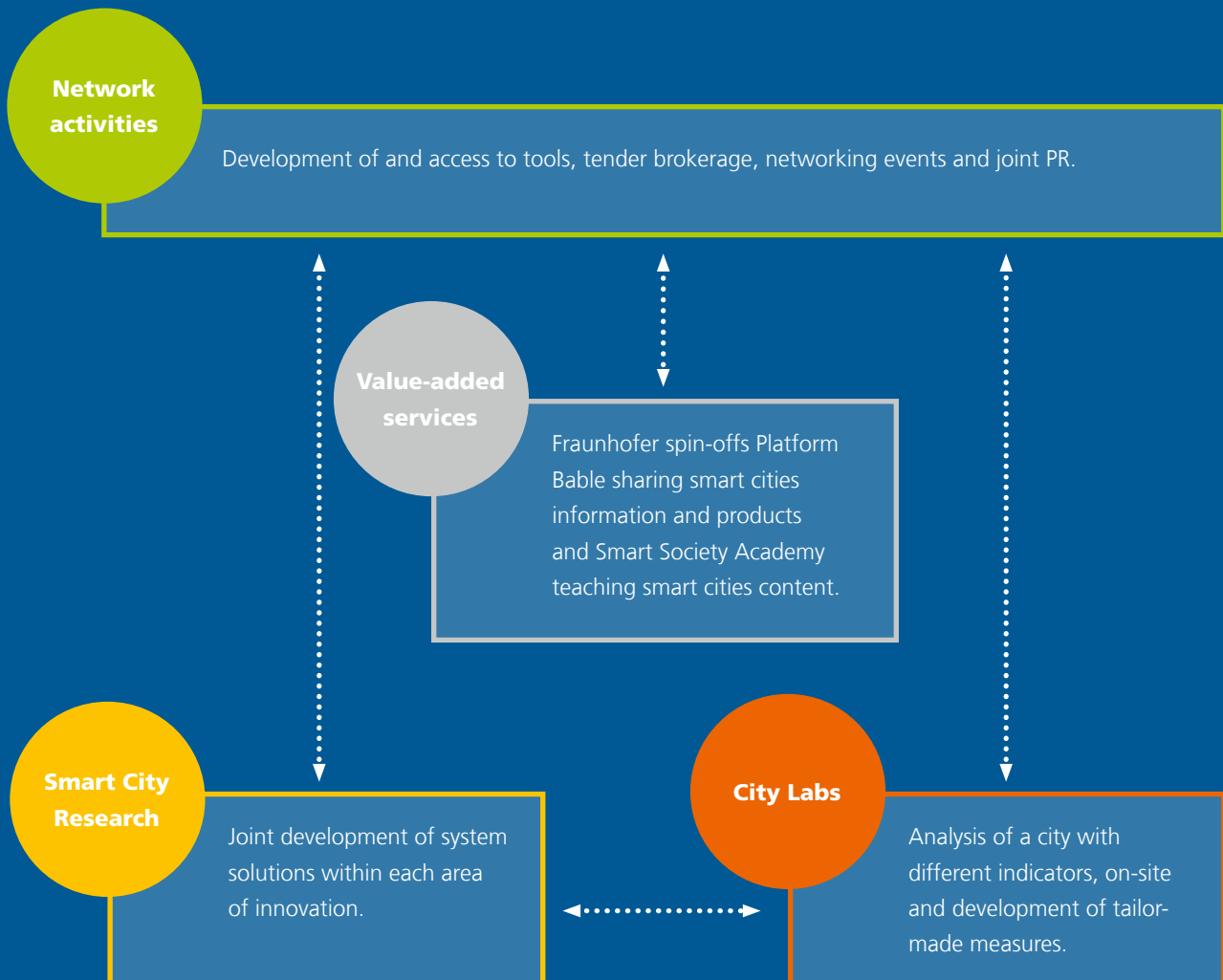


Innovation Network »Morgenstadt: City Insights« Phase III

WORK PROGRAMME 2018–2019



Morgenstadt Phase III



Graph 1: Pillars of work programme 2018/2019

1 WORK PROGRAMME 2018–2019

The project phase 2018 – 2019 of “Morgenstadt: City Insights” will seamlessly connect to the previous project phases: together with our Morgenstadt Network partners new technology concepts and creative solution strategies will be identified, adapted to real-life project requirements and tested in several pilot projects for practicability and feasibility. Morgenstadt partners are able to exploit a broad range of research results that have been developed since 2012 and capitalize on innovative ideas for sustainable cities.

For achieving our ambitious goals connection between applied research and strategic business development is the key. For research and project realization the Morgenstadt Network is focussing on the three pillars: Morgenstadt research, Morgenstadt City Labs and Innovation Partnerships.

1.1 Morgenstadt City Labs

Since 2014 the Morgenstadt Framework has been applied to city labs in Prague, Lisbon, Leipzig, Tbilisi, Chemnitz, Berlin TXL and Sabadell. In different variations the city lab approach has also been successfully piloted in South-East Asia and in Latin America.

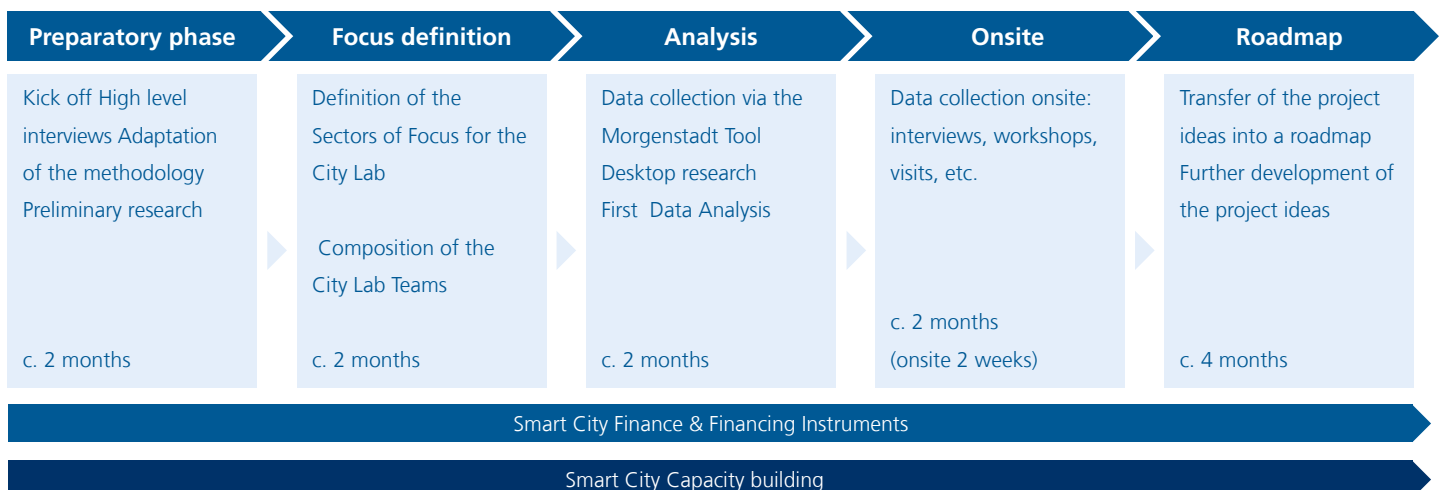
Based on this work, in 2018 / 2019 we strive to address more cities with the Morgenstadt City Lab approach in different forms ranging from a joint modular consultancy to the development of fully fledged urban innovation strategies and smart city investment plans:

1.1.1 Modular City Labs and digitization strategies

The Morgenstadt framework consists of several integrated modules, together forming the »City Lab«. In some cases cities do not need the full application of the Morgenstadt City Lab, but are still in need of elements of the framework.

In the work programme 2018 / 2019 the Morgenstadt management strives to modify the City Lab as a modular offer towards a joint Morgenstadt consultancy for different types of city needs:

- Designing and supporting digital transformation strategies of municipalities
- Developing sector-specific development & innovation strategies and bringing them towards implementation (e.g. City Lab on sustainable mobility or energy)
- Offering semi-automated and online-based assessment and analysis of indicators and action fields for different types of cities.



Graph 2: City Lab process

Initiatives like the „Digitale Zukunftskommunen@BW“ with several cities in Baden-Württemberg (Germany) or the Morgenstadt Global Smart Cities Initiative supported through the international climate fund, will be used to pilot these refined city lab approaches. Morgenstadt members, especially our partner companies, are invited to be part of the assessment and development team and / or to play a role in action planning and implementation of projects as a result of the City Labs. This not only enables them to gain hands-on expertise in shaping urban innovation processes, it also helps position their own solutions in a process that aims to solving city challenges.

1.1.2 Linking global urban development, innovation and climate funding

The Morgenstadt Initiative can and will make a strong contribution towards achieving the global sustainability goals. The unique constellation of research, companies and cities enables bringing innovation (clean and connected technologies) to the core of a sustainable development of cities worldwide. Especially in developing countries in Asia and Latin America we are able to contribute to a better, climate friendly and resource-efficient urban development in fast growing cities, by making use of climate finance and dedicated funds around sustainable development.

Throughout 2018 / 2019 we will apply the Morgenstadt Framework as a pre-investment assessment tool in Peru (Piura), India (Coimbatore and Kochi), Mexico (Saltillo), Brazil (Joinville) and other emerging economies, working closely with development and finance institutions.

Here again our Morgenstadt partners are invited to contribute with their knowledge and expertise as sub-contractors during the process or with technologies and solutions for a future-proof investment in the urban areas. Moreover, there will be a knowledge dissemination process between the Morgenstadt

Global Initiative and the Morgenstadt Network and the partners will have access to the adapted Morgenstadt Framework.

1.2 Morgenstadt Smart City Research

Out of the Morgenstadt innovation areas we will focus on 2 – 4 research topics in 2018 and 2019 as listed below. However, new Morgenstadt research initiatives may be started by any partners at all times.

Morgenstadt partners are invited to co-create the research initiative, to attend the initial meetings and workshops and to enroll in the projects over a course of 18–24 months.

1.2.1 Value of Urban Data

The urban data market today is still in an exploratory phase. There are no universally accepted approaches that would enable cities to fully understand the value of data and their entire potential for a sustainable and smart urban development. While governments ought to become more deterministic in their data strategies, setting up a system to govern the data innovation transmission and exchange is absolutely crucial. Furthermore, a comprehensive city data architecture is yet to be constructed and data-driven business model that address urban negative externalities are yet to be tested and proven.

Our Morgenstadt cities Berlin and Dublin, together with new Morgenstadt Partner cities like London, Copenhagen, and Vienna will lead the way in pushing the understanding of aggregate value of urban data, with a variety of use-cases developed uniquely in each of the four cities. From the Night-time Economy to Connected mobility and Urban Labour Markets, better work with urban data will capture more of its value. Throughout the VoUD project, 16 – 20 smart city use

cases will be modelled for the selected cities, capturing and monetizing the value that comes with the data provided as prerequisite for implementation.

The joint platform for sharing data and understanding values and impacts will be set-up and operated by Fraunhofer IAO and Fraunhofer FOKUS. It will ensure interoperability based on EU standards and provide data security and data protection for all partners. The joint consortium will share own data for research purposes. Project partners are requested to sign an NDA.

Methodologies: modelling & simulation via system dynamics; value capture with holistic cost-benefit models; integration of data-sets of partners

Use cases: Connected urban mobility, nighttime economy, urban labour markets, real estate markets, environmental monitoring, integrated carbon neutral energy systems, etc.

Results: VoUD project partners will receive a value-tag for data sets and simplified models to calculate urban benefits and return on invest per use case in any city.

1.2.2 Mobility as a service (MaaS)

Based on an applied-research approach, Morgenstadt partners strive to design and implement new hybrid mobility service systems in 1-3 selected cities. A joined research project on MaaS helps break down mobility innovations into an overarching mobility service on city level. New mobility solutions like autonomous vehicles, last-mile micro-mobility or sustainable city delivery systems will be seamlessly integrated

into the existing transport infrastructure and public transport services, upgrading the urban mobility systems and reducing the necessity for private car ownership and usage,

- Value-oriented: development of new hybrid business models at the interface of private and public mobility operators
- Technology based: development and piloting of new technology solutions (e.g. mobility hubs, mobility platforms).
- Inclusive: integration of needs (citizenship, overall system) and offers (private, public, economic)

The project aims to establish innovation partnerships to design and implement MaaS in selected cities with local companies, SMEs and transport providers to synchronize heterogeneous / transactional transport services, infrastructures and mobility data to develop new mobility service delivery systems.

Methodologies: We will apply the Fraunhofer LivingLab format as an organizational and territorial framework for the strategic development and piloting of integrated mobility service systems.

Use cases: autonomous driving, micro mobility, city logistics, intermodal transportation. Ict-enabled urban movements, intelligent transport systems.

Results: MaaS project partners will become part of real world pilot projects to showcase the connected urban mobility system of the future.

1.3 Innovation Partnerships

Morgenstadt Innovation Partnerships come in two different forms:

- a) Local / Regional Morgenstadt Clusters
- b) Business innovation strategies for the smart city market

The locally focussed innovation partnerships help partner cities with inducing individual innovation processes that link local businesses, citizens, the administration and Morgenstadt business and research. In 2018 & 2019 we aim to establish and foster 5 strong local Morgenstadt Innovation Partnerships in our partner cities.

Business oriented innovation partnerships are directed at uncovering and accessing the market potential of smart cities together with our corporate partners. Corporate Morgenstadt partners are supported in designing applicable smart city implementation projects that lead to successful new business models in different areas of smart cities.

1.3.1 Local Morgenstadt cluster

In the past years, Morgenstadt has successfully established innovation partnerships with cities across Europe. Some of them embedded in research projects (e.g. Leipzig, Reutlingen or Prague) some of them with an innovative approach to design and foster local living labs that eventually become the core of a larger innovation-based growth strategy.

In essence, we identify local innovation capacity and match it with innovative solutions and approaches from research and industry partners to create strong partnerships on urban innovation. The sequential steps of the local innovation partnerships involve:

- Assessment of needs and innovation potential with proven Morgenstadt assessment tools
- Innovation workshops with the municipal partners, the wider ecosystem and Morgenstadt solution providers around identified needs
- Identification of funding opportunities and application for funding
- Project development, innovation procurement and neutral expert support for developing public tenders and public-private-partnerships

We strive to establish Morgenstadt Satellites together with the innovation ecosystem of 4-5 cities, leading towards a set of interrelated innovation projects in one place. In Eindhoven, Bremen, Copenhagen and Ludwigsburg (among others) we will engage with utilities, the municipality and universities to launch and manage innovation projects around infrastructure and urban development. This may eventually lead to a permanent Morgenstadt office in these locations.

Local Morgenstadt Innovation Partnerships exist with cities of Ludwigsburg, Eindhoven and Reutlingen. Morgenstadt's innovation partnership generates visibility through lighthouse projects, sustainable growth and its inclusive approach.

Cities interested in setting-up Morgenstadt Innovation Partnerships are invited to approach us at any time.

1.3.2 Business Innovation strategies

The second kind of innovation partnerships supports companies that aim to succeed in the smart city market. A Morgenstadt Innovation Partnership generates visibility for the company and positions it right in the front in the market. Expert knowledge concerning technologies and digital business models, the direct access to decision-makers of lighthouse cities in Europe and an application-orientated approach makes the Morgenstadt Innovation Partnership to a successful model. The result of Morgenstadt Innovation Partnerships consist in successful business strategies and projects with cities and municipalities in Europe and worldwide.

Morgenstadt Innovation partnerships exist with companies such as Robert Bosch GmbH, Tüv Süd or EON.

On a longterm perspective, Morgenstadt Innovation Partnerships empower companies to transform their own processes and structures as a basis for a future-proof company development.

1.4 Morgenstadt Network Activities & Knowledge Transfer

1.4.1 Online check for cities

In the past 6 years the Morgenstadt Network has developed a set of high-quality tools for analysis and transformation of cities. Yet, many cities are not aware of the existing tools or may not be able to afford a full Morgenstadt analysis. Especially small and medium sized cities are often left-out of the transformation process.

Starting in January 2018 the Morgenstadt management will set-up an easy online assessment for cities to rate their own maturity across several areas of a sustainable and innovation-driven development. Along with helping cities to gain a quick understanding of areas of potential improvement, the online check is also meant to serve as a first interface to the Morgenstadt Innovation Network.

Our declared goal is to increase the number of active cities in the Morgenstadt Network. The online check will allow us to reduce barriers for interaction with cities at a very early stage.

Methodologies: Simplified Morgenstadt Framework in a free online assessment tool accessible via the Morgenstadt website.

Use cases: Cities from all over Europe will be invited to perform the assessment and engage with the Morgenstadt initiative around the development of strategies and the procurement of solutions.

Results: A growing number of city profiles, contacts and identified needs will provide for transparency and business intelligence for the Morgenstadt members.

1.4.2 Urban innovation radar

Autonomous cars, 5G networks, narrow-band technologies, delivery by drones and robots, artificial intelligence, blockchain-based transaction platforms etc. A large set of digital technologies will transform the way cities operate and provide services in the future. Today it is difficult for many cities to understand the rapid transformation that is about to happen in the next 10 – 15 years. Especially when it comes to the potential impact of individual technologies on the urban fabric and various city systems. We aim to support our partners by helping them prepare for the digital innovations that will have an impact on cities in the upcoming years (5 – 10 years).

Methodologies: The innovation radar will be based on the Fraunhofer IAO technology radar and will encompass input from our corporate and city partners.

Use cases: IoT enabled urban technologies and nature based solutions in the Morgenstadt research areas (Mobility, Energy, Water, Waste, Governance, Security, Buildings, urban space).

Results: Exclusive urban innovation radar that identifies and rates a large set of emerging technologies and solutions for cities with regards to their potential urban impact and the pro's and con's for investment.

1.4.3 Morgenstadt start-up challenge

As knowledge becomes more important, innovation becomes a key prerequisite to propel the transformation towards healthy, sustainable and liveable societies. Innovation, however, is nothing that can be ordered on demand. Innovation happens and we cannot plan it.

Yet, when innovation happens, we can make sure it is embedded in the best available environment that allows for rapid prototyping and testing, provides instant feedback (on

success or need for change) and nourishes great ideas so they become strong new offers to the market, triggering demand and interest.

Together with our partners we will organize the second Morgenstadt start-up challenge in 2018, identifying start-ups that work on innovations matching the portfolio of our partners and / or delivering solutions for pressing challenges of our city partners. The winning start-ups will be awarded with a free membership of the Morgenstadt Innovation Network and included in ongoing research and innovation projects.

Approach: Based on consultations with our partners, start-ups and young SMEs will be asked to submit their solutions, ideas and prototypes for making an impact in the city of the future. A joint Morgenstadt event in 2018 will be used to select the most promising start-ups and provide them with a free Morgenstadt membership over 1–2 years.

Focus: The focus of the start-up challenge will be collectively defined by all partners.

Results: New solutions that may support the business development of our Morgenstadt partners and have the potential to solve specific challenges for our city partners.

1.4.4 Ongoing network activities

Since 2014 Morgenstadt consortia raised over 120 Mio EUR of public funding for city-based innovation projects. Most of this funding was gained through a successful application to EU Horizon 2020 projects – such as the SCC1 lighthouse projects on smart cities and communities.

The joint acquisition of public research funds by Morgenstadt consortiums for high-potential innovation projects continues to be an important focus in 2018 and 2019. Together with our partners we plan to access national and EU-funding for urban innovation projects in the next years. The Fraunhofer Society can support here neutrally with the tenderings.

Morgenstadt Network Meetings take place 3 times a year and are envisaged to take Morgenstadt Partners to outstanding European (and international) locations of urban innovation (e.g. Eindhoven, Copenhagen, Amsterdam, London etc.). The Morgenstadt Network meetings are great occasions to meet the mayors and vice mayors of our host cities, to exchange with local experts and to raise awareness and communication on Morgenstadt activities in Europe.

The Marketing and Communication strategy aims to establish the Morgenstadt Innovation Network as the strongest European institution, when it comes to urban innovations, sustainable urban development and smart cities. Therefore the project management will organize a range of marketing and communication activities that position Morgenstadt Partners in the core of international dialogues on smart cities:

- Joint organization of trade fairs and international events
- Representation of Morgenstadt at international fairs and events
- Intensification of social media communication and opening-up of Morgenstadt Newsletters to all interested parties

2 PROJECT MANAGEMENT

The overall coordination of the Morgenstadt Network is realized by the Fraunhofer Institute for Industrial Engineering IAO. Project management tasks include:

- Coordinating the flow of information between all parties involved
- Administration of the City Insights Online Platform
- Organization of events and workshops
- Public relations and communication
- Coordination of contractors and third parties within the project framework

Newsletter, E-Mails, Online Platform

Communication between project members and project management will take place primarily in the form of regular e-mails, newsletters, compressed reports, and briefings on ongoing projects and developments.

Partners in the City Insights Network receive monthly newsletters with information about current research projects, conferences and events, as well as on important developments and initiatives in key sectors of interest. Information on organizational issues (workshops, events, decisions) will be disseminated through E-Mails. The results of systems analysis will be communicated in compressed reports and briefing documents.

In addition to the personal meetings and publications an online platform (JIVE) secures the information flow and enables interaction between all project partners. Through the online-platform members have the opportunity to constantly exchange ideas and information and to extend their contact network. Fraunhofer provides up-to-date information and documents exclusively for the project members at the online platform.

The official "M:CI" language is English. Some specific activities, however, must be conducted in German.

- Research activities and project development in German cities will be conducted in German.
- International research activities and project development will be conducted in English.
- Important documents for all project members will be provided in English. German summaries will be provided upon request.

The language used in network meetings and project management meetings will generally be English.

Steering Committee

The "M:CI" Steering Committee represents an equal share of Fraunhofer representatives (4) and project partners (4: 1 city partner, 1 industry partner, 1 planner, 1 consultant). The goal of the steering committee is to achieve the best representation and integration of the interests of research, cities and industry throughout the course of the project. Representatives from industry and city partners on the "M:CI" steering committee will be elected on an annual basis by all project members. The steering committee will determine the allocation of resources for the project development team. It will also stipulate which cities will be visited by the project development teams and project experts.

The Competence Team „Urban Governance Innovation“ of the Fraunhofer Institute for Industrial Engineering IAO has taken on the task of the overall project coordination as well as main parts of the research performances.

PROJECT MANAGEMENT

Following Fraunhofer Institutes will participate in the research for phase II. This composition guarantees the systemic research approach, because all relevant sectors of research and project development are perfectly covered.

- Fraunhofer Institute for Open Communication Systems
FOKUS Berlin
www.fokus.fraunhofer.de
- Fraunhofer Institute for Industrial Engineering IAO, Stuttgart
www.iao.fraunhofer.de
- Fraunhofer Institute for Building Physics IBP, Stuttgart
www.ibp.fraunhofer.de/
- Fraunhofer Institute for Factory Operation and Automation
IFF, Magdeburg
www.iff.fraunhofer.de
- Fraunhofer Institute for Interfacial Engineering and
Biotechnology IGB, Stuttgart
www.igb.fraunhofer.de
- Fraunhofer Institute for Material Flow and Logistics IML,
Dortmund
www.iml.fraunhofer.de
- Fraunhofer Center for International Management and
Knowledge Economy IMW, Leipzig
www.imw.fraunhofer.de
- Fraunhofer Institute for Manufacturing Engineering and
Automation IPA, Stuttgart
www.ipa.fraunhofer.de
- Fraunhofer Institute for Solar Energy Systems ISE, Freiburg
www.ise.fraunhofer.de
- Fraunhofer Institute for Systems and Innovation Research ISI,
Karlsruhe
www.isi.fraunhofer.de
- Fraunhofer Institute for Wind Energy and Energy System
Technology IWES, Kassel
www.iwes.fraunhofer.de

In addition there are strategic partners of the Fraunhofer-Society bringing their experience and global network into the project. Among others:

- ICLEI – Local Governments for Sustainability
- LSE – London School of Economics Cities Programme
- DGNB – Deutsche Gesellschaft für nachhaltiges Bauen
(German Council for Sustainable Building)
- Smart Cities Forum
- Smart City Solutions- fair within the INTERG

3 MEMBERSHIP CONDITIONS

Morgenstadt is collectively financed by all network partners. Our aim is to create added value (operative/strategic) for all project partners. Usual duration of project membership is two years.

Network Membership Conditions:

The network participation fee differs for enterprises/ companies and cities.

Enterprises/companies: 37.500 EUR p.a.

Costs cover all network activities and joined research. Included are 2 bilateral workshops between the partner and Fraunhofer.

Start-ups can participate at our Morgenstadt start-up challenge (see 3.2.4).

Cities: free

Cities are expected to „come with a project“. Morgenstadt partner cities formulate their demand and engage in joined project development together with our network partners.

Cities without a specific project contribute with 7.500 EUR p.a.

Research Membership Conditions:

Individual Morgenstadt research projects are not included in the membership fees. There will be separate agreements on research projects based on the project type, focus, and duration and partnership level.

Innovation partnership:

Partners can opt for a Morgenstadt innovation partnership with Fraunhofer. This includes bilateral research and development as well as an individual Fraunhofer expert key account, helping to leverage the network benefits for your city or company.

Innovation Partnerships start at 50.000 EUR (Cities: 25.000 EUR) and can be designed according to the needs of the partners.

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