[ui!]

Lighting Innovations • Mobility Innovations • Software Institute

INNOVATIVE TECHNOLOGY FOR YOUR SMART CITY

ADDED VALUE THROUGH URBAN DATA

50% of people already live in cities, but consume 75% of the world's energy and are responsible for around 80% of global emissions.

A rethink of consumption, resources and the environment is therefore more necessary than ever. However, this requires data that must be collected, processed, visualized and further used.

Added value for citizens

WE ARE ACTIVE FOR SMART CITIES SINCE 2012

[ui!] was founded in 2012 to support cities in their efforts to jointly develop innovative concepts and solutions in the sense of a Smart City and to use them sensibly.

Activities will focus on cloud-based smart services for the efficient use of existing real-time urban data in areas such as open data platforms, urban infrastructure, sustainable mobility and intelligent energy management.

The [ui!] group of companies has five locations in Germany and branches in Brisbane (Australia/New Zealand), Budapest (Hungary), Oxford (UK) and New York (USA).

DIGITAL TRANSFORMATION
OF CITIES IS IMPORTANT! BUT HOW?

No time lost in traffic jams, finding a parking space faster, breathing cleaner air, less noise pollution and more flexible energy concepts for neighbourhoods - in short: **more comfort and quality of life in daily life.** Das wünschen sich viele Bürgerinnen und Bürger in ihren Städten und Kommunen. In der Smart City von morgen könnte das zum Alltag werden. Hier einige Beispiele bereits von heute:

TRAFFIC OPTIMIZATION
WITH GREEN PREDICTION

Forecasting methods for traffic light changes in order to drive through the city as smoothly, efficiently and with the least possible environmental impact. Each driver receives information in real time via app or directly into the vehicle system, which enables smooth driving by means of an individual speed limit.

INTELLIGENT, MULTIFUNCTIONAL
STREET LIGHTING

Intelligent, multifunctional modernisation of lighting leads to reduced light pollution, lower energy consumption and lower maintenance costs. Added value for citizens, including public WiFi, environmental and fracture sensors, real-time analysis of traffic volumes and parking space utilization.

ENVIRONMENTAL
INFORMATION IN REAL TIME

Integrate sensor data from existing urban infrastructure and make it available to third parties. Thus, possible changes and optimization possibilities can be visualized and directly traced.

FLEXIBLE ENERGY CONZEPTS
FOR QUARTERS

Consider neighbourhoods as a whole in order to balance energy demand with energy production and energy storage. Produced electricity Consume locally and feed only excess electricity into the grid.
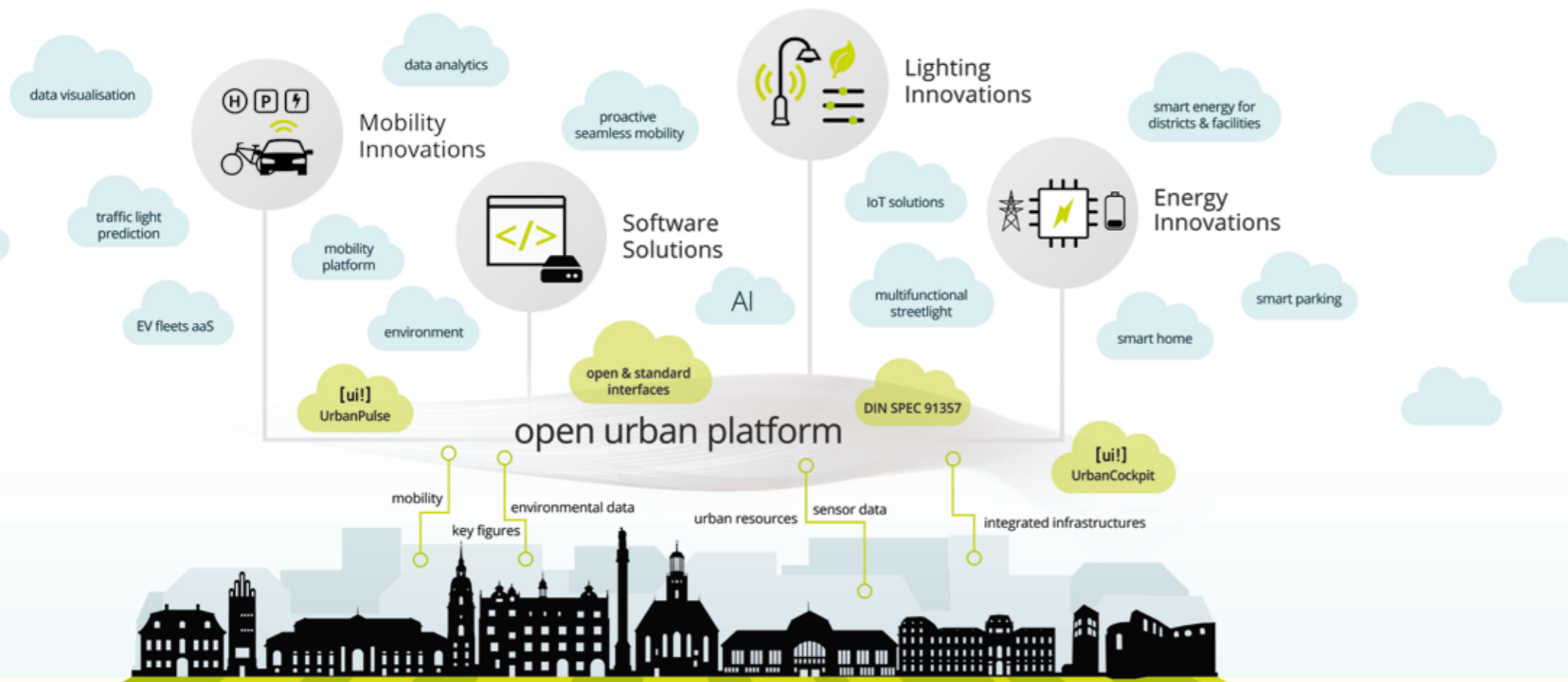
WE SUPPORT YOU
ON YOUR WAY

[ui!] is for you as a competent and experienced solution provider and a reliable partner for the upcoming tasks in the field of Smart City and Smart Regions.

APPROACH

We collect, process and analyse urban data and thus provide concrete new services as added value for cities, municipalities and utility companies Decree.

These solutions are based on an open and urban data platform - the [ui!] UrbanPulse - where data from a city's various IT systems are loaded up so that they can be used for new Smart City services in real time.

Using a large number of connectors, we are able to link the most diverse IT systems with each other in such a way that all the information of a city can be used and made visible, while at the same time the data sovereignty remains with the respective provider. In this way, the platform not only provides integrated access to urban data, it also prevents the risk of data misuse.

The graphic shows from bottom to top the different steps on the way to the Smart City where we can support you.

DARMSTADT, Traffic control & traffic light phase prediction

The digital city of Darmstadt has long relied on a modern and real-time traffic control system. At the same time, the current high level of air pollution means that the annual average limit values for NO2 and CO2 are exceeded every year. This leads to an acute need for action to liquefy traffic and reduce emissions from traffic.

[ui!] has been supporting Darmstadt with solutions in the field of digitization for several years. Since the end of 2015, an open data platform for traffic data with a citizen app for the visualisation of the traffic situation has been in operation. In addition, [ui!] provides a specially defined group of third parties with traffic light data in real-time.

Furthermore, the [ui!] group implemented an environmental sensor network for the city and is an important consulting partner and supplier for further activities of the digital city.
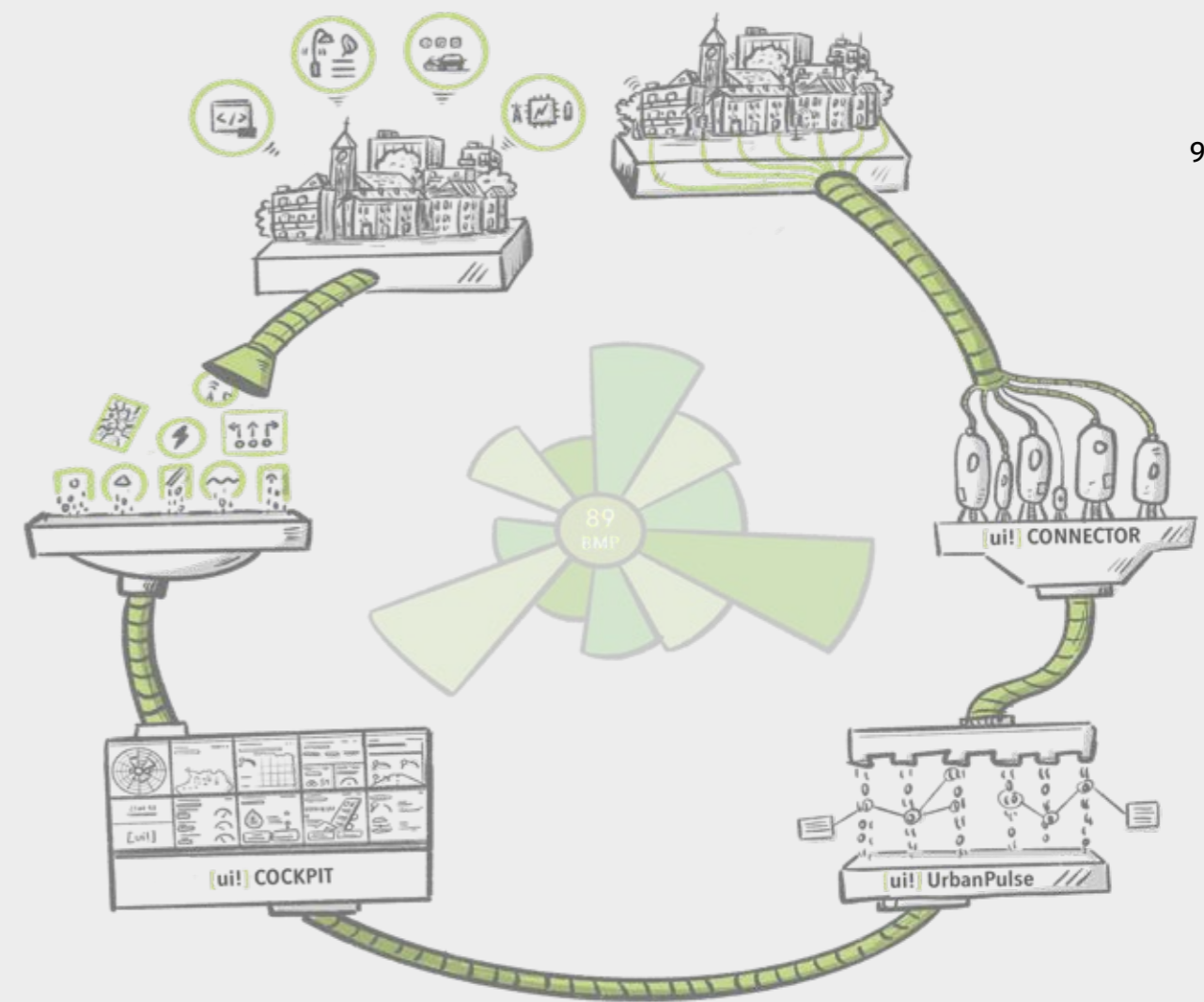
DARMSTADT, Open urban data platform in real time

For the open urban data platform for traffic data already developed with [ui!], the Digital City of Darmstadt awarded [ui!] and its consortium partners the contract to extend the real-time data platform by further urban areas. The first Europe-wide call for tenders for open urban data platforms was based on DIN Spec 91357 and enables the Digital City Darmstadt without the need to acquire its own IT infrastructure to connect and synergize a wide range of areas such as mobility, environment, administration, trade, society, education, cyber security, security and disaster control, health, industry 4.0, culture, energy and IT infrastructure.

The possibility of collecting, evaluating, visualizing and reusing anonymized data creates numerous new added values for the citizens of the digital city of Darmstadt, such as improved air quality, an optimal planning basis for the ecological traffic control of the future, interaction with the citizen through transparent and visualized city data.

KARLSRUHE, Traffic control & recommendations

The streets are full and there is no free parking space in sight - many drivers know the problem. A mobile and flexible solution was developed by [ui!] together with the Stadtwerke Karlsruhe and Green Way City GmbH for the shopping traffic in Karlsruhe.

Traffic data is collected by means of newly installed detection cameras and from Floating Car Data (FCD), supplemented by parking garage information and transmitted as anonymized data to a Smart City platform of the Karlsruhe public utility company. The platform analyzes the current traffic volume and informs motorists by means of mobile signs at the roadside about the best way into Karlsruhe city and gives recommendations for suitable parking spaces close to the city.

In this way, every car driver learns in real time how to get to the city center fastest and park there or better outside the city gates.
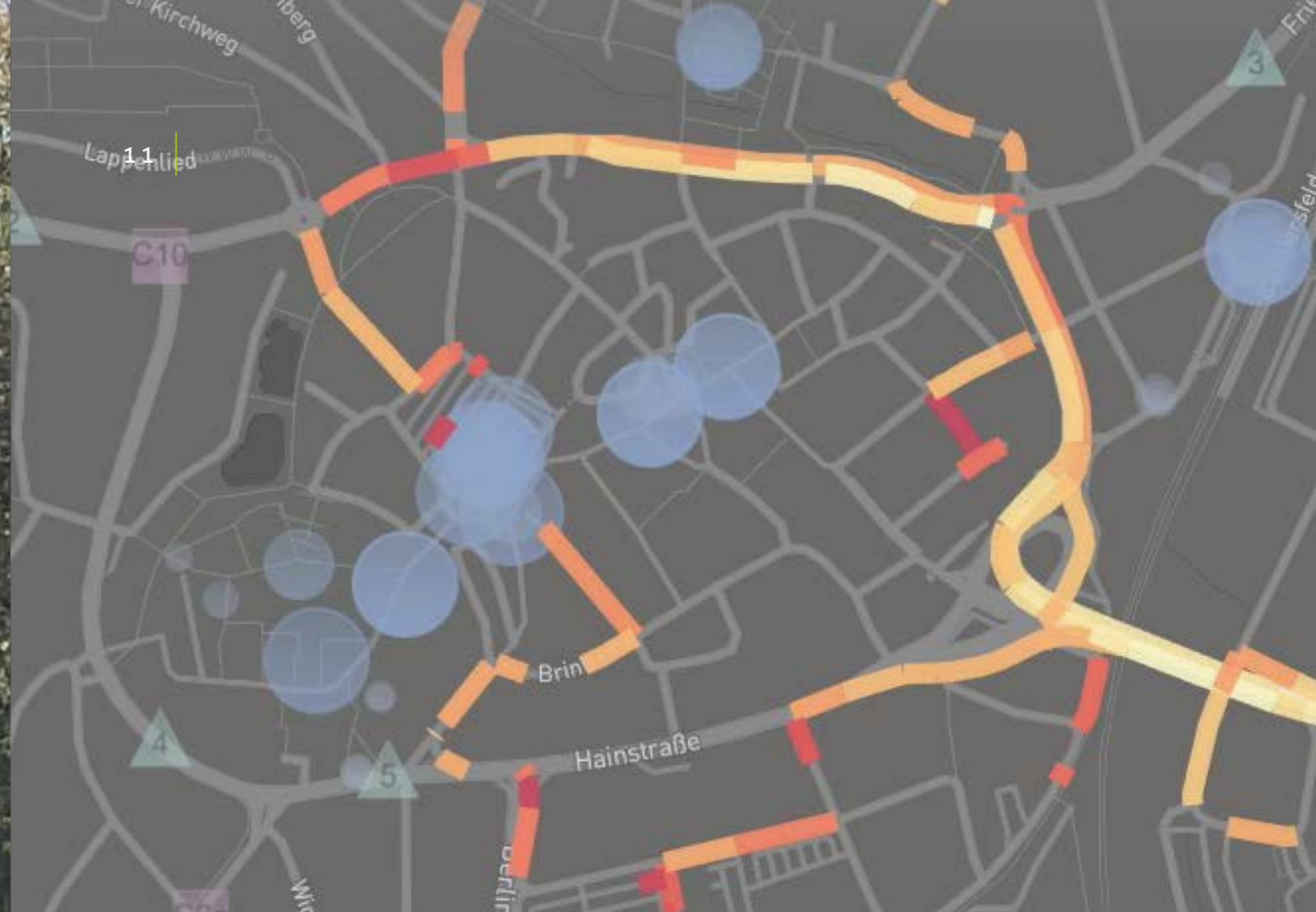
BAD HERSFELD, Festival organization & security

With the [ui!] FestivalCOCKPIT, innovative 3D representations of visitor flows, traffic situation, parking lot occupancy and weather data were displayed in a central cockpit, which interactively provided the organizers and security forces with the data they needed for a smooth event. In addition, non-safety relevant data was displayed to the visitors in real time in a festival app, so that they were able to view the data on the the fastest way to the next free parking space.

With numerous partners, data sources were connected and camera feeds integrated. These were displayed on several monitors in a cockpit in the control center of the major event. Further, sensor-independent data sources were evaluated in order to monitor the approach routes and the traffic jam situation, for example, and to be able to intervene in case of a traffic jam.

FLOATING CAR DATA > 0 ▬▬▬ 1800 Fzg. VERKEHRSKAMERAS >

Realized by
[ui!] Urban Lighting Innovations
[ui!] Urban Software Institute

Realisiert von
[ui!] Urban Software Institute

RÜSSELSHEIM, Mobility & Data Service

The residents of Horlacher Park (Quarter of the Future) received new meters installed in their model residential units and new tablets with corresponding software handed over, so that digital data transmission and monitoring of their own energy data was made possible for the residents.

In addition to interviews, information events were held in the neighbourhood in order to inform the residents individually and, if necessary, to seek solutions for possible problems together. In a permanent exchange between all partners, a model neighbourhood consisting of numerous smart residential units gradually formed a smart neighbourhood network.

E-charging stations will be installed for Car-Sharing and for charging private cars. A close cooperation with the city for the clever use of the existing infrastructure is indispensable.
Gradually, Wlan is to be introduced throughout the country. Further smart home aspects will be gradually implemented and tested in the model quarter.

Realized by
[ui!] Urban Software Institute

LANGENFELD, Intelligent street lighting & sensor technology

In the Langfort amusement park [ui!] established multifunctional light masts to solve the overall requirements of the park. The luminaires used are based on state-of-the-art technology and ensure maximum energy savings and minimum light pollution via a sensor-based control system.

Many of the masts are equipped with public WiFi, which can be used by park visitors. Some of the sites have video cameras, which are only activated when the maximum permitted noise level is exceeded.

In order to realize this, [ui!] integrated technology into the masts, which allows to measure noise levels and recognize noise patterns. In addition, the [ui!] experts equipped one site with environmental and fracture sensors.

Realized by
[ui!] Urban Lighting Innovations

[UI!] CONSULTING & STRATEGY

Support of municipalities, cities and regions on the way to SMART CITY.

We accompany you from the first idea to the realisation, give you tips from our wide range of experience and are always at your side as a reliable and competent partner.

Since its foundation, the [ui!] GROUP has benefited greatly from its in-depth research projects. The model of collaborative research funded by the European Commission, the German Federal Government or various federal ministries and other national governments, coupled with the implementation of a large number of cross-domain smart city projects, has strongly supported the development of our expertise and technical knowledge within the group.

We use this knowledge to support cities, municipalities & regions on their way to becoming a SMART CITY.

Our clients appreciate this wealth of experience and rely on our consulting for Smart City strategies. We are also very familiar with the identification and selection of funding opportunities and the corresponding applications and have had many successes with them.

In addition to strategic consulting, applications and funding opportunities, we support the conception and overall planning of infrastructure projects, accompany their implementation and advise on technology selection - a service that is already used by many cities and utilities on a national and international level.

Our independent position makes us a "trusted advisor" for all parties involved when it comes to supporting cities and regions in their digital transformation.

With BlueRoom to the common goal

The BlueRoom method developed by [ui!] supports all project participants in finding and implementing jointly defined goals. Upcoming challenges and problems are solved with commitment and cooperative collaboration. Especially new developments / solutions / opportunities in cities and regions are in the focus of the method.

1

Creation of the BluePrint

Problem definition, creation of the context proof, description of the resources and formulation of the result.

2

Cooperation

The art of collaboration defines the common language / output / result.

3

"BlueSky Thinking"

Understand global best practices and thus create innovative answers, 'Test Thinking'.

4

Developing a solution strategy

Test several solution approaches and narrow down the best ideas, test them in relation to the vision/problem.

5

Take steps

Agree responsibilities, develop implementation plan and measures, report.
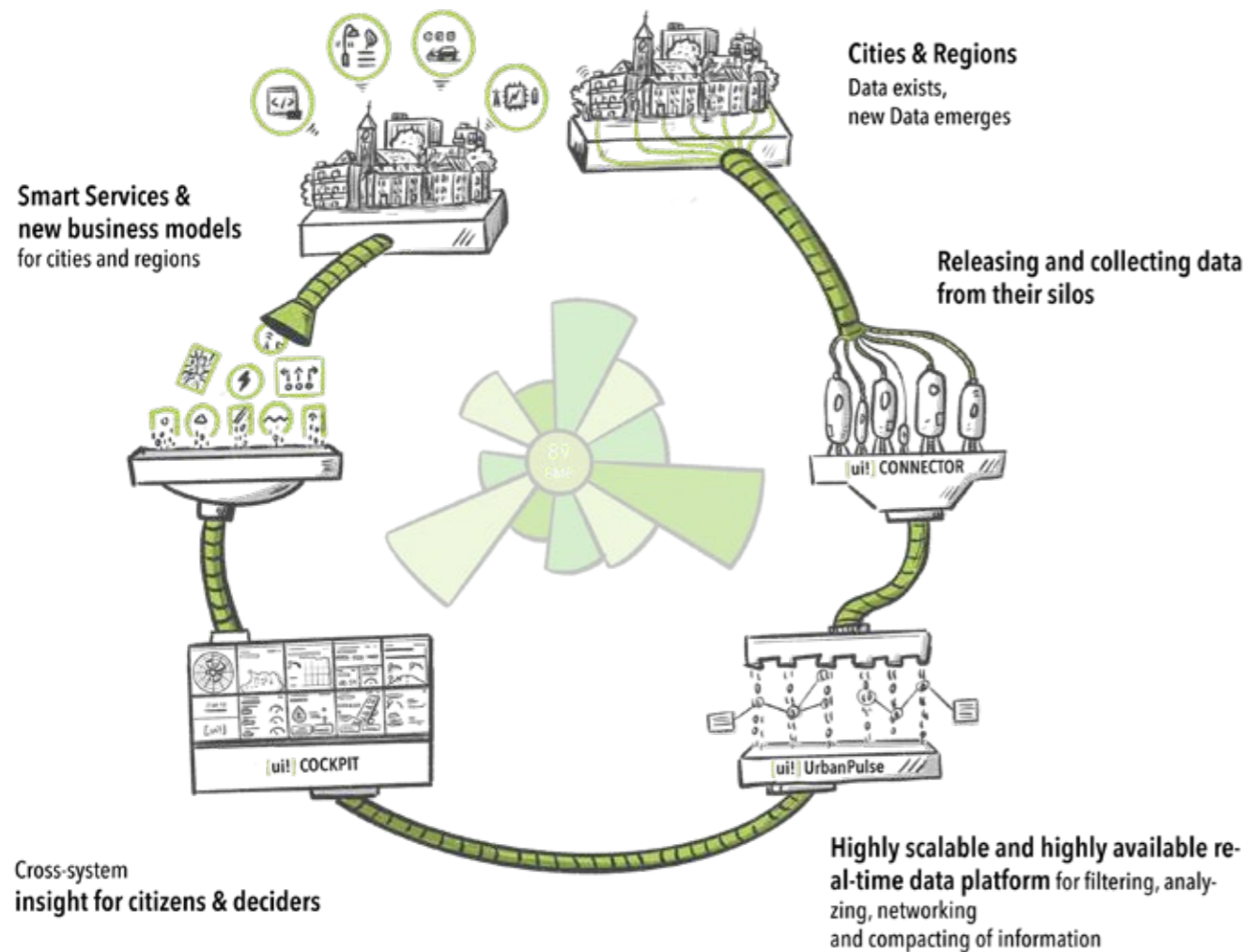
6

Gain benefits

A simplified review, identification of lessons learned, securing benefits and disclosure of the results obtained.

OUR PORTFOLIO

Extensive experience in the field of digitization of cities and smart cities has already led to the establishment of several successful real-world laboratories in Germany, the USA and Australia.

The sector-specific knowledge of the subsidiaries [ui!] UMI and [ui!] ULI in the areas of mobility and urban infrastructure also enables the entire value chain: from the development of new business models and consulting on the acquisition of suitable hardware to the implementation and operation of the solution from a single source.

[ui!] UrbanPulse
Added values for Cities & Regions

Cities & Regions
Data exists,
new Data emerges

Releasing and collecting data from their silos

Smart Services & new business models for cities and regions

[ui!] CONNECTOR

[ui!] COCKPIT

[ui!] UrbanPulse

Cross-system insight for citizens & deciders

Highly scalable and highly available re-al-time data platform for filtering, analyzing, networking and compacting of information

www.ui.city
www.uli.city
www.umi.city

ENVIRONMENTAL SENSORS & INTELLIGENT MULTI-FUNCTIONAL STREET LIGHTING

SUSTAINABLE MOBILITY & TRAFFIC OPTIMIZATION

MOBILITY IN THE NEIGHBOURHOOD

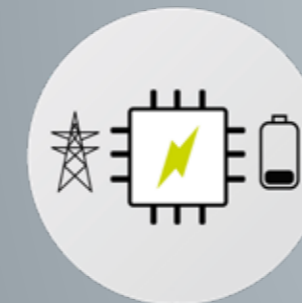UI!] URBANPULSE AS BASIC PLATFORM & VISUALIZATION OF URBAN DATA

[ui!] SOLUTIONS

Based on [ui!] UrbanPulse, sensor and other real-time data are collected from different data sources and processed, analysed and visualised as the "pulse of the city" in all relevant areas as data-based value-added services.

Environmental data and intelligent street lighting including e-charging stations as part of the innovative infrastructure of Smart Cities.

Analysis and prediction of the green phases of traffic lights in real time to improve traffic guidance, intelligent support in finding parking spaces in inner city areas.

Mobility in old age through accompanying services in public transport, supported by [ui!] software solutions.

E-vehicles as an economical alternative in the fleet of companies, municipalities, public utilities, etc.

Optimised energy management in cities and neighbourhoods.

We offer our customers a complete service. From the first consultation to decision-making in committees and individual implementation on site.

Environmental sensors & intelligent multifunctional street lighting

STREET LIGHTING

With more than 20 years of experience, we cover all issues relating to street lighting. From simple LED lights to sensor-based control systems and street lighting as a central IoT infrastructure.

SECURITY

Intelligent, situation-oriented systems to increase public safety with integrated solutions such as emergency call modules, CCTV, audio and image analysis.

ENVIRONMENT + WEATHER

Acquisition of environmental and weather data according to individual requirements such as temperature, noise, Co2, ozone, NOX and particulate matter as well as the determination of the Air Quality Index.

AT ONE GLANCE

Visualization of all collected data on a unique dashboard like the [ui!] COCKPIT.

USE OF CALIBRATED SENSORS

High quality of the acquired data by using professional and calibrated sensors.

TRAFFIC + PARKING

Real-time analysis of traffic volumes and the utilization of parking areas of any kind, adapted to the existing infrastructure and situation on site.

TRANSPARENT DATA MANAGEMENT

The collected data always remain the property of the customer.
You decide on the form and scope of use.

COMPLIANCE WITH STANDARDS

Compliance with the standards for imHLa according to DIN SPEC 91347.

Sustainable mobility & traffic optimization

[UI!] CROSSFLEET - FOR FLEETS

The cross-fleet use with the help of intelligent ICT-supported organisation enables the ideal utilisation of e-vehicles in public and commercial fleets.

We can ensure optimal capacity utilisation and thus lower operating costs by sharing the vehicles. This means that e-vehicles can already be operated today at full costs comparable to those of conventional vehicles.

Traffic information in real time

The [ui!] TRAFFIC APP shows the current traffic situation by means of information provided on the basis of data from an urban traffic control computer. Thus real data is displayed in real time for the user.

Traffic light phase prediction as a component of traffic optimization

The analysis and prediction of the switching commands of traffic lights in real time provide new types of information, which enable "connected" vehicles to travel through the city's road network in a significantly

improved way by means of suitable assistance functions.

Drivers who do not yet have a vehicle with appropriate assistance functions receive recommendations for optimal driving behavior via the app [ui!] ECOMAT, which they can install on their smartphone.

Smart travel with artificial intelligence

Development of a nationwide, intermodal travel option - in order to be able to travel with **one ticket and a single payment process**. This will take into account the various regional and national mobility providers, such as rental bicycles, rental scooters, car-sharing, local transport, and even rail or air travel.

Mobility pilots for people with disabilities

Digital support for the implementation of an accompanying service in public transport.

2012	3.335 MWh	1.497 t
2013	3.156 MWh	1.398 t
2014	3.098 MWh	0 t
Gesamt	16.028 MWh	4.106 t

PARKPLÄTZE
Ort: Bad Hersfeld (Marktplatz)

STADTRADELN KAMPAGNE

Jahr	Teilnehmer
2012	235
2013	420

ECHTZEIT VORHERSAGE

[ui!] UrbanPulse as a base

With [ui!] UrbanPulse, a real-time sensor data platform has been developed that follows the vision of an open urban platform as expressed by the European Innovation Partnership Smart Cities and Communities (EIP) and specified in DIN SPEC 91357.

[ui!] UrbanPulse is based on a highly scalable architecture for data processing and analysis, with a special connector framework for easy integration of sensors and other urban management systems. Based on open interfaces, the platform offers an integrated access to urban data from different urban areas.

Municipal administration, companies and citizens can use the data collected and refined with [ui!] UrbanPulse to optimize their individual decisions and improve their digitalized services and processes.

Visualization of urban data

Visulalisation of information is the basis for added value of a city.

A digital city is a very complex issue and affects several areas at once. Here the possibility to visualize an overall picture is often missing.

[ui!] supports the possibility of identifying the real potential of a Smart City in an urban overview and to provide the citizens with and citizens to communicate.

For this purpose there are various [ui!] COCKPITS with different and individually compiled urban data.

[ui!] Festival COCKPIT

Using the [ui!] Festival COCKPIT, which was specially developed for large events, important data such as figures on traffic volume and traffic speeds, weather data, parking lot occupancy, visitor numbers, temperature and environmental data, towing operations and much more can be displayed in real time at a control center.

This means that those responsible have an up-to-date overview at all times and can intervene if necessary.

SMART CITY Forum
Germany's largest SMART CITY network

The Smart City Forum is a network of cities, municipalities, companies and science, which has existed since 2013 and has become one of the most successful Smart City networks in Europe.

Our network has more than 400 members and we have already been able to acquire over €100 million in funding for our network partners. This includes in particular the work within the framework of the European Innovation Partnership "Smart Cities and Communities", which was founded by EU Commissioner Oettinger, among others. The Smart City Forum has developed into a multiplier for Germany.

The focus here is on the topics:

- Sustainable urban mobility
- Energy-efficient neighbourhood management
- Integrated infrastructures

**The organisation of the SMART CITY Forum has taken over [ui!].
A membership is free of charge.**

www.smart-city-forum.de

SMART CITY Forum

[ui!] Urban Software Institute

www.ui.city
Info@ui.city

You are interested in further [ui!] use cases?

PLEASE VISIT OUR
SHOWROOM IN DARMSTADT

We would be happy to show you further innovative examples of various [ui!] SOLUTIONS in our showroom in Darmstadt, or in our branches in Berlin, Chemnitz, Munich, Brisbane, Budapest, or Oxford.

DARMSTADT - Rösslerstr. 88 - 64293 Darmstadt

Appointments: info@ui.city oder T +49 (0) 6151 4 93 20 60

CONTACTS

BERLIN

Fasanenstraße 3
D-10623 Berlin

T +49 (0)30 208 47 24 40
F +49 (0)30 208 47 24 49

DARMSTADT

Rösslerstr. 88
64293 Darmstadt

T +49 (0) 6151 4 93 20 60
F +49 (0) 6151 4 93 20 69

WALLDORF

Haydnstr. 34
D-69190 Walldorf

T +49 (0)6151 49 320 60
F +49 (0)6151 49 320 69

CHEMNITZ

Zwickauer Str. 223a
D-09116 Chemnitz

T +49 (0)371 8579859
F +49 (0)371 8579854

MÜNCHEN

c/o GATE,
Lichtenbergstr. 8
85748 Garching bei München

T +49 (0)89 5484 2095
F +49 (0)89 5484 2099

[ui!]

[UI!] URBAN SOFTWARE INSTITUTE AUSTRALIA

[ui!] The Urban Institute Pty Ltd
c/o Innovation Centre, 90 Sippy Downs Drive
Sippy Downs QLD 4556 Australia

T: +61 7 5457 0307
E: apac-sales@ui.city

[UI!] URBAN INTEGRATED LTD GREAT BRITAIN

7 Long Barn High Street,
Sutton Courtney, Abingdon, Oxfordshire OX14 4BQ,

T: +44 7834 998151
E: jason.warwick@ui-uk.city

[UI!] URBAN INSTITUTE HUNGARY ZRT. HUNGARY

Egry József u. 18, V1 Building C wing.
Budapest, 1111,
Budapest University of Technology
and Economics

T: (+36) 1 463 34 19
E: info@ui.city

[UI!] URBAN INTEGRATED INC. UNITED STATES OF AMERICA

One World Trade Center
285 Fulton Street, Suite 8500
New York, NY 10007

E: info@ui.city

Our employees are happy to around the globe to get in touch with you.

[ui!]

[UI!] GROUP

Fasanenstraße 3
D-10623 Berlin
Germany

Tel: +49 (0)30 / 208 47 24 40

www.ui.city
info@ui.city