Joint Programming Initiative

URBAN EUROPE

Global Challenges – Local Solutions

To be delivered to the GPC

Presented by

Austrian Ministry of Science and Research

Austrian Ministry of Transport, Innovation and Technology

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Subject :   Draft template for the submission of a proposal for a theme for a Joint Programming Initiative (JPI) by one or more GPC members

URBAN EUROPE: Global Challenges – Local Solutions

Summary

URBAN EUROPE - A Lens for Global Challenges

The background of this Joint Programming Initiative (JPI) is the ongoing transformation of society, economy and environment. Globally, this is a transformation towards urbanisation. Hence, the future of Europe will largely be shaped in urban areas. It is here, where a series of global challenges and their impact on the social, economic and ecologic subsystems become concrete and must be managed. Major challenges to cope with are social deprivation and segregation, urban sprawl and congestion, environmental degradation and effects of climate change. European countries, wanting to be attractive places to live and work in a global village, should exploit the advantages of urbanised space.

URBAN EUROPE – A Systemic and Innovative Approach

The JPI URBAN EUROPE aims to develop innovative approaches to adequately address these challenges and create urban places of vitality, liveability and accessibility. URBAN EUROPE aims to advance research on the *understanding of the complex urban system* to develop comprehensive *urban policies implications* taking utmost advantage of *emerging technologies and governance solutions* to help developing *prospering European areas.* Building on existing research and policy initiatives, for which it aims to function as a co-ordination platform and a 'clearing house', it brings together strands of thoughts and develops applicable and feasible tools and instruments. URBAN EUROPE addresses research issues on different levels starting from urban scenarios and foresight activities for policy-oriented roadmaps and planning concepts over demonstration and pilot projects to finally monitoring and benchmarking. It will complement major ongoing initiatives for development of new technologies in energy, transport, construction and communication. In doing so, URBAN EUROPE offers an operational contribution to the implementation of Europe 2020.

The JPI will bring together and support the various stakeholders in urban development working on
- urban areas as hubs of innovations and living labs,
- places of social cohesion and integration,
- intelligent intra- and inter-urban transport, logistic and communication systems and
- sustainability and minimisation of ecological footprint of urban areas.

URBAN EUROPE - Added Value

Research efforts and findings aim to achieve a wide range of hitherto unexploited benefits for urban areas in Europe by
- enhancing the attractiveness of European places for living and working significantly,
- reinforcing European competitiveness by focusing on the great advantages of urban agglomerations and the quality of networks linking these urban areas,
- adding value to European knowledge infrastructure through the development of demand oriented shared knowledge and pooled human capital as urban frontline initiatives in Europe and
- supporting various European networks of stakeholders and acting as a clearing house for professionals on urban issues.

1.   JPI Theme: URBAN EUROPE

The future of Europe will be an urbanised future. The overwhelming majority of people live in urban areas and it is there, where the largest part of GDP is created. As locations to live, to produce, to communicate, urban areas increasingly compete on a global level for direct investment and the pool of talent. At the same time, urbanisation faces the grand challenges our society is confronted with, but simultaneously contributes to their scale and scope. Unprecedented urban growth will continue against the background of demographic and climate change. Segregation, deprived areas, urban sprawl and safety problems are well-known issues urban areas already have to face. This will be topped by increasing pollution and congestion in urban areas due to the density of people and firms. Furthermore, looming effects of climate change potentially hit vulnerable urban areas destroying wealth irreparably. It goes without saying that European urban areas - with their uniqueness in terms of history, design and economic power which distinguishes them considerably from Asian or American mega cities - have to respond properly and urgently to avoid a declining attractiveness for creative talents and firms and a degradation in 'liveability'.

The vision of the proposed JPI URBAN EUROPE is to fundamentally *rethink and manage the dynamics of urban development in Europe to sustain and enhance urban areas as a place of vitality, liveability and accessibility* for future generation. To reach these aims URBAN EUROPE provides a systemic approach which takes utmost advantage of *emerging technologies*, assessing their potential and socio-economic impacts and utilising them in fundamentally *new urban policies and design* strategies. URBAN EUROPE brings together strands of thoughts to develop future-oriented strategies, initiatives and instruments. To pave the road to a promising urban future, URBAN EUROPE provides original and path-breaking research initiatives with a view to

(1)   establishing urban areas in Europe as hubs of innovation and test beds building on a pool of talents and firms, new functionalities, services, governance modes and communication systems connecting people and knowledge,

(2)   realising eco-friendly and intelligent intra- and inter-urban transport, efficient logistics services and facilities for the supply of necessary goods to support the urban (trading) activities

(3)   ensuring social cohesion and integration developing new concepts of social care systems, built environments, social accessibility and

(4)   reducing the ecological footprint using smart energy supply and demand solutions, eco-housing and renewable recourses.

URBAN EUROPE pools knowledge and experience of urban professionals in Europe. The interdisciplinary and multi-stakeholder approach of URBAN EUROPE sets Europe apart and at the forefront of worldwide research efforts.

Aims and Scope of URBAN EUROPE

The background of this Joint Programming Initiative (JPI) is the remarkable transformation of the global society, economy and environment we are currently facing. This radical change of the European space prompts a series of grand challenges for policy and research. Urban areas are characterised by a strong accumulation of economic activities, agglomeration of people and an intensive use of the environment and resources. Urban areas are therefore the first hit by the grand challenges with a high impact on our social, economical and ecological balance. A major challenge to cope with is the unprecedented change of our population structure. This potentially generates social deprivation and segregation, demographic change and urban sprawl. This will be topped by increasing consumption of resources, pollution and congestion in urban areas. Furthermore, looming effects of climate change potentially hit vulnerable urban areas destroying wealth irreparably. For ensuring socially stable, economically prospering, ecologically sustainable and globally competitive urban areas, these challenges cannot be tackled isolated but require a systemic and comprehensive answer. It goes without saying that European urban areas - with their uniqueness in terms of history, design and economic power which distinguishes them considerably from Asian or American mega cities - have to respond properly and urgently, if they want to remain major players in a global village within the next 25-30 years.

Only if urban areas as the frontrunner of European development manage to adequately address this complex bundle of challenges and exploit the advantages of urbanised space, Europe as a whole will benefit. As Europe is moving towards on interconnected network of urban areas this is the engine of change. The JPI URBAN EUROPE aims to develop innovative approaches to adequately address challenges in European urban areas and turn them into opportunities. The distinct nature of URBAN EUROPE is the explicit focus on a spatial scale. Using a geographical lens the global challenges become more concrete and manageable. Moreover, the complex interrelations of the grand challenges and their impact on the social, economic and ecologic subsystems becomes manifest in urban areas.

This JPI fundamentally contributes to the implementation of Europe 2020. URBAN EUROPE will help to rethink and efficiently manage the dynamics of complex urban development. To this end it aims to identify and implement a systemic approach towards common research, innovation and policy initiatives from the perspective that urban areas in Europe are not to be seen as sources of problems, but as laboratories and action centres for smart socio-economic, technological and ecological performance. This means that urban areas in Europe have to develop smart strategies that maximise their socio-economic potential and minimise their sustainability threats integrating the different urban scales (regions, cities, neighbourhoods, buildings).

The proposed systemic approach for URBAN EUROPE calls for a set of *new research initiatives* that ultimately can contribute to a *radical change of the urban system.* The research initiatives related to

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this challenging approach centre around three modules. **Module 1** focuses on the **understanding of prospering urban systems.** It goes without saying, that understanding the system must be the basis for the development of new ideas about urban future. This is fundamental for the development of **implications for new urban policies in the 21st century (Module 2).** Hence, new urban policies (i.e. new governance models, spatio-temporal planning concepts, awareness rising instruments, participatory policy development) are needed to tackle the social, environmental and economic challenges and opportunities for urban areas. They are required to achieve rapid and efficient **utilisation of new technologies and governance solutions (Module 3)** specialised for urban areas. Thereby, URBAN EUROPE does not primarily focus on the development of technologies, but on the creation of cities as tests beds and places of demonstration ('Living Labs') for innovative systems of transport and mobility, energy supply and ICT, waste & water management and new construction and control systems for buildings. Validation and evaluation of new structures ensure dynamic feedback loops between the three modules. Figure 1 summarises the aims and scope of URBAN EUROPE and outlines the basic thematic modules of the proposed JPI.

Figure 1: Thematic Structure of the JPI URBAN EUROPE
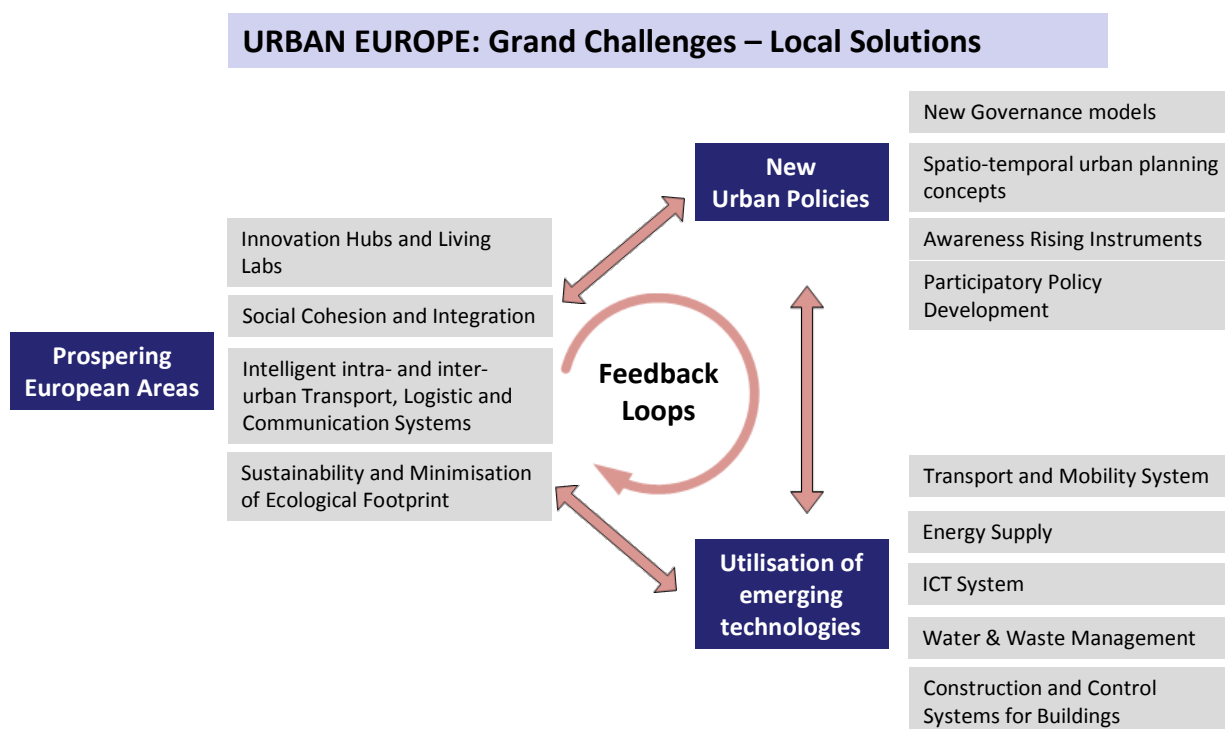
The Action Space of URBAN EUROPE: Turn Challenges into Opportunities

In contrast to many other regions of our world, Europe has thus far been rather successful in managing its urbanisation trends but the grand challenges and upcoming opportunities for the next

decades are formidable. URBAN EUROPE aims to develop **a prospering urban system** in the future characterised by:

Innovation Hubs and Living Labs

It is noteworthy that most economic activities are concentrated in urban areas; about 80% of GDP in most countries is generated in cities. International competition and the linkage to global value chains will determine the economic impact on European urban areas. Urban activities range from public and private services (banking, insurance, education and health) and trade activities to production. In general, urban areas benefit from interactions among firms, universities and public research institutes as well as governmental institutions and organisations, because these shape the urban innovation system and highlight their role as centres of excellence. The potential of economic growth in European countries will depend on the urban areas' ability to create and maintain an environment (social, technological and educational) to attract a critical mass of talents and innovative entrepreneurs to compete on international markets. The basis of this is a well-developed social and environmental system.

Social Cohesion and Integration

Today, almost 75-80% of the population in Europe resides in urbanised areas. Although the natural population change is expected to stabilise in most European countries, migrants will gain importance as a compensating factor, especially in urban areas. And therefore, the trend towards unprecedented urban growth will continue against the background of demographic and social change. This development involves opportunities as well as challenges for urban areas. On the one hand, urban spaces can grow to clusters of people with a variety of talents, ages and cultural diversity. On the other hand, socio-cultural issues such as segregation, intra- and inter-urban disparities and security problems tend to arise in many areas. The structure and dynamics of the future population pattern in Europe requires evidence-based research in order to develop urban areas with social cohesion and integration, to exploit new advantages of these opportunities, and to simultaneously predict and avoid risks of large-scale urbanisation.

Intelligent intra- and inter-urban Transport, Logistic and Communication Systems

Thus, connectivity and communication at local to international levels are critical. This reinforces the opportunity of urban areas to strengthen their key role as logistic centres for research and development combined with potential markets for new urban technologies and their wide-spread application. Sustainable and smart solutions for global as well as for intra and inter-urban transport, logistics and communication are needed. Future cities will see it as their task to create an innovative system of transport hubs (public transport, ports, inland terminals and transhipment points) as well as communication hubs to interlink the European network of cities and to ensure a time-sensitive flow of information, goods and people, while reducing their ecological footprint, their congestion

and accident level.

Sustainability and Minimisation of Ecological Footprint

It should also be noted that urban areas are also responsible for about 70% of global CO_2 emissions. They have developed into networks of places of high energy consumption and increasing emissions (including air polluting emissions caused by vehicles and industry, liquid emissions caused by contaminated sites, noise and light pollution) while there are scarce natural resources (energy, water, food etc.). To large extent economic activities take place in urban areas and consequently, they turned into hubs of enormous flows of goods and people with the associated problems of emissions, congestion and accidents. Cities face the growing constraints on resource availability requiring new systems for generation and distribution of renewable energy and efficient resource and waste management in urban areas. Finally, the impact of climate change on urban development calls for ecologically compatible urban planning solutions by integrating sustainable and environment-friendly energy, buildings, production and transportation systems. URBAN EUROPE encourages research to better understand how urban areas can grow to successful 'Living Labs' for large-scale demonstration projects related to the development implementation of new transportation and energy concepts characterised by high efficiency, safety and overall a reduced ecological footprint.

Contribution of URBAN EUROPE to a Strategic Research Agenda

Apart from promising initiatives in the recent past, urban research today is grossly underrepresented in the EU research landscape as well as in many national research programmes. Considering urban areas as source of European solutions for globally arising problems, URBAN EUROPE addresses a research agenda which deserves priority treatment.

URBAN EUROPE will fundamentally contribute to position European cities as vital, liveable and accessible places with a high quality for living and working. In the first place, urban areas have to develop in vital places of creativity, innovation activities and enjoyment with economic powerful, but flexible structures. Social integration, cultural diversity and economic variety increase attractiveness of European cities for talents and ensure an endurable open society and business life. Secondly, urban areas must be liveable and sustainable providing green & clean places with a minimised ecological footprint (energy-neutral systems, eco-housing, e-mobility), safe & secure place for living (intelligent home, safe traffic) and place with a concerted work-life-balance (well-connected, smart communication). Thirdly, urban areas have to turn into a physically and socially easily accessible place. URBAN EUROPE assesses the contribution of emerging technologies to the intra- and inter-urban accessibility through innovative solutions in transport, energy and ICT. URBAN EUROPE connects modern urban development with the development of modern

transportation and infrastructure networks, responsible for the flow of goods and people. Social accessibility of urban areas requires conceptual and managerial governance solutions for social and cultural integration.

URBAN EUROPE secures, strengthens and takes advantage of the particular and characteristic European flavour of controlled urban sprawl and urbanised land use (incl. infrastructure) and acknowledges the unique urban history of Europe manifest in its distinct cities full of historical heritage. It is not by chance therefore, that urban development in Europe is quite distinct from e.g. American or Asian urbanisation processes.

URBAN EUROPE is not starting from scratch, but will be solidly rooted in the various relevant recent and ongoing initiatives and will address and involve a broad range of stakeholders and research groups from a diverse disciplinary background. Providing the socio-economic, policy-oriented and innovation-related research and sharing the European knowledge base in this field. URBAN EUROPE provides a major approach to interlink European efforts on a transnational level. Although currently several (research and other) efforts are ongoing related to the mentioned challenges, so far no overall concerted and coherent approach has been made to address future urban development as a complex network system with high interdependencies of the related social, technological and ecological subsystems. This requires substantial research efforts in developing joint views of future urban areas, their functionalities and conditions as well as new instruments, tools and methods for assessing new urban design, governance and management approaches. Besides that, there are a number of initiatives which address different technological dimensions of the challenges urban areas are confronted with (see the list below). For these initiatives, we will provide the tools for developing, assessing and aiding their implementation through supporting test-beds and pilot applications. For these, and for the current initiatives with a focus on socio-economic research (like "Urban-Net"), the JPI URBAN EUROPE aims to be a platform which can act as an open coordination 'clearing house' of strategic research agendas, a lever to high level policy awareness and a way to increase the effectiveness of European policy measures.

- The current *ERA-net "urban-net"* which identified research areas, took stock of and exchanged existing knowledge focusing on urban sustainability and initiated first rounds of joint calls.

- European Energy Research Alliance (EERA) with the objective to implement the SET plan, develop European research agendas and coordinate major European research activities.

- *Trans European Transport Networks* (TEN-T), a EU programme for developing the infrastructure to support the European internal market, including the role of ports as essential nodes to establish this infrastructure.

- *ERA-net "transport",* working towards large scale introduction of electric mobility in urban areas and innovative approaches for the greening of transport in corridors between major urban agglomerations.

- The *Freight Logistics Package* 2007, which aimed at ensuring more efficient and more sustainable transport in Europe (including the program motorways of the Seas).

- POLIS, a network of cities, bringing together the demands of cities and research findings

- European Construction Technology Platform (ECTP)

- Other initiative in this vein include: PLUREL: Peri-urban land use relationships (FP6), Eurocities, ICLEI - Local Governments for Sustainability, CIVITAS - CIty-VITAlity-Sustainability (FP5, FP6, FP7), SOCIAL POLIS - Social platform on cities and social cohesion (FP7), EURA - The European Urban Research Association

- Furthermore, existing initiatives on the national level will also be taken into account (such as Programme de recherché et d'innovation dans les transports terrestres (PREDIT) and the French Alliance for the Environment

2. Proposing GPC member/members of URBAN EUROPE

Proposers: Austria, The Netherlands, Finland, France, Ireland, Italy, Spain, Sweden, Switzerland, Turkey

Interested countries: Belgium, Bulgaria, Denmark, Estonia, Malta, Norway, Romania, Slovakia, United Kingdom, Germany, Israel, Hungary, Czech Republic

## 3. Research Objectives and Underlying Approaches of URBAN EUROPE

The overall objective is to realise prospering European urban areas by rethinking urban design and development processes and providing the knowledge base necessary to secure a dynamic and sustainable urban development in Europe. A prospering urban area in this context is not only based on economic success but on a balance of such factors as social cohesion and integration, innovativeness, sustainability and viability, leading to highest quality of life and work urban areas can offer. To successfully address all these issues our understanding of urban areas and the manifold challenges they are confronted with and how these challenges interact has to be deepened. We have to provide new solutions to tackle these manifold requirements and aspects in a consistent and systemic way. As outlined in Figure 1 the principal aims of URBAN EUROPE are therefore to develop, assess and demonstrate new urban concepts and solutions for facing current opportunities and challenges of European urban regions. These answers are to be found in the realm of urban-related policies (planning and management of urban development in the broad sense) and utilising the potential of emerging technologies and new governance solutions. The key objectives of URBAN

EUROPE are as follows:

- *Understanding the dynamics inherent with urban systems* and the implications of new grand challenges for urban systems and their development processes. Insights for coping with the manifold demands and needs of urban areas in Europe have to be derived from this analysis (Module 1).

- Developing tools and instruments for the *implementation of new urban policies* on mid to long term urban development (Module 2).

- Assessing the *contributions and impacts of emerging technologies and new governance solutions* for the development of urban areas in large scale demonstrations, integrated socio-technological approaches will be applied, including the analysis of the need for shaping those new technologies to maximise their problem-solving capacities (Module 3).

To reach these key objectives a broad spectrum of research efforts has to be initiated on three levels in a modular structure for optimal support of the development of new policy agendas and technologies (see Figure 2).

Figure 2: Modular Structure of the JPI URBAN EUROPE

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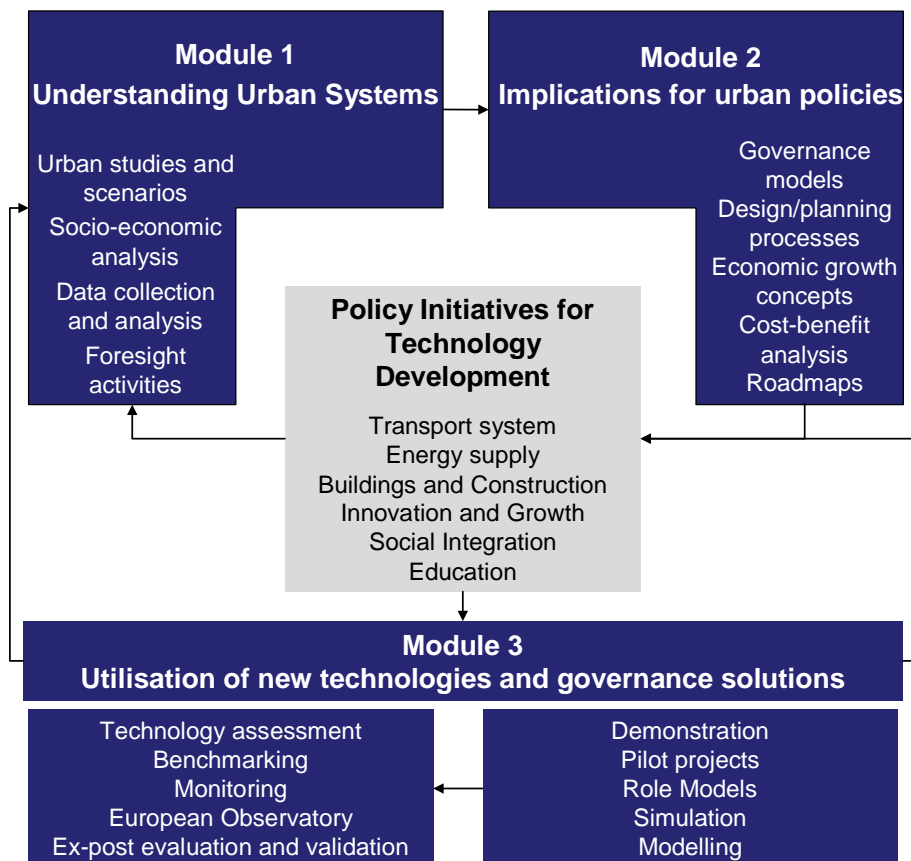
Module 1: Understanding Urban Systems

A thorough understanding of the fundamental processes which are shaping the dynamic processes of urban systems is necessary for addressing the manifold challenges and opportunities. Therefore basic as well as applied theoretical and empirical studies are a prerequisite within the scope of this JPI:

- Investigating *urban development studies and scenarios* that allow European urban areas to tackle the complex challenges and take most advantage of current opportunities. A systemic approach has to be applied for considering the different, maybe sometimes also contradicting requirements according to the given challenges and integrating the various urban subsystems on different spatial scales (i.e. intra-urban, regional, European-wide). This will require *data collection and analysis* and *foresight activities* to assess different trends and their implication for the urban future. The aim is to generate research efforts necessary to develop concepts that integrate the wide spectrum of stakeholders in urban areas as well as build a profound basis to deduce boundary conditions for future urban design and the development of specific urban subsystems.

- Performing *socio-economic analysis* to assess the impact of these new conditions and scenarios for the social and economic system.

Module 2: Implications for urban policies in the 21ˢᵗ century

Based on a new understanding of the role of urban systems the respective implications for modern urban policies have to be derived:

- Understanding the interdependencies of global decision making and urban development: Decision processes of global (economic) players will highly influence the development of urban areas, the role of individual urban areas within the global economic landscape as well as the respective international transportation flows between urban areas and other regions. *Governance and development models* of urban areas in a globalised world where decisions on e.g. production locations or supply chains are made according to global opportunities have to be investigated.

- Redefining urban development processes by shifting from a spatial to a truly *spatio-temporal approach* for urban planning and by integrating feedback loops considering technological options in the context of ambient urban intelligence.

- Understanding the new role of cities as "centres of excellence" (scientific, technological, market hubs) and the impact on the connectivity and interrelationship of these specialised urban areas. Cities are becoming highly specialised areas with respect to local industries as well as science & technologies. This leads to the demand for a high connectivity of these specialised areas regarding communication, people and products and the development of cities as service centres. Based on this new role, *new concepts for economic growth* and innovativeness may arise from some cities which can serve as general role-models.

- *Roadmaps* for policy-guided urban development and *cost-benefit analysis* are fundamental for comprehensive policy programmes.

Module 3: Utilisation of new technologies and governance solutions

New technologies and applications as well as governance solutions suitable to contemporary urban problems have to be assessed and their diffusion processes have to be analysed in order to overcome possible bottlenecks and diffusion barriers. Accordingly, the respective governance systems and regulation regimes to implement these technologies have to be derived.

- Provide *demonstration projects on transportation systems* on local, regional and international levels that are safe, sustainable and available for everybody and provide a high quality of services for both passengers and cargo. Urban areas are transportation hubs where local, regional and international transportation flows meet. Therefore highly efficient systems are required that link and connect these different flows in ways that the environmental impact of transportation is reduced significantly (congestion, emissions), access is provided for everybody (independent of age, income, etc.), the safety of people is secured and the supply chains are reliable.

- *Role models for advanced co-modal transportation* will offer solutions that allow a large variety of stakeholders in the mobility system (transportation industry, municipalities, public transportation services, social groups, etc.) to fulfil their assignments and needs in an environmentally friendly, healthy and cost-efficient way.

- *Pilot project on electric mobility* have to be integrated into urban planning and management which requires a profound understanding of the impacts of electric mobility on the customers' mobility behaviour, as well as on the interdependencies of various transport modes.

- Integrating space, energy and transport planning processes to realise reliable and ecologically compliant *energy systems* for urban areas. This requires the understanding and *modelling* of urban metabolism and its implications for the energy management of whole urban areas. The utilisation of smart grids, the implementation of new building concepts based on renewable energy sources and intelligent control strategies as well as the realisation of smart energy management and control strategies for whole urban areas are of utmost importance to reduce the ecological footprint, improve quality of life and provide the basis for economic development. *Ex-post technological assessment* is needed to ensure impact and acceptance of new technologies.

- Introducing new European concepts related to important *technological fields* such as *energy, mobility, ICT* etc. through standardisation and regulation ensuring interoperability of technological solution between cities and countries. The identification of standardisation needs and the establishment of (European-wide) framework conditions suitable to supporting their development have therefore to be investigated.

- *Monitoring, benchmarking and observatory units for new policy programmes* are needed related to socio-economic issues (e.g. education, social integration, internationalisation of business, employment issues). This ensures best information and knowledge circulation.

- *Ex-post evaluation and validation* of urban policy programmes is required to ensure high effectiveness and provide inputs for the understanding of the urban system.

4.   Research Issues Addressed by URBAN EUROPE

The thematic umbrella defined by URBAN EUROPE and the related research objectives open up a wide array of possible research questions from the social sciences to natural sciences and engineering. According to the defined modules and objectives the following research issues have to be addressed:

Module 1: Understanding urban systems

- Urban development in face of uncertainty needs to be embedded into a strategic planning framework in order to manage arising potential contingencies. Performing *foresight processes, dynamic simulation analyses, roadmaps etc.* for specifying and assessing concepts for future urban areas that are able to meet the defined requirements of vitality, liveability and accessibility, etc provide necessary tools for this task. The varying European geometry of territorial frameworks and governance (i.e. cities as autonomous regions, cities embedded in regions, cities crossing national borders, cities as part of metropolitan cooperation networks etc.) has as well to be taken into account as the different sizes of urban areas involved. Depending on the particular history and the specific local framework conditions different challenges will be emphasised and addressed (i.e. structural change & shrinking cities, growth & new functions, identity & reconnection to old roots and potentials etc.). Foresights are participative in their nature and relevant stakeholders will be involved in the scenario development processes. Particular emphasis will be put on the one hand on the proper adjustment of foresight results with ongoing or future urban planning processes, on the other hand the functioning of the cooperation between local practitioners and academia will be ensured by adequate communication structures and processes. These visionary pictures of urban areas, their functionalities, rules and conditions display a sound basis for the subsequent research activities.

- *Integrate data bases*: there is a wealth of data on urban and transport issues (e.g. Eurostat, Urban Audit), but most data bases are fragmented and incomplete. The design of a focused information system on urban issues - that is consistent among European countries - is thus of great importance and forms an important challenge for URBAN EUROPE.

- Develop *integrated models for simulation and optimisation* of urban development scenarios: operational methodologies for foresight experiments on urban issues; in this context, agent-based scenario exercises, interactive foresight analysis, critical path models, micro-simulation methods, multiple criteria techniques, and urban system dynamics models (e.g. complexity models, cellular automata, self-organised mapping models) will be used and/or developed.

Module 2: Implications for urban policies in the 21st century

- Developing *tools for new planning, management and governance models* for future cities will be

  o based on a multidisciplinary analysis of social and economic developments to reduce and avoid social tensions in urban areas and

  o based on the concept of "cities as service centres" to efficiently operate cities, by providing efficient and resilient infrastructures (such as energy, ICT, water, waste treatment and management etc)

- Developing *tools* for integrated planning from production to consumption and the related *transportation, waste, energy and communication flows* (emission reduction, congestion reduction, security, efficient resource allocation, etc.) with special emphasis on:

  o Transportation safety: Deploying the full range of IT (sensor web, web2.0) with the aim of zero tolerance of fatalities and injuries

  o Management of mobility, logistics services, network and traffic management: efficient and sustainable provision of necessary transport capacity for people and cargo

  o Energy network and Transportation systems: Smart Grids, electric mobility (i.e. electric vehicles (EV), hybrid EV, plug-in EV, fuel cell vehicles)

  o Energy and Communication: Information Technologies and cities' connectivity

  o Modelling the urban metabolism and integrating spatio-temporal planning processes for land use transport and energy and communication technologies to investigate and enhance the benefits of the mutual interdependencies and implications for effective urban management.

- *Securing an integrated socio-economic development* of urban areas and integration of migrants

Module 3: Utilisation of new technologies and governance solutions

- Performing *large scale demonstration and case studies* to demonstrate the potential

integration among *transportation, energy and communication networks*

- Investigating how technologies (future internet, e-mobility, new energy concepts, transport technologies etc.) have to be introduced and implemented to exploit positive network externalities, to gain *highest customer acceptance* (socio-economic research, social innovations) and to overcome possible barriers to diffusion and adoption

- *Evaluating* urban development processes and its key factors to identify best practice as well as to learn from failures in order to improve mutual policy learning

- Investigating the potential of standardisation of urban infrastructure technologies to secure *inter-operability* and to foster European-wide applications

- Developing and implementing *policy tools* which help urban planners in the process of urban development policies (i.e. data pools, European urban observatory etc.)

- *Analysing and promoting model-cities and districts as 'good practice' examples regarding various subsystems (e.g. waste management, energy, transport) and/or regarding an integrated sustainable city*, e.g. Stockholm, Tübingen, Freiburg, Barcelona ('eco-cities'), Amsterdam (modal split), Vienna (waste management, eco-renovation), London (congestion pricing), Mannheim (smart grids), Paris (rental e-mobiles), Lübeck (waste water treatment).

5. Added-value, Benefits and Impact of URBAN EUROPE

URBAN EUROPE creates a European model to pool expertise and develop initiatives to establish European urban areas an attractive high quality place to live and work and set Europe apart as a global front runner for future urban development. URBAN EUROPE fundamentally adds value to three crucial points.

A. Add value to Quality of Life - *Creating applicable and feasible Tools and Instruments for Policy Makers to turn urban areas in places of Vitality, Liveability and Accessibility*

URBAN EUROPE starts with the understanding of a prospering urban system and the underlying ideas what potential development trajectory urban areas in Europe can follow. This provides studies with broad overview about urban needs and potentials. This is the basis for ex-ante data analysis, forecast studies and roadmaps leading to policy implications from a socio-economic as well as a technological perspective. URBAN EUROPE supports the implementation of new technologies with the development of demonstration project in urban areas and test beds. It also provides observatory studies, monitoring units and social economic fieldwork for new governance solutions. After implementation URBAN EUROPE validates and evaluations new tools and initiatives. This finally ensures urban areas to become places of vitality, liveability and accessibility. URBAN EUROPE strengths the role of currently underrated urban research and provides tools to improve efficiency of the existing research system through coordination, organisation and participation. Simultaneously,

URBAN EUROPE highly contributes to the implementation of Europe 2020 strengthening the development of urban innovation systems, the establishment of a resource-friendly environment and socially stable urban areas.

B. Add Value to European Competitiveness - *Exploiting the Uniqueness and Strength of European Urban Centres against the Globalisation and intensified Competition*

URBAN EUROPE emphasises the *specific uniqueness of European structures in urban areas* (urban design and history) and *between urban areas.* Despite the great diversity cities encounter common future problems. URBAN EUROPE approaches the *European network of urban centres* instead of paying attention to selected cities. The strong points of URBAN EUROPE are the development of applicable and feasible tools and concepts for general use, but specific adaptability. Specialisation and division of labour provides the freedom to conduct large-scale projects and pilot tests for specific solutions with a high transferability. The *European added value* is seen in how to ensure a leading role of the unique European urban centres to *strengthen competitiveness on the global scale*. This needs protection as well as promotion.

C. Add Value to European Knowledge Creation and Policy Making – *Sharing Knowledge and Pooling Resources among European Researchers and Policy Makers*

- URBAN EUROPE will *build upon activities and knowledge* of existing research programmes and initiatives to gain highest benefit. Instead of focusing on specific subtopics and subsystems of urban development, URBAN EUROPE a systemic and integrated perspective. In its focus on researching the socio-economic and governance dimensions of urban development and the design of respective tools and approaches (foresight, planning, simulation, assessment etc.) it will complement the current and ongoing technology-oriented initiatives (SET plan, various ERA-nets).

- A *multi-stakeholder approach* integrating local and national policy makers, governmental agencies and research organisations guaranties a multidimensional and complex coverage of urban development. URBAN EUROPE fosters the *establishment of a clearing house* for urban professionals for well-coordinated and organised research structures. The JPI encourages cooperation instead of competition.

- *Pooling and sharing of interdisciplinary and international experience and competence* will lead to an efficient and optimal development of products and processes. Problems can be captured and solutions developed which no Member State is capable of resolving on its own.

- URBAN EUROPE sets up the *basis for future joint research projects* with close links between science, industry and policy.

- This requires the *establishment of a learning European community* on urban development for identifying best/worse practice examples and transfers it into European knowledge.

6.   Interim Governance Structure of URBAN EUROPE

The interim governance structure for the JPI URBAN EUROPE aims to implement the complex objectives in a transparent, flexible and efficient way. In the first phase of implementation the proposed structure of the JPI Urban Europe will be put in place to develop a strategic research vision and research agenda as well as the required framework conditions and by that builds the basis to launch the programme in the second phase. According to the different steps and needs in the implementation process the governance structure will be further developed successively.

In the first phase of implementation two main bodies will be established – a Governing Board (GB) and a Management Board (MB). Furthermore a Scientific Advisory Board (SAB) as well as a Stakeholder Consultative Board (SCB) will be put in place to provide high level scientific expertise in the first case and ensure the integration of the broad spectrum of stakeholders in the second case (Figure 3).

Figure 3: Interim Governance Structure of the JPI URBAN EUROPE
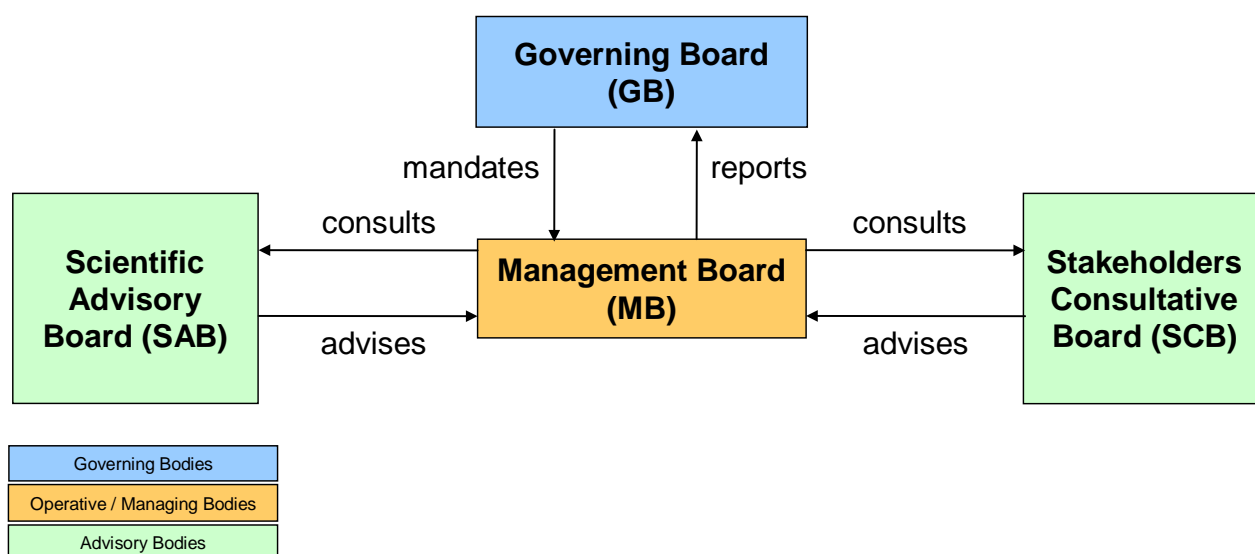
Governing Board (GB)

The Governing Board is responsible for the overall political, strategic and financial orientation and the decision making body. All participating/interested countries are represented in this Governing Board, although voting power will be reserved for countries financially supporting the JPI. The Governing Board develops a vision for the JPI URBAN EUROPE, commits funding, decides on new members, and communicates with the GPC and the European Commission. It furthermore mandates

the Management Board to elaborate a strategic research agenda as well as to provide a proposal for the framework conditions for the JPI implementation. The Governing Board appoints the members of the Management Board, the Scientific Advisory Board and the Stakeholder Consultative Board.

Management Board (MB)

In the interim structure the Management Board will be mandated by the Governance Board to develop the Strategic Research Agenda (SRA) and the framework conditions. The members of the Management Board are appointed by the Governance Board. For elaboration of the SRA the Management Board will set up and coordinate an appropriate process integrating a broad spectrum of scientific expertises in the research topics related to the JPI URBAN EUROPE. Furthermore framework conditions will be proposed by the Management Board including

- a funding structure,

- application procedures,

- monitoring and evaluation processes of research results,

- working and communication methods and

- programming cycles.

For this purpose working groups can be set up to efficiently work out appropriate concepts. All these results, the Strategic Research Agenda as well as the Framework Conditions, are provided to the Governing Board for decision. Furthermore the Management Board will propose scientists for the Scientific Advisory Board as well as organisations and networks for the Stakeholder Consultative Board to the Governing Board.

Scientific Advisory Board (SAB)

The Scientific Advisory Board consists of scientific high level experts in the various fields of URBAN EUROPE and its members are appointed by the Governing Board. It can be consulted by the Management Board as well as the Governing Board for scientific advice. In the context of elaboration of the Strategic Research Agenda the Scientific Advisory Board plays a key role in defining the state-of-the-art in the specific research areas, in defining research demands for URBAN EUROPE and in developing research topics within the defined framework of the JPI proposal.

Stakeholders Consultative Board (SCB)

This board consists of the broad spectrum of stakeholders, like cities, urban initiatives and networks and are invited by the Governing Board. As the Scientific Advisory Board, the Stakeholders Consultative Board can be consulted by the Management Board and the Governing Board. In the first phase this Stakeholders Consultative Board will provide input on specific existing research programmes and agendas related to subtopics of URBAN EUROPE. Cities demand research on the one hand, but also serve as a demonstration and test area on the other hand. Urban initiatives and

networks (e.g. ERA nets) give specific advice.

Secretariat

Later on a Secretariat responsible for the day-to-day business and for support in terms of administration will be established.

This suggested governance structure should give URBAN EUROPE the opportunity to mange the JPI efficiently and adapt to specific research needs. It is responsible for a high-quality research, a sound financial management as well as shared and clear roles of responsibility and rights among partners.

20/04/2010

Annex 1 Preparatory Workshops

The preparation process of the Joint Programming Initiative URBAN EUROPE was initiated by the Austrian Ministry of Science and Research, the Austrian Ministry of Transport, Innovation and Technology and the Dutch Ministry of Transport, Public Work and Water Management.

The preparatory workshops were attended by about 40 institutions and networks from 17 countries. During and following the workshop, participants strongly supported the approach of the JPI URBAN EUROPE itself, and provided substantial input to the concept paper.

Preparatory Workshops:

7 September 2009, Brussels

1 October 2009, Vienna

17 February 2010, Vienna

3 / 4 March 2010, Brussels

List of institutions represented at the workshop:

Spanish office for science and technology	ES
Ministry of Science and Innovation	ES
Centro para el Desarrollo Tecnológico Industrial (CDTI)	ES
ETH Zürich/ Institute for Transport Planning and Systems	CH
Academy of Finland	FI
TEKES	FI
Ministère de l'Ecologie, de l'Energie, du Développement durable et de la mer (MEEDDM)	FR
Programme de recherché et d'innovation dans les transports terrestres (PREDIT)	FR
French Alliance for the Environment	FR
University of Camerino	IT
Regione Marche – Giunta Regionale	IT
Svim – Sviluppo Marche SpA; Development Company of the Marche Region	IT

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RCN – Research Council of Norway	N
Senter Novem	NL
Delft University of Technology	NL
Technical University of Eindhoven	NL
VU University	NL
Ministry of Transport, Public Works and Water Management	NL
Netherlands Organisation for Scientific Research	NL
Ministry of Education	SE
VINNOVA	SE
Service Public de Wallonie	BE
EWI – Economy, Science and Innovation in Flanders	BE
TUBITAK	TR
Tallinn University of Technology	EE
Romanian Office for Science and Technology	RO
Transport Malta	MT
Science Foundation Ireland	IE
Research Councils UK	UK
The Danish Council for Strategic Research	DK
Austrian Institute of Technology (AIT)	AT
Joanneum Research	AT
Ministry of Transport, Innovation and Technology	AT
Ministry of Science and Research	AT
URBAN-Net	
European Energy Research Alliance (EERA):	
European Construction Technology Platform	
ERA-Net Transport	
POLIS	
ICLEI – Local Governments for Sustainability	

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