XCARCITY Consortium Meeting

6th December 2023



Agenda

10:30- 11:00 Walk in and Coffee

- 11:00 11:15 Welcome & Introduction
- 11:15 11:30 Inspirational Speakers
- 11:30 12:00 NWO Update
- 12:00 12:15 House Keeping Rules & Amendment
- 13:00 14:00 Programme Progress

LUNCH

- 14:00 14:30 Use Case Update and Feedback (Almere, Amsterdam Region and MRDH)
- 14:30 15:15 Introduction to appointed researchers

BREAK

15:15 - 16:00 Close Out & Next steps



Introduction



Goal of the Day

- Update on the programme progress
- . Importance of connections (at events such as these)



Inspirational Speakers





Lessons from Japan

XCARCITY and SIP Smart Mobility Platform

Toward Sustainable Mobility in the context of Climate Change

Impressions



Perspectief programme

NWO (Dutch Research Council)



Duration: 1st June 2023 -1st June 2029 Budget: 4 M€ by NWO, 2 M€ by partners 9 PhD candidates, 2 postdocs, 1 programmer, TNO researchers (60 person years) 33 partners from academia, public and private sector



https://www.youtube.com/watch?v=2pL5sGV2khQ





Smart Mobility 2.0



"Smart Mobility 1.0 "

(**Current.** See **left** part of the figure below) Place value on **the efficiency and enhancement of transport and movement** and pursue developing services. Smart mobility such as heavy, long and large.

"Smart Mobility 2.0 "

(Target. See **right** part of figure below) Place value on the viewpoints of regional medical and nursing care, declining birthrate and aging population, education, etc.A society that strives to solve problems and maintain and improve health, mobility for realizing well-being





Basic Ideas in Smart Mobility2.0



Real / Physical

Hard Infrastructure Narrow St, Roads, Exprsway, Cities,... Soft Infrastructure Legislation/Institution, Business customs, Public/Social acceptance

Collaborations / Co-working / Synergies and Holistic Approaches

SIP Smart Mobility Platform interested in:

Collaboration with XCARCITY (and hopefully RADISH)

SIP SMP Advisory board (BvA)

UDelft

Digital twin, Digital sandbox

Autonomous driving in societies MaaS for logistics, daily lives, tourism, medical services,.... New business models New life styles

Data / Cyber

Data PF, Data Space, API, Connector, Smart City/Mobility OS Sensors, Communication Digital/Real Architecture

Toward Sustainable Mobility in the context of Climate Change

Prof Bart van Arem, Delft University of Technology, the Netherlands

Picture taken 1st November 2023, Ryoan-ji, Kyoto

a to a to





What is the future? The future is uncertainty. There are no right answers. Therefore, YOU can create it yourself.

History can be altered by the will of a single individual. That individual could be YOU. All that you dream, everything that inspires and challenges you, helps shape the future.

Here is where knowledge and society intersect. .. where individuals interact with others, and everyone benefits. The unknown world beckons, and pathways to the future open up. Now, come meet the YOU you've never known!

> The world as we see it may seem unpredictable, but together we can see it as something different.

Regardless of how difficult your individual path may be, you have someone here who will encourage you, and cheer you on. Do not falter, do not fear. The future is yours.

農村コミュニティ









TUDelft







拠点連携型の土地利用

Between now and 2050

How to make mobility carbon neutral and transport resilient?

Climate change

What are disrupting events?





Cities and regions

Allocation of space to road, water and green?



What is a robust

and resilient

network?

Resilient

transport



Sustainable mobility How sustainable is mobility?



Energy transition

Which energy sources and infrastructure?

PUBLIC AUTHORITIES INDUSTRY ACADEMIA CITIZEN

How can transition be made together? What action do take today? Society and economy



What is fair, inclusive, reliable accessibility? Description of the development of a (complex) socio-technical system in time from the present to a (desirable, possible) future state

Describes main interventions and events that affect the pathway

Can be based on different assumption regarding progression, disruption, transformation and shocks

Is plausible, coherent and consistent by taking into account interaction and feedback between system elements.

Is consistent with historic development

Proposed definition, scientific literature describes purposes of transition pathways, but does not give definition of a transition pathway itself.

Fransition pathways



1972, commissioned by Club of Rome

Current growth of human activity will deplete available resources under current governance. This will result in forced decline. System dynamics based on 5 main elements:

Population Food production Non renewable resources Industrial production Pollution





Published 2022



Jørgen Randers - From "The Limits to Growth" to "Earth for All ...



Addresing inequality
Empowering women
Food healthy for people and ecosystem
Clean energy

YouTube

Turnaround needed:

Ending poverty

2-4% of global income needed for sustainable energy and food ;Income redistribution; Citizen Fund; filled by private companies for using co revenue to all citizens.

Transformational economics and system dynamics

Tension may trigger destabilisation.

inequality and social tension.

Social Tension Index and Average well-being. Social

Continuing political and economic paths lead to rising

Inadequate response to climate emergency lead to

over 2 degrees global warming, with huge

consequences, instabilities and social tension.





https://www.youtube.com/watch?v=GQu3AX6fNEo

https://earth4all.life/

Earth4all scenarios

Too Little Too Late scenario



Muddling through, democracies fail to reform, social tension, low wellbeing. Autocratic states perform better.









Prof Yoshitsugu Hayashi Meeting 30th November

*T***UDelft**

Model description : https://eartharxiv.org/repository/view/5111/

Software and data: https://stockholmuniversity.app.box.com/s/uh7fjh52pvh7yx1mqfwqcyxdcvegrodf









Impact hub sustainable mobility?

SUMMARY AND OUTLOOK

GHG emissions lead to climate change.

- Sustainable mobility helps to reduce GHG emissions.
- Transport networks needs to be resilient against extreme weather.

Transition pathways toward sustainable mobility and resilient transport require a systemic approach, including interactions with the climate, city, energy and societal systems.

System dynamics are promising to study plausibility, coherence and consistency of transition pathways.

Cities and mobility re-design for people, service oriented (Society 5.0)

Digital twins/sandboxes for immersive experience of future states

Quadruple helix approach: academia, public and private sector, citizens















































THANK YOU!



Open Remote, Witteveen+Bos + FSD

- A highlight of what you have done so far in designing car-free areas and/or digital twinning
 - What your interest is in XCARCITY
 - What your contribution is to XCARCITY



OpenRemote, 100% open-source IoT device management platform



Making sure trees survive the drought of the changing climate. ER UMWELT ZULIEBE - W ELT BEWÄSSERN - MIT HO

NIGEN





Improve use of locally produced clean energy in the cities fleet.

Nottingham

City Council

TELTONIKA

ttingham ty Council

reg

TELTONIKA | Telematics

FMC003 LTE/GNSS/BLE TERMINAL Power supply: 10 - 30 V == 0.25 A Max Internal Libon batterou 3 V = 3 V = 3 V == 0.25 A Max

CS I TRACE

E#1 210

odel: FMC003-MCIB0 ade in Lithuania Noniskiu st. 98-1.

08105, Vilnius, Lithuania w.teitonika-gps.com

-57 110 R-06 1498

Crowd control, reducing queues by predicting passenger flows



Koninklijke Marechaussee





MMORE STRICHTEASIO

Witteveen+Bos

Our contribution to XCARCITY



Main characteristics Witteveen+Bos

- 23 offices in 10 countries and some 1,400 engineers and consultants
- In the fields of water, infrastructure, the environment and construction
- We like to collaborate with other parties to achieve the highest quality for our clients



Fields of expertise

(Civil) Engineering consultant:

- Calculations
- Designs

The Dutch government is our main client:

- Central Government (Rijkswaterstaat)
- Provinces
- Municipalities



Contribution to XCARCITY

- Setting up of digital twins
- Providing 3D models for use in simulated environments
- assistance in writing research papers


Relevant projects

- Mobility transition in dense urban areas:
 - Haarlem
 - Eindhoven
- BIM design integration in large infrastructural projects:
 - Digital Twins
 - Augmented Reality
 - Virtual Reality



Some Examples





AUGMENTED REALITY - BUSHALTE PLAATSEN

© 2018, Witteveen+Bos





Programme day 2 XCARCITY?

Jennifer Faber

NWO AES Programme Officer





RECAP Kick-Off

- NWO Mission
- NWO Organisation
- AES goals
- Impact & Instruments
- Perspectief
- UC & roles

NWO facilitates world-class scientific research



applied engineering sciences

innovation chains

How well have you prepared?

Question 1: which WP don't have all PhD positions filled?

- A (raise your hand) : WP 2&4
- B (don't raise your hand): WP 2&5

Question 2: you have been asked to examine two documents. What instigated the creation of these documents?

- A (raise your hand) : to prevent internal IP-discussions
- B (don't raise your hand): to deal properly with opportunities

Question 3: which WP has not started yet according to progress report?

- A (raise your hand) : WP 5
- B (don't raise your hand): WP 1

Question 4: how many productive interactions does the report mention?

- A (raise your hand) : 3
- B (don't raise your hand): 4

Question 5: which WP already has an output sent out through NWO?

- A (raise your hand) : WP 2
- B (don't raise your hand): 4

Question 6: how many impacts XCARCITY aims at?

SOCIETAL IMPACT **OUTPUT** OUTCOME 1. Framework, method and Inclusive accessibility of Public authorities take interventions guidelines for optimal sensor 6. Federated set of **digital twins** urban areas/regions regarding smart mobility solutions, Data platform network design and predictions restrictive car usage and traffic and demand 3D models of cities/regions management and control Economic: jobs, turnover, 2. Insights in **behavioral** in XCARCITY responses profit Public authorities and consultancy firms 3. Algorithms for and insights in improve their data collection and traffic Liveability: balance transport and transport models to continue the design of smart mobility infra, green areas, water, redesigning the mobility system after applications recreation XCARCITY 4. Algorithms for and insights in 7. Designs (i) and Reduced green house the design of **integrated** implementation or transition emission by the transport Area developers **develop areas** with less paths (ii) for mobility systems transport networks sector parking spots, spatial reservations for including smart mobility 5. Algorithms for large-scale mobility hubs and integrated smart mobility solutions collection of mobility data for solutions trafficmanagement Mobiity providers offer cost-efficient **mobility services** in line with requirements → ofpublicauthorities Traffic and IT companies provide data collection and communication platforms and implement effective, data-based

multimodal traffic management strategies

User Committee











Roles User Committee



- Final responsibility for all aspects related to the project
- Reporting project progress
- Primary contact NWO

- The research
- Seek advice and input from users continuously
- Presentations / workshops and minutes

- Proactive attitude
- Offer new insights, feedback and cases
- Co-financiers
- Valorization & commercialization

- Monitoring horizon and process
- Intermediary role between consortium and society
- Primary financier

UC & WP Meetings: Aligning common goal(s)



Do we all have the same expectations?

What do you **bring** to XCARCITY?

What do you **gain** from XCARCITY?



Communication Strategy

- Public communication: *inform the public of the programmes achievements, events and updates*
- Project communication: *inform all 32 partners on project related matters*
- Internal communication: coordinate all internal communication between work packages, sharing of information across the programme and sharing all relevant/published scientific research with the funders and externally
- NWO communications: progress reports, publication

Strategy will be shared soon with the entire UC



UC reporting on Scientific Progress

- Programme level: Programme Progress Report send out at least 1 week before programme day by Carla
- WP-level: WP Progress report send out at least 1 week before WP meeting by WP-leader

Please: read the reports before going the meeting. Come with questions, concerns, ideas, feedback



Topics WP meetings and Programme days



ADMINISTRATION and SMALL PRINTS



Co-Funding (Agreement article 3)

- In cash contribution:
 - Invoicing via NWO according to payment schedule (art 3.1, 3.2 and Annex 2)
 - In case of any issues, please email Jennifer and Bart
- In kind contribution
 - According to support letters (art. 3.3)
 - Register hours in the excel sheet update (art.3.4)

IP and publication - option 2 Own Arrangements transfer of results & know-how

Ownership and IP

- Article 2.4: The Parties shall inform each other in the event that new information emerges which is relevant to the Research or the utilization of the Project Results. If any patentable invention is created in the Program, the respective Party shall inform the Project Manager. The Project Manager shall inform the other Parties thereof by sending a completed invention disclosure form to each member of the Users' Committee
- Article 2.6: All Parties shall be a member of the Users' Committee and be privileged to obtain first-hand information on the progress of the Program and the Program in general. Program Stakeholders are given the opportunity to be the first to express interest in specific generated Project Results for which (commercial) usage rights can be negotiated in accordance with Annex 1.
- Article 4: tailor made arrangements (see Annex 1)
 - Ownership to party/parties that generate(s) results (annex 1, art. 4.2)
 - University keeps free access to results, freedom to operate (annex 1, art. 4.2)
 - Option for users to results depending on contribution (annex 1, art. 4.3)



Procedure for publications See ANNEX 1 Consortium Agreement & NWO Grant rules 2017

Publishing Procedure

- Results are published as soon as possible as Open Access (NWO 2017, art 4.1.1)
- All (draft) publications/abstracts/ posters are submitted to the UC via NWO-AES
- PL may decide to suspend a publication for up to 4 months to allow a patent application to be submitted. Companies max extend by 6 months (annex 1 art 4.3-3)
- Acknowledgement for funding partners and consultation companies and NWO (NWO 2017, art 4.1.3)

- 1. PL sends **papers ≥ 30 days** to NWO
- 2. AES submits publication to users
- Users have to respond within 30 → 10 days
- Within 10 days after submission AES informs PL whether there are (IP) objections:
 - if not \rightarrow publish
 - if yes → in consultation PL edits publication







SAVE THE DATE 25 JUNE 2024

RECEIVE AN INVITATION TEKNOWLOGY.NL/TEK24



NWO NERA Energy Symposium

- The NWO-NERA Energy Symposium is an interdisciplinary conference about Energy Transition research
- Inspiring presentations and workshops will cover the latest results in energy research. In addition, the symposium will provide a place for researchers and policymakers from different disciplines to meet.
- When: 2 February 2024 | 09.30 17.30 hrs
- Where: Van der Valk Utrecht
- More information and registration: <u>www.nwo.nl/nera</u>
- Questions: <u>energie@nwo.nl</u>



Open Mind – Technology for society

For out-of-the-box research ideas with societal impact



Context

- Aim: investigate out-of-the-box research ideas that contribute to solving societal challenges
- Ideas using or developing technology
- Open to scientists within all disciplines of the technical sciences from all Dutch knowledge institutes, including PhD students and postdocs



Budget

- 7 Open Mind grants of €50.000 each
- Project duration 1 year



Timetable

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- Open Mind 2024 call
- Call for proposals online in November
- 12 March 2024 Deadline full proposals
- May announcement top 15 candidates for pitch session @ TEKNOWLOGY 2024
- 25 June 2024 Pitch session & announcement Open Mind winners @ TEKNOWLOGY



Open Technology Programme 2024

Open to technical-scientific research aimed at possible implementation





Budget

- Total budget expected ~ 26 M€
- Funding up to 900 K€ per project
- Co-funding by users (in cash or in kind): 25% of the sum in excess of 650 K€



Timetable

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- Continuous application from 15 January • to 13 December 2024 (as long as the grant ceiling has not been reached)
- Make sure to use the latest documents.
 - Please note: applications with co-٠ funding should be submitted with the declaration co-funding. Support letters are no longer accepted.



More information: www.nwo.nl/otp-en | Contact: ttw-otp@nwo.nl

Cybersecurity for digital resilience (KIC)



Context

- Substantial boost is needed for cybersecurity • knowledge and innovation through publicprivate partnerships to strengthen the digital resilience of the Netherlands.
- The research questions focus on an integrated approach and include 7 research themes:
 - **1.** Security by design
 - 2. Secure data-driven operations
 - 3. Secure and resilient connectivity
 - **4.** Operational technology (OT) and IoT security
 - and secure integration with IT
 - 5. Cyber risk management
 - 6. System and supply chain security
 - 7. Cyber knowledge and skills



Budget

For researchers based in the Netherlands applying for this call:

- **15 M€** total NWO budget
 - For each project can be requested: • a minimum budget of 673,5 K€ a maximum budget of 3,4 M€
- At project level, a private contribution of at least 15% is requested



Timetable

- 25 October 2023 information meeting •
- 7 December 2023 matchmaking session
- 11 January 2024 deadline letter of intent • (research description)
- 16 April 2024 deadline proposals •
- December 2024 grant decision ٠

This call for proposals aligns with the priorities of the programme **Cybersecurity for the** Netherlands (CS4NL).

More information: www.nwo.nl/kic-cybersecurity | Contact: KIC-Security2023@nwo.nl

Contact



Program Officer: Jennifer Faber (j.faber@nwo.nl)



Management Assistent: Inge Vreeswijk (i.vreeswijk@nwo.nl)



Other information: <u>www.nwo.nl/aes</u>



Thank you for your attention!



House Keeping Rules & Amendment



House Keeping Rules

- Why?
 - Clarification 'non-commercial research' (TU/e)
 - Efficient decision making (PCT)



House Keeping Rules

- Governance: PCT, PC, UC definition (as in project proposal)
- UC as main decision making body



Decisions in UC meetings

- Decision requires 2/3 quorum and 2/3 majority and at least 2 grant recipients agreeing.
- If quorum not reached, another meeting within 15 calendar days
- If quorum not reached once more, extraordinary meeting, with no quorum.



Decision without meeting

- Suggested decision, 10 calendar days to respond
- 51% majority needed
- Veto possible within 10 calendar days


House Keeping Rules- non commercial research

Annex 1 4.3(3)(iv)

All Grant Recipients shall retain the right at all times to use Project Results for further noncommercial research and education on a royalty-free basis;

Annex 1 4.2(2)(iv) JOA=Joint Ownership Agreement

this Agreement and the NWO Grant Rules 2017. Unless otherwise agreed in the JOA: (a) each of the joint owners shall be entitled to use their jointly owned Project Results for non-commercial internal research and teaching activities on a royalty free basis as defined in the European State Aid Rules ((Communication from the Commission, Framework for State Aid for research for development and innovation (2022/C 41 41 4/01) (C2022) 7388, point 20), and without requiring the prior written consent of the other joint owners. (b) Each of the joint owners shall be entitled to otherwise exploit the jointly

Proposal "Not commercial research does not include contract research, but does include research in national and European grant projects."



Amendment- publication procedure

- Objection to publication within ten (10) working days, instead of thirty (30)
- Motivation
 - Objections or responses are usually received within 10 working days
 - This will researchers to publish quicker.



Amendment-Accession

- New Party can accede agreement
- Description of contribution by New Party
- Unanimous agreement needed by Parties and by NWO
- Project manager mandated to execute accession



Programme Progress



Work Package 1 - Unravelling flows

 Aim: assess how different and novel sensor technologies can influence the quality and performance of different traffic applications, through a data utility framework.



Work Package 1: Update

- 2 PhDs students just started: Mohammad Jafari and Yuxing Cheng
- Postdoc hired: Dingshan Sun









Work Package 1: 2024 Plan/Next Steps

- Develop more detailed research plans
- Organize kickoff with partners: Rijkswaterstaat and Technolution



Work Package 2: Update

- Dennis started working on task 2.2 (behavior) of the workpackage in September.
- Review of literature on cycling (traffic) safety and personal security in urban environments has been completed.
- Longlist of potential attributes that can be included in the experiments has been composed.
- First steps have been taken in reducing the longlist into a workable set of variables



Work Package 2: 2024 Plan/Next Steps

- The virtual environment that forms the basis of the stated preference and bike simulator experiments will be created.
- Data collection for both of these experiments will be started.



Work Package 2: Links with Partners & Use Case

 Conversation with the Fietsersbond has been planned to discuss attribute longlist.

• Link to Case Study Areas: Safety map for cyclists



Work Package 3: Update



Work Package 3: 2024 Plan/Next Steps

•As first step: a static case study is in progress and being programed for the network design problem (space usage of a street).

In parallel: PhD research agreement is being prepared that answers the project's needs and the scientific challenges for the PhD.

•Meeting with TNO to know the multimodal model has already been scheduled

Work Package 3: 2024 Plan/Next Steps

October,2023

PhD start date: 1/10/2023
Reviewing the KPIs (Task 3.1)
Reviewing dynamic road space Allocation problem (Task 3.2)

December,2023

A framework of a multi-commodity min-cost flow problem (MCMCFP) on a time-space network is discussed to solve the problem (Task 3.2)
Onboarding sessions for Urban Strategy (Digital Twins) at TNO

February – June, 2024

 Finalizing KPIs list (Task 3.1)
 Propose and examine different solutions to verify the model (Task 3.2)

November,2023

- List of proposed KPIs was introduced (Task 3.1)
 Proposed methodologies to tackle the problem (Task 3.2)
- Onboarding sessions for Urban Strategy (Digital Twins) at TNO

January - March, 2024

PhD Research agreement at first of Jan, 2024
 Problem formulation (Task 3.2)

July – December ,2024

- Uses cases (Almere, Amsterdam and MRDH) will be used to validate the proposed model (Task 3.2)

Work Package 3: Links with Partners

- Need to schedule a workshop with the societal partners as well because we want to know in greater detail how dynamic they think public space usage can be.

- Mini workshops between TNO and TU Delft to see how Urban Strategy works, which KPI's can be computed, which models are included etc.

- All with the idea to help shape TUD/TNO's research activities in WP3. Members of WP4, are also invited because this is also important for them.

Work Package 4: Integrated transport networks

- Integrate the car-low areas and smart mobility strategies in the overall mobility system,
- by redesigning the national and regional road network, public transport system and bike network and the connections with these systems to urban mobility systems
- while considering societal goals on sustainability, liveability and inclusive accessibility and while considering spatial restrictions

Work Package 4: Update

- Jyotsna Singh started her PhD 15-10-2023
- A review of interventions, KPI's and optimization and impact assessment methods is being made
- She is getting to know the digital twins
- A series of meetings TUD/TNO has been scheduled to get to know Urban Strategy
- TNO started with the development of a parking module and car ownership module needed for impact assessment of car low areas

Work Package 4: 2024 Plan/Next Steps

- Developing a detailed research plan
- Definition of first research topic (e.g. land use effects)
- Developing parking module and car ownership module

Work Package 4: Links with Partners

A kickoff with all partners has been scheduled for January

- AMS
- Amsterdam
- Goudappel
- MapTM
- Mobycon
- Rijkswaterstaat
- TNO
- TU Delft

Work Package 5: Smart Infrastructure

Update:

- First UTwente Ph.D. student started (Fatemeh Marzani)
 - Currently analyzing a large data set of WiFi detections.
 - First tests with Bloomfilter-based footfall and mobility detection.
- 2nd UTwente Ph.D. student: new hiring procedure due to visa problems
- TUD Postdoc (Dingshan Sun) is setting up environment for multimodal traffic simulation.

WP5: Smart Infrastructure

Goals:

- efficient real-time information collection from all traffic modalities
- privacy-preserving mobility monitoring
- optimized multi-modal traffic (and traveller) management

Mobility monitoring (@ Univ. Twente)

- How can we detect individual people in crowds, and correlate detections across time and space to provide counts of mobility patterns, while protecting privacy?
- We currently explore the use of (truncated) Bloom filters and homomorphic encryption.

Foreseen system architecture:

- Detectors: detect (e.g., WiFi sniffer, camera, ..), anonymize, store, encrypt
- Servers: correlate, randomize
- Consumers: query, decrypt, extract counts

Example queries

Work Package 5: 2024 Plan/Next Steps

- After Dec. 6: WP meeting, with hopefully all PhD's/Postdoc.
- UT PhD1: Propose, analyze and evaluate ideas for privacy preservation on Bloomfilter-based footfall- and mobility detection.
- UT PhD2: new hiring
- TUD Postdoc: Start of modelling of multi-modal traffic networks (metro/car). (Aim: getting insights in how the network structure and control measures influence travel times, and hence mode choice.)

Work Package 5: Links with Partners & Use Case

• OpenRemote: involvement in hiring process, initial discussion planned.

Work Package 6: Goals

- To develop an open DT model architecture, as a federated system of models
- focus on the design and development process when using DT.
- WP6 is where all work packages come together

Work Package 6: Update

- The process of hiring a postdoc started.
 - The required text has been sent.
 - The vacancy will be open for six weeks.
- Onboarding sessions for Urban
 Strategy with students are in progress
- Almere Set-up in Urban Strategy is almost finished.

Work Package 6: 2024 Plan/Next Steps

- After Christmas holidays we discuss needs of the different work packages with respect to digital plans.
- Run use cases for Almere
- Start working on the Urban Strategy XCARCITY set-ups for MRDH & Amsterdam
- Start working on a plan to connect different digital twins
- Start working on the open DT architecture

Work Package 6: Links with Partners

- Talks with different partners about digital twins in and outside the consortium, e.g.
 Argaleo, Cap Gemini, Open Remote. Talks will continue after Christmas holidays.
- Regular meetings will be scheduled with TNO to best connect apply digital twins for the three locations.
- We are starting the inventorization of Digital Twin technologies within and outside the XCARCITY

Work Package 7: Knowledge utilization

- Aim:
 - Identify and categorise smart mobility pilots and applications in terms of their expected impact on sustainability, accessibility, safety and liveability as well as their scalability and business model potential.
 - Develop designs for complete mobility systems, including smart mobility solutions, in future settings and suggest implementation or transitions paths

Work Package 7: Update

- On 12 October 2023, the first annual design session was organized in Almere
- DTV is working on visualizations of the results of the Almere design session
- A teaching assistant (Sören Burghardt) has been hired to follow-up on the results of the Almere design session
- The cases of Almere Pampus, MRDH and Amsterdam regions are being defined together with the stakeholders
- A PhD student started: Azarakhsh Salem

Work Package 7: 2024 Plan/Next Steps

- Post-design sessions will be scheduled with 4 stakeholder groups
- A meeting will be organized with CROW, PBL and SWOV to work on their yearly reports
- The cases of the MRDH and Amsterdam region will be specified further

Work Package 7: Links with Partners

- ABB
- Almere
- Amsterdam
- AMS
- Buck Consultants
- Connekt
- CROW
- DTV
- FSD
- Future Mobility Network

- Rotterdam
- Goudappel
- MapTM
- Ministry I&W
- Mobycon
- MRDH
- · PBL
- · RET
- . SWOV
- Technolution
- Witteveen en Bos

LUNCH

Use Case Update

Amsterdam Use Case

Use case update: Amsterdam

- First ideas presented in Almere
- Discussions with MRA/Vervoerregio, AMS Institute and Amsterdam
- Communication within Amsterdam to:
 - Present Xcarcity
 - Call for interest to participate with a use case (commitment important)

Meeting with urban planning department

- Interest from R&D (spatial planning department) working in Haven Stad, ZuidasDok and Amsterdam ZuidOost
- Amsterdam 3D platform
- Interest in new tools (need for more than only existing traffic models)
- Bring spatial quality into the equation



Meeting with urban planning department

- Importance of walking and public space division
- Interested to cooperate in a triple helix environment
- Good to meet, to know needs and existing tools/developments



How to proceed?

- What is possible within Xcarcity?
- Combination of existing modelling developments, Amsterdam3D and use case (Haven Stad, ZuidasDok) seems promising
- Discussion with TNO/TU Delft and Tom and Maarten to make choices



MRDH en Rotterdam Use Case



Strategische Agenda MRDH

- Investeren in bereikbaarheid om de inwonersgroei in de regio te faciliteren
- Toekomstbestendige economie stimuleren
- Actieve en collectieve vormen van mobiliteit stimuleren
- Vernieuwen van de werklocaties
- Versterken van het regionale mobiliteitsnetwerk
- Herstellen van het ov systeem





Xcarcity kan helpen bij uitwerking van onze doelen

Hoe zorgen we ervoor dat de automobilist die een alternatief zijn auto laat staan, maar de automobiliteit die er wel moet zijn daar zo min mogelijk hinder van ondervindt. Met alleen autobeperkende maatregelen tref je zowel de eerste als de tweede groep.



Dilemma's in bestaand gebied

- Waar begin je in bestaande omgeving: met het zuur of met het zoet?
- Wat wil je met deelmobiliteit, hoe zien overheden hun rol hiervoor?
- Hoe heffen we eventuele barrières in de regelgeving voor nieuwe mobiliteitsvormen?
- Is een privé autoloze stad of wijk mogelijk of richten we ons eerst op de tweede auto?
- Hoe schaalbaar is dat concept, in welke wijken en gebieden lukt het wel en welke niet?
- Is bekend wat gebruikers willen: ov, fiets, deelmobiliteit (fiets / scooter)?
- Welke doelgroepen zijn dat dan.
- Hoe doen we dat zonder al te veel techniek te hoeven op tuigen?



Nog geen casus, maar wel veel gaande

- In de regio wordt in verschillende gemeenten gewerkt aan minder autogebruik / soms ook bezit. Zoals in Den Haag, Delft en Rotterdam.
- Deze laatste gemeente doet ook mee met xcarcity.
- Voorbeelden zijn: Den Haag Binckhorst en Zuid West, Delft Spoorzone, Rotterdam Merwe4-havens en het gebied rondom Rotterdam Centraal.
- Soms ook kleinere projecten als fietsvlonders en coöperatief deelmobiliteit.
- Er worden zowel zoete als zure maatregelen genomen.
- Er wordt wel objectief gemeten, maar relatie met genomen maatregelen blijft lastig.



Groslijst casussen

- Mobiliteitstransitie Delft
- Merwe4-Havens
- A15 IJsselmondse knoop



Almere Use Case



Use Case Update and Feedback – Almere Pampus

Michiel van Bokhorst / 6-12-2023



Contents



- 1 Design Session
- 2 First analysis of results

Design Session (12 October)



- Real life experience train connection to Almere
- Lot of enthousiasm
- Lot of knowledge
- Thanks everyone!

First analysis of results



- Transit-Oriented-Development along metro stops
- Extend current bus network to Pampus
- Extend current bicycle network to Pampus
- Density of car network unclear

Gemeente Almere













Gemeente Almere





Gemeente Almere





Using results



- Input for Mobility study Ruimtelijk-Strategische Verkenning Almere Pampus
- Consortium Goudappel Coffeng Royal Haskoning DHV – Urhahn

Researchers Introductions















Work Package 7





Next Steps



Open Discussion

- Next Consortium meeting July 18th 2024?
- Questions from Partners?





