

POLIS

CITIES AND REGIONS FOR TRANSPORT INNOVATION

ANNUAL
CONFERENCE

2022

30 November
1 December, 2022
Brussels, Belgium



#POLIS2022

Systemic analysis of CCAM-readiness

- of cities from three EU projects: Ride2Autonomy, PAV and Dynaxibility4CE

Session 4B: ARE CITIES READY FOR VEHICLE AUTOMATION?

Wolfgang Backhaus, Rupprecht Consult

Materials for planning for Cooperative, Connected and Automated Mobility (CCAM)



- What are our **goals**, our **vision** for (automated) mobility?
- How to **communicate** effectively with citizens & stakeholders about CCAM?
- How can automation contribute to **decarbonisation**?
- How can we deal with **uncertainties** in business models and impacts?

European Platform on Sustainable Urban Mobility Plans

European Commission

Road vehicle automation in sustainable urban mobility planning
Practitioner Briefing

CoEXist

Enabling "Automation-Ready" Transport Planning

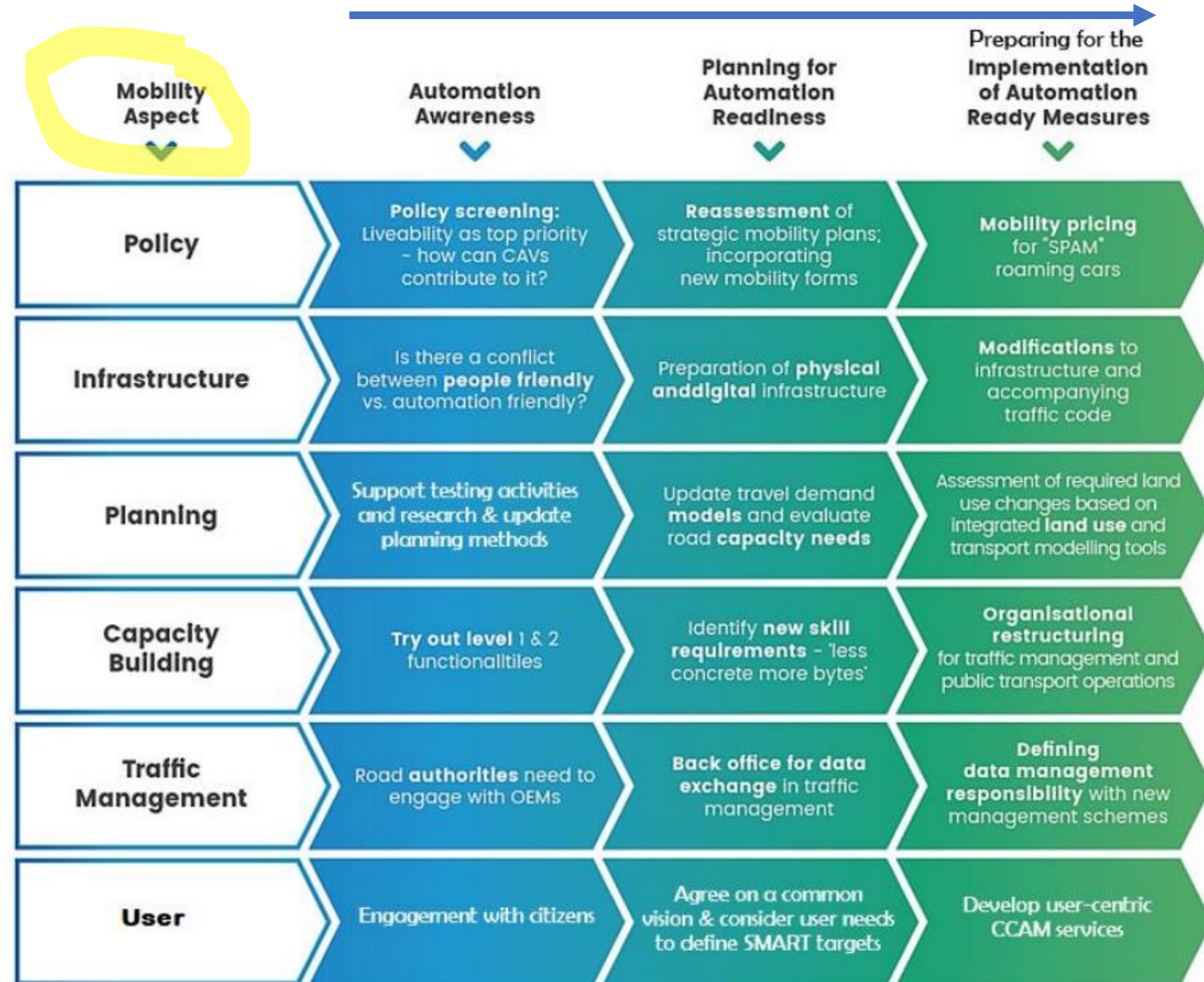
How to become an Automation-Ready road authority?

 This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 723201

CCAM Self-Assessment Tool

- Conceptual approach for **assessment of automation-readiness**, as ‘the **capability of making structured and informed decisions** about the comprehensive deployment of CCAM’, has been designed to **guide the assessment of a city’s/region’s current status** in relation to CCAM deployment and **what the next steps could be to get ‘automation-ready’**.
- The CCAM-readiness Self-Assessment tool is structured along the conceptual approach of the ‘**automation-ready framework**’, which propose three phases of strategic action CCAM in urban mobility planning processes: Automation awareness raising; Planning for Automation-readiness; Preparing for the implementation of automation-ready measures.

Response options & weighting of responses along phases



This project has received funding from the European Union's Directorate-General for Communications Networks, Content and Technology, 2020 Work Programme under grant agreement No. LC - 01632937

CCAM Self-Assessment Tool – status & outlook

- Online Questionnaire developed in cooperation with camo.nrw network (capacity building network for North Rhine-Westphalia, DE) within Interreg Central Europe project Dynaxibility4CE
- Testing with cities/regions
 - Dynaxibility4CE partner cities/regions: May 2022
 - PAV partner cities/regions: August 2022
 - R2A partner cities: September 2022
- Online survey: https://qeurope.eu.qualtrics.com/jfe/form/SV_I ZjgHgioU27yXtA
- Further development to an integrated tool in PAV to : [09/2022 – 02/23]
 - Transfer to online tool environment/platform
 - Link of assessment results to handbook/SUMP CCAM topic guide and best practices
 - Integration into existing platforms, e.g. FAME CCAM knowledge base (entry point for city/regional authorities;) to link existing knowledge resources to weaknesses identified in self-assessment



18 cities/regions from 10 countries



Interreg
North Sea Region
PAV
European Regional Development Fund



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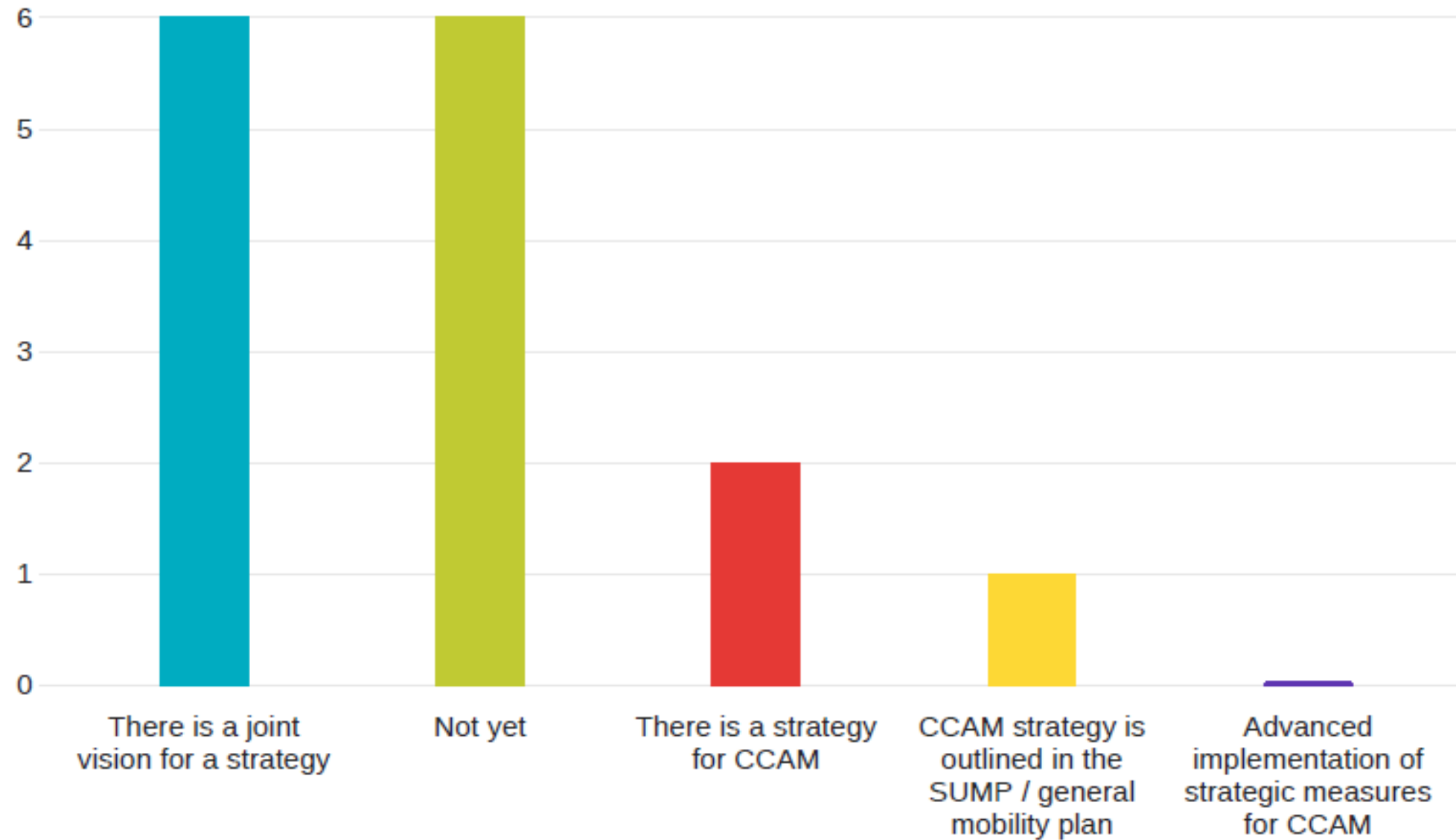


Interreg
CENTRAL EUROPE

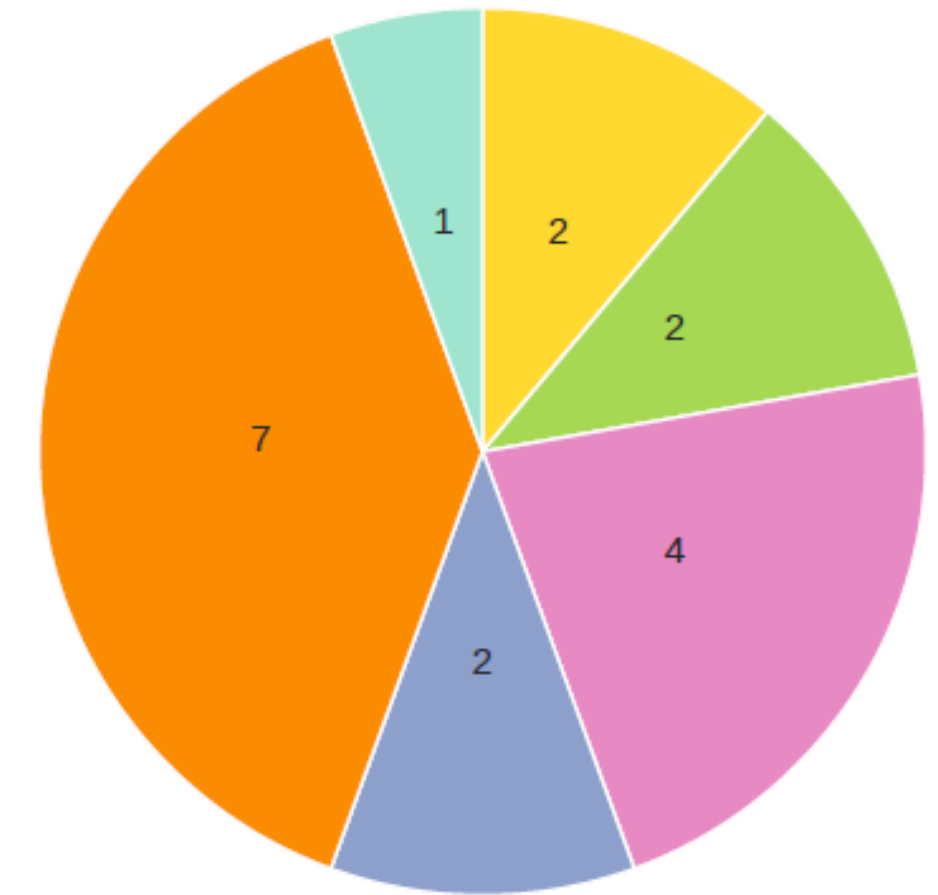
Dynaxibility4CE



Is there a strategy for CCAM in your area?



How is the topic of CCAM strategically addressed in your area?



- It is relevant but opportunities and feasibility have not been studied
- There is a strategy for the regular monitoring and evaluation of CCAM areas of a...
- CCAM scenarios have been tested in living labs/pilot projects
- Specific implementation scenarios have been studied/selected to address local mo...
- General impacts and opportunities of CCAM have been investigated
- It is not relevant / not embedded



High hopes – low impacts?



4 Assess current and future performance

Cooperative, Connected, Automated Mobility Solutions	
"Business as usual"	"Net zero automation"
<ul style="list-style-type: none"> increased urban sprawl induced new demand 	<ul style="list-style-type: none"> shared mobility solutions (for low-serviced areas, e.g. peri-urban)
<ul style="list-style-type: none"> car culture continued better safety 	<ul style="list-style-type: none"> attractive & accessible collective services (quality, price)
<ul style="list-style-type: none"> modest fuel savings improved traffic flow 	<ul style="list-style-type: none"> electric vehicles (powered by clean energy, e.g. local renewable sources)
<ul style="list-style-type: none"> lower/ higher vulnerability? 	<ul style="list-style-type: none"> highly integrated (other policies, infrastructure)

Basic policy options

AVOID travel (or reduce need for travel)

SHIFT transport to more sustainable modes

IMPROVE resource efficiency of transport

Make **RESILIENT**

Expected CCAM impacts

- compact green metropolitan areas
- people-friendly urban space & infrastructure

- better safety, lower cost, fair access
- private-public coordination
- digitised mobility services

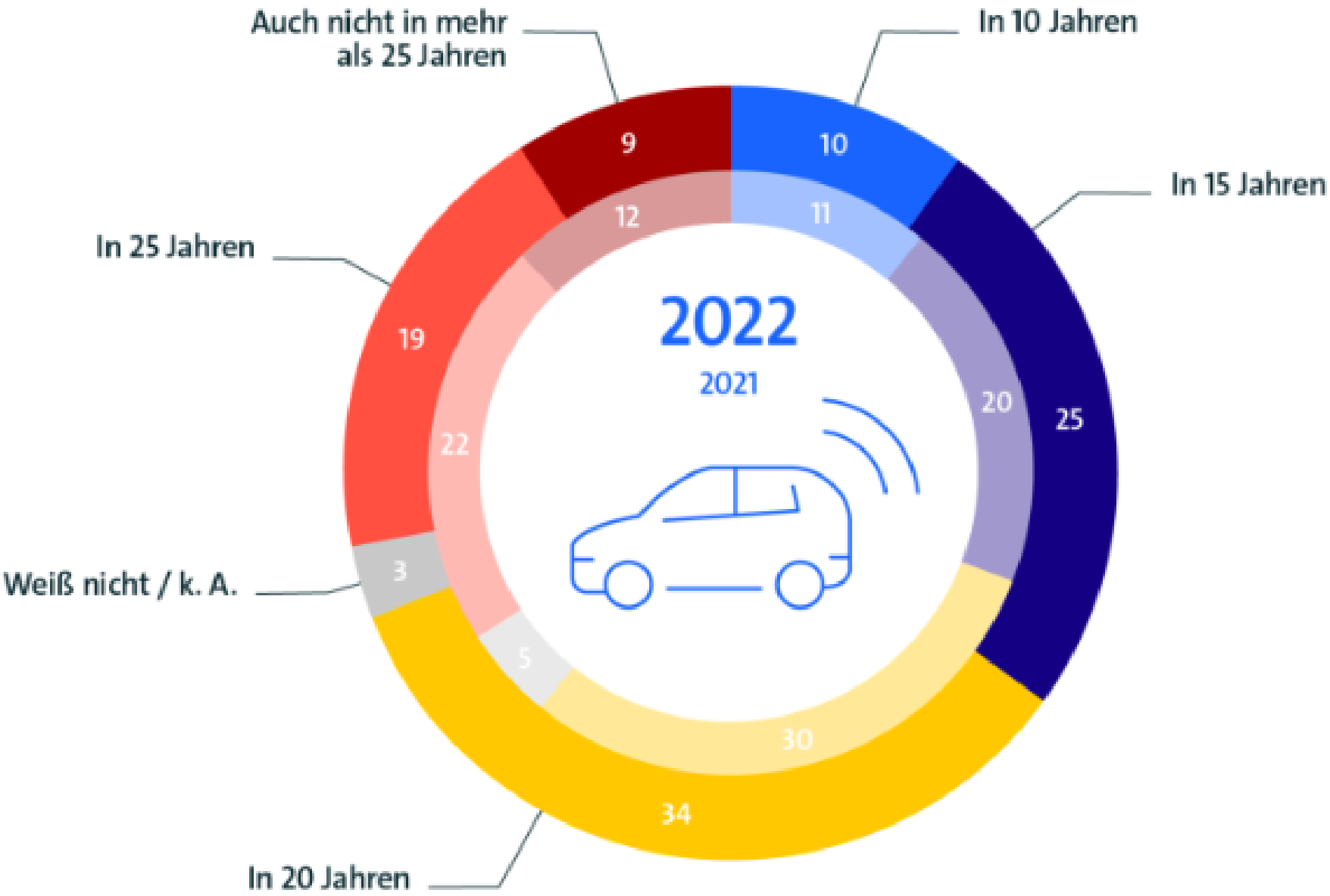
- more efficient traffic flows
- most effective energy use
- low emissions

- robust transport system able to recover quickly from disruptions

High hopes – low impacts?

Autonome Autos sollen in 20 Jahren dominieren

Wann glauben Sie werden in Deutschland pro Jahr mehr selbstfahrende Autos als herkömmliche Autos zugelassen werden?



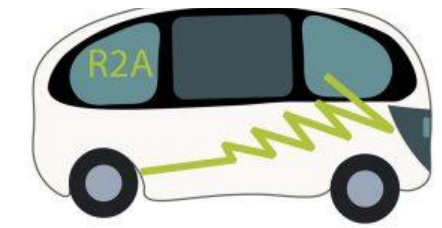
4 Assess current and future performance

- Modest positive impacts in early adoption
- Even in high adoption, quite low impacts compared to other technologies/ policies.
Example: fuel reduction from eco-driving is similar (~10%)

in Prozent

Basis: Alle Befragten (n=1.005) | Quelle: Bitkom Research 2022

bitkom Source: Elvik (2020) [Levitate Project].



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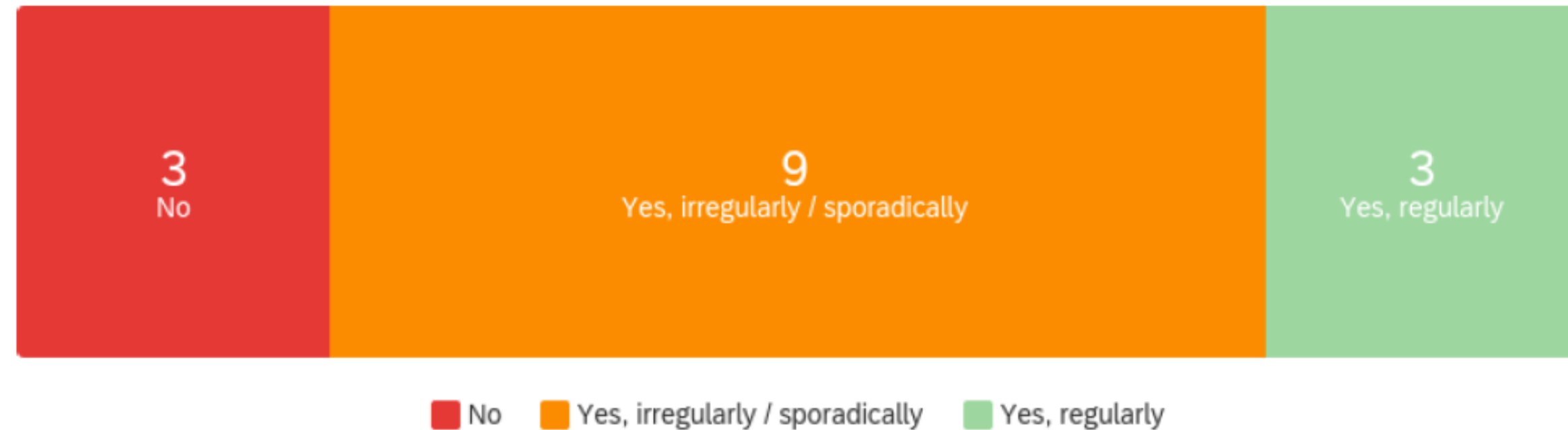


Have measures been taken to increase awareness and/or understanding of CCAM by citizens? (public pilot launch events, surveys, consultations etc.)



3 Involve citizens and stakeholders

Are societal/user needs and preferences on CCAM assessed in your area planning processes?



How to better communicate with public authorities and citizens on the predicted impacts of CCAM?

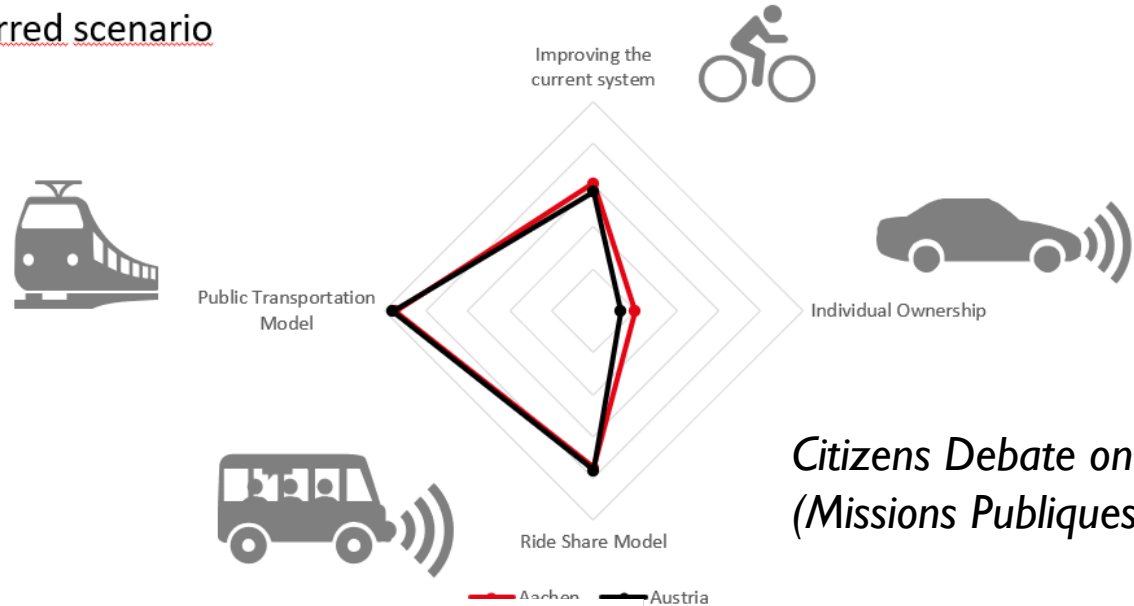
Purpose (why?)!: how do we achieve our mobility goals with CCAM (#livable/#climate neutral/#inclusive/#...)?

- SUMP / CCAM strategies - mobility objective (priorisation) / scenario-/ use case-oriented engagement -



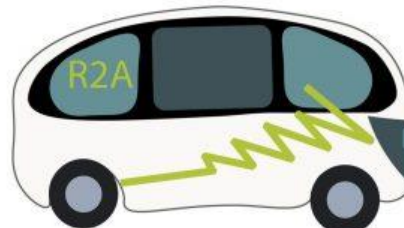
Selected Results

Preferred scenario



Citizens Debate on Automated Mobility (Missions Publiques)

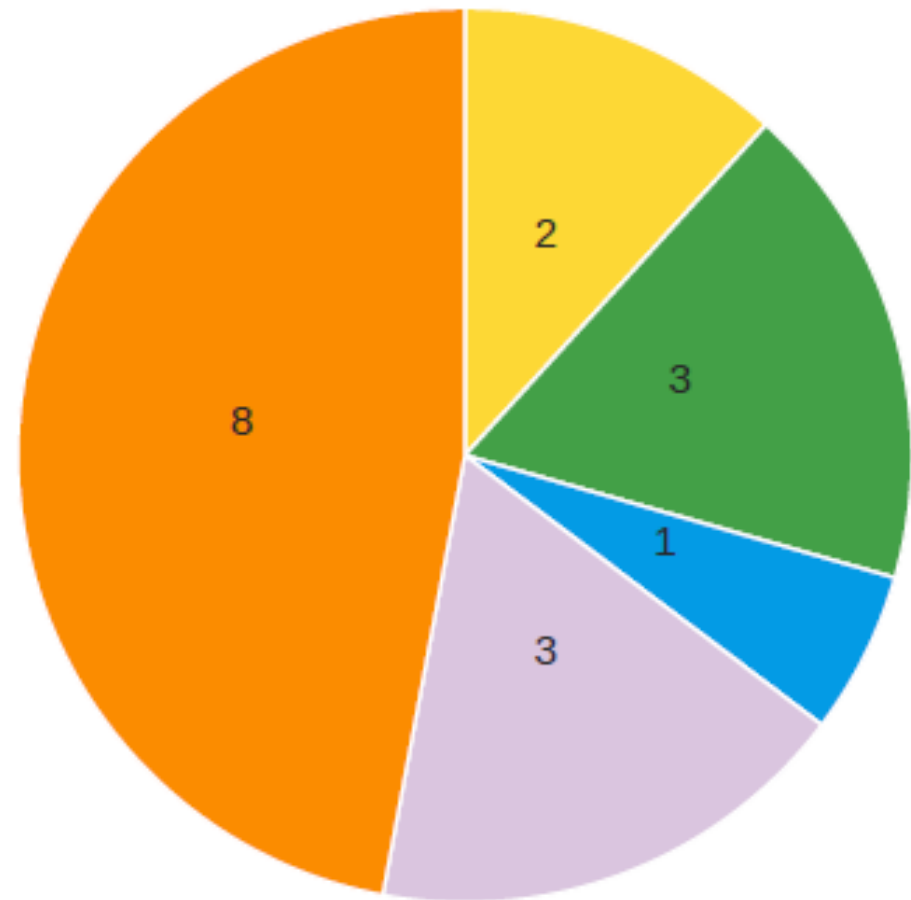
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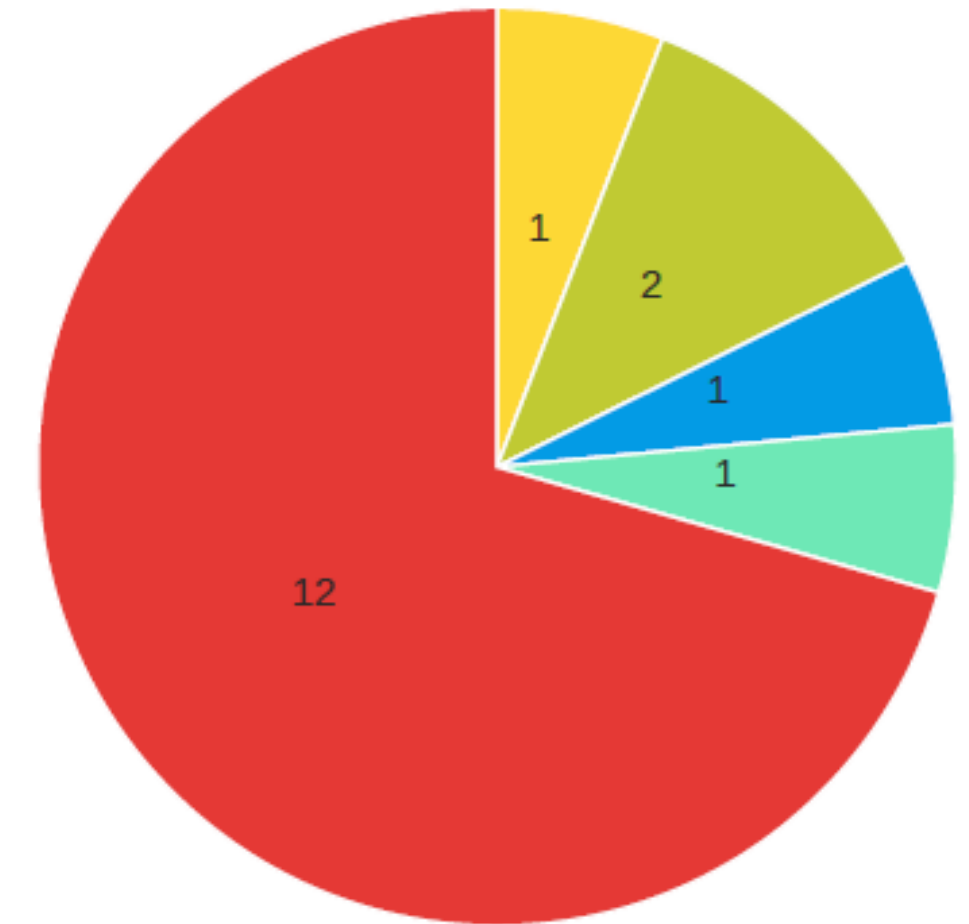


Is there a strategy for C-ITS (Cooperative Intelligent Transport Systems)?



- C-ITS solutions have been implemented/tested (e.g., in pilot projects)
- There is a strategy for C-ITS
- C-ITS strategy is outlined in the SUMP / general mobility plan
- There is a joint vision
- There is no strategy

Is there a strategy for the integration of CCAM in parking & stationary traffic?



- CCAM measures are implemented in the whole municipality
- CCAM measures for stationary traffic have been tested in some areas (e.g., valet...)
- There is a fixed concept for the implementation of CCAM measures
- There is a joint vision
- Parking & stationary traffic is not addressed in the CCAM

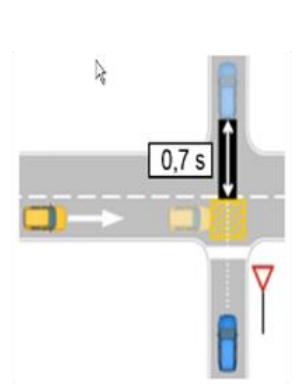
Automation-readiness of physical and digital infrastructure?

How to enable understanding of CCAM topics?

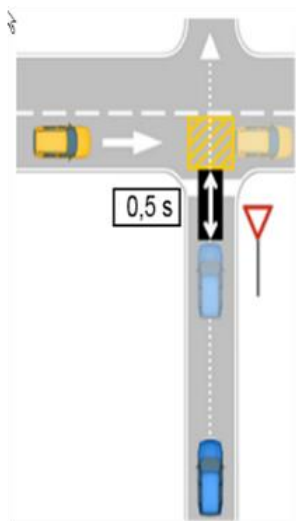
Accessibility during long-term construction works



Above: <https://iot-automotive.news/deutsche-telekom-the-new-long-distance-drivers-in-the-office-and-4000-kilometers-away/>



Shared Space



Legend:



Microscopic



Macroscopic



Gothenburg (VTI)

Helmond (TASS)



Transition from interurban highway to arterial



Signalised intersection including pedestrians and cyclists

Below: Volkswagen Newsroom



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EUROPEAN UNION



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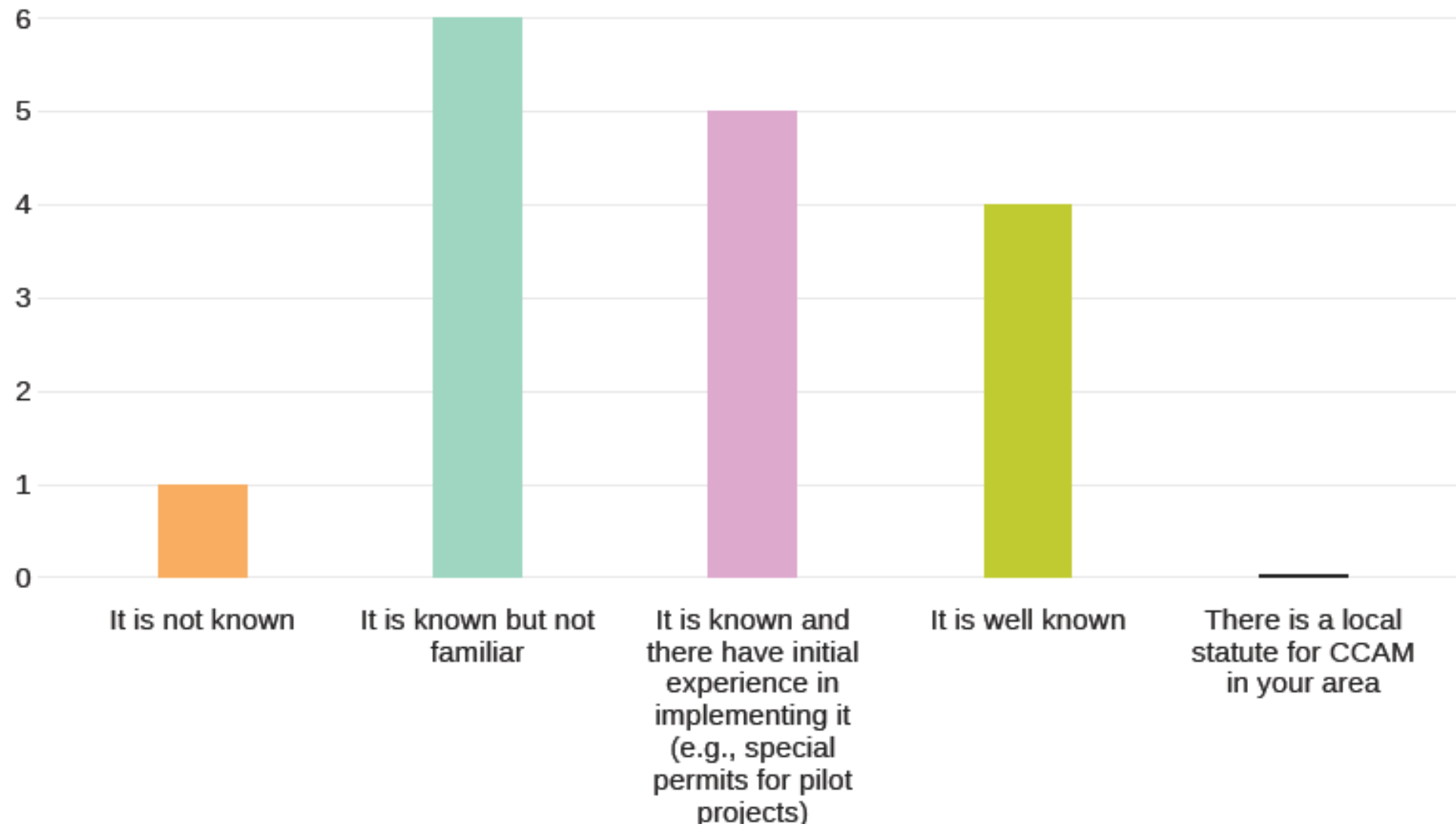


European Union

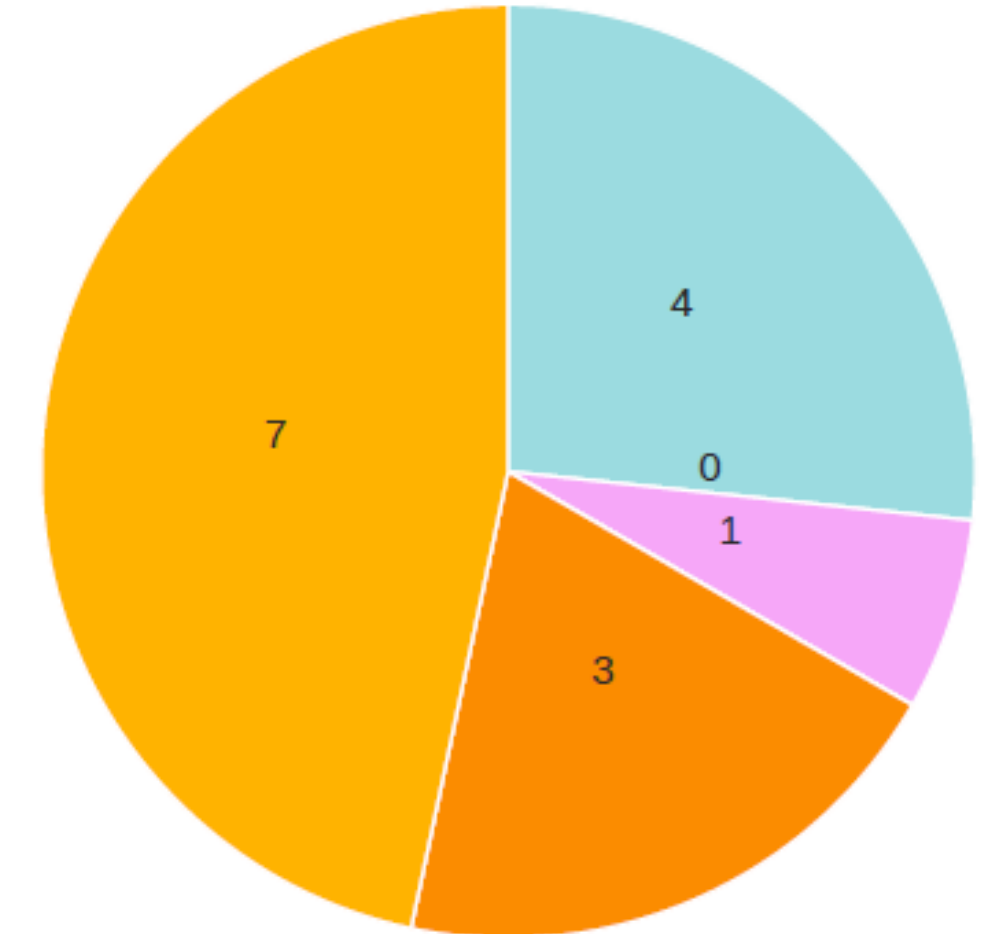
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Dynaxibility4CE

How familiar are you with the applicable regulatory framework / normative for CCAM?



Have you undertaken any capacity building measures/efforts to increase the capacities of local authorities to address CCAM?



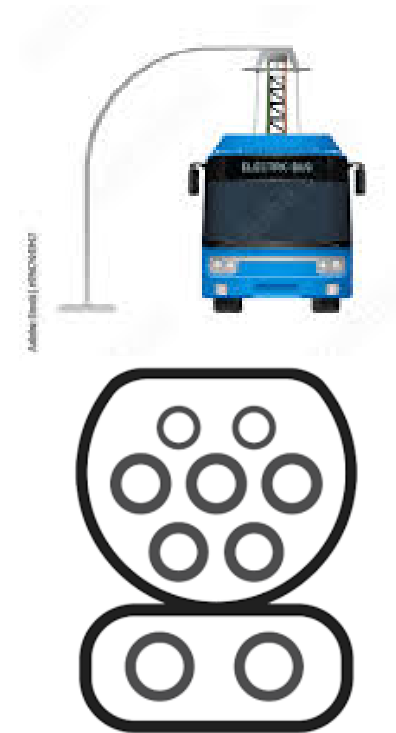
- No
- Capacity/knowledge gaps are actively addressed through training programmes
- The necessary competences for CCAM planning were examined and gaps were identified
- By participating in fairs and events on CCAM, knowledge is expanded and a network...
- Knowledge and skills to implement CCAM (personnel and tools) are available

Consider lessons learned from other mobility areas ...

Micromobility: adaptive / outcome-based regulation



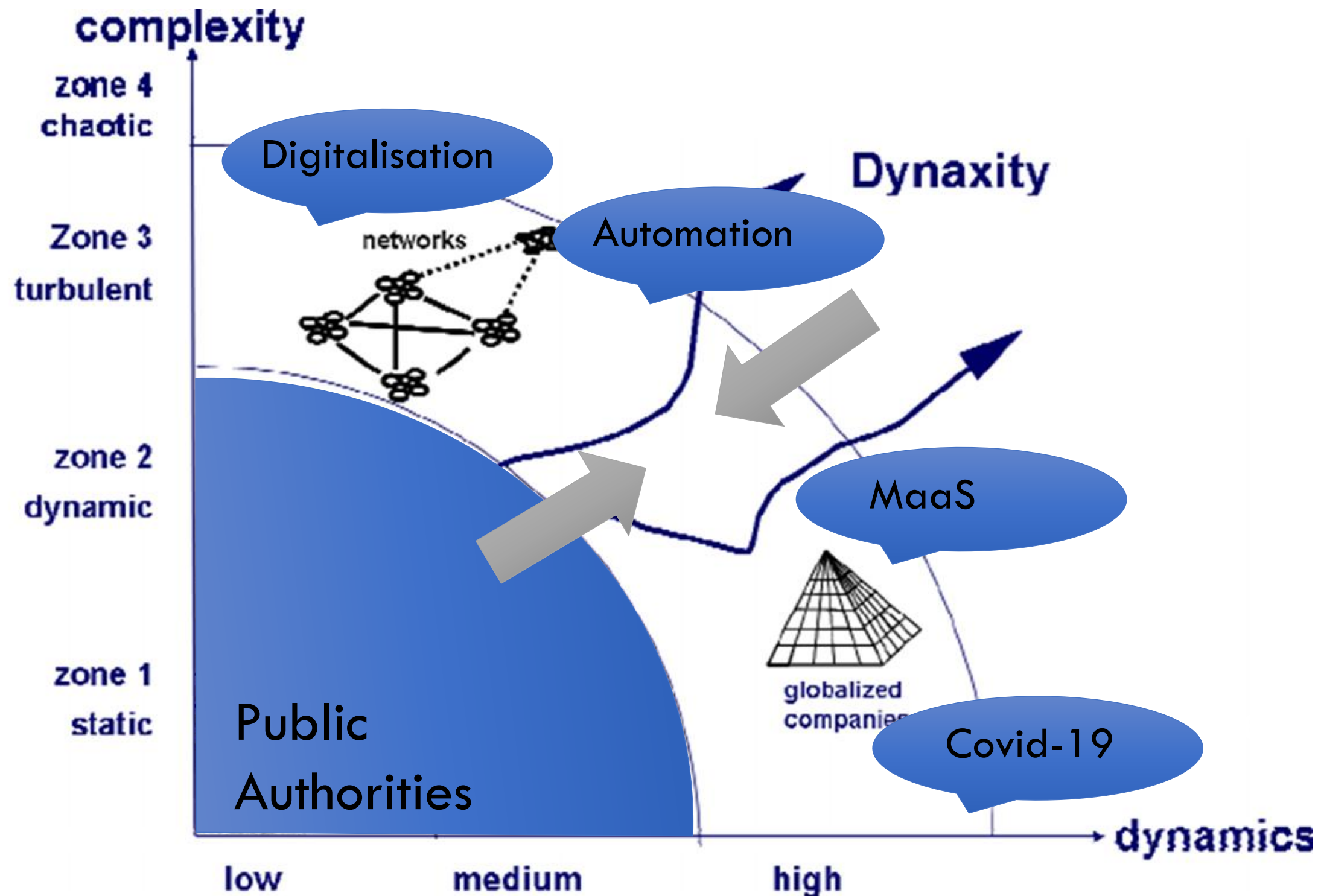
<https://twitter.com/madeline/status/10...>



Electric mobility: open standards / interoperability



What is Dynaxibility?

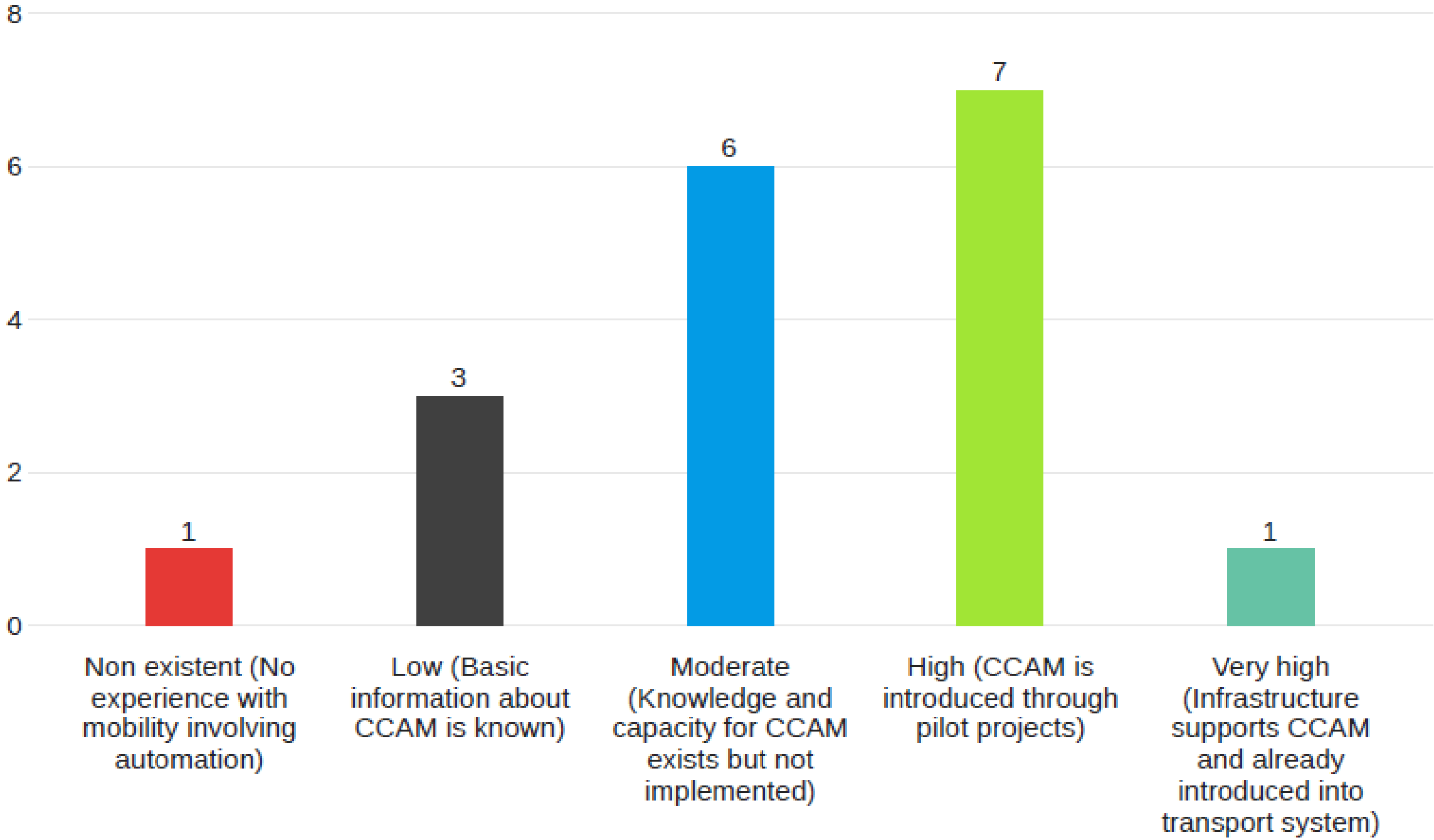


Ability to manage change in dynamic and complex environments:

Increase **Dynaxibility** to establish sustainable mobility in zone 3 by:

- finding the right balance between long-term vision and adaptability (agile planning)
- finding the right balance between regulation (e.g. Automated Driving Law (level 4)) and new measures to foster innovation (e.g. living labs to test new CCAM services).

How would you evaluate your area level of automation-readiness (i.e., capacity to make structure and informed decisions about CCAM)?



Conclusions

- **CCAM Self-Assessment Tool is well received** by cities/regions – to analyse in a systemic way weaknesses of their automation-readiness and derive needs for **capacity building in a structured way**.
- Further development of tool welcomed by cities/regions to **link knowledge resources of CCAM** best practice to the assessment results and benchmark within clusters of cities for **steering knowledge exchange among cities/regions**.
- Automation-readiness can be strengthened by **lessons learned from other mobility innovation areas** (incl. processes) following “patterns” for innovation implementation.
- Automation-readiness comes with **need for new competencies/skills set: dynaxibility** (systemic, adaptive, learning-by-doing ...) **following agile values**, e.g. “working products over comprehensive documentation” (sandboxing, innovation procurement, living labs) or “responding to change over following a plan” (outcome-based regulation, citizens engagement).

Thank you for your attention!

For questions:

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