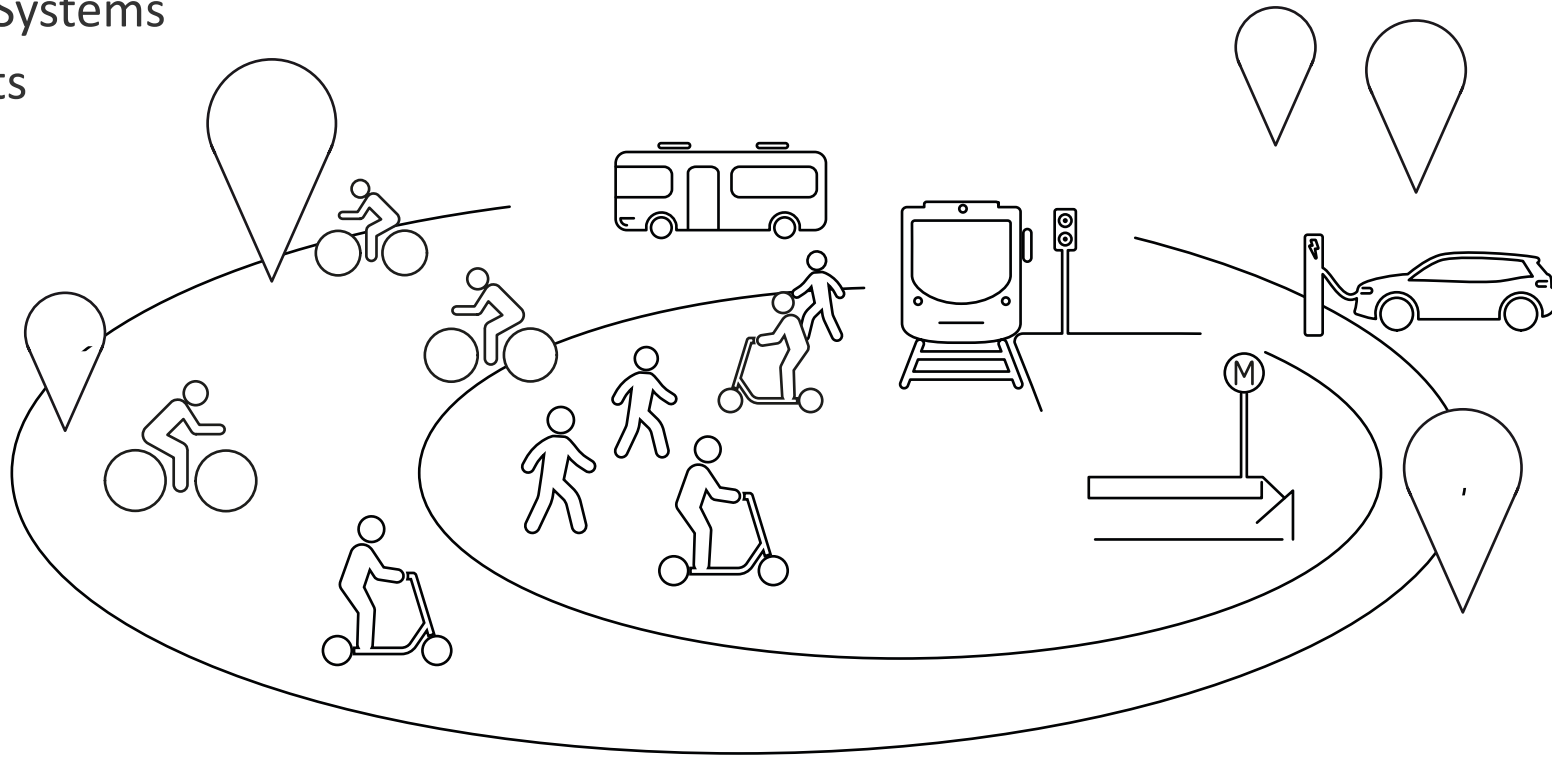
## SOUL – Smart mObility hUb pLatform

A design thinking approach

Marco Kellhammer  
TU Munich  
Professorship of Urban Design

# A Decision Support for Mobility-Hubs

- Various hub users and potential users
- Various stakeholders involved in planning and decision making
- Product-Service-Systems
- Many touchpoints



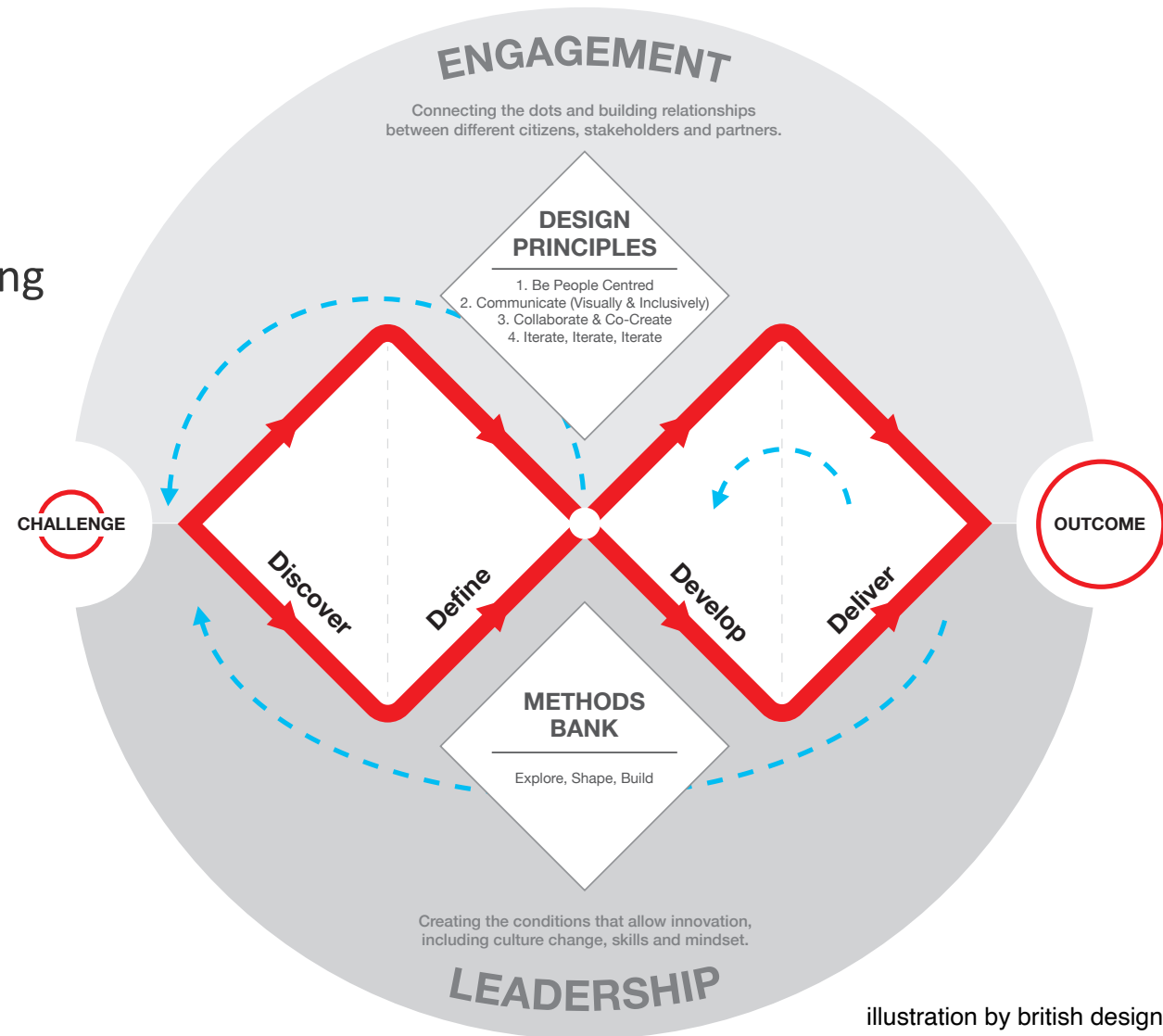
# Design Thinking Approach

Discover: identifying user needs

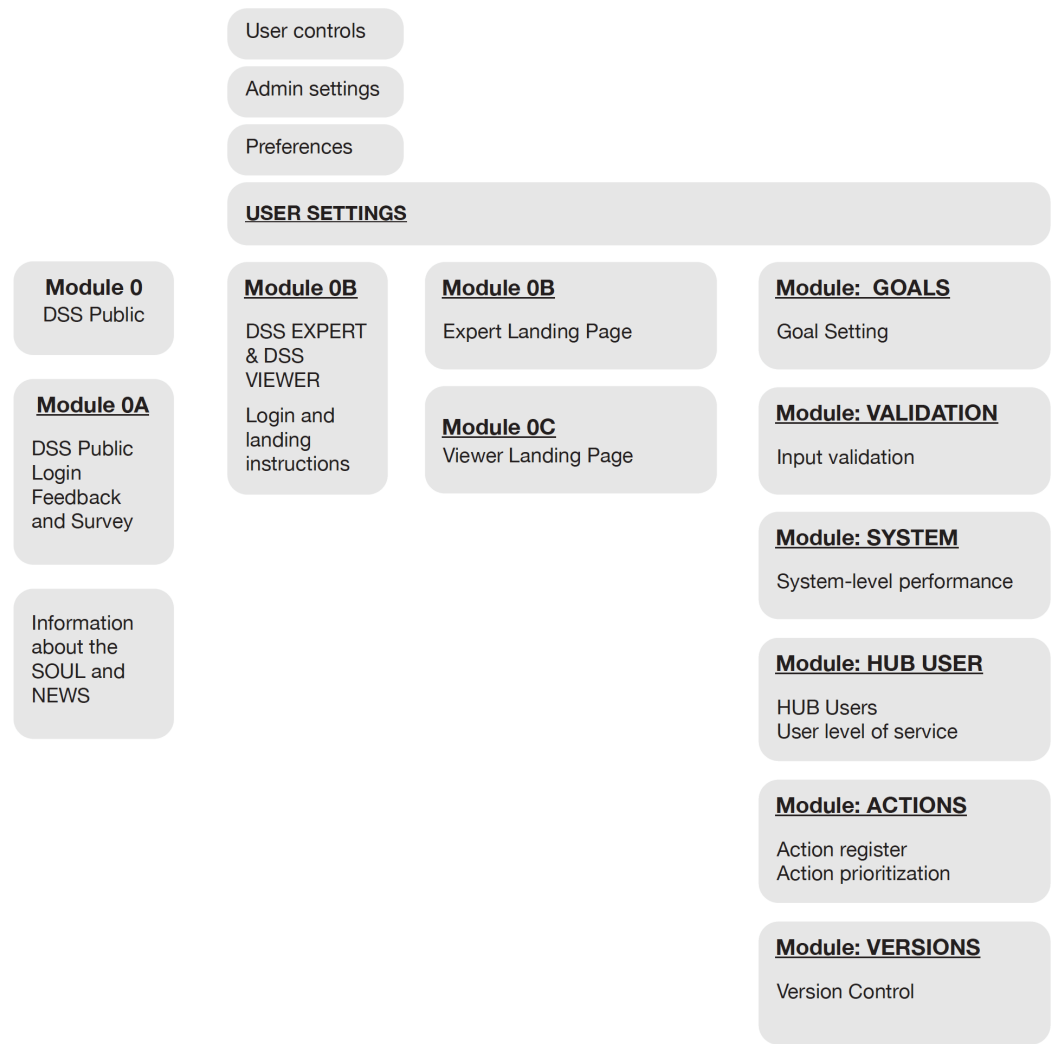
Define: problem framing

Develop: seeking inspiration and co-designing

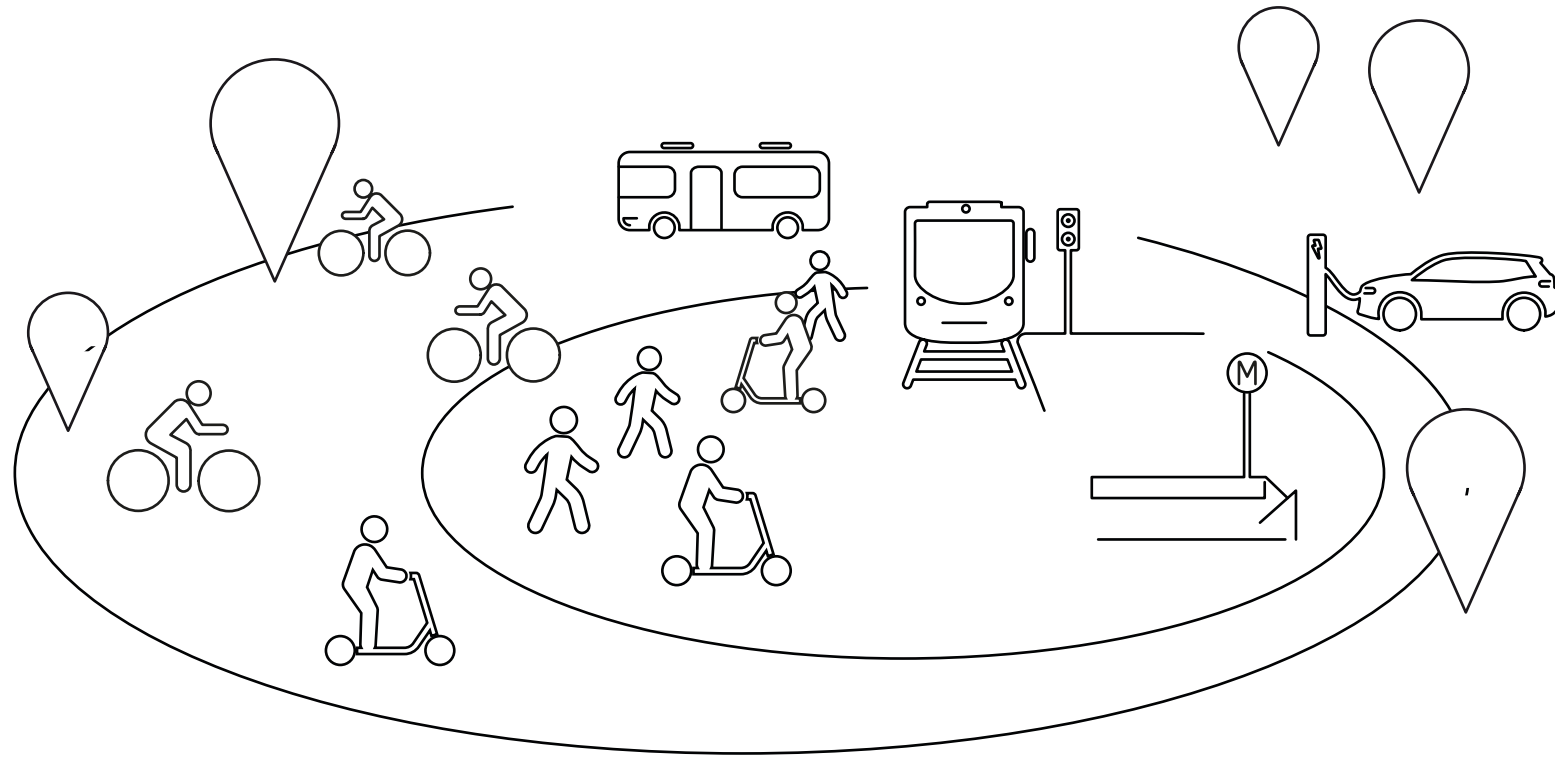
Deliver: testing out different solutions



# DSS modular structure



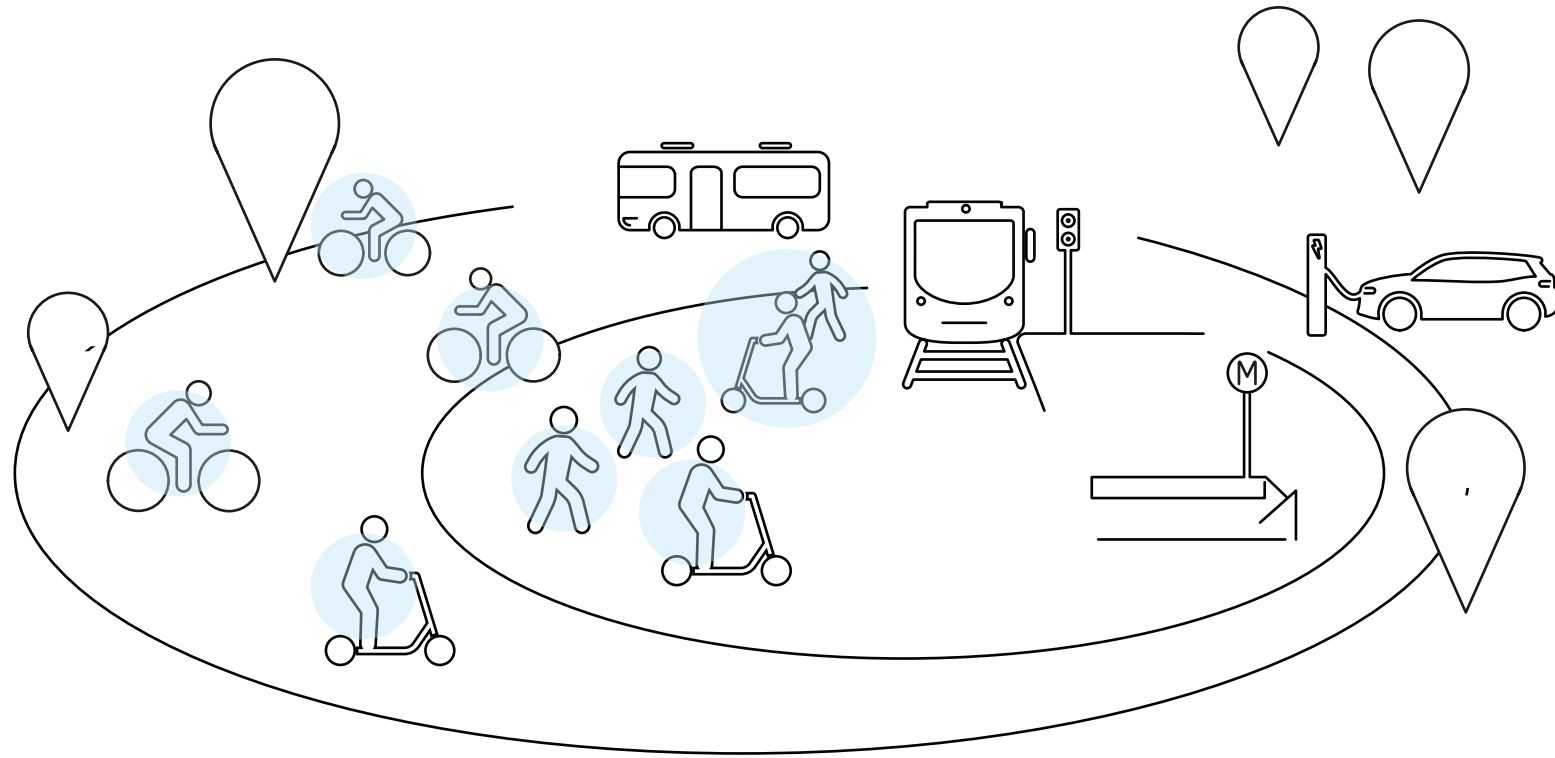
# A Decision Support for Mobility-Hubs



# Discover users – who, what and why?

Be Human-centered

Understand hub users rather than assume



## **Module: HUB USER**

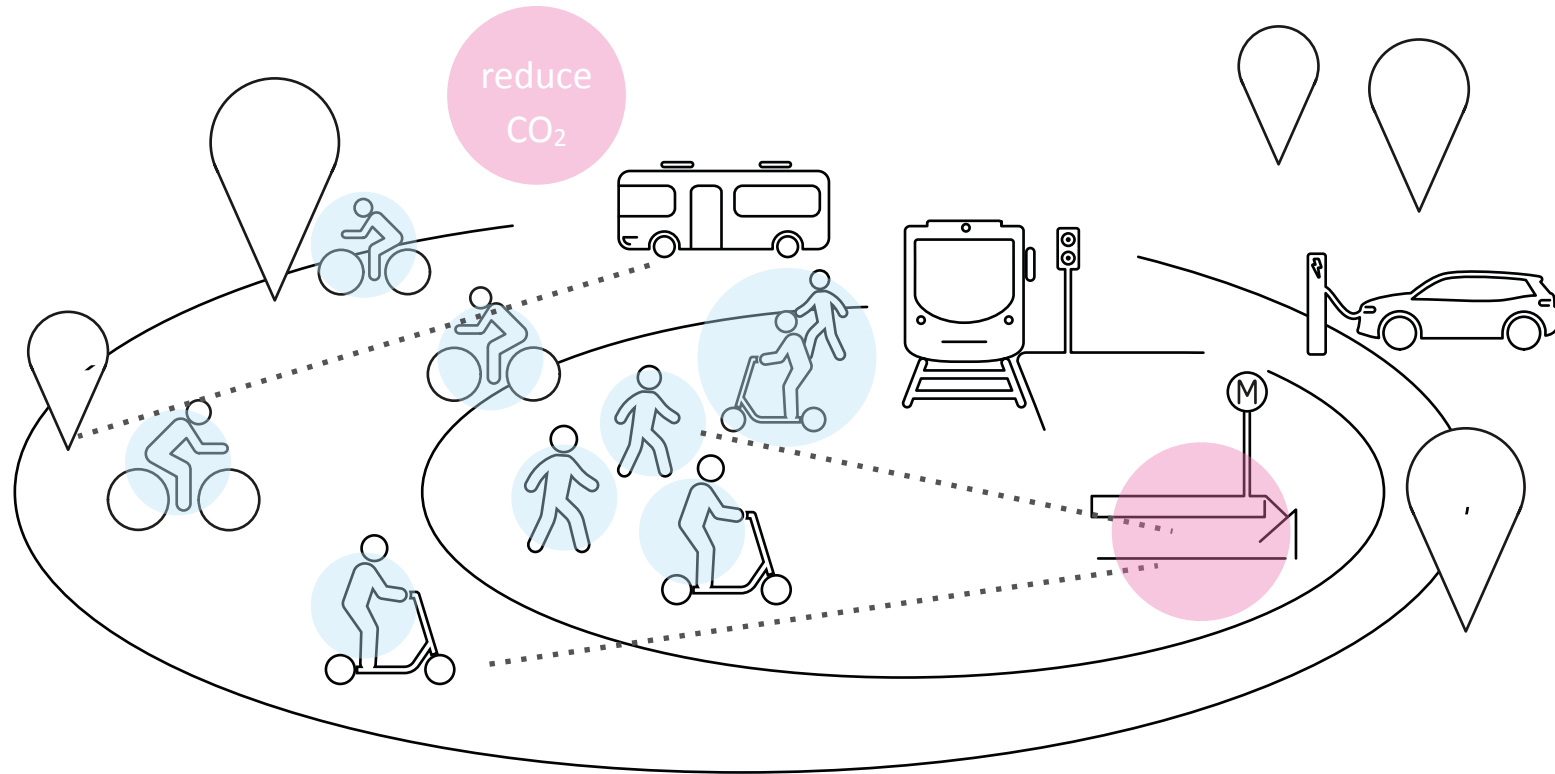
HUB Users  
User level of service

## **Module: SYSTEM**

System-level performance

# Define the challenges

Focus on specific parameters from the discover phase



## **Module: GOALS**

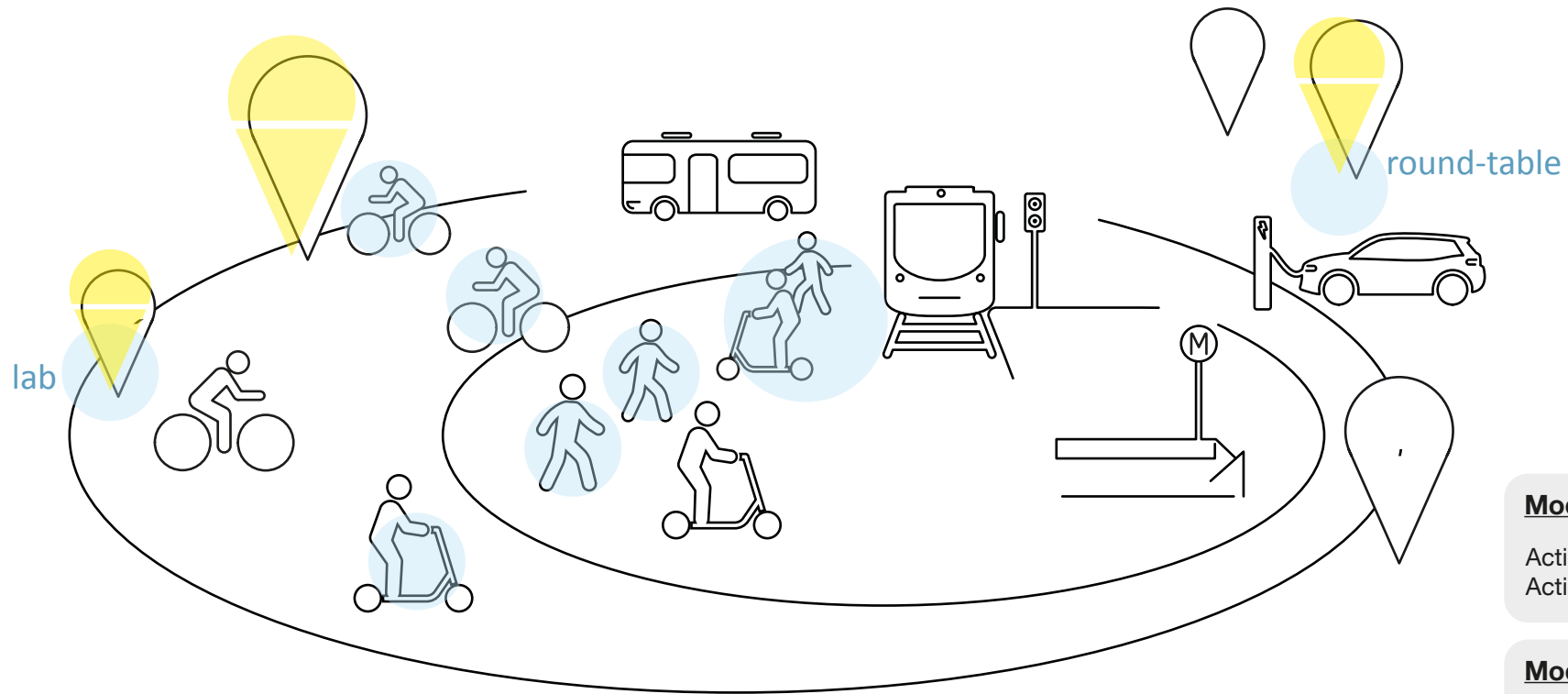
Goal Setting

## **Module: VALIDATION**

Input validation

# Develop / Encourage participation

Work together on different answers to the defined problem,  
co-design, bring people and stakeholders together  
Get inspired



## **Module: ACTIONS**

Action register  
Action prioritization

## **Module: HUB USER**

HUB Users  
User level of service

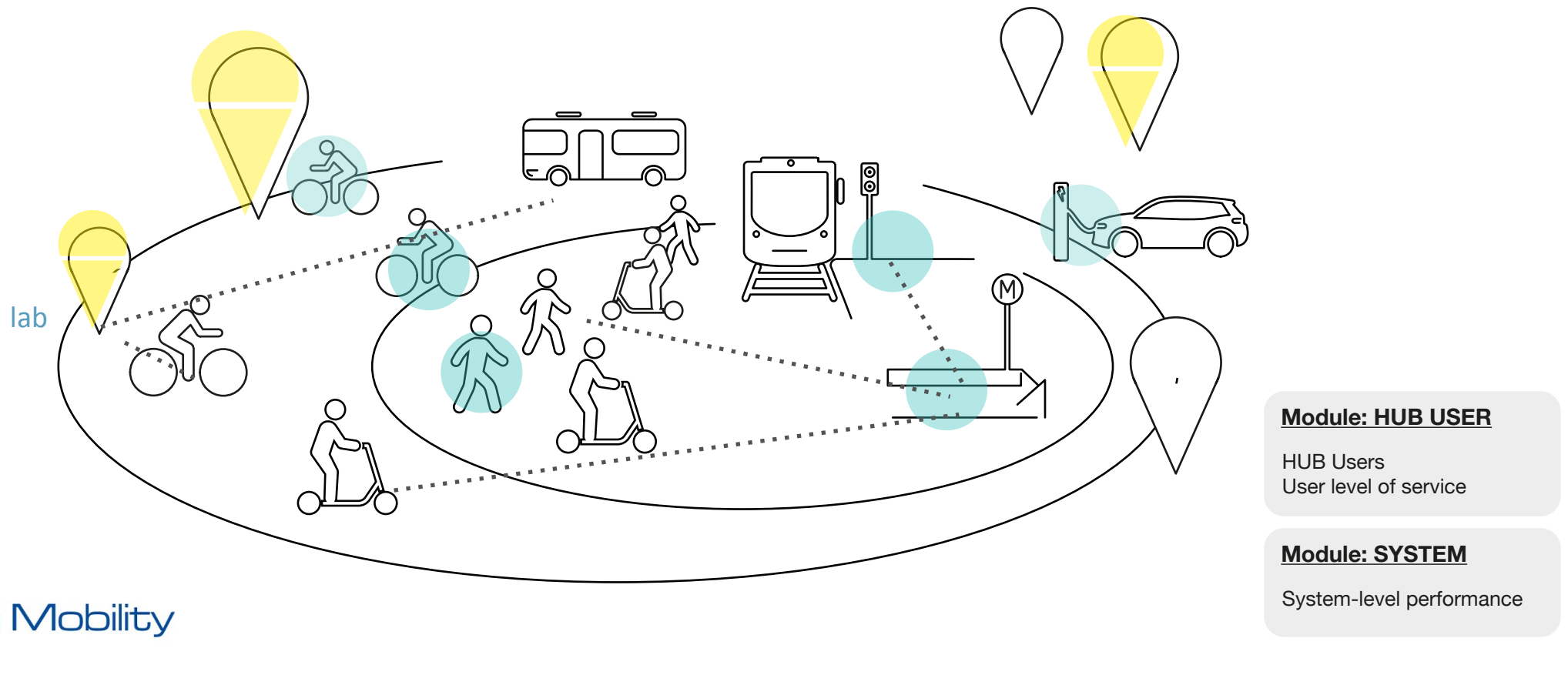


# Deliver – prototype and test

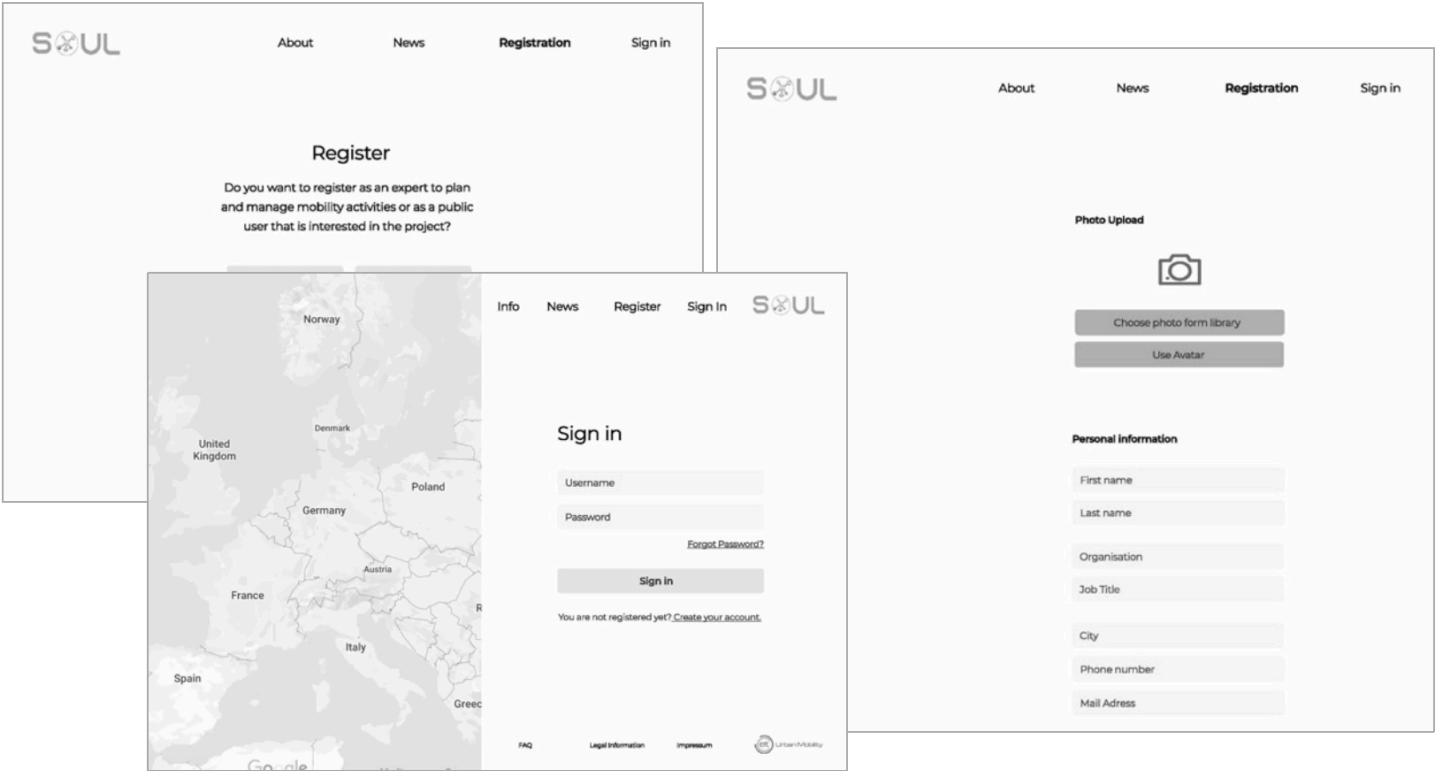
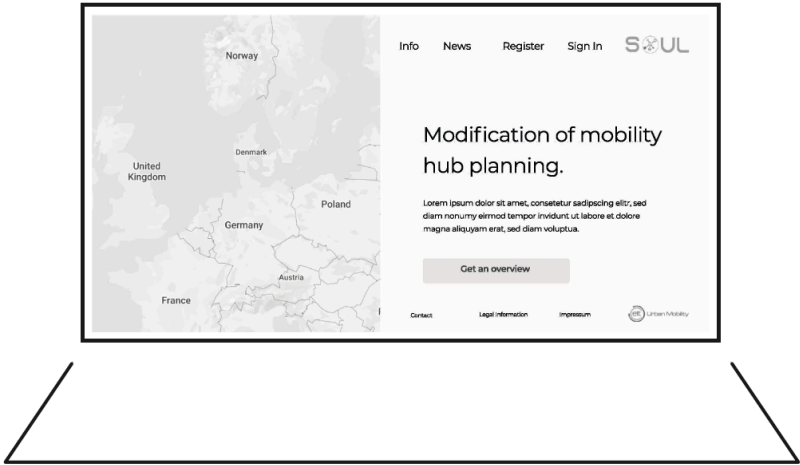
Test out potential small-scale solutions

Evaluate

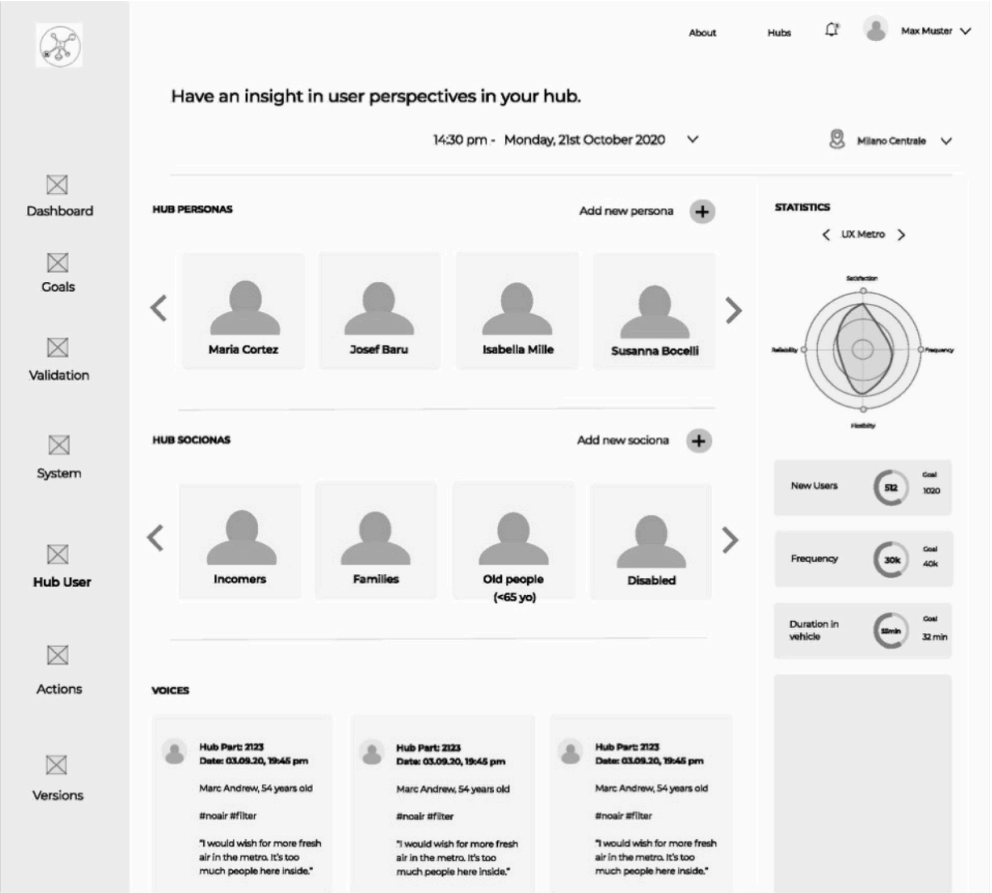
Improve



# Web Based DSS



# Hub user and action module



# Hub user and action module

About

Hubs

Max Muster

▼

Have an insight in user perspectives in your hub.

14:30 pm - Monday, 21st October 2020

Milano Centrale

HUB PERSONAS

Add new persona

Maria Cortez

Josef Baru

Isabella Mille

Susanna Bocelli

HUB SOCIONAS

Add new sociona

Incomers

Families

Old people (<65 yo)

Disabled

STATISTICS

LUX Metro

Reliability

Frequency

Flexibility

Stability

New Users

552

Goal 1000

Frequency

30%

Goal 40%

Duration in vehicle

30min

Goal 32 min

VOICES

Hub Part: 2123

Date: 03.09.20, 19:45 pm

Marc Andrew, 54 years old

#noair #filter

"I would wish for more fresh air in the metro. It's too much people here inside."

Hub Part: 2123

Date: 03.09.20, 19:45 pm

Marc Andrew, 54 years old

#noair #filter

"I would wish for more fresh air in the metro. It's too much people here inside."

Hub Part: 2123

Date: 03.09.20, 19:45 pm

Marc Andrew, 54 years old

#noair #filter

"I would wish for more fresh air in the metro. It's too much people here inside."

Dashboard

Goals

Validation

System

Hub User

Actions

Versions

About

Hubs

Max Muster

▼

Decide which action you want to follow.

14:30 pm - Monday, 21st October 2020

Milano Centrale

CURRENT ACTIONS WITH PRIORIZATION

Prio	Action	Status
1	Pathways to/from the hub using Connected Goals: xxx	<div><div></div></div>
2	traffic signals for cyclists / green wave	<div><div></div></div>
3	Increase bike sharing	<div><div></div></div>
4	Install bike stalls next to station free for daily commuters	<div><div></div></div>
5	Pathways to/from the hub using different modes	<div><div></div></div>

ACTIONS MAY FOLLOW

Hub user participation

city/road tax for cars going to station

benefits for using bike incentives

Pathways to/from the hub using different modes

POSSIBLE NEW ACTIONS

Search for actions

List

Grid

Map

Network

1

2

6

Hilton Milan

Grattacielo Pirelli

BioToBe Vegetarisches Restaurant

Milano Centrale

Caiazzo

STAZIONE CENTRALE

About

Hubs

Max Muster

▼

Welcome back, Max Muster!

14:30 pm - Monday, 21st October 2020

Milano Centrale

ACTION OVERVIEW

Rank	Title	Category	Connected actions	Actors	Stakeholders	Site ID	Socionas								
1	Pathways to/from the hub using different modes	Pathways through the hub using different modes	Waiting and queuing areas	Vertical integration of areas	Micro-mobility service system	Vehicle sharing service system	Parking system and usage scheme (incl. charging)	Pick-up / drop-off system and usage scheme	Schedule coordination between different modes	Information systems	Navigation systems	Long term and short term scheduled promotional events	Responses for disruptions and irregular events	Entertainment, cultural, or commercial information	Entertainment, cultural, or commercial information

DETAIL VIEW

Impressione

Milano Centrale

Caiazzo

STAZIONE CENTRALE

ZONA BUE

Urban Mobility

TU Munich  
Professorship of Urban Design  
Prof. Benedikt Boucsein

Thank you!



Marco  
Kellhammer



Elif Simge  
Fettahoğlu-Özgen



Svenja  
Nevermann