

Call for Proposals 2022

Pre-Proposal: Consortium and General Information

1. Project overview

Project Short Title/Acronym: MULTIGINATION			
Project Full Title: Multiplicative imagination of citizens and stakeholders towards the 15 minutes City			
Project Coordinator: HES-SO, Prof. Dr Joëlle Mastelic			
Main R&I approach: <input checked="" type="checkbox"/> Innovation-oriented approach (IOA)			
Main Transition Pathway: <input checked="" type="checkbox"/> 15mC Transition Pathway			
Call topics: <input type="checkbox"/> PED topic 1: Energy communities – energy transition driven by civil society <input type="checkbox"/> PED topic 2: Energy flexibility strategies <input type="checkbox"/> PED topic 3: Energy efficiency in existing urban structures <input type="checkbox"/> 15mC topic 1: Strengthen the mix of urban functions and services <input type="checkbox"/> 15mC topic 2: Foster sustainable options for personal mobility and logistics in urban outskirts <input checked="" type="checkbox"/> X 15mC topic 3: (Re)imagine urban public spaces and streets for vibrant, sustainable neighbourhoods <input type="checkbox"/> CUE topic 1: Urban resource sharing and circularity <input type="checkbox"/> CUE topic 2: Nature-based solutions <input type="checkbox"/> CUE topic 3: Urban food systems			
5 keywords describing the project		Keyword 1: 15 minutes City Keyword 2: Co-design Keyword 3: Living Labs Keyword 4: Mobility services Keyword 5: Sustainable urban transformation	
Total Project Costs in EUR:	3.574.711,60	Requested funds in EUR:	1.483.096,40
Duration of the Project in months (max. 36):	36	Expected start:	[01.2024]
Total Effort in Person Months:	233,61	Expected end: (MM.YYYY)	[12.2026]

2. Abstract

The project provides an innovative process and tools for empowering the multiplicative imagination of public spaces and streets, leading to actual urban interventions towards sustainability. Car parking spaces, public transport stops and mobility hubs, waste and reuse collection containers, package exchange stations, additional services of decentralised public offices are reshaped in the use-cases (embedding the 15mC goals) of an horizontal process (involving experts, citizens, private companies, researchers, NGOs and city authorities). Covering from visualisation to evaluation, funding and execution, this process is codified for transferability. Basic and advanced (public and private) services are co-designed in Living Labs and localised in critical areas by a participatory process embedding a proven open-access visualisation tool of the built and non-built environment, multiplied by a marketplace of innovative solutions and a crowdfunding platform. Citizens' proposals can be budgeted. The cities select what actually to implement, keeping into account this "participatory urbanism" and all other constraints (zero emission and other goals, laws, stakeholder interests, ownership rights, etc.). Cities can co-finance the investment, look for private investors, draw on crowdfunding campaigns and use part of the Call funds. In other terms, we are setting up a replicable movement of constant improvements of the urban landscape by fostering the multiplicative involvement of all actors.

3. Project consortium

	Organisation	Type of organisation	Country / Funding agency	Contact Person (first name and family name)
Project Coordinator/Main Applicant	HAUTE ECOLE SPECIALISEE DE SUISSE OCCIDENTALE	University or Other Educational Institution	Switzerland DETEC (SFOE)	Joëlle MASTELIC
Project Partner 2	STADT WINTERTHUR	City Authority/Municipality	Switzerland DETEC (SFOE)	Vicente CARABIAS
Project Partner 3	ZURCHER HOCHSCHULE FUR ANGEWANDTE WISSENSCHAFTEN	University or Other Educational Institution University or Other Educational Institution	Switzerland DETEC (SFOE)	Andrea DEL DUCE
Project Partner 4	OPEN URBANISM FOUNDATION	Other Non-Profit Organisation	Switzerland DETEC (SFOE)	Alain RENK
Project Partner 5	DREES & SOMMER SCHWEIZ AG	Business – SME	Switzerland DETEC (SFOE)	Haris PIPLAS
Project Partner 6	TAMPEREEN AMMATTIKORKEAKOULU OY (Tampere University of Applied Sciences)	University or Other Educational Institution	Finland Business Finland (BF)	Markus AHO
Project Partner 7	LEHTOVUORI OY	Business – SME	Finland	Niku OJALA

			Business Finland (BF)	
Project Partner 8	PIRKANMAAN JÄTEHUOLTO OY	Business – SME	Finland Business Finland (BF)	Saana OJALA
Project Partner 9	VISIOSOFT	Business – SME	Turkey The Scientific and Technological Research Council of Turkey (TÜBİTAK)	Samed DURAK
Project Partner 10	BAŞAKŞEHİR LIVING LAB	Other Public/Governmental Institution	Turkey The Scientific and Technological Research Council of Turkey (TÜBİTAK)	Ömer ONUR
Project Partner 11	ASSOCIATION WEMAKEIT.CH	Business – SME	Switzerland DETEC (SFOE)	Sandro ALVAREZ-HUMMEL
Project Partner 12	VERKHSBETRIEBE ZÜRICH	Other Public/Governmental Institution	Switzerland	Nicola GABRIEL
Project Partner 13	RÉPUBLIQUE ET CANTON DE GENÈVE : DIRECTORATE FOR INTERNATIONAL AFFAIRS (GENEVA INTERNATIONAL)	Other Public/Governmental Institution	Switzerland	Michael MEIER
Project Partner 14	EUROPEAN NETWORK OF LIVING LABS IVZW	Other Non-Profit Organisation	Belgium	Evdokimos KONSTANTINIDIS
Project Partner 15	COMUNE DI BERGAMO	City Authority/Municipality	Italy	Giacomo ANGELONI
Project Partner 16	AYUNTAMIENTO DE PAMPLONA	City Authority/Municipality	Spain	Jose COSTERO
Project Partner 17	VLAAMSE INSTELLING VOOR TECHNOLOGISCH ONDERZOEK N.V.	Public or Private Research Organisation	Belgium	Yves DE WEERDT
Project Partner 18	COVENTRY UNIVERSITY FAB LAB COVENTRY	University or Other Educational Institution	United Kingdom	Sinead OUIILLON

4. Quality of work, project objectives and targets

4.1 Objectives and targets, background and positioning with respect to the state-of the-art

Today's urban transformation processes are mostly based on a top-down approach, with municipalities who often don't have the resources, methods and tools for identifying and satisfying the local needs of communities and neighbourhoods. Open innovation and collective intelligence are crucial for feedback on missing services in specific locations, on potential actions in misused spaces from the local citizens, with their key tacit knowledge. To reduce car-centric mobility in favour of short trips by walk or bike, co-imagination, quasi-experiments and interventions represent promising tools. A strong portfolio of interventions should be co-designed with the stakeholders to ensure a smooth alignment. Methods and tools such as apps of civic technologies can play a critical role in accelerating urban transformation processes towards 15mC visions. All this should be embedded in Living Labs, as concrete realisation of Open innovation hinging on a quadruple helix (citizen companies, academia, authorities). The **goal of the project** is to establish a full, lean, and effective process of citizen-driven sustainable urban transformation and to apply it in use-cases of particular value for the goals of the 15mC. We will demonstrate its actual implementation in Winterthur (CH) and Istanbul (Municipality of Başakşehir) (TR), with a constellation of cities (Bergamo - IT, Pamplona - ES, Geneva - CH, Coventry - UK), some of which are already envisaging use-cases, regional research centres (in Tampere and the Flanders).

The advantages of a 15-minutes city are many, well discussed in the literature ([Moreno et al. 2021](#); [Allam et al. 2022](#); [Balletto et al. 2021](#); [Weng et al. 2019](#)) and demonstrated in reality (C40, including Milan, Paris, Barcelona, Melbourne; [Pinto & Akhavan 2022](#)), drawing on a longer planning tradition ([Pozoukidou 2021](#)). However, in literature (and practice) there is a first major gap: **how to involve the stakeholders and the citizens in the transformation** and thus **to provide realistic market perspective** (effective demand) for the services and functions, especially for services that require minimum thresholds of number of users for their financial sustainability.. The second gap is how these bottom-up indications can be channelled into **decision making processes where finance plays a key role**, in which cities retain the decisive role but the private sector can be engaged. **This risks of making the 15mC a good spatial planning approach without actual provision of opportunities**. We fill the gap, building on 15 years of partners' experience in Living labs and urban labs, open urbanism, and crowdfunding by innovating technology, planning process and finance. A horizontal process leveraging an existing visualisation software, the involvement of citizens in Living Labs, of urban experts, city authorities and stakeholders is conceptualised, practiced and codified in explicit knowledge for replicability for the sake of the 15mC.



To ensure a **holistic, inclusive** and **evidence-based** 15mC concept, in each city, we will analyse the designated locations holistically with an initial overarching consideration of the overall urban context and the quality/quantity of current services that need to become ubiquitous (under 15mC). We will define core neighbourhoods for interventions, which will then be analysed in depth in terms of their deficiencies and advantages and offered to the citizens and other users as a decision-support. Strategies of urban acupuncture will be formulated. In practical terms: in this project, an enhanced version of the open-access *Unlimited Cities visualisation* software, a successful producer of transitional contextualised objects, is coupled with a **marketplace** of objects (mainstream, innovative, and proprietary) that can be inserted in its virtual landscape. The marketplace is populated with objects coming from the private companies involved in the project and from other companies, solicited by project proponents to offer a very wide and pertinent choice, which co-design the image of the possible interventions in the selected neighbourhoods. This software is utilised on the streets and in Living labs. A tagging and a **voting system** are established online allowing people from all over the city to offer their qualitative and quantitative judgement of the alternatives created before. They are **budgeted** as for the range and order of magnitude of the costs – first automatically and then, for the main plausible alternatives, by a team of

experts. The city, the area owner, the envisaged service suppliers and all other stakeholders, detailed mapped, proceed to a **choice**, based on preferences expressed, city strategy and interests, and funding opportunities, including **blended finance and crowdfunding** through the collaborative processes. The implementation process will be accompanied by stakeholder workshops in the format of the City Action Lab public co-creation formats, ensuring partnership and overcoming obstacles in terms of lack of trust. Drees&Sommer (DS) can provide the relevant expertise as a renowned urban project implementation partner (e.g. City Labs to ensure inclusive cities and collective ownership in Mannheim, Athens and Sarajevo).

*Visualisation of the chosen scenario in the project example
Inclusive and evidence-based 15mC Concept Berlin-
Friedrichsfelde by Drees&Sommer*



This "horizontal" process can be used for a wide variety of purposes and territorial challenges.

Our project aims to create synergies between the human-centered open innovation methodology used in the Living Labs ([Von Wirth et al., 2019](#); [Ballon, Van Hoed & Schuurman, 2018](#)), and crowdfunding digital tools ([Chiappini & de Vries, 2022](#)) for the actual implementation of the 15-minute City concept, proposed by C. Moreno, which emphasises the importance of human-centered urbanism, creating diverse, inclusive, and accessible neighbourhoods with the help of political support ([Allam et al., 2022](#)). Open digital tools, can clearly facilitate the implementation of ideas in cities but require better structuring of what is shared. Wicked urban problems require multi-scale action, both in their core and in the second-level clusters ([Gebhardt 2022](#)), thus urban acupuncture (spreading certain functions at neighbourhood level) can abolish the need to make much longer trips (in cars). Finally, multi-stakeholder collaboration

is key to success in creating complex solutions for cities' sustainable development. Living Labs are widely used arenas for such beneficial interdisciplinary collaborations, as certified by ENoLL. Shown in the table nearby, a comparison with other similar EU research projects, selected from a review of 62, demonstrate that our proposal is particularly pertinent to the Call by offering a more comprehensive application of methods and by including the mobility field.

Project name	Human-centered approach & Co-creation	Living Lab methodology	Urban mobility / connectivity & Public spaces	Municipal policies and laws (open urbanism)	Open-source digital tools (crowdfunding platform)	Scaling up and dissemination of project solutions
Our project	+	+	+	+	+	+
oPEN Lab	+	+	-	-	-	+
URBiNAN	+	-	+	+	-	-
UNaLab	+	+	+	-	-	+
Crowdfunders	+	-	-	+	+	-
CityxChange	+	+	-	-	+	+
Smarticipate	+	-	-	-	+	+
Inclusive Public Space	+	-	+	+	-	-
Handshake	-	-	+	+	-	-
Park4SUMP	-	-	+	+	-	-
2ISECAP	+	+	-	-	-	+
Scalable Cities	-	-	+	+	-	+

4.2 Relevance and contribution of the project to the goals of the call

For the specific purposes of the 15mC, and in particular the topics 3, we envisage the following five use-cases, to be implemented as pilot during the project: **PUBLISH (PUBLIC transPort stops and mobility Hubs)** Bus stops, mobility hubs and "shared micro-mobility dedicated spaces" play a key role in how a mobility journey by foot can be perceived as a positive experience. Attributes in this context are, both, the quantity, frequency and types of mobility services available, as well as the pleasantness, safety and functionality of bus stops and mobility hubs. In this use case, we explore the interaction of public transport infrastructure with the population by including elements of bus stops and mobility hubs in the digital library of the app. We explicitly ask the community to "play" with these objects within their neighbourhoods. The aim is to launch a bottom-up process for the design of more user-friendly bus stops and mobility hubs with added services and totally new qualities. This use-case will be carried out in **Winterthur**. The collaboration with stakeholders, including the public mobility operator VBZ,

cooperation partner, will allow including beyond-state-of-the-art bus stops' and mobility hubs.

PASS (reimagining car PARKing Spaces) In many cities, space surrounding the streets is used to park cars. In the direction of more use of active non-motorised mobility, some of these spaces can be redundant and might have a different use. In this application, people are asked to reimagine the use of some of these spaces (e.g. with bike & shared micro-mobility parking spaces, totems for services, leisure appliances, etc.). The full horizontal process will be operated. This use-case will be carried out in **Başakşehir**.

SAVANT (Smart And Visually Appealing waste bins and reuse collection coNTainers) In a 15mC, people need to find places where to bring waste and objects for re-use by others within a short distance from home. But this spatial spread of bins and containers involves a lot of ugly (and even smelling) objects, which cities are already trying to select and adjust to minimise impacts in a technocratic approach. Asking citizens where they want such objects and to choose nicer and smarter solution would explore a larger solution space and increase public acceptance. In the market space, a consortium partner will insert its catalogue of solutions (which includes solar-powered smart bins sending messages to the operators to come and empty the bin when a certain quantity is achieved) and another will bring its knowledge of prices and segregation strategies. Further companies will be looked for. Based on citizens' opinions and differential willingness to pay, a city may undertake a more formal assessment, together with the current waste operator and re-use networks (e.g. FabLabs). This use-case will be carried out in **Winterthur**.

EXFOOT (EXchange stations FOR ObjecTs) Package exchange station, with the aim of bundling deliveries (from online and offline providers), may creating an exchange space for citizens and enhancing the reception options of packages. This means that products cannot be shelved in small shops can be made available in a 15 minutes radius by delivering there (with people reaching the exchange station by foot or by bike), transported by zero-emission vectors. In this use-case, to be carry out in **Winterthur**, citizens will be asked to propose locations of the package exchange stations and detail the specific functions they see as particularly helpful/unhelpful. This will contribute to understand how to best design and locate such solutions in order to maximise their utilisation and reduce distribution related mobility. This will provide lessons also for other companies and cities.

OFTEN (additional services to be provided in connection with decentralised public Offices OF The municipality) The City of **Bergamo** (Cooperation partner) has publicly embraced the 15mC concept and has begun a process of decentralising some of its front offices at ground zone in buildings localized in underserved areas, external to the historical and to the modern city center (Bergamo Alta and Bergamo Bassa). Utilising the solutions of MULTIGINATION, this city intends to explore which further uses and services could be hosted in such locations. The other city authorities, such as the city of **Geneva**, **Pamplona**, and **Coventry**, will choose further use-cases or will replicate one of the above mentioned.

4.3 Overall project type: innovation-oriented approach

The projects builds upon existing tools and experiences, hinges upon a process of real participation and co-design in a network of Living Labs, with city authorities and other stakeholders already onboard and a specific WP5 for them. It aims to have (at least some of) the imagined solutions to be up and running by the end of the project in the logics of pilots (TRL 6-7). Accordingly, it takes an Innovation-oriented approach and will help communities to live in more healthy, reachable and greener communities, by advancing at multiple local scale the development, implementation, demonstration, testing, evaluation, and uptake of new localised products and services.

4.4 Added value of international co-operation

The project enters into the neighbourhood dimension of polarised examples of national contexts (high and middle income, large and small, traditional and innovative) to test if the horizontal process can work in all of them, thus producing the seed for transferability. In each city, there are established Living Labs and smart city units, used to cross-border cooperation on sustainability. We shall be benefitting from research, technologies, innovations, tools and experiences of other partners, utilising resources and capabilities to maximise best results, to out-scale the successful interventions in different countries and financial settings. We envisage temporary exchanges of human resources.

5. Expected outcome and impact

The adoption of the horizontal process in the cities by the chosen use-cases will have as outcome at least 200 imagined and visualised interventions in at least 15 critical areas. At least 80% of the interventions will have corresponding budgets, 40% will be subject to voting systems, offering at least 30 highly credible solutions. Within the duration of the projects, at least 5 key decisions will be taken by the cities and their stakeholders, opening the road to the crowdfunding campaigns. We aim at having 3 funded realisations, of which 2 up and running by the end of the project. Within 2 years after the end of the project, we expect and will work for having 12 up and running interventions.

In synthesis, the following urban impact are envisaged in the cities:

- a reduction of 40% of underserved areas of Winterthur with respect to the use-cases;
- a re-utilisation of significant areas currently used for cars in Başakşehir;
- further progress in the typical KPI of the 15mC across all involved cities.

The City of Winterthur with over 120'000 inhabitants is the 6th largest city of Switzerland and covers an area of about 6'800 ha. The project will integrate and positively impact the execution the Smart City Winterthur strategy (hinging on an Innovation Team comprising at least one representative from all city departments as well as from the local science partner ZHAW Zurich University of Applied Sciences) and its annual Innovation Credit to support smart city pilot projects. In 2019, Winterthur received again the European Energy Award® Gold for its ambitious masterplan and promising implementation measures moving towards a 2'000Watt society. This project will contribute to promote sustainable mobility: the Winterthur 2040 development perspective sets Winterthur as a "5-minute city". This includes a seamless bicycle network, obstacle-free and safe footpaths, good public transport services and the promotion of electro-mobility. The use-cases are directly addressing urgent needs; despite an overall well-developed public transport system based on urban trains, busses and trolleys, Winterthur's mobility system is still dominated by cars. Micro-mobility and particularly the availability of e-scooter sharing (as the ones provided by Lime in most European cities) has rapidly spread in Switzerland during the last years, is available in Winterthur and could play an important part in adding flexibility to the mobility systems, but its uncoordinated introduction has often led to contrasts between their users and citizens less open to these kinds of solutions. At the same time, the concept of mobility hubs, in the sense of aggregators of public transport and alternative mobility services to empower non-car-based mobility has attracted a lot of interest among municipalities during the last years. The public transport provider of the City of Zurich (VBZ), cooperation partner, has recently developed a mobility hub concept ([ZüriMobil Stationen](#)) which is being tested in the city. Hence, a deeper understanding of mobility hubs and their shaping with micro-mobility options, involving a broad part of mobility users, is key for the successful transformation of Winterthur's mobility away from car use. Finally, in view of the growing volume of online shopping and related delivery traffic, the city is strongly interested in alternative logistics solutions that can reduce the presence of goods transport vehicles and enhance the flexibility for customers.

In Başakşehir (Turkey), municipality of more than 300 000 inhabitants, integral part of the city of Istanbul, the impact assessment indicators that will be measured before and after project rollout will be:

- Physical activity levels of citizens
- Average body weight of the citizens
- Average BMI of citizens
- % of products and services citizens have been able to reach in 15 minutes and or vice versa the % of products they haven't been able to reach
- CO₂ emission levels
- Noise levels
- Happiness index

In terms of qualitative impact, in all cities tracked indicators are the diversity of the background of the people participating to the Living labs and use-cases. The trust generated by the process allows for deliberation on the meaning to be given to territorial transformations, the priorities and the political and technical choices to be privileged, conditions for the best possible appropriation of more inclusive and sustainable lifestyles.

The overall impact within and beyond the cities will be particularly linked to the following factors:

- **a large increase of the portfolio of solutions and crowdfunded / blend-funded projects**, including links with Deep Demonstration (Climate-KIC);
- **integrated and applied co-research** also in link with national key innovation funding programs (Innosuisse **Innovation Booster** and SFOE **SWEET**);
- **Capacity building**: development through research and innovation (R&I) projects of **skills and tools** (including technology) available e.g. in the ENoLL platform of e-learning, with special reference to the Living Lab Integrative Process;
- **Urban policy support**: help cities in their transition towards a more sustainable economy and functioning in the link with H2020 2ISECAP: co-design of urban energy & climate plans;
- **Demonstration and mainstreaming of results**: make urban change happen and boost the urgently needed urban transformations, and bring existing and new knowledge and evidence into action with an focus on transferability, out-scaling, new and fairer financial models.

In market terms, for the private companies involved in the project and in the marketplace, we aim to provide **export opportunities in Finland, Switzerland, Turkey, Italy, Spain, Belgium, UK** (where consortium members and cooperation partners are located), for a total **target turnover** of 3 million Euro. We aim to involve in the marketplace at least 30 companies.

An additional value is the opportunity for scale up and scale out through the ENoLL Action-Oriented Taskforce Energy & Environment led by J. Mastelic. ENoLL has certified more than 500 Living Labs and has a **current membership of more than 180 Living labs**, operating on urban and rural areas, in all EU country (80% of membership) and beyond (20%), and that the **app embedding open-source software, the marketplace and a manual for the implementation in any other city and context will be released for free during and after the project**, we estimate that, within 3 years after the project has ended, at least **50 cities** in EU, Switzerland, Turkey and other countries will have downloaded the software and activated at least preliminary participatory processes. Within the project period, we expect this number to be at least 15.

In scientific terms, we aim at 4 submitted papers to journals of relevance for the disciplines involved and for policymakers. We shall be participating in at least 6 international conferences presenting the process and its results and opportunities for replication. In particular, we want to argue, and demonstrate by real examples, that the 15minC is not a utopia nor a fashion but a fast-implementable urban reorientation, providing significant emerging system-level effects. Not a masterplan needing billions, not a book by dreamers, not an empty participation process without fulfilment of the best proposals – but a realistic pathway of bottom-up change shift how people perceive the relative attractiveness of car vs. non-car modal choices, thus behaviours.

Overall, we intend to significantly contribute to the success of the 15mC in EU and beyond, thus participating to the international movement of urban revival, sustainable urbanisation and the related Sustainable Development Goal (SDG11: Sustainable Cities and Communities), also in transversal relation to goals on which we as researchers, cities, companies and stakeholders are systematically involved: the Climate-neutral and smart cities EU Mission (to which Tampere and Bergamo have been selected), the Zero Pollution Stakeholder Platform (to which ENoLL participates, supported by HES-SO). In Switzerland, the impact of this project will be synergised with the LANTERN project, a large SFOE SWEET project aimed at influencing lifestyles and working habits in cities, led by HES-SO and supported by ZHAW, City of Winterthur and 14 other partners.

6. Quality and efficiency of project implementation

6.1 Outline of the work programme

Workpackages		2024				2025				2026			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Software enhancement												
2	Marketplace development												
3	Voting system												
4	Crowdfunding and blended finance												
5	Support to decision-making												
6	Urban analysis, use-cases and stakeholder management												
6.1.	Winterthur												
6.2.	Başakşehir												
6.3.	Bergamo and other cooperation cities												
7	Knowledge transfer, dissemination and impact												
8	Project management												
Milestones													
M1	Software tested and approved												
M2	Software released to project participants and cities												
M3	10 companies participate to the marketplace												
M4	Guidance for crowdfunding issued												
M5	Manual for use-cases ready												
M6	15minC local analysis carried out and critical zones identified												
M7	Citiens' involvement session, including in open areas and Living labs, carried out												
Deliverables													
D1	Software released in open-source accessible repository												
D2	First cycle of solutions for the use-cases												
D3	Second cycle of solutions for the use-cases												
D4	Crowdfunding campaigns												
D5	Successful urban interventions												
D6	Manual for replicating the horizontal process into new cities and usecases												
Main meetings involving travel													
	Kick-off	CH											
	Finalisation of software and consortium meeting				CH								
	Regular consortium meetings					FI		TR		FI		CH	
	Dissemination in Cooperation partner cities												

WP1. Software enhancement (Lead: OUF; Partners: HES-SO, ZHAW, CITYWIN, VITO, VISIO) TRL6

This WP starts from an existing, trialled and tested open-source visualisation software, which allows to visually propose urban transformation processes. *Unlimited Cities* has been already utilised in 20 countries and different types of human settlement, from village to metropolis, from slums to healthy cities, to involve citizens and decision-makers in a process of open urbanism. One of the platform's innovative features is to combine quantitative and qualitative data, 360° citizen visions and expertise, individual and collective thinking. The WP1 enhancement will add a business-friendly interface to upload catalogues of real products, the technical possibility of providing monetary values for the price of the products, differentiated per geographical area, and its language localisation. More broadly, this WP will technically implement the requests based on the needs of WP2, WP3, and WP4, and features co-

designed with stakeholders (notably the city authorities and the cooperation partners). The notion of modularity and interoperability between the software will be at the centre of the developers' work to allow the first cities of the project (in WP6) to finely adapt the tool to their needs. This flexibility will allow maximum impact and use for other cities in the future.

WP2. Marketplace development (Lead: TAMK; Partners: ZHAW, DS, LEHTO, PJ, VITO) TRL6

This WP will engage companies and stakeholders for the goal of extending the current library (120 items) and computing or retrieving price (min, max, and modal value, differentiated for the three countries and cities). The companies participating to the consortium – and the others contacted by partners (at least 5 per partner) and by cooperation partners, for a total of at least 30 companies, will insert in the marketplace at least 100 products of their catalogue. In addition to material items, also services and intangibles will be included. This allows users (citizens and stakeholders) to have a very broad and pertinent enhanced library of items. In most round of utilisation of the software, we shall be collecting new proposals emerging from citizens and enrich the library correspondingly, drawing on the Living Lab Integrative Process (Mastelic, 2019 and LANTERN project), here depicted:



WP3. Voting system (Lead: CITYBA; Partners: HES-SO, CITYWIN, ZHAW) TRL6

The current version of the software allows for qualitative "tags" that allow to clustering solutions. This WP will structure and design the architecture for a web-based voting system in which remotely all inhabitants of the city can express their preferences (likes, dislikes, potentially graduated). It will provide inputs to WP1 for the technical enhancements of the software and to WP5, where other platform of voting may already be existing. Overall, this module democratizes the decision-making process and reconciles the ebullient creativity with the necessary consensus. It provides policymakers inputs for the relative popularity and level of controversy surrounding the different options.

WP4. Crowdfunding and blended finance (Lead: HES-SO; Partners: WEMAKEIT, ZHAW) TRL6

Crowdfunding for urban projects has already been proposed (Chiappini and Vries, 2021) and met some difficulties (deFreitas, Amado 2013). For this reason, we build upon the very successful experience of the partner wemakeit.com. During the 36 months of the project, we shall try to establish new links with nationally appropriate crowdfunding platforms in IT, FI, BE, TR, UK. In other terms, we are structuring a space of solutions that crowdfunding platforms typically take for granted but that need to be structured to enhance the collective intelligence and the public good, with the intentional participation of the city.

With this WP, we structure the connection of the software to crowdfunding. A “prospective crowdfunding” mechanism reveals the willingness to pay for the intervention, which is actually converted in a real crowdfunding campaign, if the city, in accordance with the owner of the space and possible further partners, decides to select the option (in WP5 and in WP6). The users' economic attitudes are tested in three levels: 1. by asking users a simple willingness to pay for having the transformation implemented; 2. as potential demand for the services provided (e.g. asking how many times you would go there and how much you may typically spend); 3. a real crowdfunding campaign (e.g. all-or-nothing or with Impact booster, when additional investors kick in after a certain sum has been achieved).

This WP determines, based on the partners' experience and business contacts, the key factors for crowdfunding to be successful and issue guidelines for crowdfunding, for the sake of WP6 and future uses. Moreover, it supports WP6 in actual campaigns. In particular, the city of Winterthur might open a channel, use the visualisation tool (and possibly other smart tools they are independently developing, e.g. based on Decidim) to provide an exploration of possible alternatives and then officialise the launch of the campaign once things are mature enough, maybe by providing "Impact boost" by the city and further stakeholders. We are very aware that, in many instances, crowdfunding supports citizen's engagement but cannot alone finance significant urban transformation, so this WP will conceptualise and mobilise a blend of further funding, by approaching key players both in the private and the public sector.

WP5. Support to decision-making (Lead: CITYWIN; Partners: OUF, ZHAW) TRL6

This WP institutionally connects the bottom-up approach to the level of policymakers. The WP5 brings in the project the point of view of the city authorities, which may want to select specific critical locations, ex-ante limiting the list of available options, and will need to mobilize their technical departments in the moment a certain solution takes a public process (e.g. tender), by providing the preliminary level of project and an economic assessment that serves e.g. as bid starting value. Please note that, conversely, in other cases, the owner of the area may be a private and that the intervention may be following private procedure. More broadly, this WP recombines the results of the other WPs to ensure that they are in line with the city strategies. It supports WP6 where specific choices are made with more general guidelines and approaches.

WP6. Urban analysis, use-cases and stakeholder management (Lead: DS; Partners: OUF, ZHAW; WP6.1. Lead: CITYWIN; Partners: ZHAW, VPZ; WP6.2. Lead: CITYBA; Partners: HES-SO; WP6.3. Lead: CITYBG, CITYPA; Partners: HES-SO) TRL7

This WP encompasses a comprehensive urban research and integrated urban analysis, stakeholder involvement and management through City Action Labs, as well as scenario visualization based on the identified core zones for interventions. This WP, therefore, supports in creating evidence and stakeholder alignment that is necessary to implement the 15mC concept. It is articulated in three phases: Phase I: Integrated urban analysis of the overall urban context and the quality of current services. Phase II: Intervention scenarios co-design via visualization and Living labs Phase III: Actual urban intervention orchestration with the stakeholders. The use-cases in every city are included in this WP.

WP7. Knowledge transfer, dissemination and impact (Lead: HES-SO; Partners: DS, OUF, ZHAW, VITO, CITYCO, ENOLL) - This WP aims to engage the current Cooperation partners and to enlarge their ranks. It aims at scaling out and scaling up the impact of the project by supporting dissemination of the open access software and its enhancements. It will bring the project to international fora. It will collect evidence of the impact of the project in the participating cities and beyond. It will also support a capacity building program. WP8. Project management (Lead: HES-SO; Partner: ZHAW) This WP provides the organisational support necessary for a successful project operation and implementation. This includes coordination and monitoring actions, project planning and progress control, internal collaboration, organisation of project meetings, management of the digital workspace, community management, administrative, technical and financial reporting, data, ethics and quality control and risk management, innovation management, impact monitoring, establishing and maintaining links to national funding agencies in all the involved countries and with the EU.

6.2 Project consortium, transdisciplinary, stakeholders' involvement

Project consortium

The consortium is composed by 5 city authorities (Winterthur, Başakşehir, Bergamo, Coventry and Pamplona), 3 universities (HES-SO, TAMK, ZHAW), a research institute (VITO), a primary engineering and architectural company (Drees&Sommer Schweiz AG), 4 private companies (LEHTOVUORI OY,

PIRKANMAAN JÄTEHUOLTO OY, VISIO, ASSOCIATION WEMAKEIT.CH AG), a foundation (Open Urbanism Foundation) and an international association (the [European Network of Living Labs](#)). The cooperation with stakeholders is at the heart of Living Labs, animated by partners in 5 cities and regions (Sion, Tampere, Başakşehir, Flanders, Coventry). MULTIGINATION is led by **HES-SO**, a leading university of applied sciences in Switzerland (>21'000 students, >10'000 collaborators, about 900 FTE dedicated to R&D). FP7: 30 collaborative projects (3 as coordinator), H2020: 34 projects (4 as coordinator). The research group "Energy Living Lab@HES-SO" builds on 15 years of experience in co-designing interventions with stakeholders in Living Labs. Recent projects: [INTENSSSPA](#) (framework for integrating spatial & energy planning), [H2020 2ISECAP](#) (co-designing an integrated city plan together with the key stakeholders), [H2020 SCORE](#) (co-designing mitigation plans for coastal cities), [Green Deal Open Lab](#) (co-designing and implementing retrofitting in 3 European neighbourhoods). HES-SO leads large-scale national programmes ([Innovation Booster](#) & [SWEET LANTERN](#)). The Zurich University of Applied Sciences (**ZHAW**), a leading university of applied sciences in Switzerland (25'000 students and 3'500 employees), will be represented by the researchers of the Institute of Sustainable Development, having a long tradition in socio-technical research aimed at sustainable mobility and energy systems. Through high profile transdisciplinary projects (e.g. SCCER Mobility, SWEET Lantern, SWEET SWICE), it is involved in state-of-the-art research on the promotion of public and active transport use, Mobility-as-a-Service, the adoption of electric vehicles, the potentials of automation & optimization of goods delivery. [Smart City Winterthur](#), as part of the City Development area of the City of Winterthur (**CITYWIN**) initiates, accompanies and implements projects covering areas such as energy, mobility, housing, education, smart government in a logics of multi-stakeholders involvement. Verkehrsbetriebe Zürich (**VBZ**) is an operator of public transport. The Open Urbanism Foundation (**OUF**) promotes in Switzerland and internationally the creation of inclusive and sustainable territories through the integration of civil society and stakeholders in decision-making. To create its concepts, methods, projects and free civi-techs, the Foundation relies on the 7 Billion Urbanists collective, an international network of multidisciplinary teams in Germany, BE, FR, CH, Mexico, USA, Ecuador, China and Taiwan. One of the leading consulting, planning and project management enterprises, Drees & Sommer Schweiz AG (**DS**) has supported private and public clients and investors for 50 years in all aspects of architecture, urbanism and (digital and physical) infrastructure. Through its *Integrated Urban Solutions* approach, our interdisciplinary teams can offer holistic approaches for successful buildings, people-oriented urban environments and visionary spatial concepts. The company's 200 employees in 3 Swiss locations (Lausanne, Basel, Zürich) provide support for clients from a wide variety of sectors across the world, in an holistic approach (*'the blue way'*) WEMAKEIT (**WM**) is a cutting-edge civic crowdfunding platform with an experience of 10 years and 6'000 project successfully funded in Switzerland, where it has legal standing. It has a current portfolio of more than 80 proposals (5'000 to 55'000 CHF), including many on the [environment](#), with [one](#) that is already in the logics of the 15mC. The Tampere University of Applied Science (**TAMK**) is a prominent applied science universities in Finland and is key to support the city into its goal of climate neutrality by 2030. Lehtovuori (**LEHTO**) is a highly innovative Finnish company offering urban goods. Pirkanmaan Jätehuolto (**PJ**) is a company offering key urban services to a group of Finnish municipalities. Başakşehir Living Lab (**CITYBA**) is Turkey's first Living Lab certified by ENoLL in May 2012. Involved in [UNaLab](#) and [METABUILDING LAB](#), Başakşehir Living Lab is the Başakşehir Municipality Innovation and Technology Center (whose building is LEED Gold certified) located in Başakşehir District, one of the 39 municipality level districts of Metropolitan City Istanbul. With a land size of 105 km², Başakşehir is a rapidly growing modern city, now over 400 000 inhabitants. VITO Nexus is part of the Flemish Institute for Technological Research (**VITO**), an independent Flemish research organisation that provides scientific advice and technological innovations that facilitates the transition to a sustainable society in the areas of energy, chemistry, materials, health and land use. FabLab Coventry, a joint venture between Coventry University and Coventry City Council (**CITYCO**) representing a physical space for our Urban Living Lab activities is an Inspirational community maker space that combines research and citizen science with practical social innovation and prototyping to support vulnerable communities and the circular economy.

7. References

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The Call asks to select here only five references. We chose the abovementioned, out of a much larger reviewed literature, for the following features:

The first summarises the strand of research on the 15minC. The last one can be used as reference on Living Labs. The other three are authored by members of MULTIGINATION team. They reflect the awareness of complexity and the intentional construction of proposals capable of leveraging it towards a more livable planet, conceived as mosaic of small walkable, bikeable, energy efficient and thriving neighbourhoods.