USER NEEDS & SOCIETAL ASPECTS

(Related cluster: #6)

CCAM Association General Assembly

Online

14 December 2021

CCAM
CONNECTED, COOPERATIVE
& AUTOMATED MOBILITY

A CCAM Association Partner
&
2 national projects with people & needs focus

Drive Sweden   *Josephine Darlington, Drive Sweden*

AHA - A Human Approach   *Vaike Fors, Halmstad University*

4All   *Ingrid Skogsmo, VTI*

Q's and Wrap Up   *Magnus Granström, Chalmers,SAFER*

CCAM
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SOCIETAL ASPECTS & USER NEEDS

What is this presentation about, and why?

Ingrid Skogsmo, VTI, Cluster 6 leader

… a matter for all CCAM; and a focus in Cluster 6

SRIA

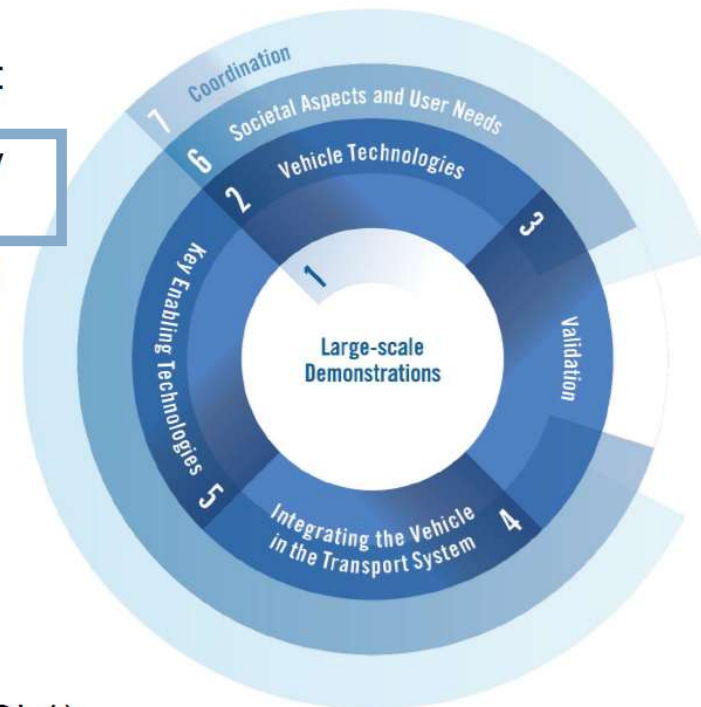## CCAM CLUSTERS

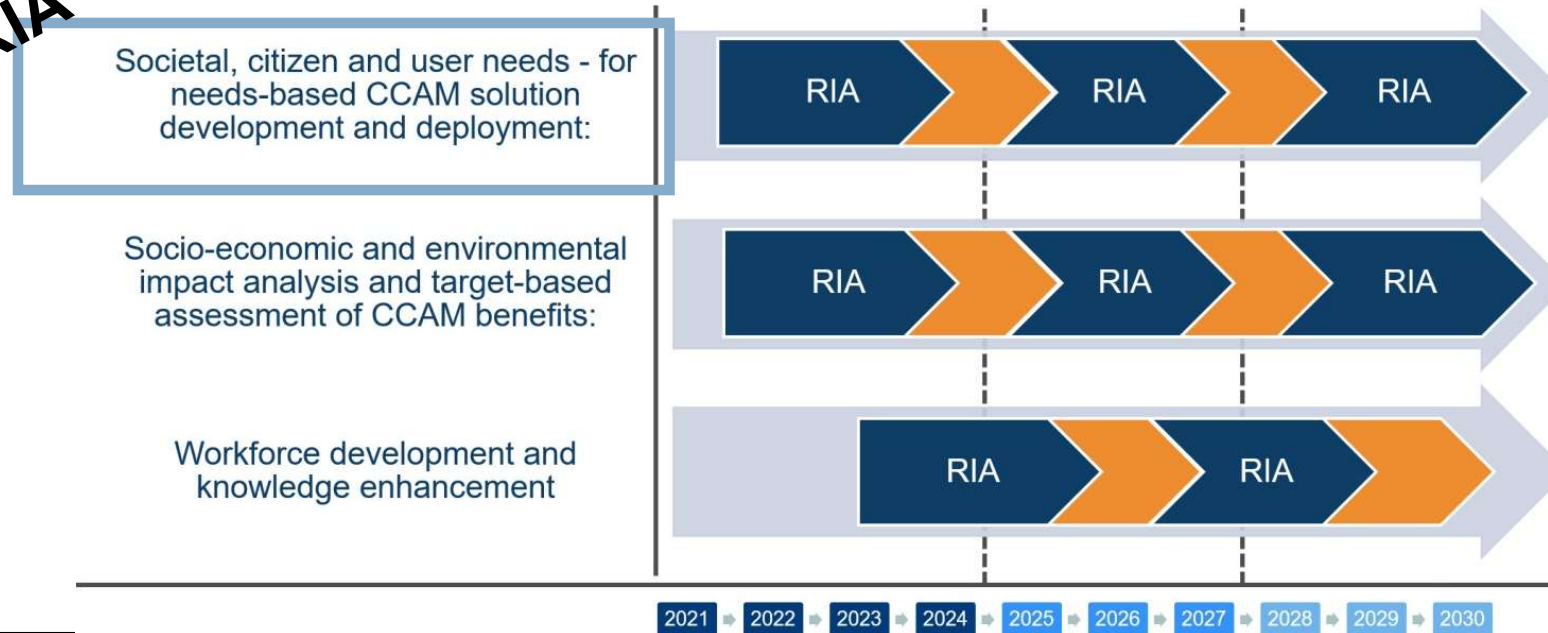Successful implementation requires understanding:

- the **user needs and societal aspects** of mobility (CL6)

- technical details, contributions, requirements and risks from **key enabling technologies** (CL5)

- the overall **transport system** requirements and set-up (CL4)

- what **vehicle technologies** are required and how to implement them (CL2)

- how to **validate** safe system functioning (CL3)

Finally **demonstrate** all aspects at a **large scale** (CL1)

Cluster 6: Societal aspects and user needs

SRIA

Societal, citizen and user needs - for needs-based CCAM solution development and deployment:	RIA → RIA → RIA	
Socio-economic and environmental impact analysis and target-based assessment of CCAM benefits:	RIA → RIA → RIA	
Workforce development and knowledge enhancement	RIA → RIA →	

2021 → 2022 → 2023 → 2024 → 2025 → 2026 → 2027 → 2028 → 2029 → 2030

Specific Objective

- Societal impacts (e.g. safety, efficiency, environment) and wider economic impacts are sufficiently assessed, addressed and accepted
- Demonstrate inclusive, user-oriented and well-integrated mobility concepts enabled by CCAM with a reduced carbon footprint and reliable predicted travel times

Josephine Darlington

Vision
"Sweden takes a leading role in creating future mobility systems for people and goods that are sustainable, safe and accessible for all."

Our task
is to drive the development towards sustainable mobility solutions by creating and demonstrating efficient, connected and automated transport systems.

With support from
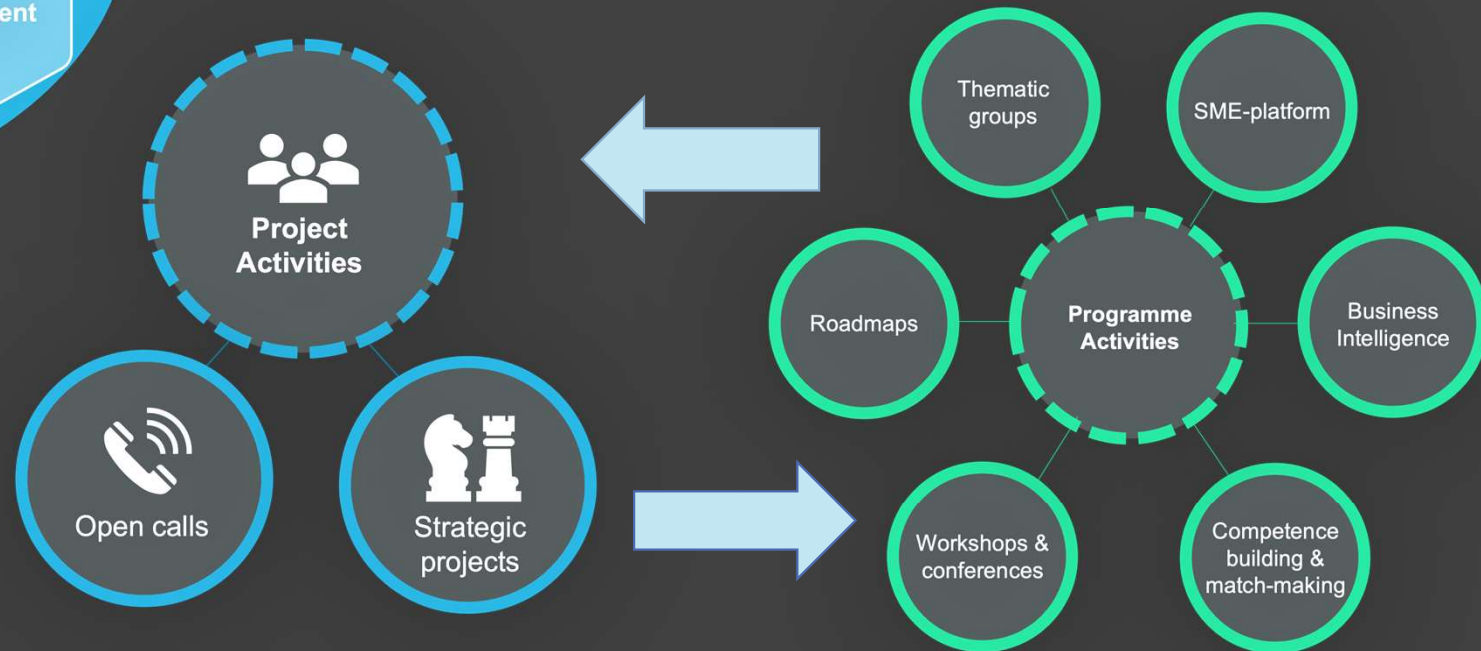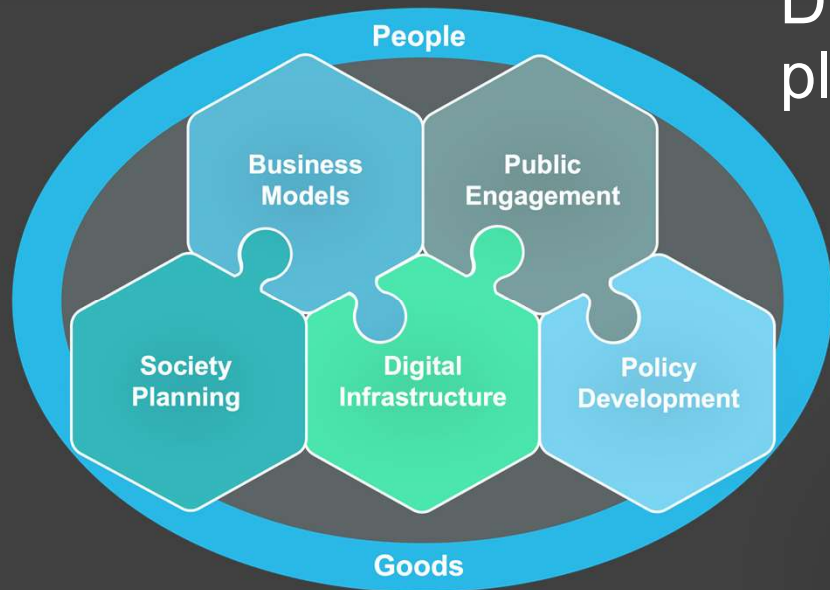
VINNOVA

Swedish Energy Agency
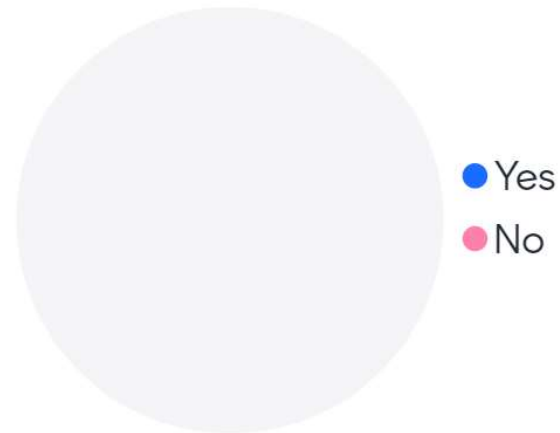
FORMAS

Strategic innovation programmes

DRIVE SWEDEN

Drive Sweden is a cross-functional collaboration platform with programme activities and projects

People

Business Models

Public Engagement

Society Planning

Digital Infrastructure

Policy Development

Goods

Project Activities

Open calls

Strategic projects

Thematic groups

SME-platform

Roadmaps

Programme Activities

Business Intelligence

Workshops & conferences

Competence building & match-making

DRIVE SWEDEN

Do you think people in general know about CCAM?

Mentimeter

- Yes
- No

Design Ethnographic Living Labs for Future Urban Mobility
https://aha2.hh.se/
Funded by Drive Sweden through VINNOVA

Vaike Fors@hh.se

AHA II: Co-Designing Future Mobility in Urban Living Labs

AHA II Challenge

To be sustainable, a shift is needed in the way Smart City technologies are designed; designing *with* rather than *for* their user communities and future users

DRIVE SWEDEN

'Wicked problems'- creating future sustainable mobility solutions cannot be done by one actor alone

Co-production (instead of mere commercialisation) shifts the focus from technical elements in innovation to more social and societal innovation challenges

DRIVE SWEDEN

**How can we ensure emerging technologies
to be aligned with what people value,
and are willing to support?**

Urban Living Lab

- Goal: Innovation, Knowledge development, Increasing urban sustainability

- Activities: Development of innovation, Co-creation, Iteration between activities

- Participants: Users, Privat actors, Public actors, Knowledge Institutions

- Decision power: All participants have decision power in various stages of innovation
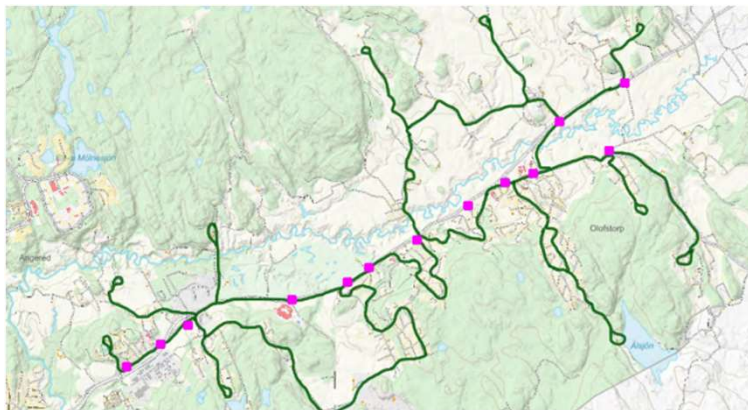
- Context: Real-life use contexts
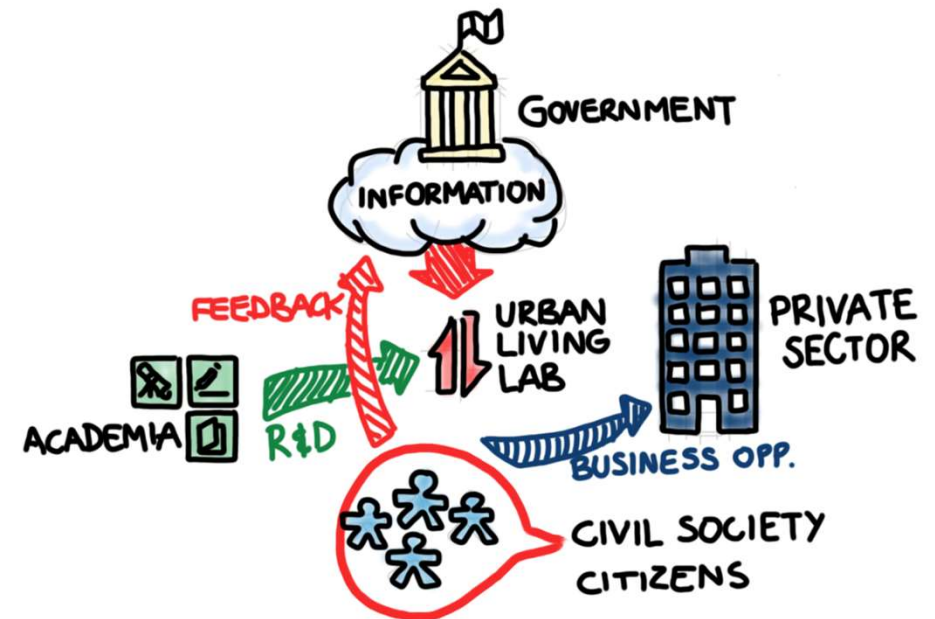
The Urban Living Lab at the Center of the Innovation Ecosystem in a Smart City
Design Arturo Muente-Kunigami

Drottninghög
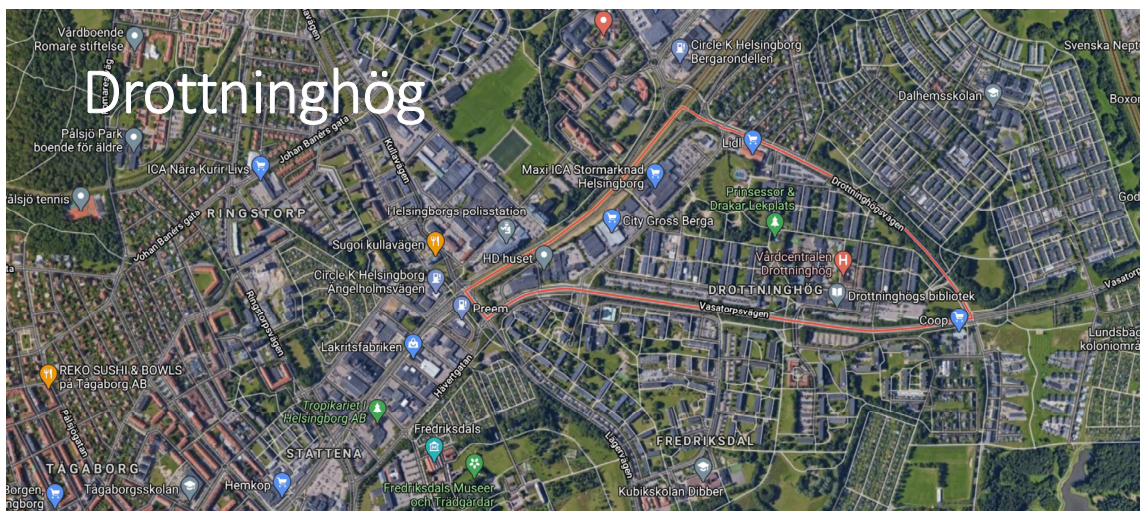
Bergum Gunnilse

GOAL
to innovate ways to engaging communities of people in design of urban mobility solutions

FIRST MILE   LAST MILE

Dokument att ladda ner och läsa - Bergum Gunnilse (bergum-gunnilse.se) Lokalekonomisk analys

Helsingborgshems hemsida Område DrottninghögHelsingborgshem

FIRST MILE

LAST MILE

LIMA-piloten är igång!
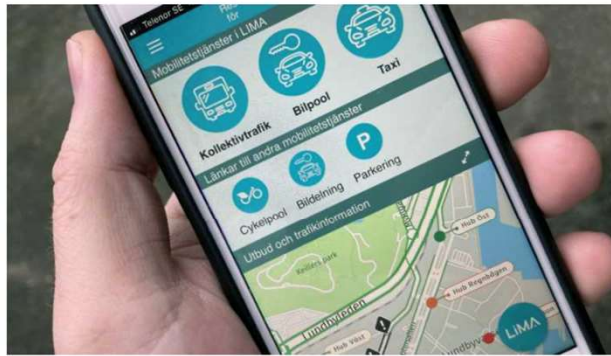
Projekt inom DRIVE SWEDEN

Projekt HUGO

Projekt S3

Step 1 in project:

Getting to know the people in the area through events, ethnographic research and collaborations with local stakeholders

Step 2 will be to prototype, evaluate and develop city planning guidelines and future scenarios in co-creating processes

Family/Friend transport arrangements is a matter of caring and part of the fabric of social life

Meandering through public space is being home. Walking the last mile is time for 'me time' (exercise, private calls, socialising etc)

FIRST MILE

LAST MILE

The dream is to shop, move, work and live locally

Waiting is filled with activity

'Finding efficient ways of moving is one thing, how we want to move is another'

First and last mile as local social spaces

People enjoy and use the first and last mile – they *use* it. Is there really a first and last mile challenge in Drottninghög?

"I work at Drottninghög's library so it is only walking distance, about 2-3 minutes depending. But sometimes it can take a little longer before I get to work because from home to work I meet a lot of people who can stop me on the road and then we start talking about one thing and the other. And it's just fun."

Local ways of knowing are fundamental to how people move in and make the most of the areas near to their homes. For many participants, the first mile was usually also the last mile. When they went out locally, they did not need to connect to other public transport systems, or to necessarily use their cars to cover this area. The local, although some participants noted the 'bad' reputation of Drottninghög for drugs and crime, was generally a pleasure to them, a social space, a route for walking, shopping and getting out of the house.

The key insight is that we should not assume that the local is necessarily an empty or problematic part of a journey, whether or not part of a commute, rather that it might be laden with welcome memories, feelings, social encounters, objects and experiences.

The first mile also might be part of someone's social identity – where a car means a status then the use of the car to drive through the parts of the locality that take you out on your commute might be performative as much as convenient. Replacing a walk or a ride in a status symnol car with an electric bike as part of a shared mobility scheme might not have the same social role.

The point here is that top-down mobilities solutions might not have anything to do with local 'problems'.

What happens if we re-frame the grand narrative of 'efficiency' in terms of local values?

ETHNOGRAPHIC

DESIGN

MOBILITY

LIVING LABS FOR

FUTURE URBAN

aha
CATALOGUE

2021.01.20 V1

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WHAT'S NEXT

Designed by Kaspar Raats

Design ethnographic Urban Living Lab

Moving beyond "users" or "citizens"
- an interdisciplinary research and innovation methodology
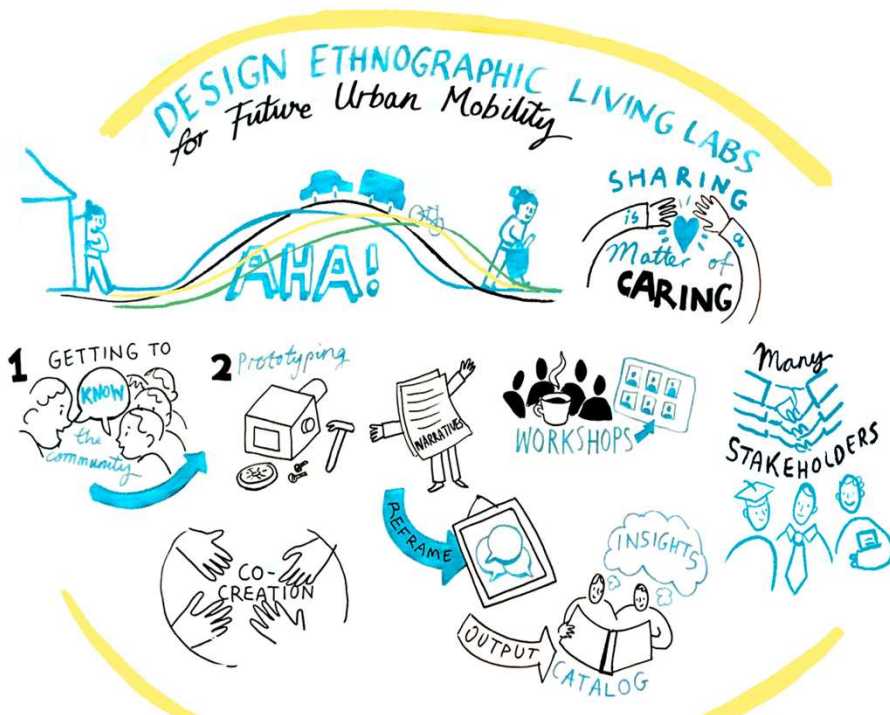
Disrupts what is known and well-established in the different stakeholder practices

Takes people's everyday lives and routines seriously.

Creates a realistic discussion of how future mobility solutions can be played out

Vaike.Fors@hh.se

"mobility for all" – who is all?

Mentimeter

CCAM "4all"?

Who is "all"?

"all" in CCAM initiatives?

Ingrid Skogsmo, VTI

CCAM "4all"?

Use case: automated shuttle
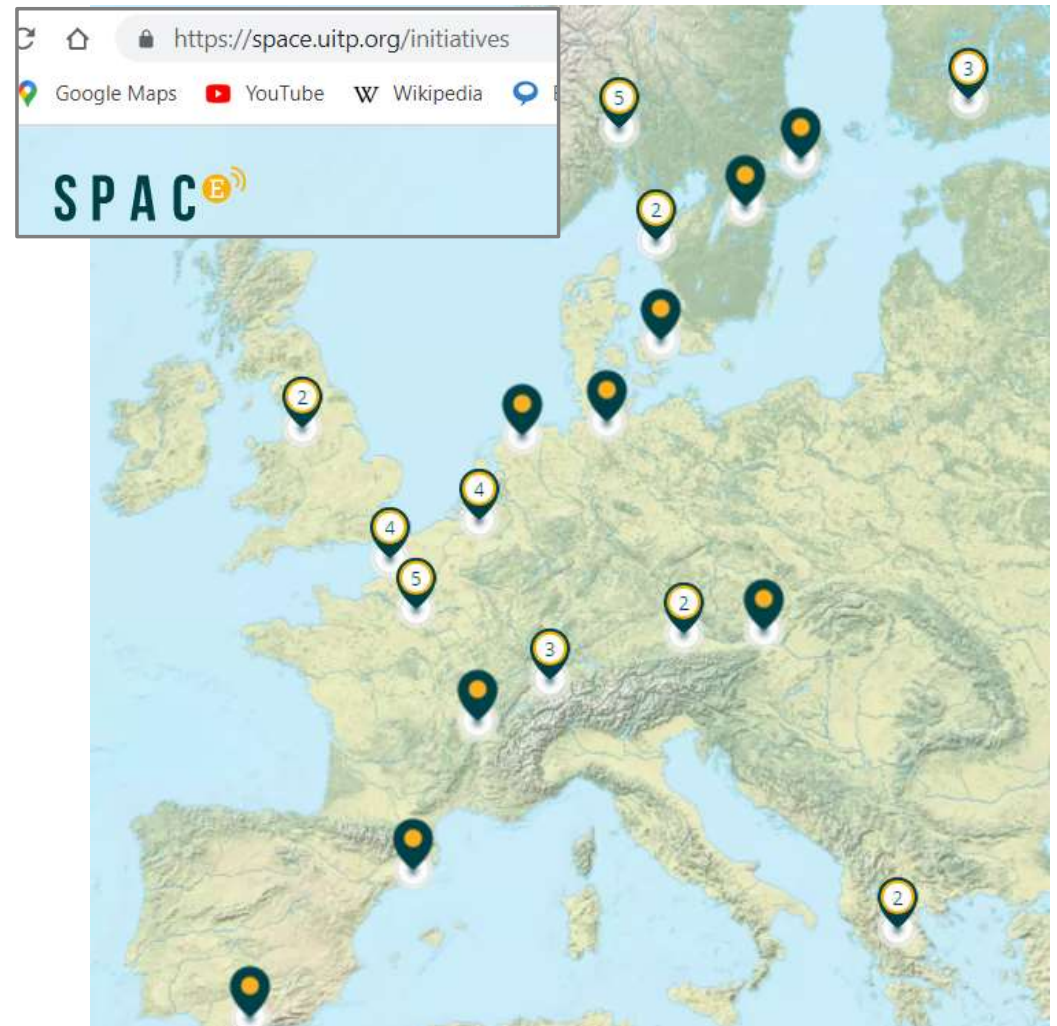
"mobility concept 4all" **WHO & WHAT?**

https://space.uitp.org/initiatives

Google Maps YouTube Wikipedia

SPAC

Ride the future
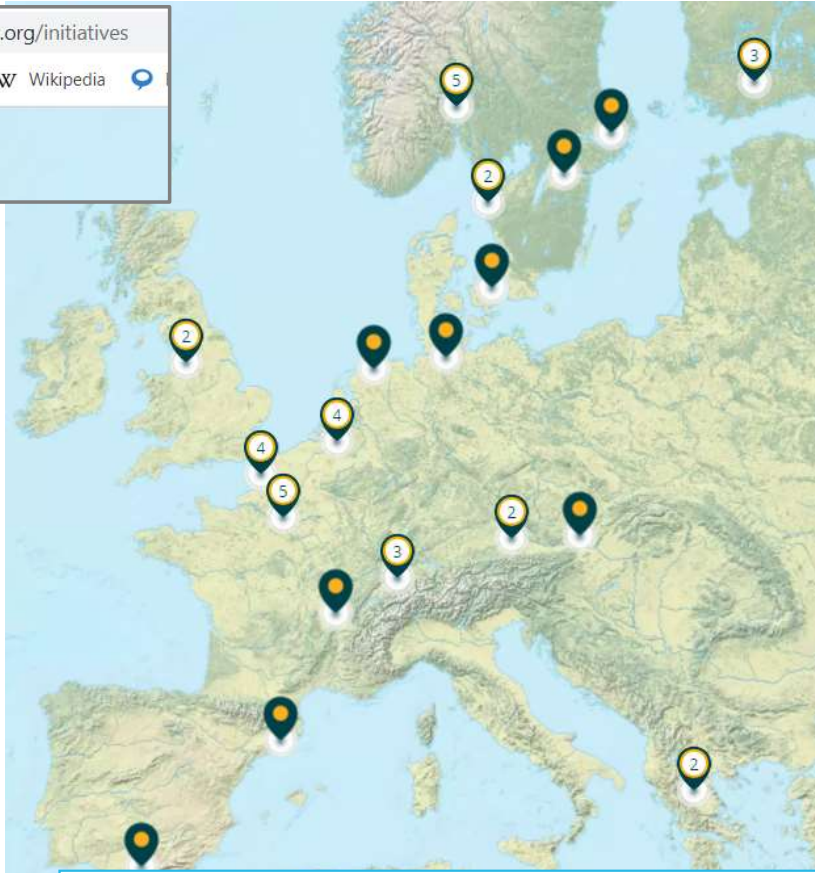
High level policy **MATCH?** Shuttle initiatives

Who is "all"?

WHO AND WHAT? – 2 CHECKLISTS

All persons irrespective of

- ✓ Age
- ✓ Gender
- ✓ Ethnic aspects
- ✓ Educational levels & digital experience
- ✓ Income levels
- ✓ Persons with special needs / disabilities
- ✓ Place of living

Should be able to reach

- ✓ Education
- ✓ Work
- ✓ Culture, experience
- ✓ Health care
- ✓ Childcare, elderly care
- ✓ Market, goods

Source: 4All study, funded by Drive Sweden

"4all" policy targets ⬌ shuttle initiatives

MATCH?

- Driving forces

- Shuttle initiative purpose

- Target groups

"all" covered in initiatives?

Driving forces:

Safety & environment, Encourage public transport use, improve rural life

"all" covered in initiatives?

Driving forces:

Safety & environment, Encourage public transport use, improve rural life

Objectives:

- EXPLORE! – technology, potential use, permit process,...
- First Mile Last Mile, provide public transportation (reduce car use)

"all" covered in initiatives?

Driving forces:

Safety & environment, Encourage public transport use, improve rural life

Target Groups:
- Those living where shuttle goes (urban areas)
- Commuters, tourists, visitors (have choice (& €))
- Persons with disabilities, Elderly

Objectives:
- EXPLORE! – technology, potential use, permit process,...
- First Mile Last Mile, provide public transportation (reduce car use)

MATCH? DRIVING FORCES -- *SEVERAL*

Reduced carbon footprint, environmental impact

Improved road safety

Reduce or mitigate dependence on owning personal cars

More efficient use of roads and space

4all → Enhance rural quality of life

4all → Prevent exclusion due to trspt deficiencies

Make green & collective modes of intelligent trspt more attractive

4all → Mobility solutions to empower residents

Improve quality of life to increase attractiveness

4all → Overcome inequality

Support economic development

4all → Help persons w mobility impairment

Address labour shortages

Demonstrate leadership, spirit of advancement, "smartness"…

occurrence in initiatives and policy documents

0   1   2   3   4   5   6   7

MATCH? SHUTTLE PURPOSE -- *SOME*

Purpose	Value
Public Transportation (PT) related objectives, FMLM (First Mile Last Mile)	53
Learn and get experience	47
Technology and Vehicle Aspects	33
Business, Efficiency	22
Familiarize public with AV, User acceptance	19
Scalability – methods, learning for expanding pilot to larger scale or elsewhere	17
Evaluate usefulness, utility	14
Provide service (for specific user groups / with special needs)	14
Reduce car dependency	8
Show city progress, demonstrate innovativeness	3
Validate and ensure equitable and accessible options	3

"Exploratory"

4all aspect

MATCH? TARGET GROUPS -- *SOME*

Target group	Value
Community residents, Citizens, Local population (in area...	23
Visitors, tourists	18
Passengers (in general)	18
Suburban neighbourhood citizens, peri-urban residents	15
Commuters	10
Persons with disabilities	10
Patients, persons with reduced mobility, lightly handicapped	8
Citizens in low/medium demand areas	5
Employees, Workers in business area	5
Elderly	5
Visually impaired	5
VRU (outside vehicle)	5
Businesses	5
Passengers with different levels of mobility and cognitive...	3
Less fortunate, disadvantaged traveller groups	3
Young travellers with limited access to personal...	0

4all aspect

3 BUILDING BLOCKS TO CONSIDER 4ALL

WHO AND WHAT? – 2 CHECKLISTS

All persons irrespective of

- ✓ Age
- ✓ Gender
- ✓ Ethnic aspects
- ✓ Educational levels & digital experience
- ✓ Income levels
- ✓ Persons with special needs / disabilities
- ✓ Place of living

Should be able t[...]

- ✓ Education
- ✓ Work
- ✓ Culture, exper[...]
- ✓ Health care
- ✓ Childcare, eld[...]
- ✓ Market, goods[...]
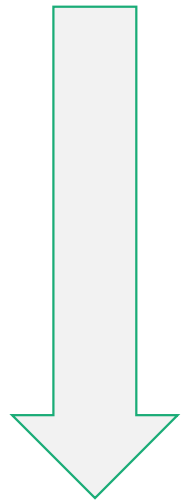
Area of operations, route, schedule, time, integration into PT

Information, apps,

payment methods

Vehicles, stops, access points,

on-board personnel
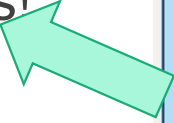
Coverage in benchmarked initiatives

Low

High

RECOMMENDATIONS

Include 4all aspects in target groups!

- Younger persons (missing today)

- Persons with limited digital experience, access

✓ Age
✓ Gender
✓ Ethnic aspects
✓ Educational levels & digital experience
✓ Income levels
✓ Persons with special needs / disabilities
✓ Citizens in rural areas

Systems approach - beyond vehicle focus!

- Area of operations, route, schedule, time, integration into PT

- Information, apps, payment methods

- Vehicles, stops, access points, on-board personnel

WRAP UP & QUESTIONS

Thank you for your attention!

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DRIVE SWEDEN