HOW ARE YOU MY CITY?

Getting your city speaking, answering and predicting its transformation at anytime in real time.

PRESENTATION OBJECTIVES

- Inform potential partners and stakeholders about experiences and perspectives of Smart City Monitor applications In Europe countries.
- Promote new use cases and applications of this powerful novel technology in urban areas

COLLABORATION OPTIONS

1. Commercial business projects
2. Public and private funds, grants and loans e.g. Horizon 2020, ESIF, EBRD, etc

Smart City application areas:

Water, Natural and cultural assets, Raw materials, Circular economy, Climate action, Energy Efficiency, FTI, Industrial Leadership, ICT, Biotechnology, Smart Green & Integrated transport and buildings

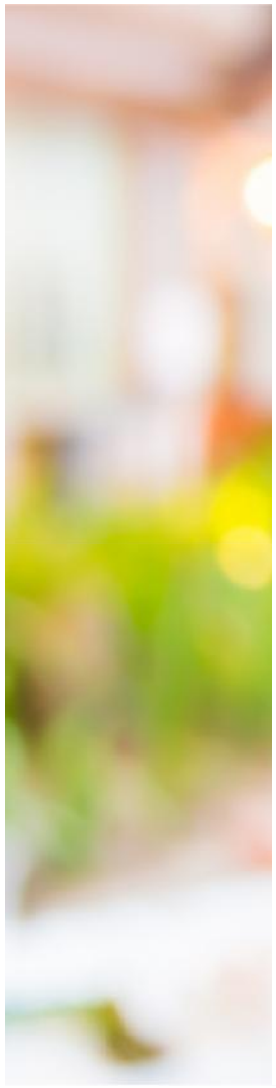
1. WHAT IS A SMART CITY?


Smart parking? Electric-cars?
Smart waste collection?
Smart Water?
Interesting events notifications?
Smart Traffic management?
Smart energy grids?
Smart routes planning, etc?

There are many opinions and points of view and definitions of ‘Smart City’ that differ significantly.

And many of those who are in the power to decide and set objectives such as mayors, vice mayors, funding and governmental organizations, utility providers are not sure about it as well.

OUR CONTRIBUTION TO THE FORMULATION:



Smart City is the Big Urban System of Systems having advanced organization where

- Citizens can live with best possible quality of life and have easy access to rich set of urban services that are intelligent, convenient, efficient, well organized, and emotionally positive;
- Service providers and governing bodies have holistic and in-depth knowledge of ongoing processes, its quality, flexibility to adapt to the demand;
- Available urban resources are used in the most efficient way (energy, space, parks, schools, healthcare, etc);
- The community has effective evidence tools and means enabling transparent monitoring and control.

IN-DEPTH KNOWLEDGE OF ONGOING PROCESSES

It was not that long ago ...

But already changed completely

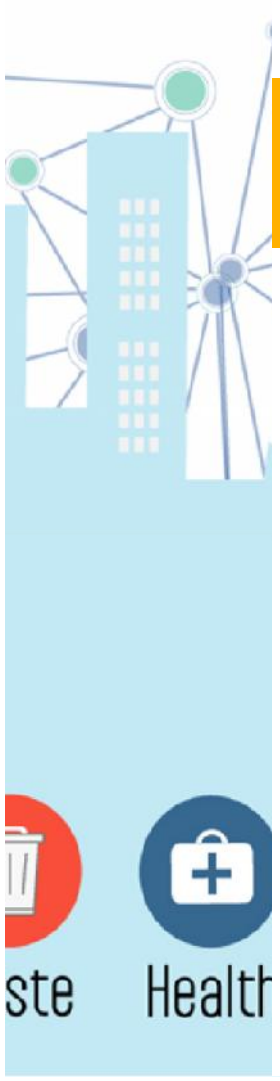
SMART CITY MONITOR AS ENABLING TECHNOLOGY

Big urban system management requires powerful ICT that shall

Automatically collect big data about numerous urban processes from large number of heterogeneous data sources in the city urban areas – IoT, sensors, smart meters, videocameras, automated systems, databases and spreadsheets, webs and various mobiles (i.e. – it shall know what's going on, where and why!)

SMART CITY MONITOR AS ENABLING TECHNOLOGY

Transforms the data into holistic trustful non-biased real time information services for citizens, businesses, utility providers and governing bodies improving efficient use of available urban resources, efficiency, sustainability, i.e. helps us to live in our city with best possible quality of life having its full knowledge and assisting our families in healthy well being and assist in intelligent mitigation of negative urban impacts



SMART CITY MONITOR (SCM)
UNIQUE OFFER PROPOSITION

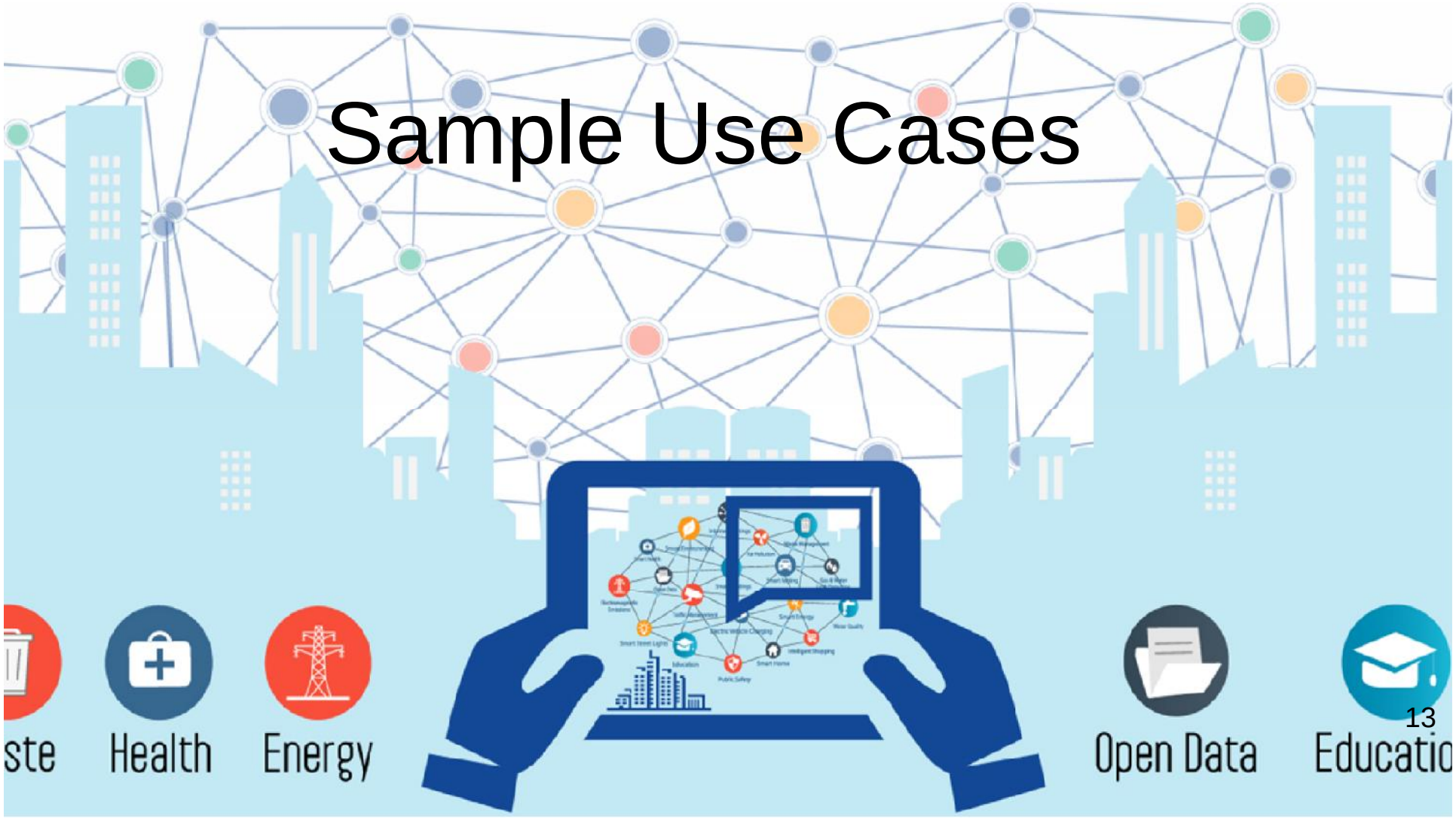
The users do not need to spend time monitoring and analysing processes trying to find out some issues.

Smart City Monitor automatically analyses all ongoing processes in real time, indentifies non-compliances to planned urban goals, calculates statuses of city objects including individual ones and identifies unsustainable trends and only then notifies relevant stakeholders – operators of city services, managers, administrators, decision-makers and citizens.

SMART CITY MONITOR (SCM)
UNIQUE OFFER PROPOSITION

- The real time predictive & prescriptive analytics assist operators, managers, decision makers, citizens in their daily business activities.
- Applies Hyperledger blockchain framework to utilize a modular platform for building, deploying, and running distributed ledgers
- **Smart City Monitor answers the question "How are you my city? to you anytime in real time.**

Sample Use Cases



2. INTERNATIONAL STANDARDS

USE CASE 1: Transformation of International Standards into continuous monitoring and auditing services

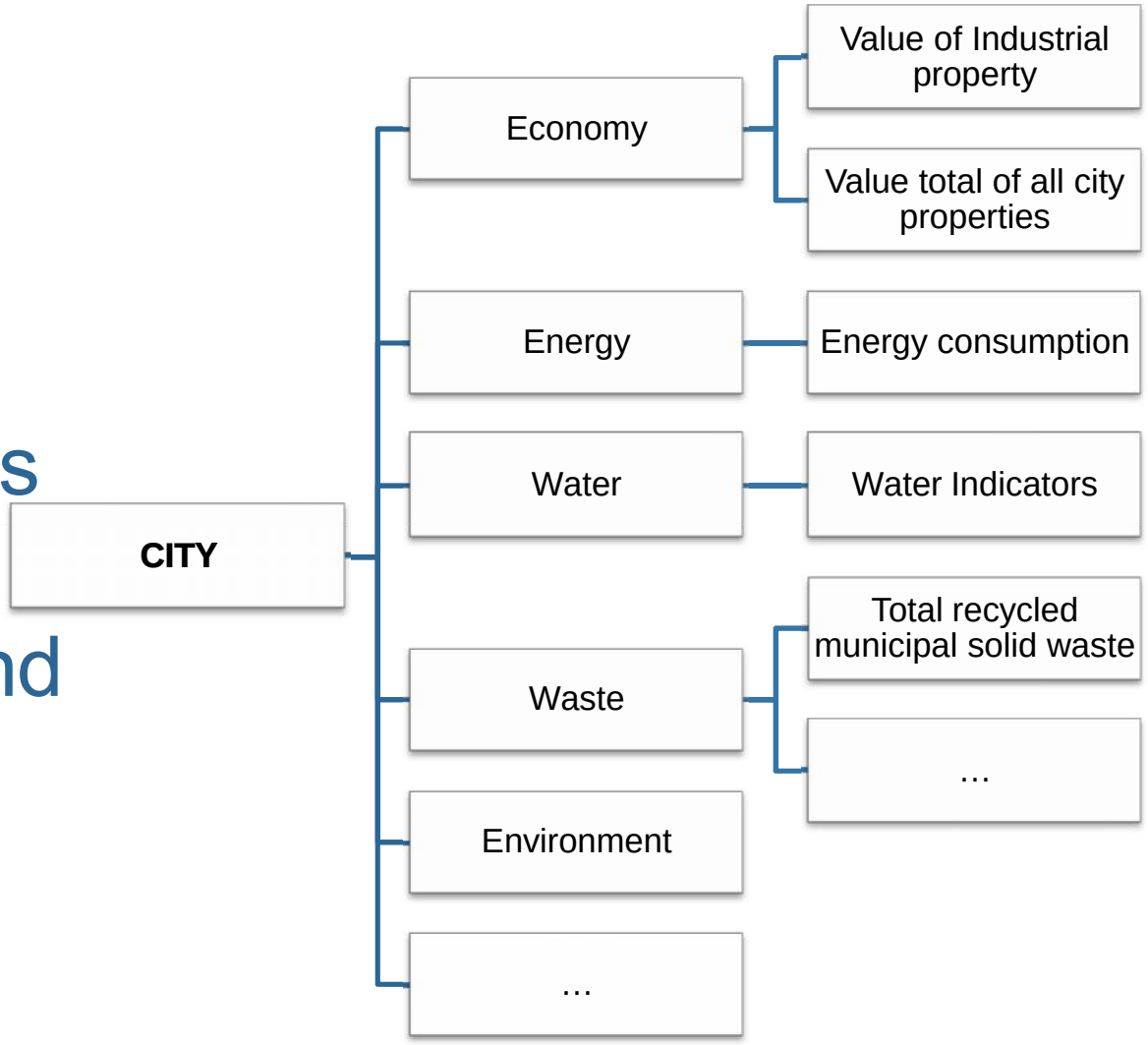
Smart City Monitor makes standards working as services for the urban communities for example the international standard ISO 37120:2018 Sustainable development of communities —Indicators for city services and quality of life".

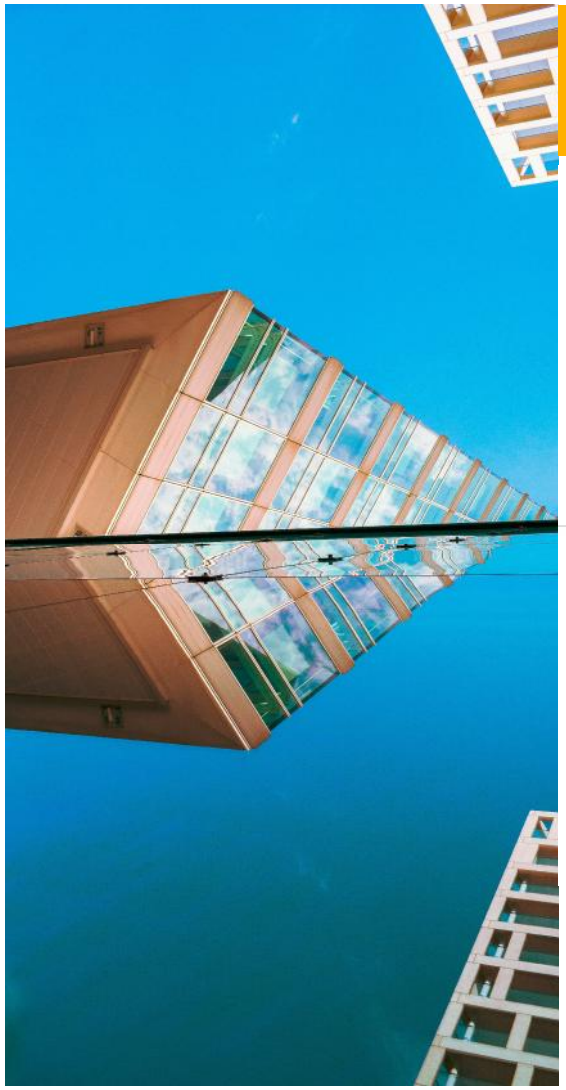
It creates integrated view for the city performance and its analysis, provides uniform definitions of What is measured? How should it be done? What are the requirements for data collection, presentation and validation?

It introduces the common basis for reporting, comparison and benchmarking of any city performance independently of it size.

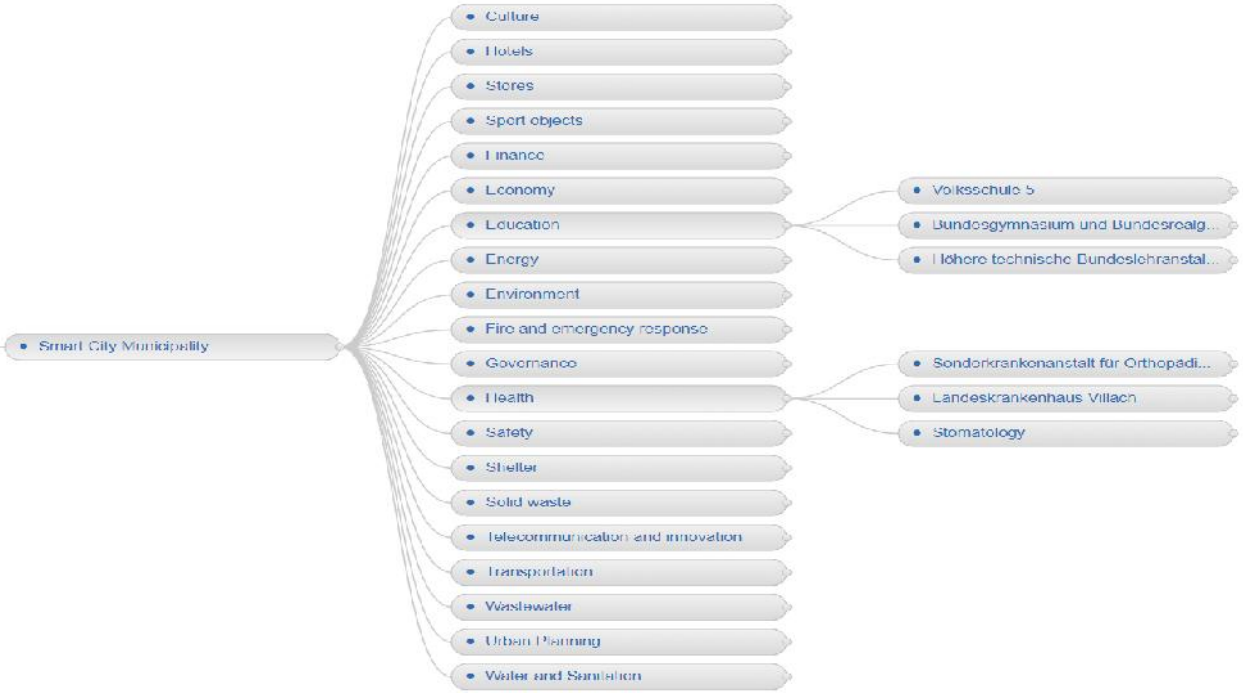
ISO 37120 Structure

19 themes as focus areas with core, supporting and profile indicators





Smart City Monitor Digital Twing by ISO 37120



Copy of the interactive widget “Navigator” in Monitoring Dashboard (http://pharosnavigator.com)

TWIN TECHNOLOGY COMPONENTS

CITY MODEL

by ISO37120 represents all major urban processes and typical infrastructure in 19 schematic themes above 60 indicators offering holistic and integrated approach to sustainable governance and development

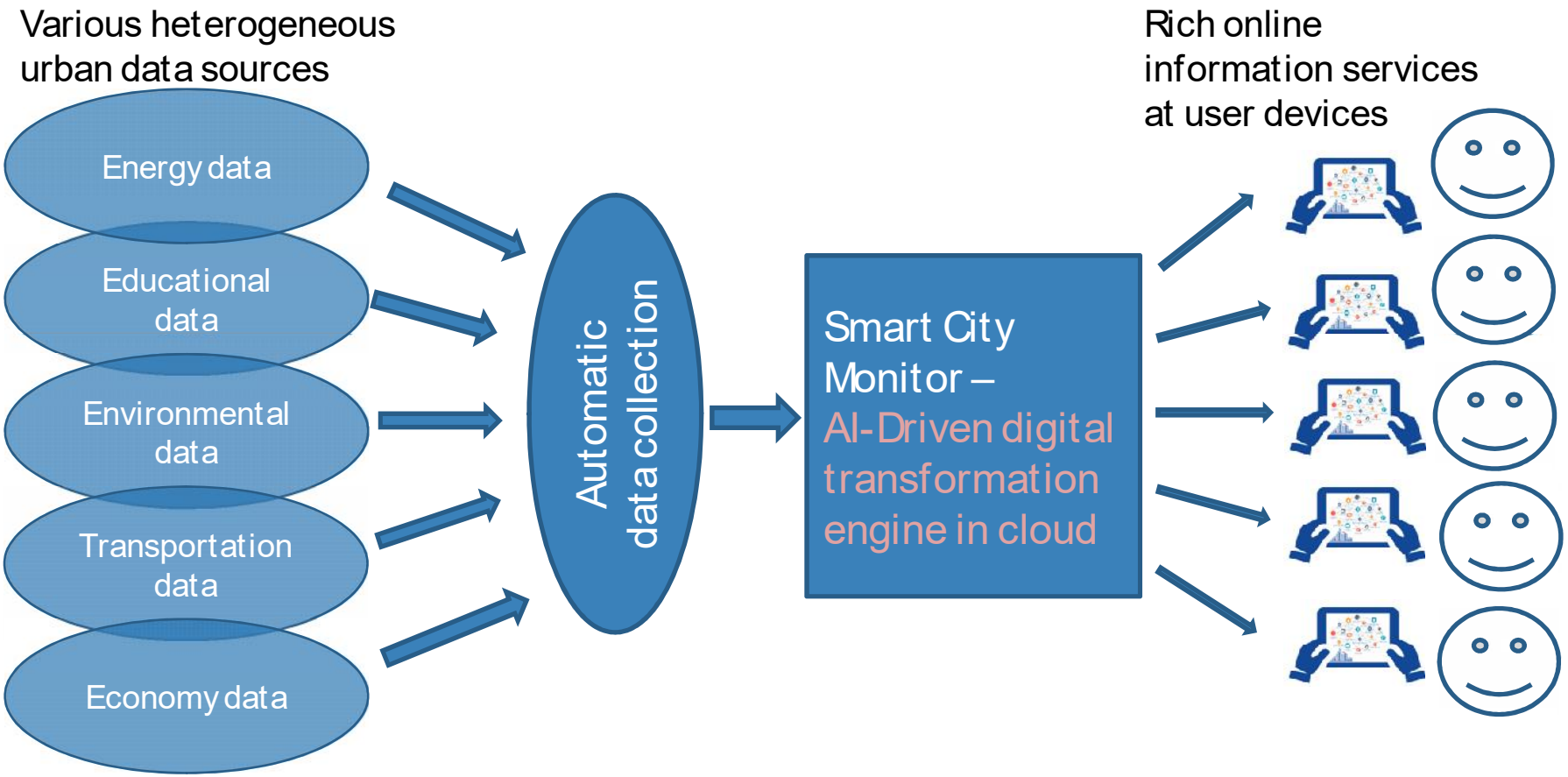
CITY DATA

is prepared by the responsible city departments and organisations in 20 Excel files monthly or weekly accordingly to ISO37120 requirements

SMART CITY MONITOR

High level AI-driven IoT technology platform automatically collecting big data from large number of data sources and its digitally transforming into custom information services for stakeholders in real time

HOLISTIC CORE OPERATIONS:
City Model, City Data, Smart City Monitor, Stakeholders



SUSTAINABILITY, PERFORMANCE TRANSPARENCY IN REAL TIME

The CityMonitor 37120 running at Smart City Monitor presents comprehensive set of all 19 sectors and services accordingly to ISO37120

It assists cities in steering and assessing the performance management of city services and all service provisions

It is open to adding and upgrading with any necessary local indicators and city infrastructure objects that are required to assist in smart city management effectively

ANALYTICS ON COMMON USER DEVICES!

Notebooks

Tablets

Mobiles

ADMINISTRATIONS HAVE TRUSTFUL ANSWERS AT ANY TIME AND IN ANY PLACE AND IN REAL TIME

How are you my city?

CityMonitor 37120 dashboard presents the holistic indicators for city services and quality of life by ISO 37120. It is open for adding any locally defined custom indicators to measure performance management and sustainability.

It supports policy development, priority setting applicable to any local government that wants to measure its performance in a comparable and verifiable manner, irrespective of size and location enabling continuous improvements and audit of quality of life.

3. AIR

USE CASE 2: Air Quality indicators in Smart City Monitor (SCM)

City has inexpensive environmental LoRaWAN sensors installed on the public transportation vehicles (busses, waste collection trucks).

The sensor data is automatically collected by SCM and analysed for compliance with health standards for each location in real time.

The non-compliance status is publicised at the web dashboard, city maps (heatmap, isomap), mobile apps and city operational center.

All citizens who have SCM apps receive timely notifications regarding entering and passing through city areas which has air-pollution non-compliances.

USE CASE 2: Air Quality indicators in Smart City Monitor

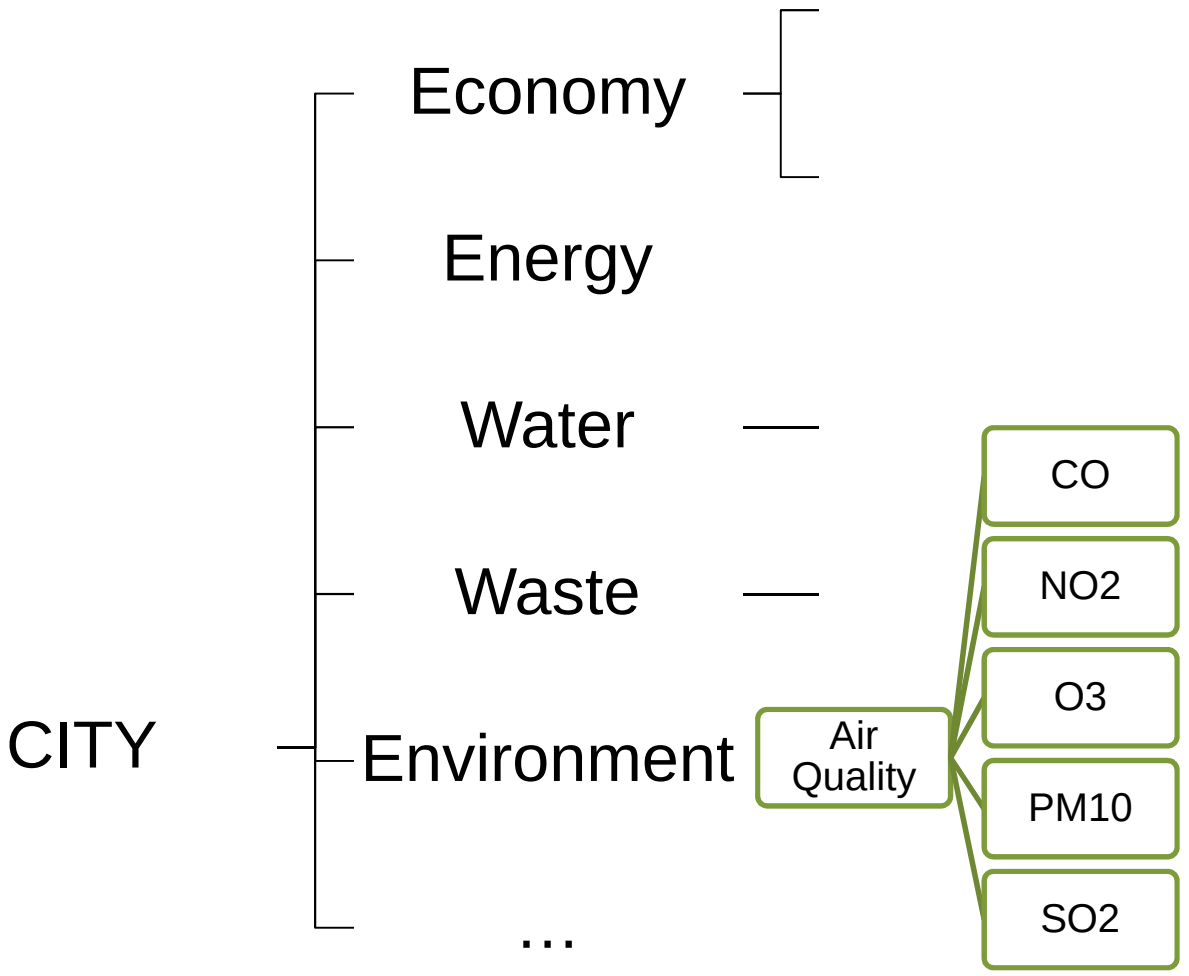
The city administrations obtain evidence data statistics regarding air quality problems in specific locations and time periods providing trustful information about environmental protection actions.

The results of such actions can be promptly evaluated and verified becoming transparent for the citizens.

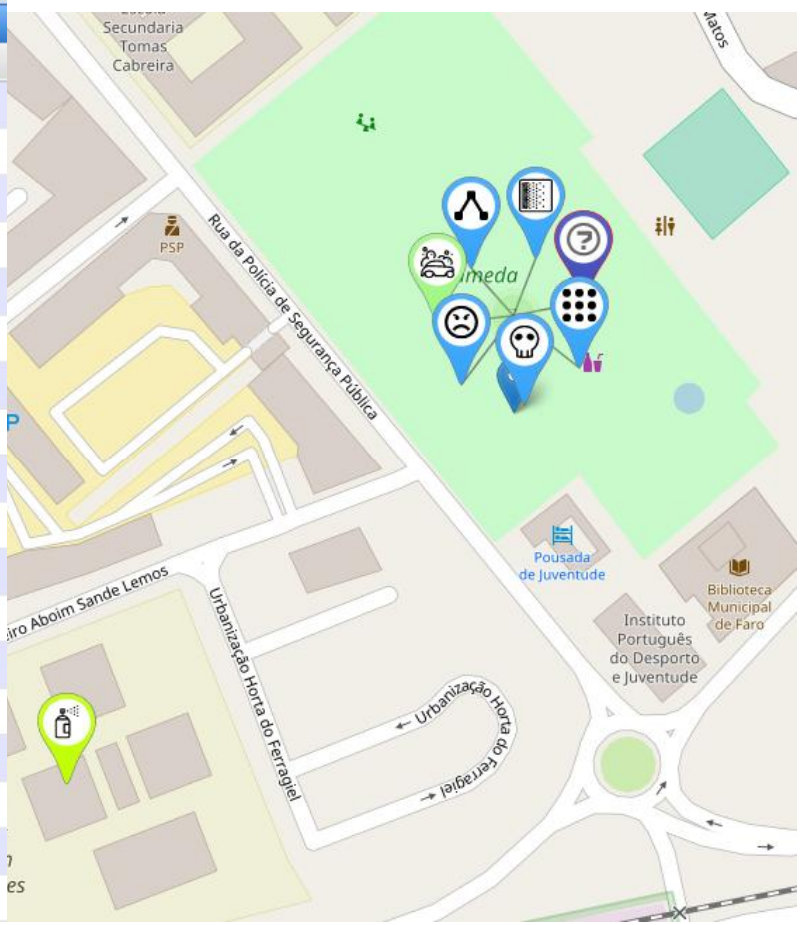
Air quality

Example (Model View):

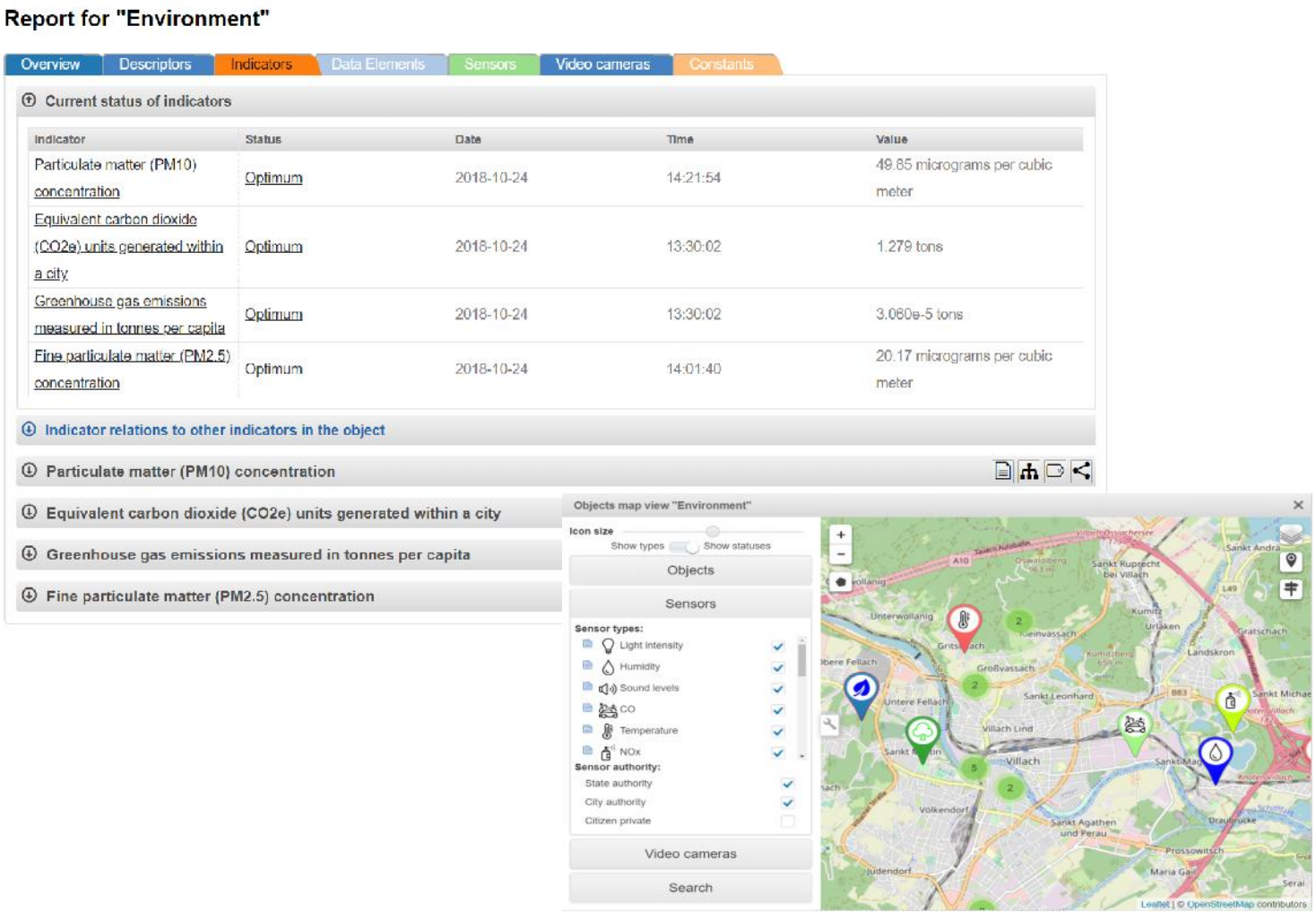
Air Quality indicators in Smart City Monitor 37120 report for Environment can calculate and present real time data that is received from multiple sensors distributed in urban area and installed on mobile vehicles (busses, trains, etc)



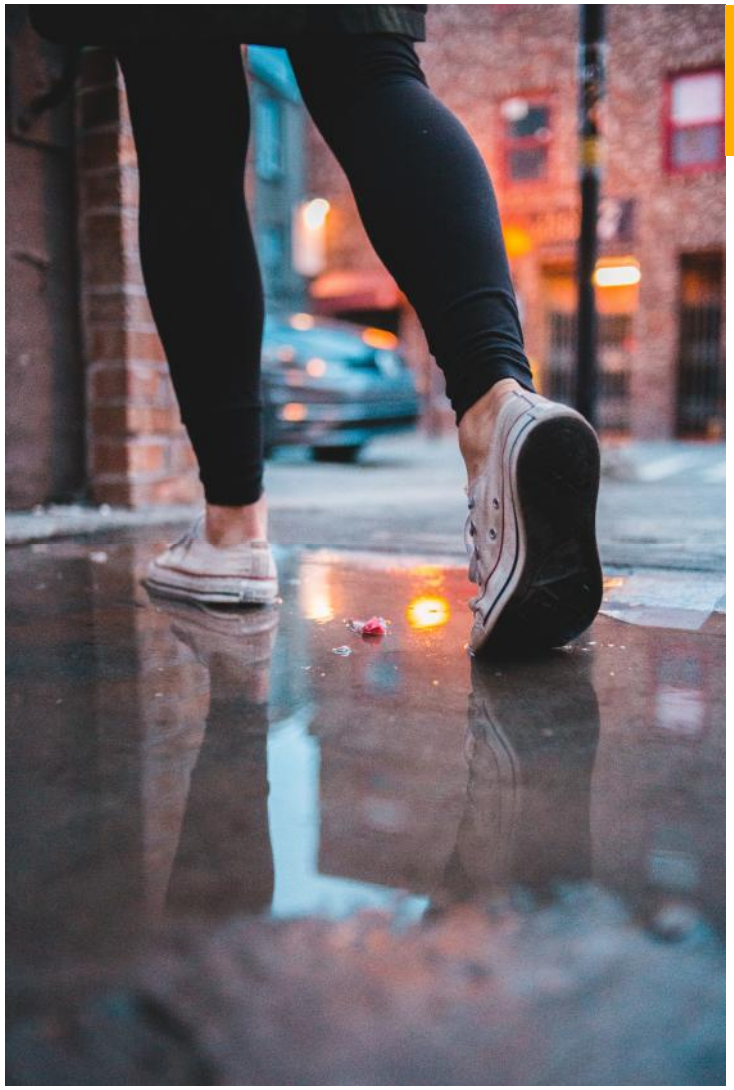
Air quality: Providing citizens with air quality information in real time by individual indicators and integrated status for specific location



SCM 37120 Environment: Providing administrations and citizens with environmental information and quality of life in real time for any specific location and the city as a whole.



4. WARNING CITIZENS & TOURISTS ABOUT ACCIDENTS



Use case 3: WARNING CITIZENS and TOURISTS ABOUT ACCIDENTS

Pedestrians use mobile apps to find out the most routes in the city – walk with kids, elderly, dogs, shopping, etc

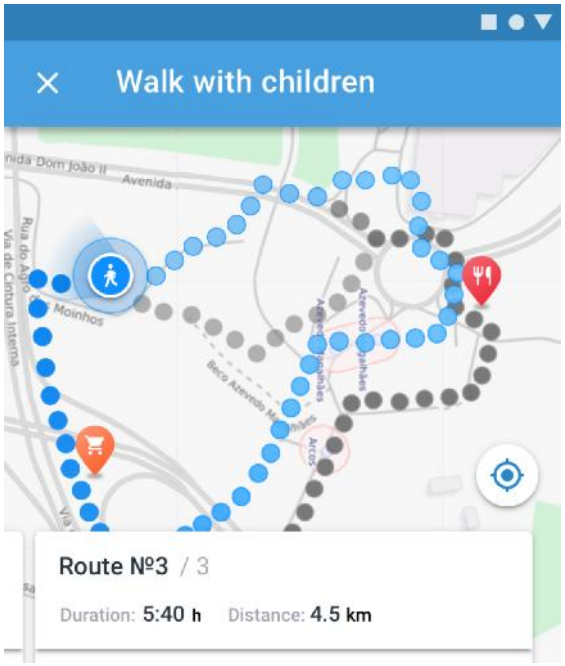
On their way SCM keeps monitoring each pedestrian location in the city (anonymous service using GPS)

In case of accident (gas/water leaks, explosions, fires, etc) SCM automatically notifies all pedestrians near the accident zone and offers rerouting prescriptions at mobiles

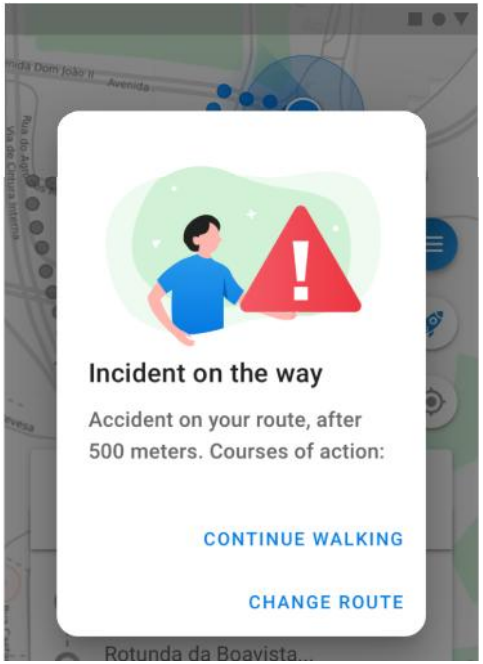
City operational center has full control of the situation and capacity to manage it.

SMART PEDESTRIAN ASSISTANT:
for citizens and city administrations

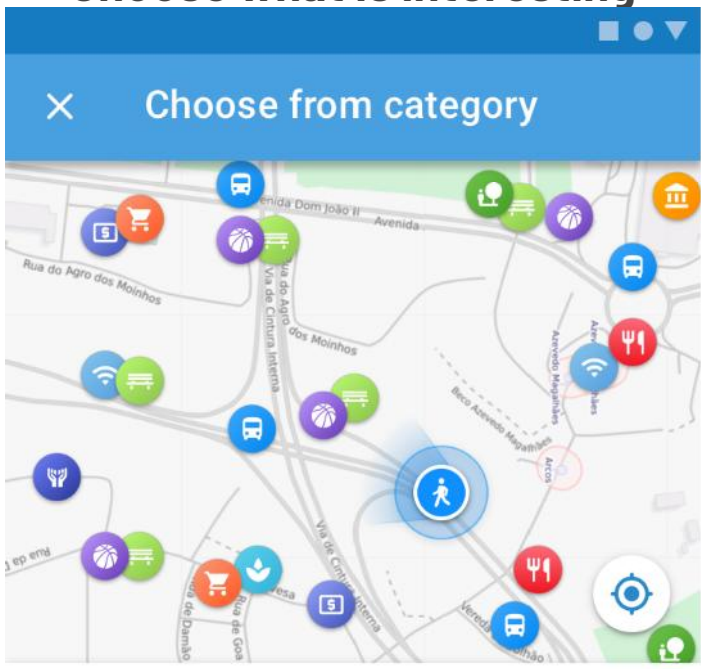
Route selection



Notifications



Choose what is interesting



4. REAL TIME PERFORMANCE ANALYTICS ABOUT ONGOING PROCESSES

OPERATIONAL TRANSPARENCY FOR MONITORING AND PERFORMANCE IN REAL TIME

Shopping Centres

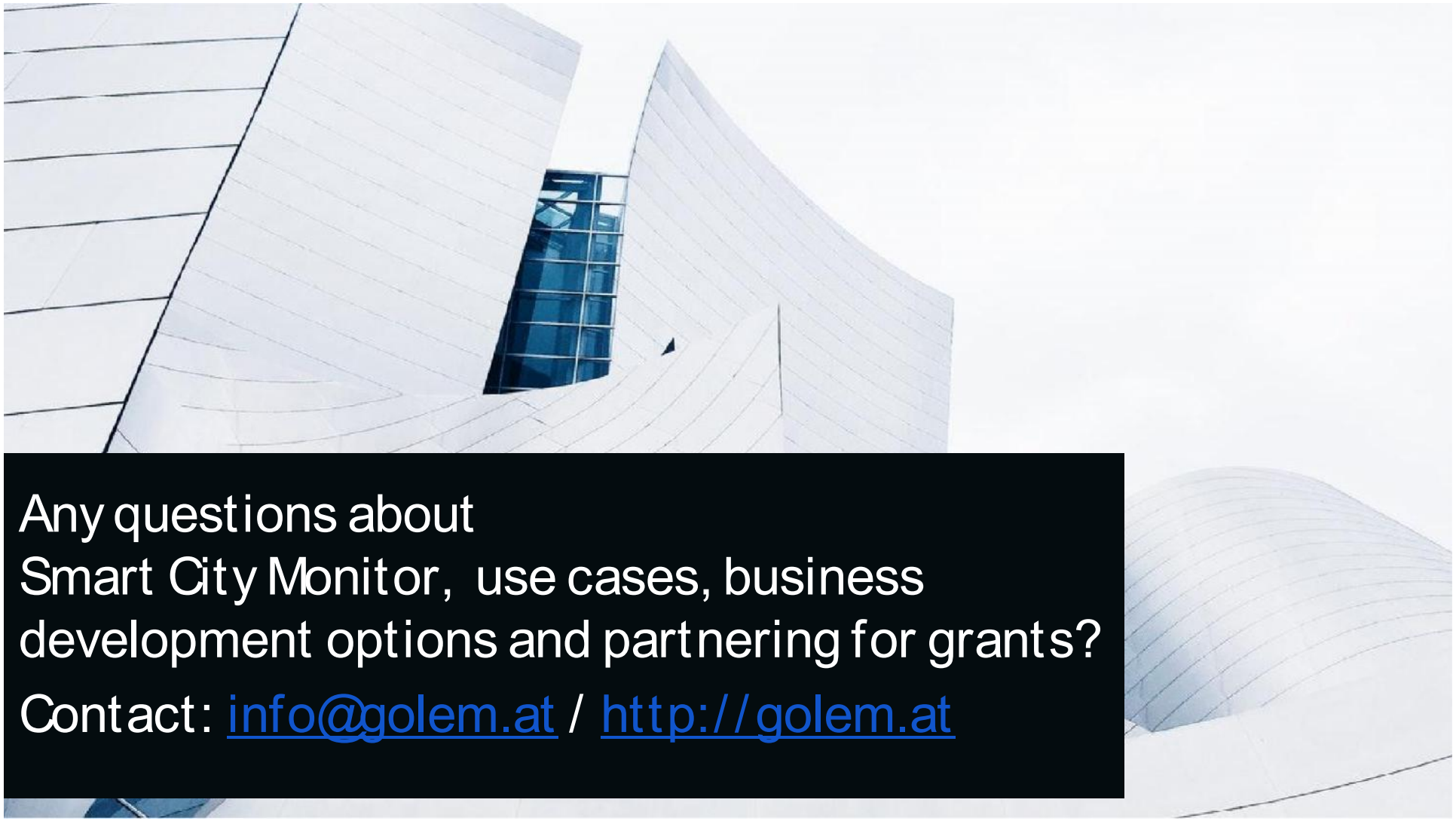
Automatic collection of metering data about each shop operations: water, electricity, waste, number of visitors, current shop status, fire, etc …

Smart districts

Each costs element for buildings and totals, revenue by categories and totals, etc

Schools, etc

CO_2, operational control, school performance, etc



Any questions about
Smart City Monitor, use cases, business development options and partnering for grants?

Contact: info@golem.at / http://golem.at

Special thanks to all the people who made and released these awesome resources:

- Presentation template by SlidesCarnival
- Photographs by Unsplash