

Multimodal and interconnected hubs for freight and passenger transport contributing to a zero emission 21st century

*Workshop with SmartHubs 29 March 2023
Bologna*



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 953939



Key facts about MOVE21

- Horizon 2020 Innovation Action
- EU CIVITAS demonstrator
- Budget 9.5 MEUR + in-kind
- Ends April 2025
- 24 partners in seven countries



Cities and functional urban areas:



Technology and service providers, industry and SMEs:



Research organisations & universities:



Network organisations:



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MOVE21 helps cities to transform into climate neutral and connected multimodal urban nodes for mobility and logistics



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MOVE21 Living Labs



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1

LIVING LABS

- Oslo
- Gothenburg
- Hamburg

2

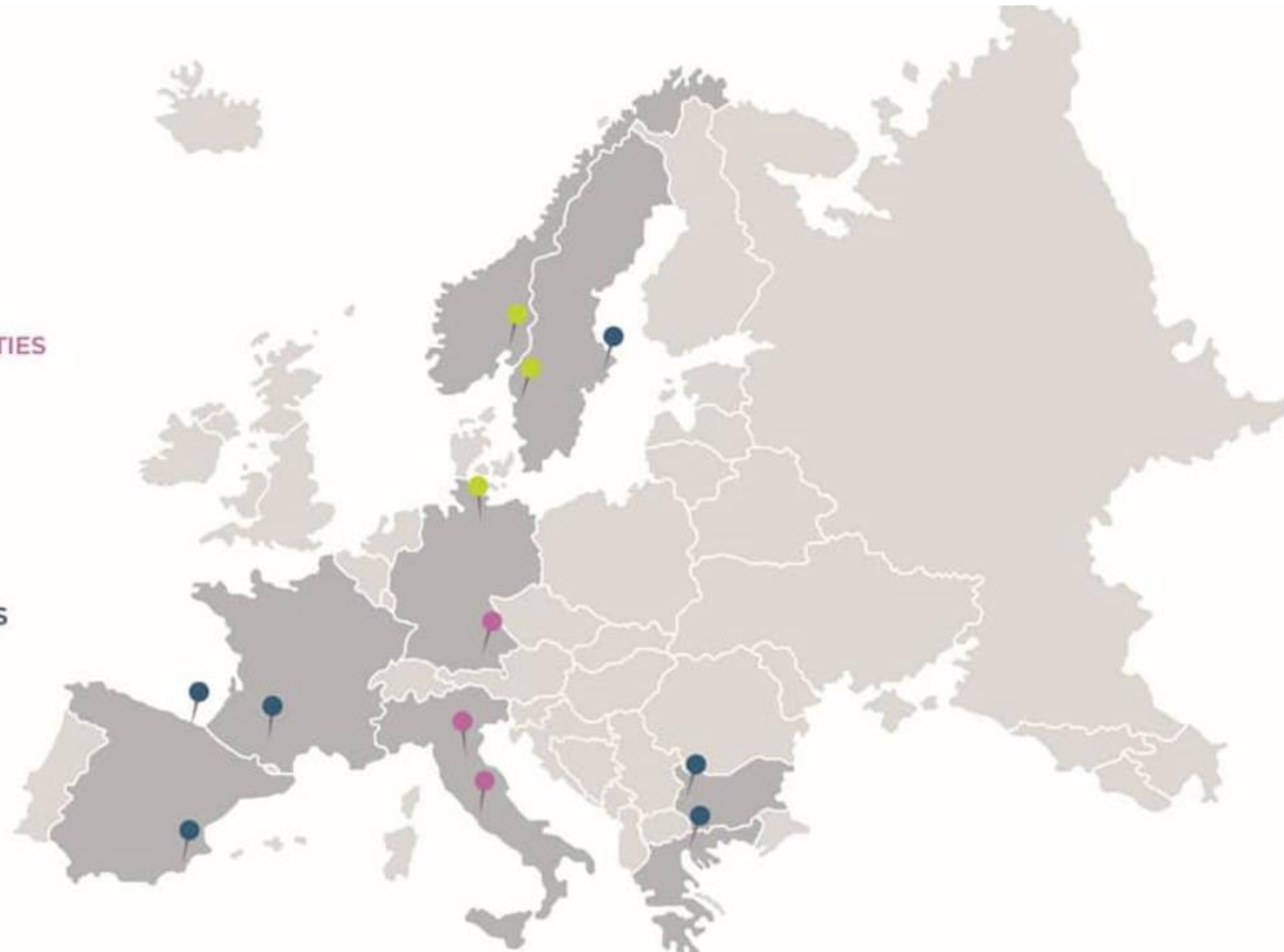
REPLICATOR CITIES

- Munich
- Rome
- Bologna

3

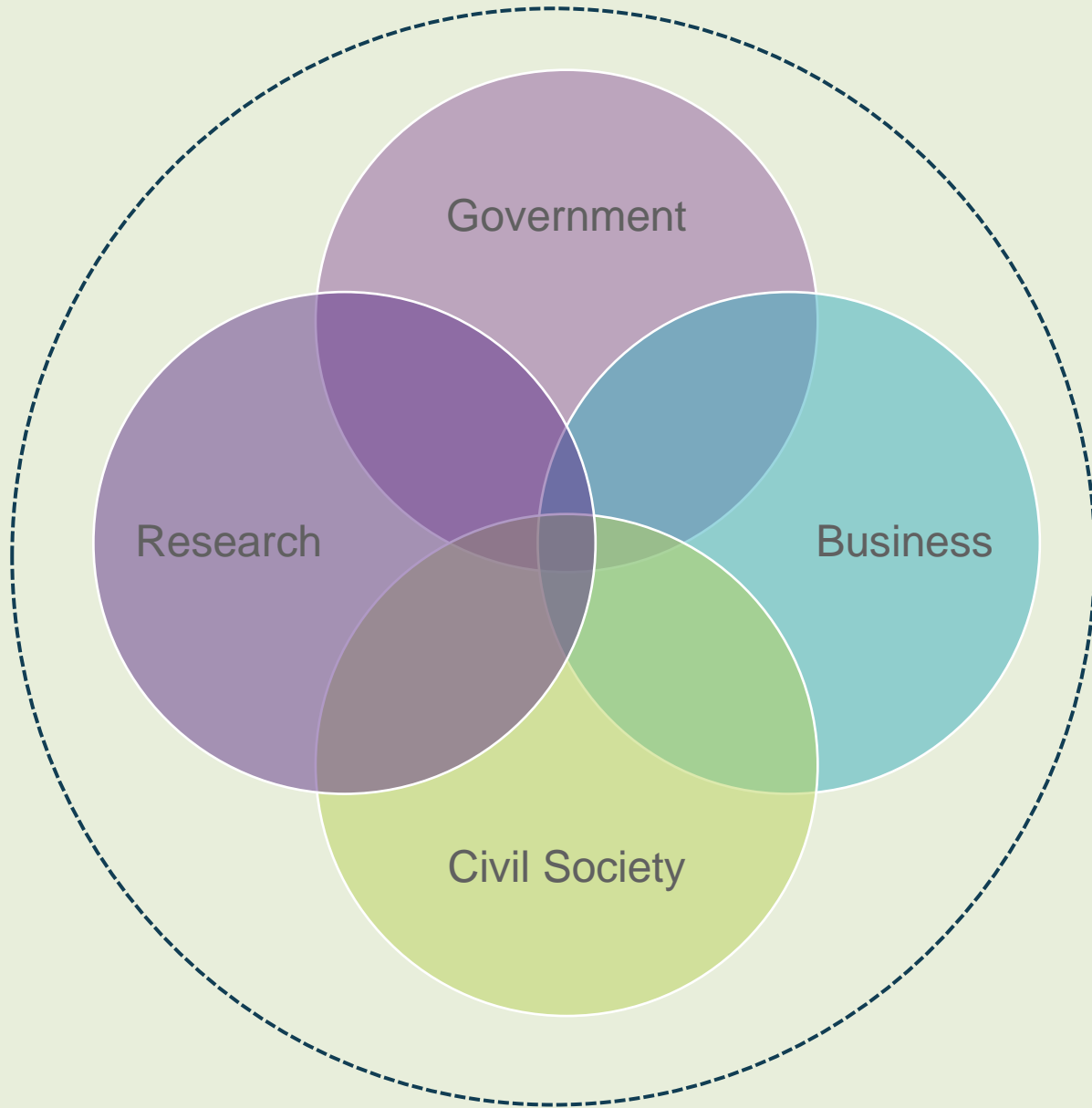
CASCADE CITIES

- Thessaloniki
- Toulouse
- Stockholm
- Bilbao
- Murcia
- Sofia



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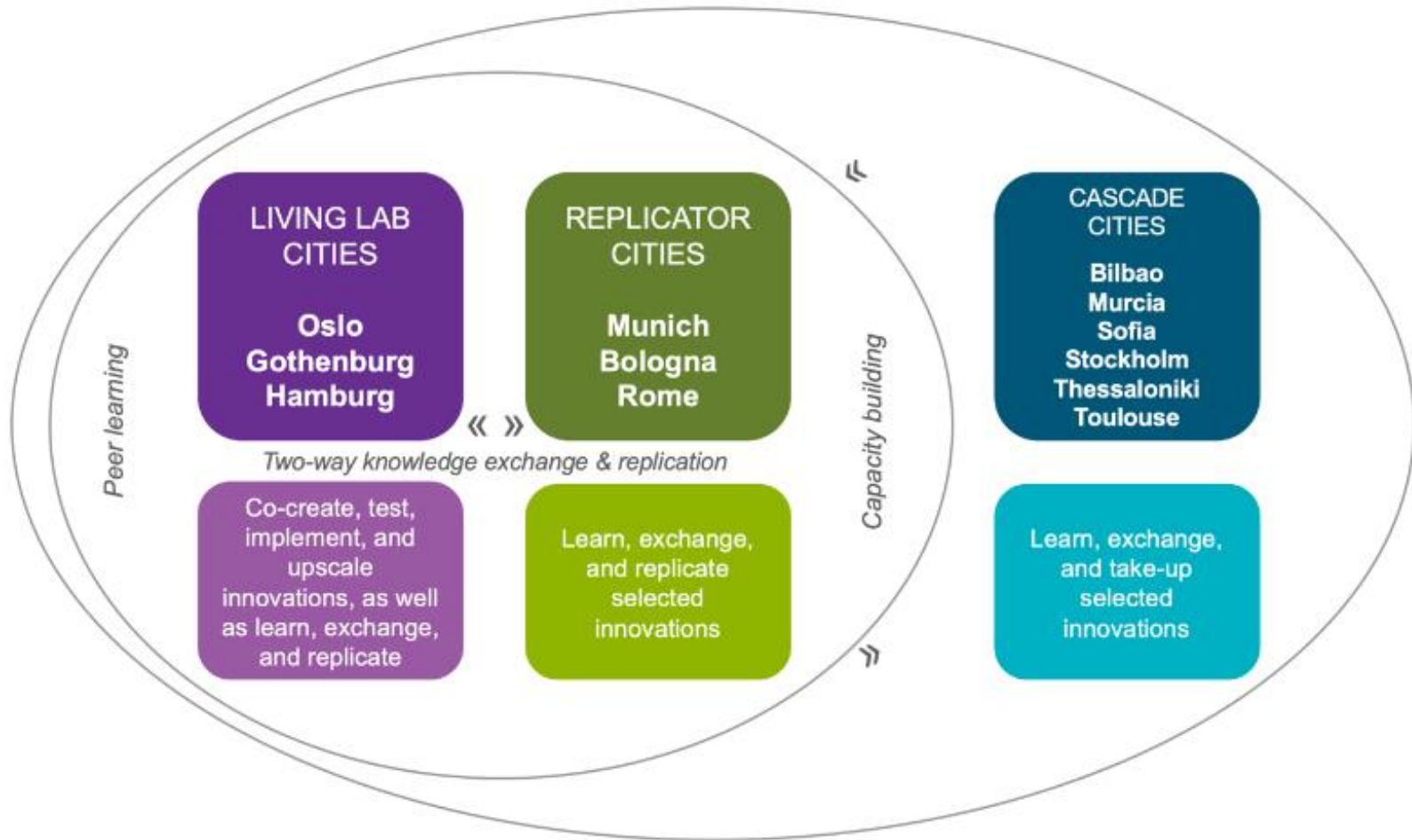
Living Labs as an open innovation methodology



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Replication approach



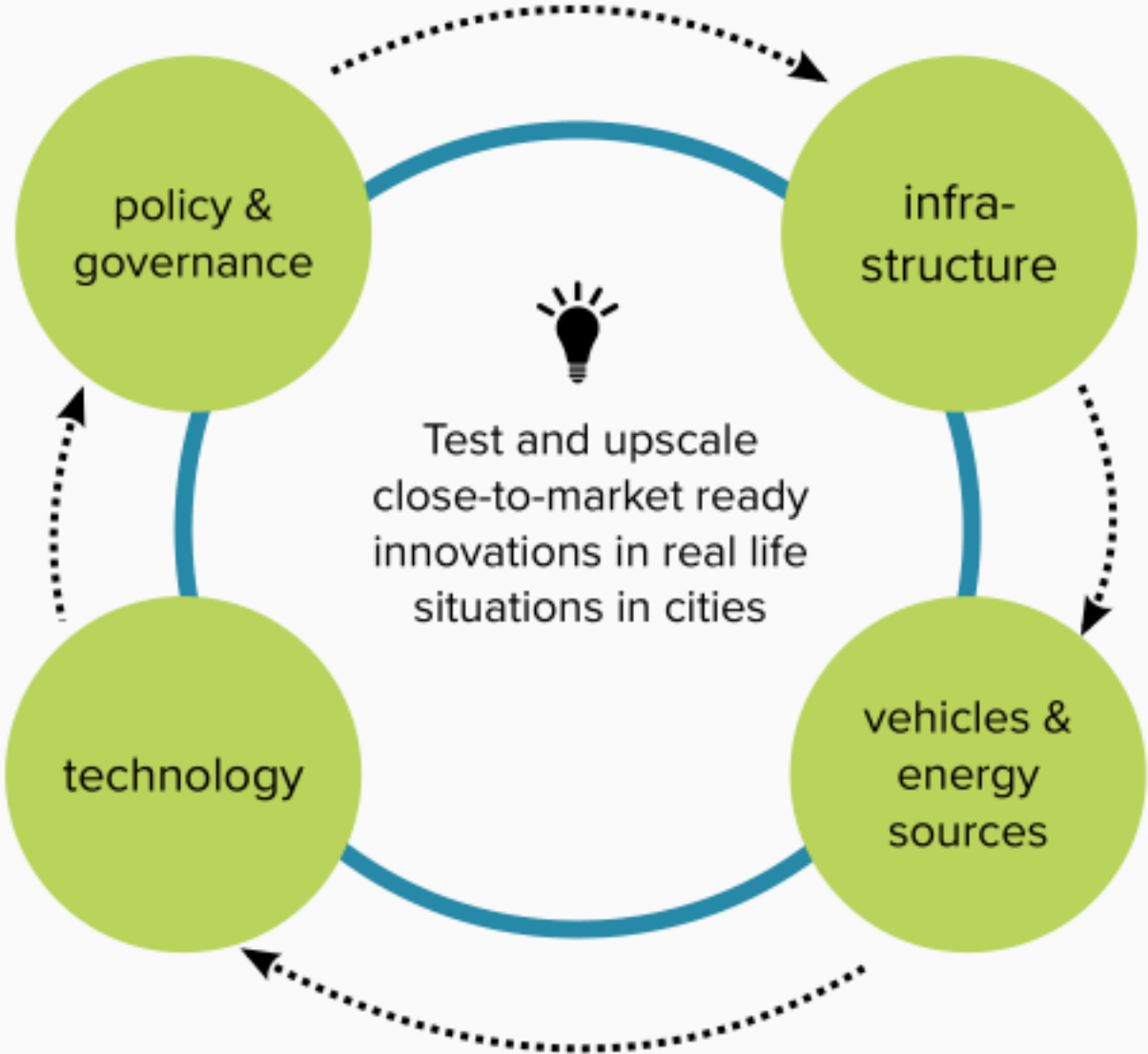
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Integrated approach addresses both goods and passenger transport together and in a cross-sectoral way



Aim to increase efficiency, capacity utilisation, accessibility and innovation capacity



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New TEN-T

- ✓ From 88 to likely 430+ urban nodes on the TEN-T network
- ✓ More importance to urban nodes (i.e. cities and regions) in the development of the TEN-T network
 - ✓ SUMP
 - ✓ Indicators
 - ✓ Multimodal hubs



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Scan-Med Observatory

What

- ✓ Ecosystem for governance coordination, data and knowledge sharing on corridor level
- ✓ Test bed for identifying and promoting new forms of governance cooperation on corridor level
- ✓ Collaboration platform to promote urban nodes' policy positions and coordinate efforts



Why

- ✓ Major discussions on TEN-T mostly driven by national stakeholders
- ✓ Focus so far on major infrastructure works, missing links and cross-border bottlenecks
- ✓ Need better integration of local and regional perspectives into TEN-T planning and implementation



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Policy
(in)coherence &
conflicting
policies

Demonstrated
emission reductions

The role of local
authorities in
urban logistics
and the trip
economy

Conflicts about
investments and
infrastructure and
space allocation

Public-
private
collaboration

System siloes
and
boundaries

Lots of new
stakeholders in
transport value
chains

Innovation
aptitude 2030
goals

Longwinded
regulatory
processes –
seldom proactive





**12
INNOVATIONS
UPSCALED**



**12
INNOVATIONS
REPLICATED**

**HIGH
IMPACT
SOLUTIONS**



**15
INNOVATIONS
IMPLEMENTED**



**15%
EMISSIONS
REDUCTIONS
BY 2025**



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MOVE21



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[@MOVE21](https://twitter.com/MOVE21)



[LinkedIn/MOVE21](https://www.linkedin.com/company/move21)



www.move21.eu

SmartHubs

Game changers in transport

Prof. dr. ing. Karst Geurs

University of Twente

Mobility hubs

- Integration: helps to provide an integrated planning approach, integrating between policy instruments, modes, infrastructure provision, transport and land use measures and other policies.
- Offers shared transport modes, public transport and (potentially) other services at a physical location
- Large variety in hubs (goal, functionality, size)



Smart Mobility Hubs as a game changer towards inclusive, sustainable urban mobility and accessibility in European cities

(May 2021-May 2024)

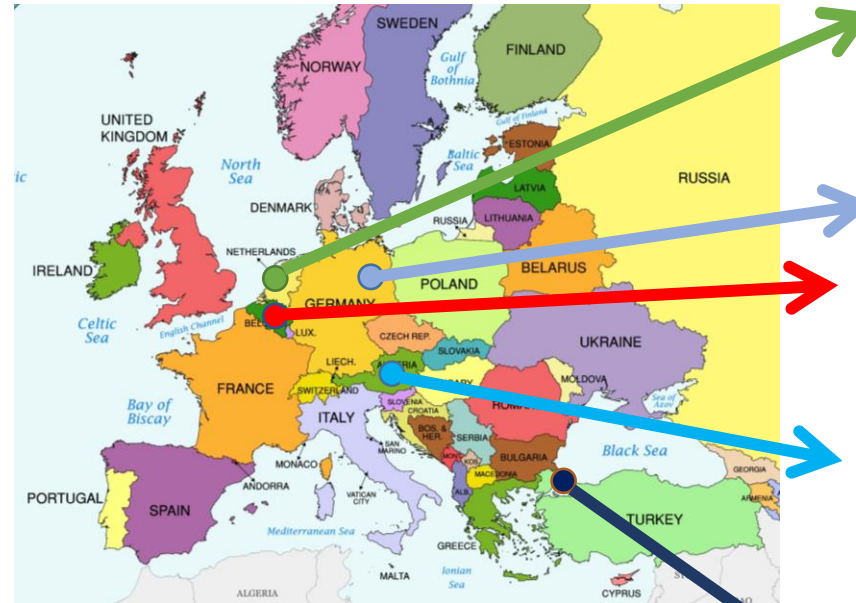
Full partners

UNIVERSITY OF TWENTE.

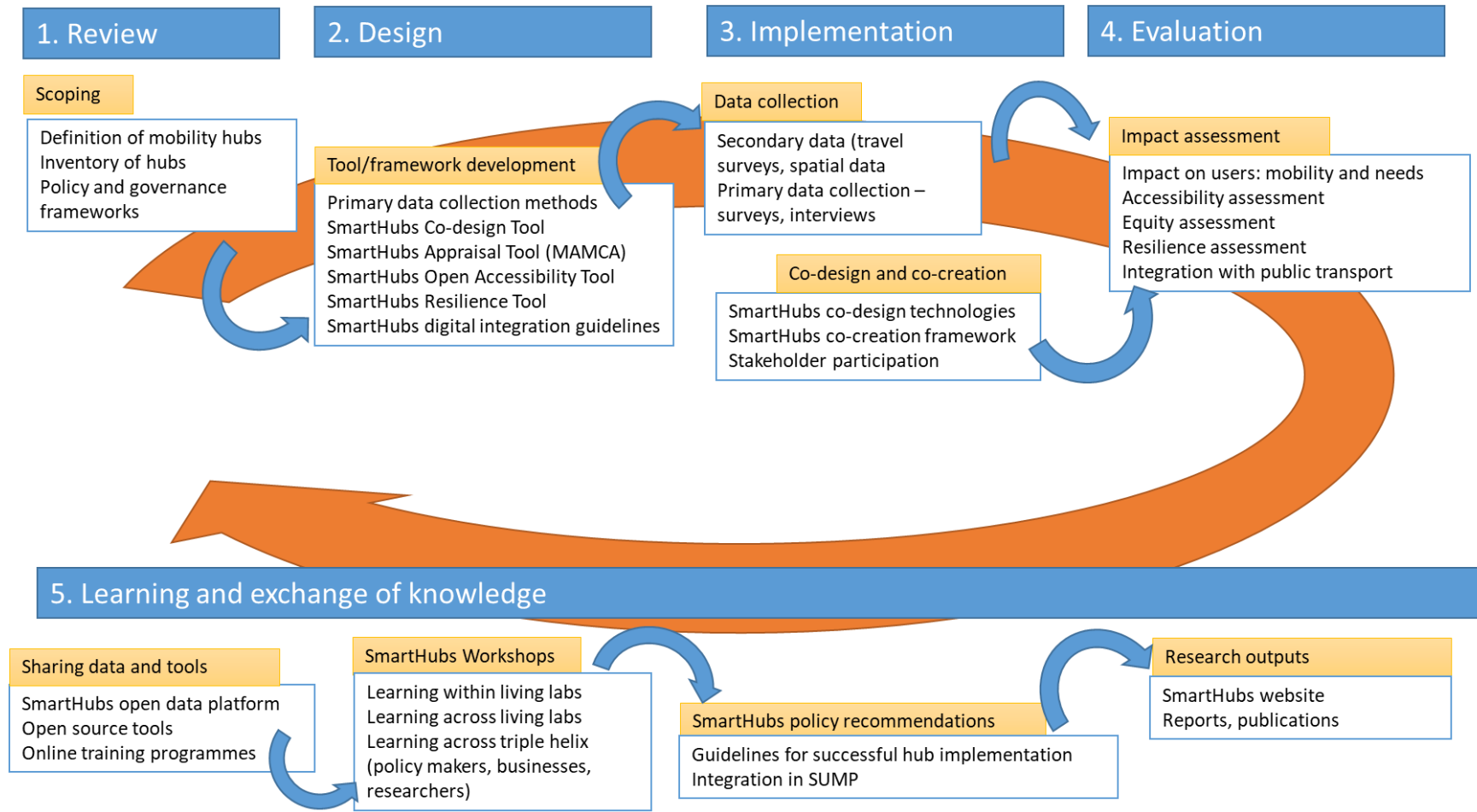


Living Labs and Associate partners

- **Rotterdam-The Hague (NLD):** Gemeente Rotterdam, Gemeente Den Haag, MRDH, HTM, RET, NS Stations, CROW
- **Munich (GER):** Munich PT (MVV), City of Munich, UPS
- **Brussels (BEL):** Anderlecht, Brussels mobility
- **Vienna (AUT):** Fed. Govt. Lower Austria, ITS Vienna region, Aspern-mobil LAB, Mobility Lab Graz, Stadt Umland Management Wien, 3420AG
- **Istanbul (TUR):** Istanbul Metropolitan Municipality



SmartHubs approach





The SmartHubs Ladder

DESCRIPTION OF THE MULTIDIMENSIONAL MOBILITY HUB TYPOLOGY



Die SmartHubs Integrationsleiter

BESCHREIBUNG DER MULTIDIMENSIONALEN MOBILITÄTSHUBTYPOLOGIE



De SmartHubs Ladder

BESCHRIJVING VAN DE MULTIDIMENSIONALE MOBILITEITSHUB TYPOLGIE



L'échelle d'intégration SmartHubs

DESCRIPTION DE LA TYPOLOGIE PLURIDIMENSIONNELLE DES PÔLES DE MOBILITÉ



<https://www.smartmobilityhubs.eu/data>

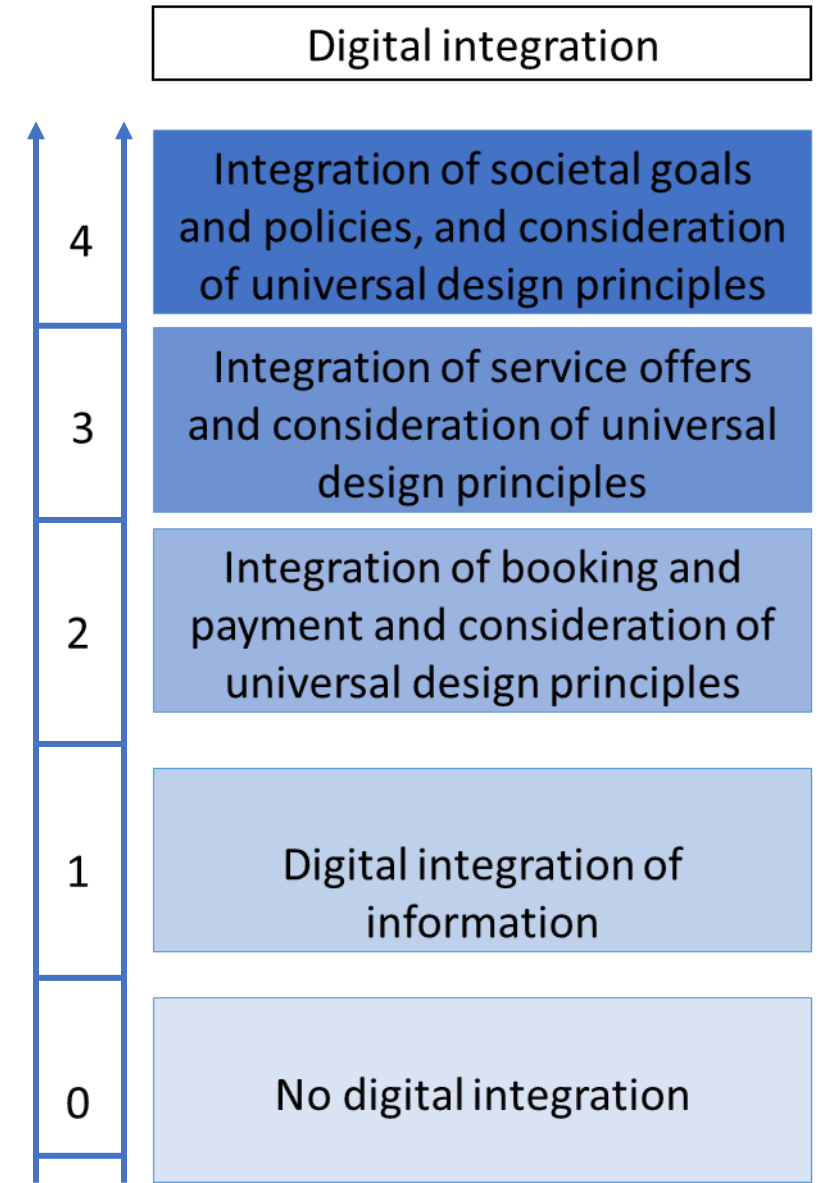
Physical integration

- Locations of mobility hub (residential density, proximity to other activities and services)
- Placement of different modes of transport in the vicinity of each other.
- Design of mobility hubs that are accessible for all (e.g. barrier free)
- Design of mobility hubs that are clearly visible with information and common logos
- Design of mobility hubs as a placemaker



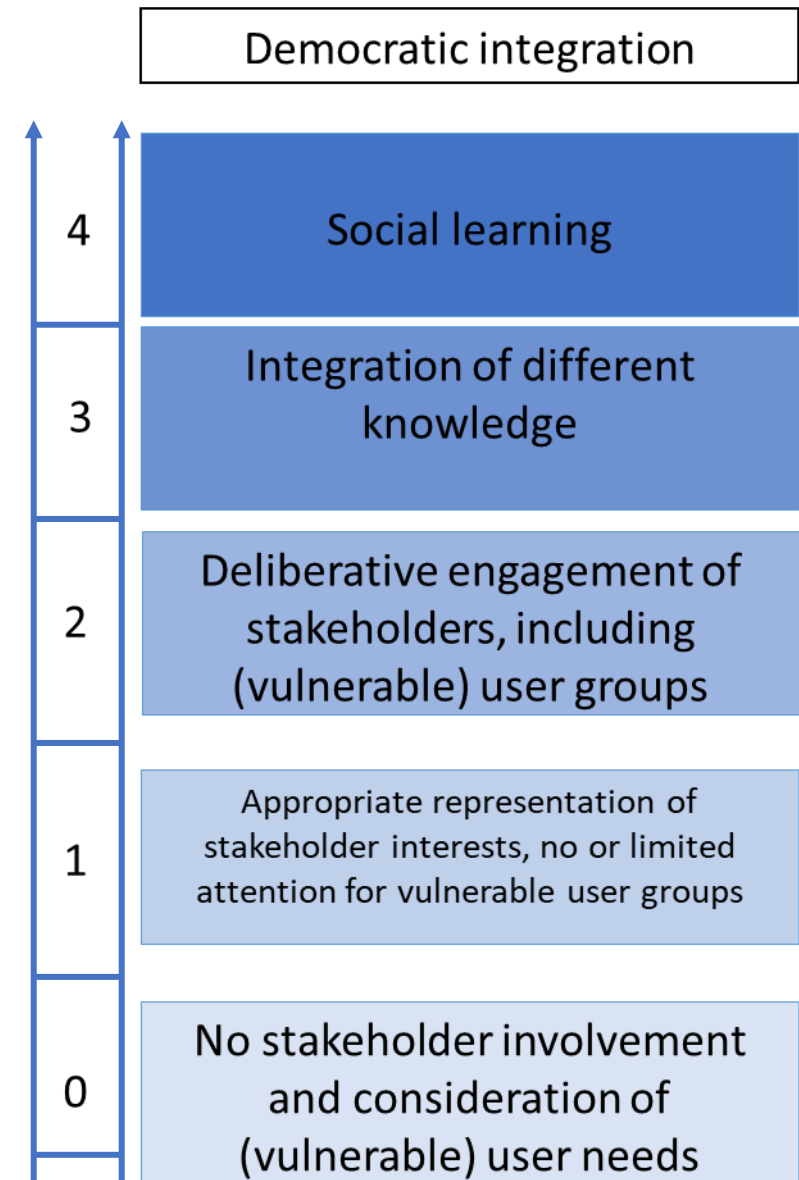
Digital integration

- The Mobility as a Service (MaaS) promise is to deliver digital integration of mobility options - planning, booking and payment using a single app or platform.
- Low levels of digital engagement may create a new layer of transport disadvantage on top of existing ones (Durand et al. 2021)
- Services for non-digitally skilled - analogue booking options, training, assistance, helpdesks etc.



Democratic integration

- Have residents, users and other stakeholders been consulted in the development of hubs?
- Have their inputs had influence on the decision making process / design of on hubs?
- Have vulnerable user groups been reached?

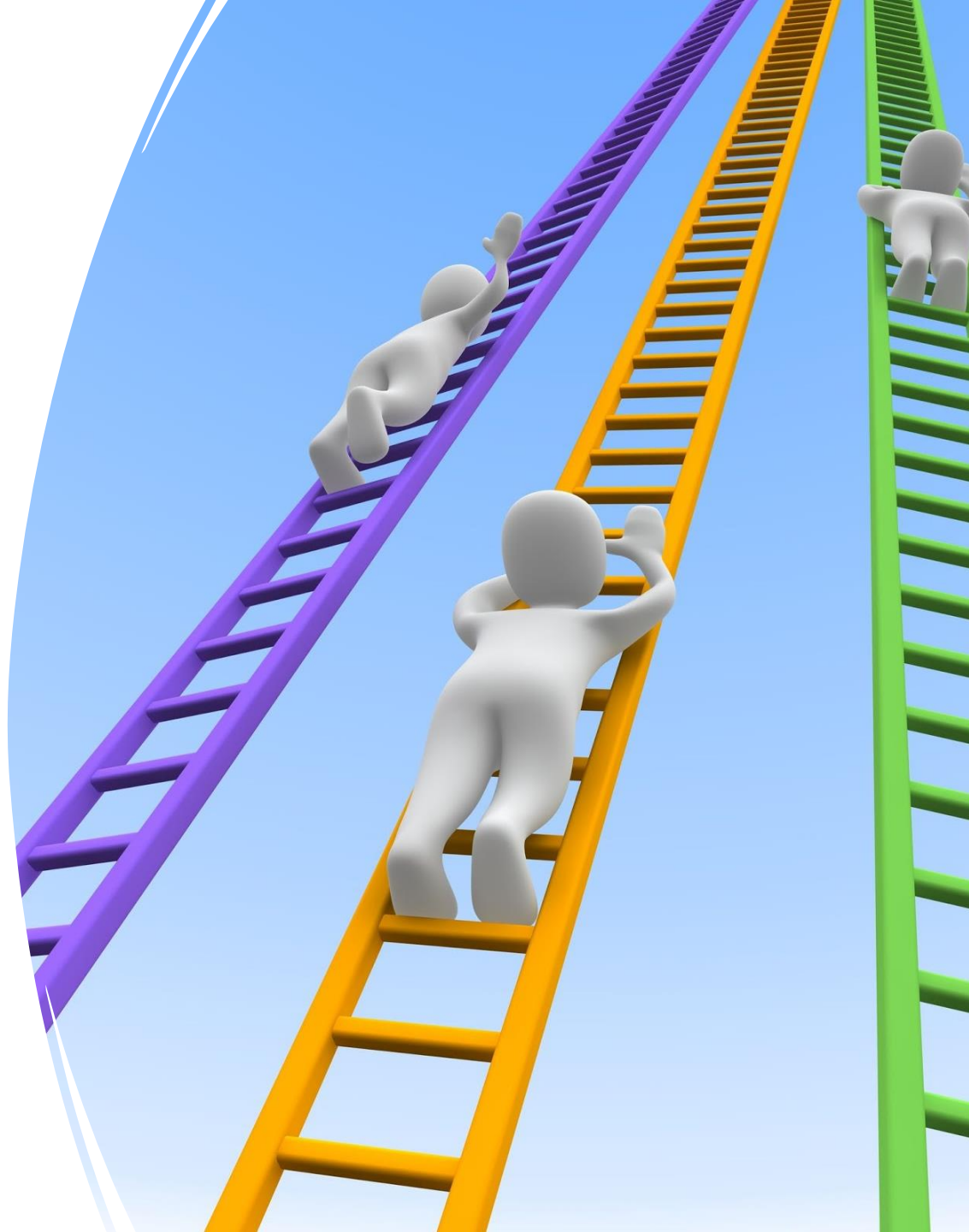


	Physical integration	Digital integration	Democratic integration
4	Conflict free and place making	Integration of societal goals and policies, and consideration of universal design principles	Social learning
3	Visibility and branding	Integration of service offers and consideration of universal design principles	Integration of different knowledge
2	Wayfinding and consideration of universal design principles	Integration of booking and payment and consideration of universal design principles	Deliberative engagement of stakeholders, including (vulnerable) user groups
1	Walking distance to shared and public transport, minimum inclusive design standards	Digital integration of information	Appropriate representation of stakeholder interests, no or limited attention for vulnerable user groups
0	No physical integration	No digital integration	No stakeholder involvement and consideration of (vulnerable) user needs

		Physical integration	Digital integration	Democratic integration
Smart Mobility Hub	4	Conflict free and place making	Integration of societal goals and policies, and consideration of universal design principles	Social learning
	3	Visibility and branding	Integration of service offers and consideration of universal design principles	Integration of different knowledge
	2	Wayfinding and consideration of universal design principles	Integration of booking and payment and consideration of universal design principles	Deliberative engagement of stakeholders, including (vulnerable) user groups
Mobility hub	1	Walking distance to shared and public transport, minimum inclusive design standards	Digital integration of information	Appropriate representation of stakeholder interests, no or limited attention for vulnerable user groups
Single mobility services	0	No physical integration	No digital integration	No stakeholder involvement and consideration of (vulnerable) user needs

SmartHubs Integration Ladder

- The higher up the ladder, the “smarter” the mobility hub, and the higher the expected impact on user behaviour and societal impacts
- Where are we now on the ladder in Europe?
- How can we climb the ladder?
- What are the potential impacts?





Welcome to the SmartHubs project's Open Data Platform!

The SmartHubs project examines mobility hubs, dedicated on-street locations where citizens can choose from different shared and sustainable mobility options. [learn more...](#)

in the database: **69 Hubs** (10 of which are Case Studies in the SmartHubs Project), **15 Mobility Hub Networks**, **60 Mobility Providers**

Mobility Hubs

Aarhus Central Station
Aarhus, Denmark

Central Station with public transportation and other different modes available using GoTur

★★ PHYSICAL ★★★ DIGITAL

MATOSINHOS LIVING LAB
Matosinhos, Portugal

create a smart neighbourhood, as a low carbon space, resilient, accessible, participated and connected.



Roma Termini Station
Rome, Italy

central station, central urban hub (a large hub in the city center, e.g. railway station)

★ PHYSICAL DIGITAL

Aarhus Central Station
Aarhus, Denmark

Central Station with public transportation and other different modes available using GoTur



Mantova Central Station
Mantova, Italy

Central Station with public transportation and bike sharing

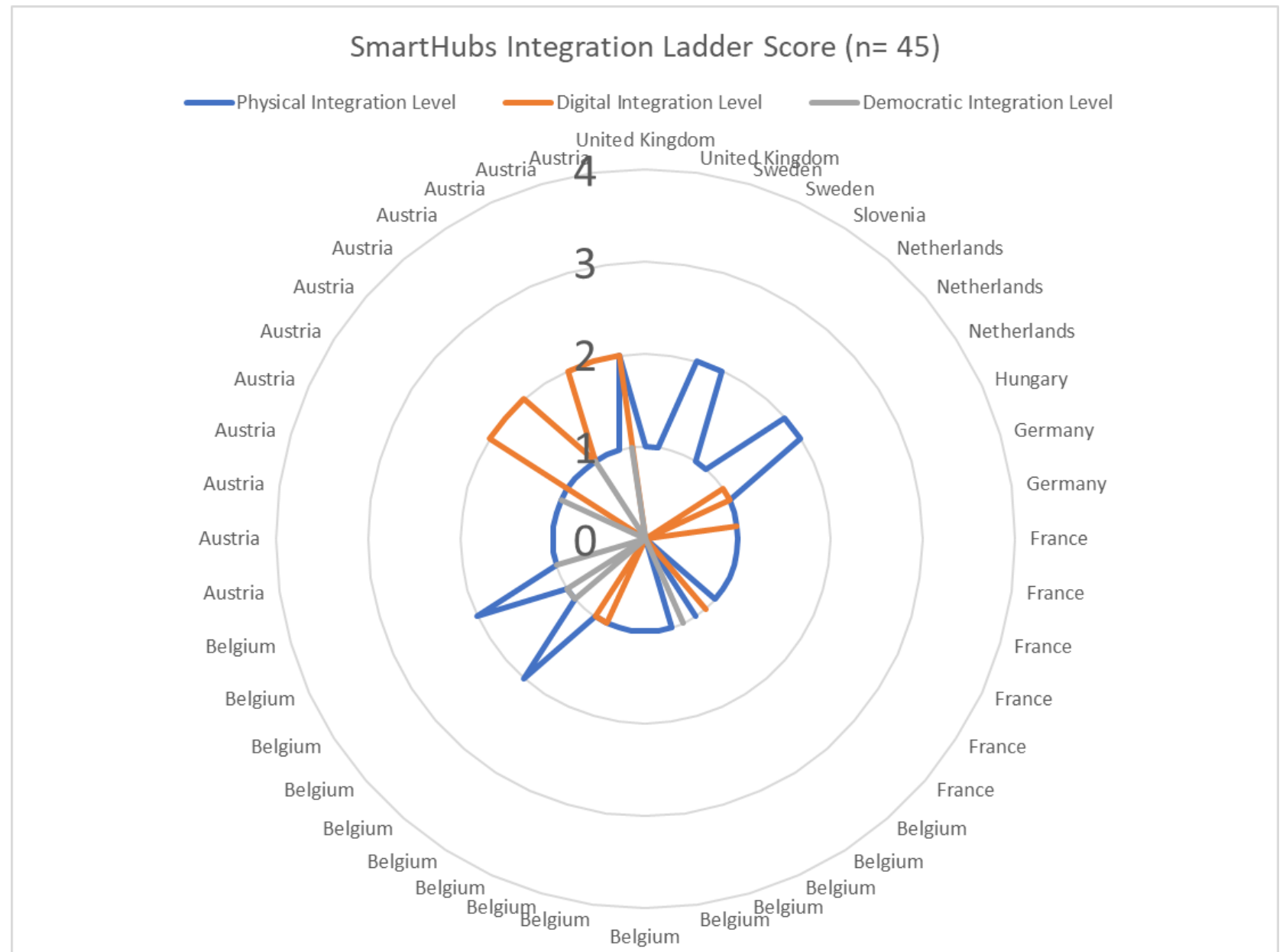
Schiedam Hub

Schiedam, Netherlands

Train and metro station of medium-sized city of Schiedam



data.smartmobilityhubs.eu





Living labs and impacts of SmartHubs

- Experiments with physical integration, e.g. hub design
- Experiments with digital integration, e.g. digital pillar
- Experiments with democratic integration: co-design games, participation events
- Impact analysis: surveys and appraisal tools



Today: a few SmartHubs highlights

- Breakouts:
 - Co-design games
 - Governance of hubs
 - Accessibility Tool
 - SmartHubs Appraisal Tool
- Poster session
 1. Open Data Platform
 2. Analysis of needs of users and vulnerable user groups
 3. SmartHubs survey : user needs and preferences
 4. Experiment with digital information pillar
 5. SmartHubs Resilience Tool

