



Katie Bulanowski, EPF Conference, 10 June 2022

**How often do you use digital mobility services (routing services, ride sharing or ride hailing services, public transport applications...)?**

039

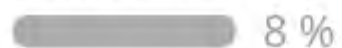
Daily



Often (2x per week or more)



Sometimes



Never



# › Digitalisation opportunities



- Improved multi-modal journey planning & ticketing for passengers



- Instant access to travel information for passengers



- Increased efficiency for operators

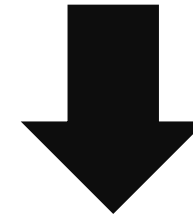


- Optimised use of resources for policymakers

# › But is digital mobility inclusive?



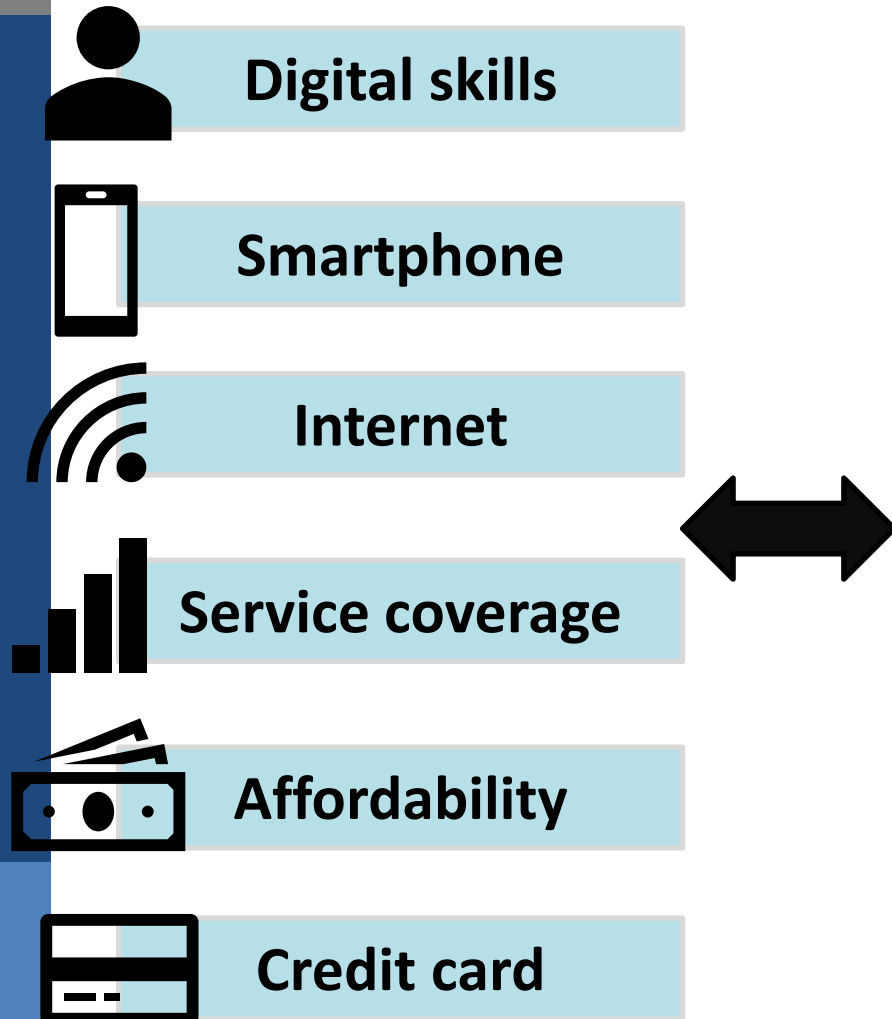
56% of the 2019 European population possessed at least **basic digital skills**



48% of citizens living in **rural areas** & 33% of **elderly populations** aged 55 to 74 possess at least **basic digital skills**

Source: European Commission's 2021 Digital Economy and Society Index (DESI)

# > Digitalisation barriers



## Influenced by socio-economic & demographic factors:

E.g. gender, race, income, age, living situation, and more...:

- People with **low income** are less likely to own a smartphone;
- **Older populations** may have reluctance to engage with technology. The natural aging process also reduces cognitive abilities;
- More than 80 million people in the EU are affected by a **disability**.



## The INDIMO project enables developers, policymakers and service operators to advance inclusive and user-centric digital mobility solutions

Project duration: January 2020 - December 2022

Coordinator:



MOBILITY, LOGISTICS &  
AUTOMOTIVE TECHNOLOGY  
RESEARCH CENTRE

Partners:



# > Project objectives

#1

To improve the understanding of the **users' needs** towards the digital transport system.

#2

To improve knowledge about **users' requirements** in personalised digital transport systems.

#3

To **co-create tools** that can help engineers, developers, operators and policy makers to generate an inclusive, universally accessible personalised digital transport system.

#4

To foster the **Universal Design** approach throughout the planning and design process of digital application and services, both for accessibility and inclusion.

#5

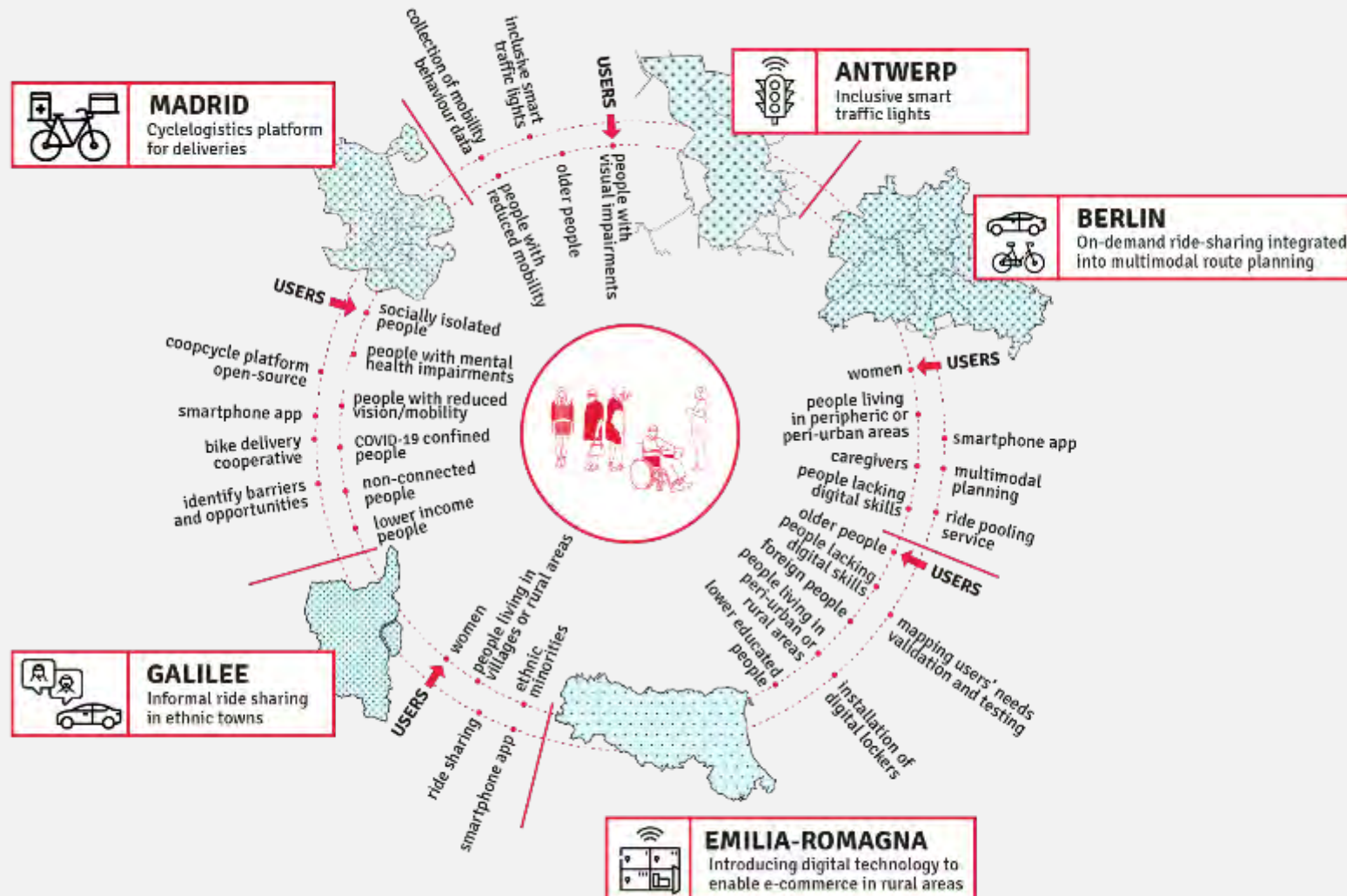
To influence **future policy** by feeding project results into European, regional and local policy making.

# › Concept & methodology





# › Pilot projects



## Objectives

- ✓ Assess the needs of users in different contexts
- ✓ Co-design the INDIMO toolkit
- ✓ (Re)design existing services or new services
- ✓ Improve INDIMO tools
- ✓ Assess transferability potential

# › INDIMO Inclusive Digital Mobility Toolbox



**Universal Design  
manual** for digital  
transport  
services



**Universal  
interface  
language** for  
digital transport  
services



**Cybersecurity and  
privacy  
assessment  
guidelines**



**Service & policy  
evaluation tool**

# › Universal Design Manual

## Who is the UDM for?



INDIMO target groups:

- ✓ Graphic designers
- ✓ Operators of mobility/delivery services
- ✓ UX/UI Designers
- ✓ Policymakers in charge of regulations
- ✓ IT experts, programmers & network architects

## What does the UDM consist of?

- ✓ The UDM is a manual to provide guidelines for designing digital mobility & delivery services to mitigate barriers for using digital mobility services .
- ✓ It includes a checklist to self-assess the service.

## Who will benefit from it?

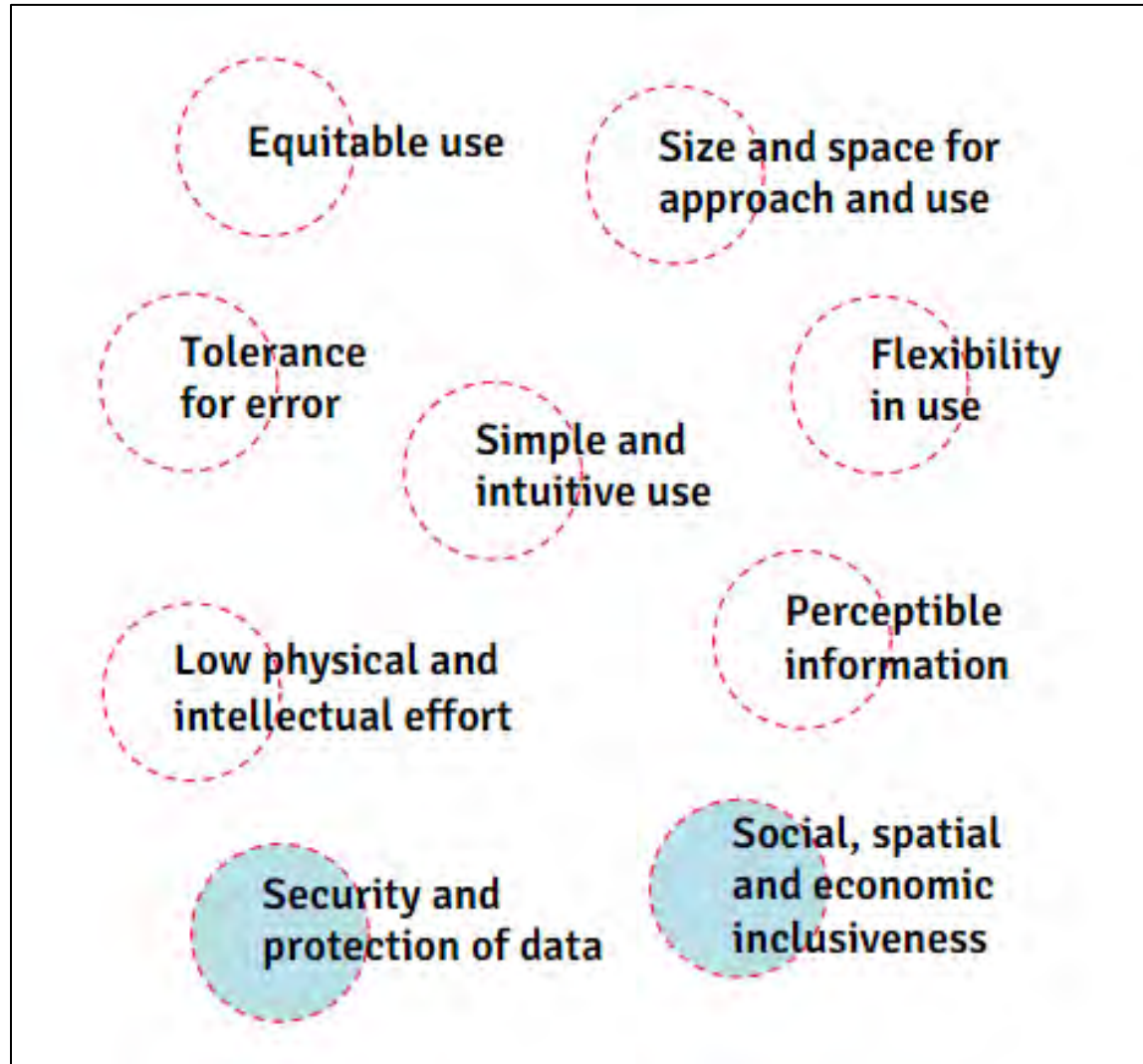
- ✓ INDIMO Vulnerable groups of people



## How did we build it?

Users' needs elicitation, identification of requirements, journey map definition, & the direct involvement of three key experts on Universal Design & target group representatives.

# › UDM Principles



- Universal Design is the **design of products and services that may be employed by people with a wide array of characteristics, abilities, & disabilities.**
- INDIMO proposes **two additional principles for digital mobility services.**

# › UIL – Universal Interface Language

## Who is the UIL for?

INDIMO target groups:

- ✓ App Developers/ UX designers
- ✓ Graphic designers
- ✓ Operators of mobility/delivery services
- ✓ Policymakers in charge of regulations



## Who will benefit from it?

- ✓ INDIMO Vulnerable groups of people



## What does the UIL consist of?

- ✓ Guidelines for the user-centred creation of icons as part of the user interface, be it digital or physical.
- ✓ A conceptual approach to promote awareness about the close connections among icons, visual interface elements & multi-modal cues.



**When using a digital mobility service or app, can you interpret the meaning behind the interface's icons?**

037

(1/2)

Always



Often



Sometimes



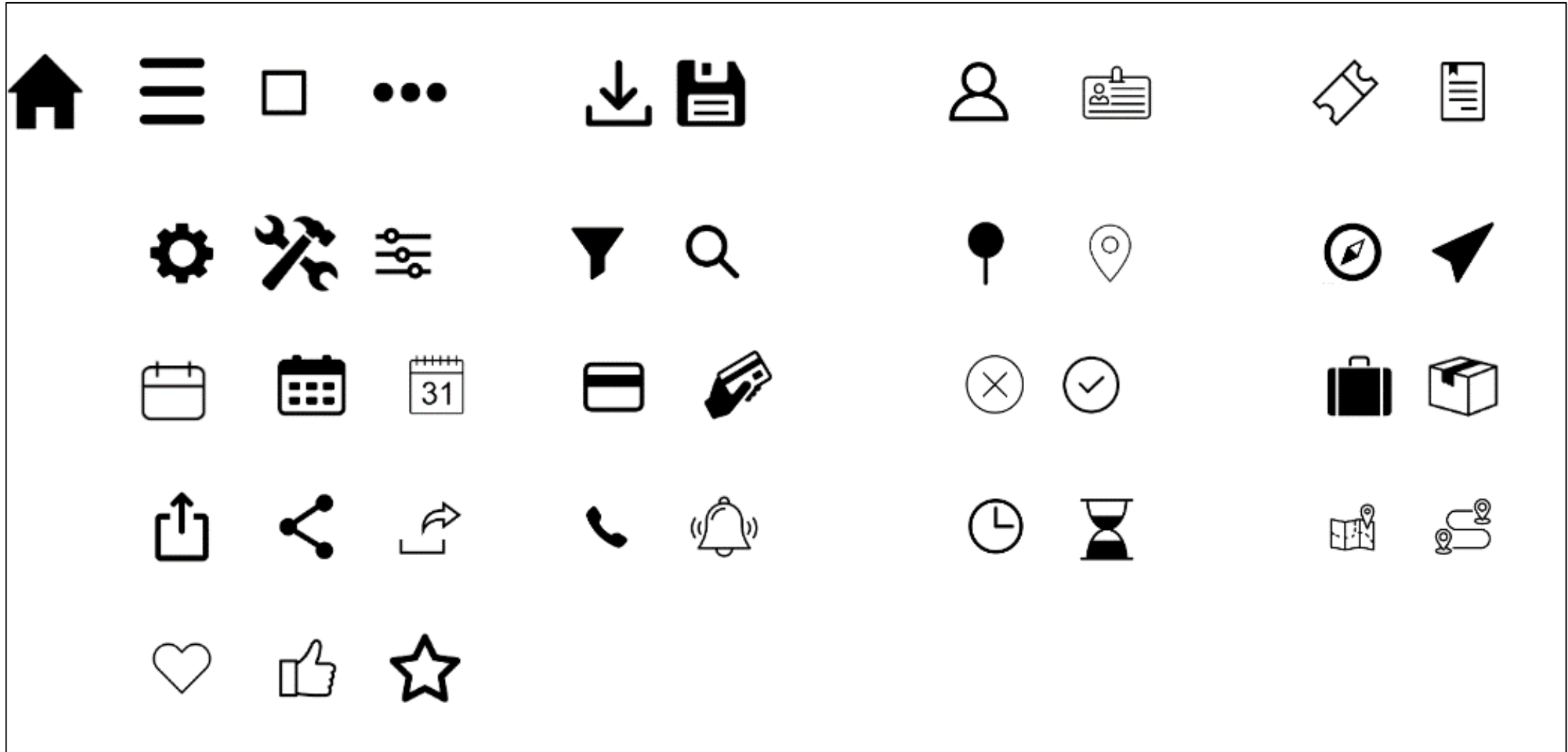
Not often



Never



# › Recurring icons in digital mobility



How many of the icons on the previous slide did you recognise?

0 4 2

All



Most



Some



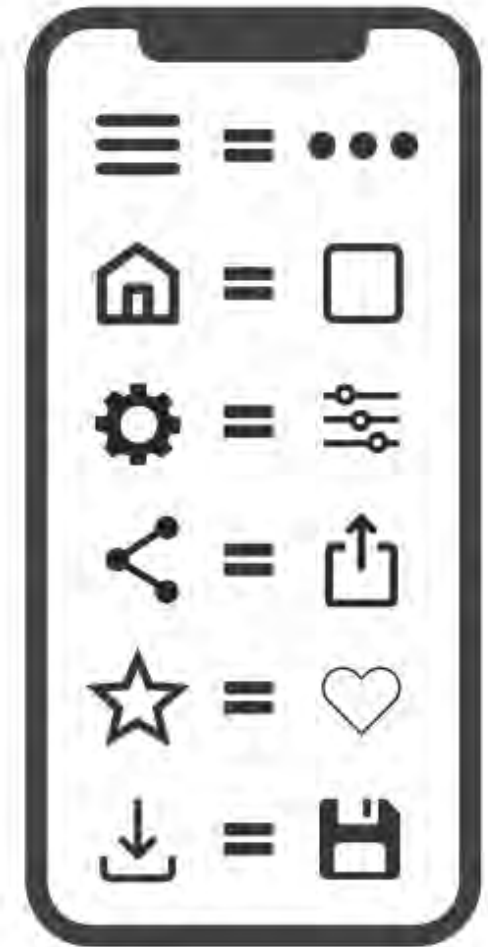
None



I don't know



# › Icon review



# › Cybersecurity & privacy assessment guidelines

## Who are the guidelines for?

INDIMO target groups:

- ✓ Operators of mobility/delivery services
- ✓ Policymakers in charge of regulations



## What do the guidelines consist of? What can they help with?

- ✓ Guidelines to improve cybersecurity & privacy of digital mobility solutions.
- ✓ Evaluation and recommendations for project pilots cybersecurity & privacy assessment

## Who will benefit from it?

- ✓ INDIMO Vulnerable groups of people



## What is its key message?

- ✓ **Human-factors** are relevant part in tackling security & data protection issues, preparing the organisation for that is an important aspect.
- ✓ **Inclusivity** is key also for security



# › SPET – Service & Policy Evaluation Tool

## Who is it for?

INDIMO target groups:

- ✓ Policymakers at municipalities, transport authorities
- ✓ NGOs representing vulnerable population groups
- ✓ Operators, developers



## Who will benefit from it?

- ✓ INDIMO Vulnerable groups of people



## What can it help with?

- ✓ An evaluation of current or new (future) services.
- ✓ Improve knowledge about how to provide inclusive & accessible services.
- ✓ It will enable & contribute to a better regulated & organised digital transport system.

# > Scope

## Universal Design Principles

- ✓ Equitable use
- ✓ Tolerance for error
- ✓ Size & space for approach & use
- ✓ Simple & intuitive use
- ✓ Flexibility in use
- ✓ Low physical & intellectual effort
- ✓ Perceptible information
- ✓ Security & protection of data
- ✓ Social, spatial & economic inclusiveness



## Service Features

- ✓ Payment
- ✓ Fair pricing
- ✓ Subscription
- ✓ Information
- ✓ Communication



## Assistance Offered

- ✓ Visual assistance
- ✓ Reading assistance
- ✓ Autism-related considerations
- ✓ Iconology



**Will the INDIMO Service and Policy Evaluation Tool (SPET) help to develop, deploy and operate an inclusive digital mobility service?**

038

Yes



No



**If yes, how? What are the main issues or barriers this tool will help you to overcome?**

028

Get a common knowledge  
It will help standardize the app    Quality check of add ons in apps  
Accessibility    helps to consider needs of different groups  
(like    Standardisation    data quality    Lack of harmonisation  
Standardization    **universal**    navigate Standardisatio  
Clear procedure    access    it

# Increase awareness

Easyness    modes    trveller tool    Provide training  
Less time consuming    make    smartphone    dark    Complex structure  
Local knowledge of tariffs    You don't have to mårske all the mistankes yourself  
To update public transport mobile app    Help with understanding text  
On the margins, no breakthrough

**How and where will the SPET fit into your current way of working? (for developing/deploying/operating of a new/existing service)**

017

Passengers being preoccupied with this  
Good dialogue      Harmonising  
New services      engage      Workingdaytime  
this is job of the PTsector  
PTOs platforms basis  
Not actual for me...      awareness  
Replacing of different apps



slido



**What are the other aspects or issues would you like the SPET to cover?**

ⓘ Start presenting to display the poll results on this slide.

# › How can you contribute?

## Join our co-creation community

- Workshop in Fall 2022 in Brussels
- Test the INDIMO toolbox
- Discuss how the tools can be used in other contexts

EUROPEAN TRANSPORT AND MOBILITY FORUM

**WELCOME TO THE EUROPEAN TRANSPORT AND MOBILITY**

An alliance that helps identifying, designing and implementing novel ideas and innovation through participatory processes. The ETM Forum main goals are:

- ESTABLISH CROSS-MODAL LINKS BETWEEN DIFFERENT TRANSPORT MODES FOR PASSENGERS AND FREIGHT
- INTEGRATE USER PERSPECTIVES INTO ALL TRANSPORT ASPECTS
- INVOLVE STAKEHOLDERS BEYOND TRANSPORT
- INITIATE R&D PROJECTS

[CLICK TO ENTER →](#)



**INDIMO**

INCLUSIVE DIGITAL MOBILITY SOLUTIONS

**Thank you for your attention!**

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