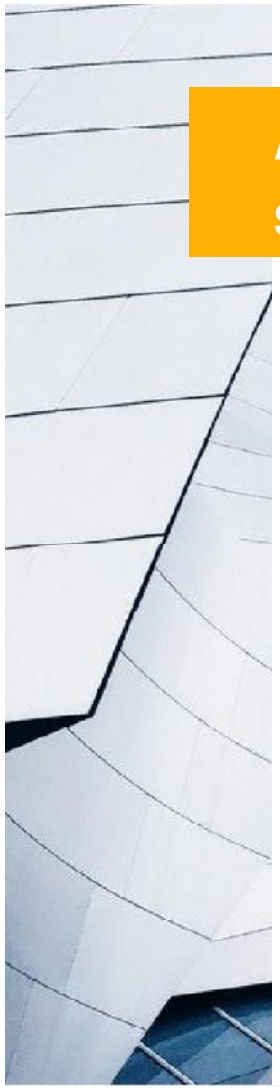
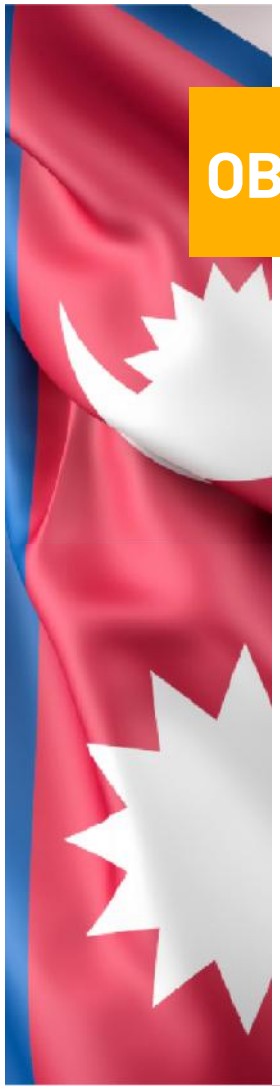


Applying AI driven Digital Transformation to empower sustainability controls

Digital Twins as Models of complex real world systems and tools enabling holistic Management and Governance

Overview of PharosN platform functionalities

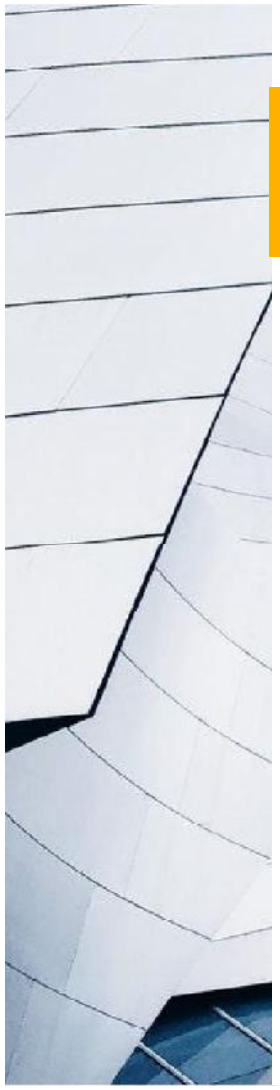


OBJECTIVES

Smart Governance application areas:

Agro-Industries, Provinces, Regions, Urban Areas, Cities, Districts, Campuses, eHealth, Water, Waste, Natural and cultural assets, Raw materials, Circular economy, Climate crisis & actions, Energy Efficiency, Green & Integrated transport, Critical infrastructures, Social dynamics trends, etc


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



Smart Outcome Monitoring in Evidence-Based Policymaking requirements

- Smart Governance needs comprehensive systemic knowledge of evidence
- Needs for prompt response to keep control
- Real time becomes a must due to increasing dynamics of change
- Predictive & prescriptive analytics needed to assist decision makers in effective responses
- Blockchain technology to ensure identity of events, actions, data sources and results

Can a human monitor complex Big System of System in real time?

Looking after each 1000+… process charts in real time? Really?

PharosN software is AI, Big Data, blockchain driven app

- Running Digital Twin as model of the target **Big System of System (BigSoS)** in real time
- Collecting big data streams from large number of various heterogenious data sources
- Analysing each data stream and its combinations in real time and transforming it into holistic
- **Answering about the ongoing status “How is my BigSoS?” anytime, in real time.**

Analysing BigSoS performance in real time and all the time

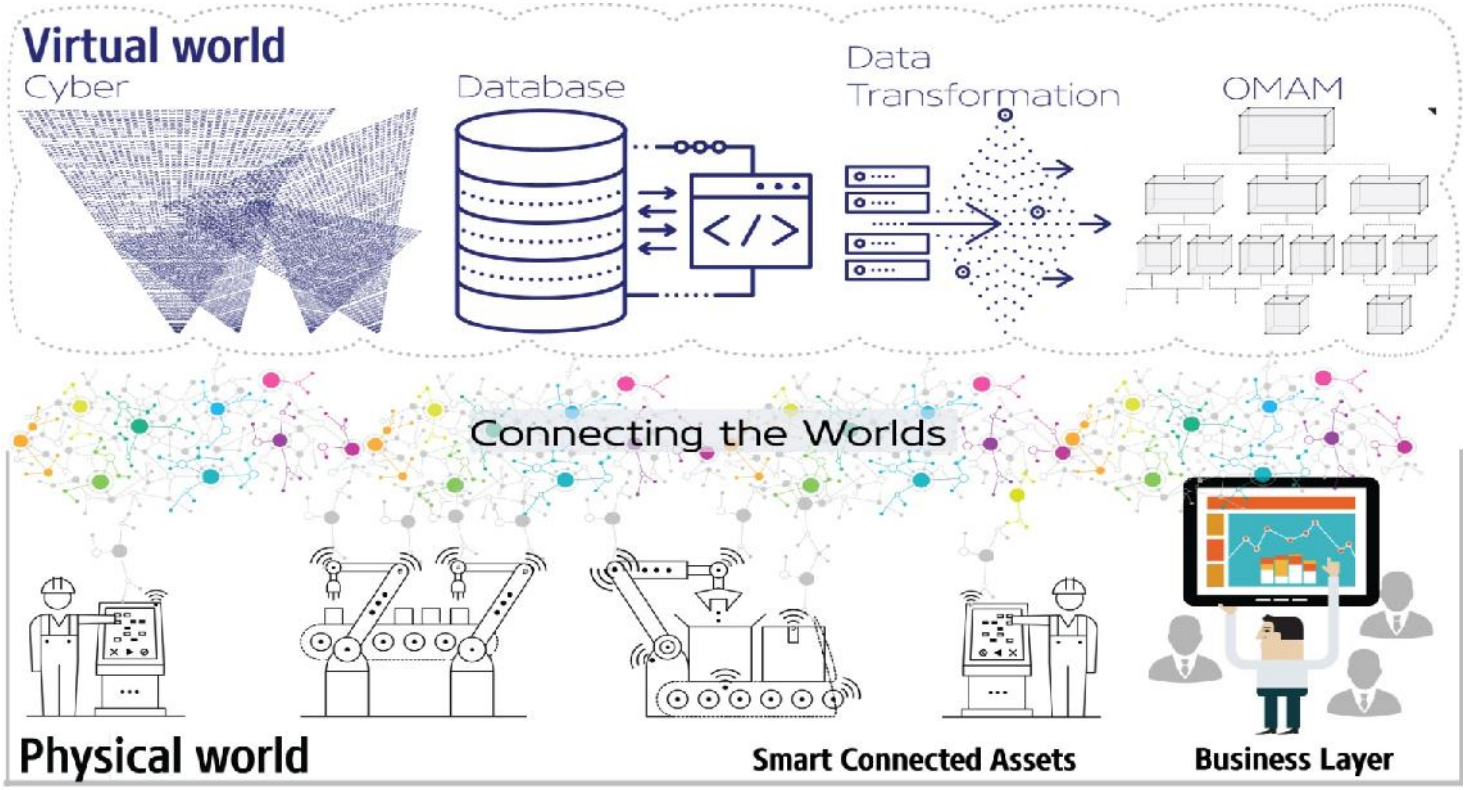
Notebooks

Tablets

Mobiles

The holistic vision of real time BigSoS performance and its prediction on common mobile devices!

Linking the worlds by Digital Twin Model (OMAM)



Open Metropolitan Assets Model = OMAM

Examples of Digital Twin Models of Big Systems of Systems

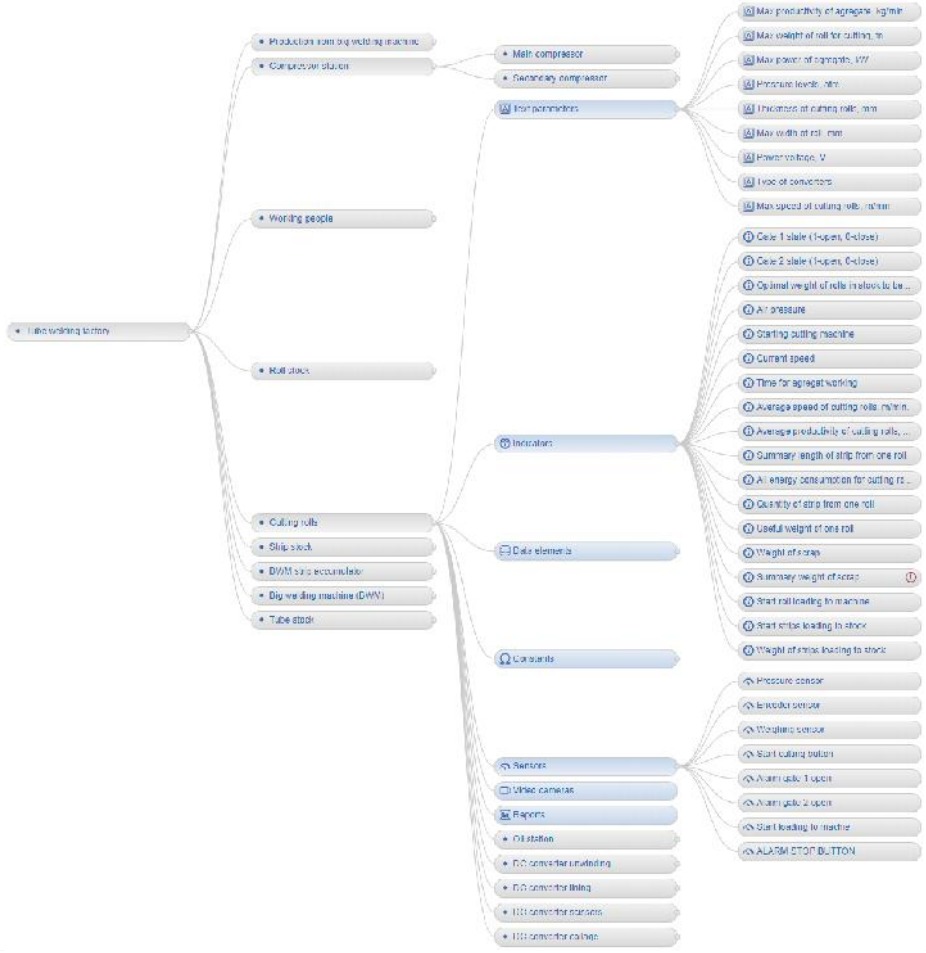
Twin Model for a Smart City by ISO 37120 @ PharosN

International standard ISO 37120:2018
Sustainable development of communities — Indicators for city services and quality of life

Twin Model for a Furniture Manufacturing

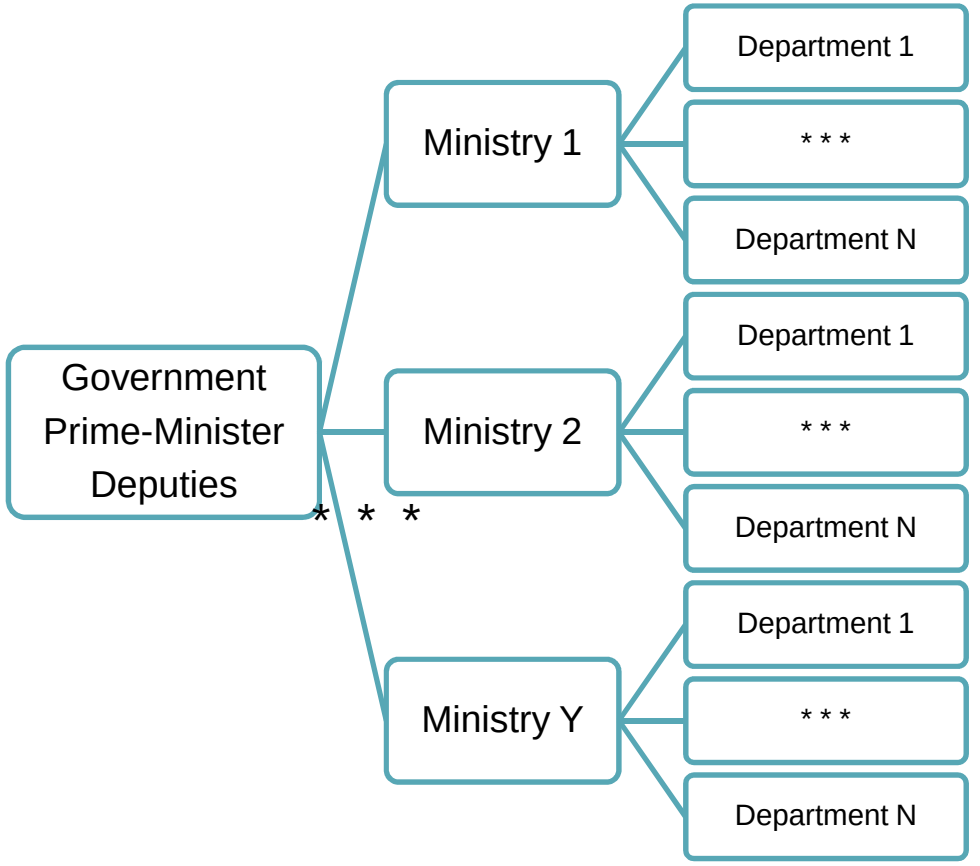
Smart Enterprise Monitor app @ PharosN

Twin Model for Tube Welding Factory

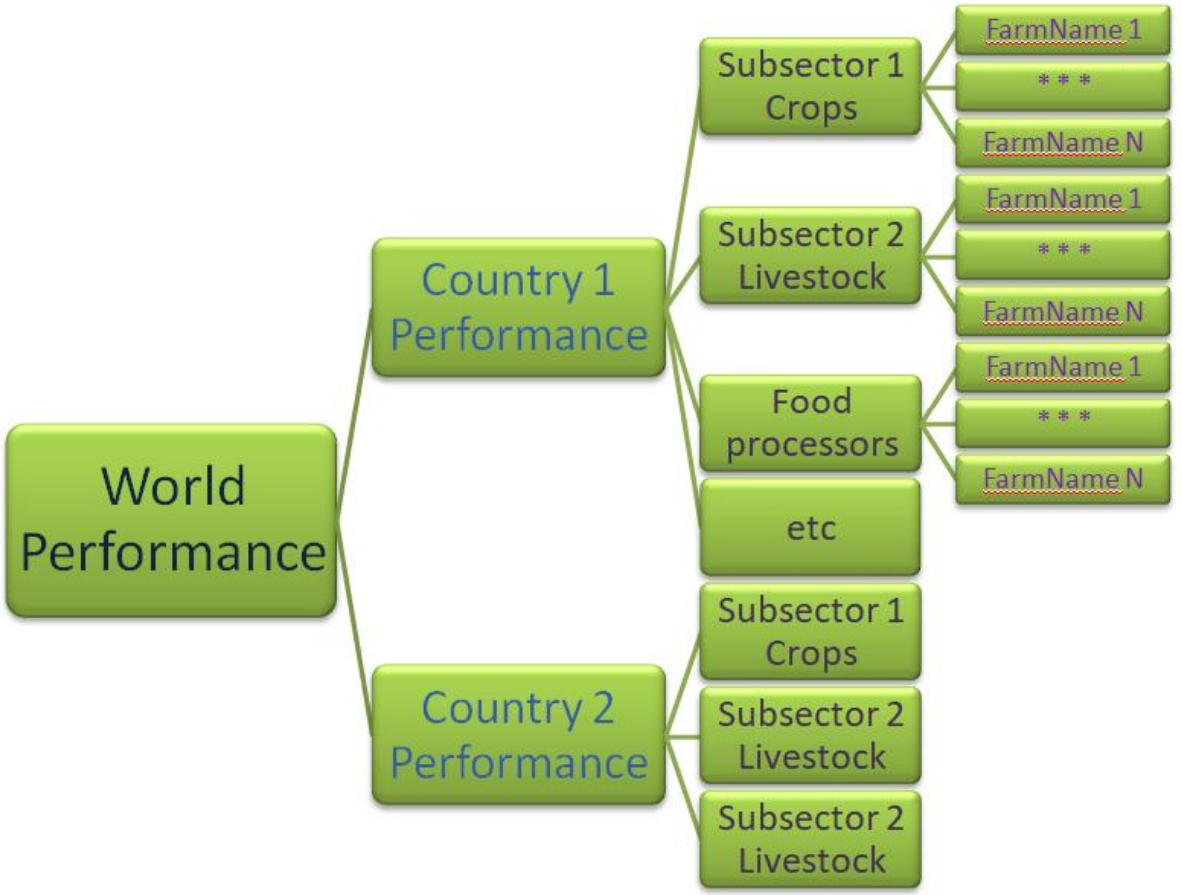


Smart Enterprise Monitor app @ PharosN

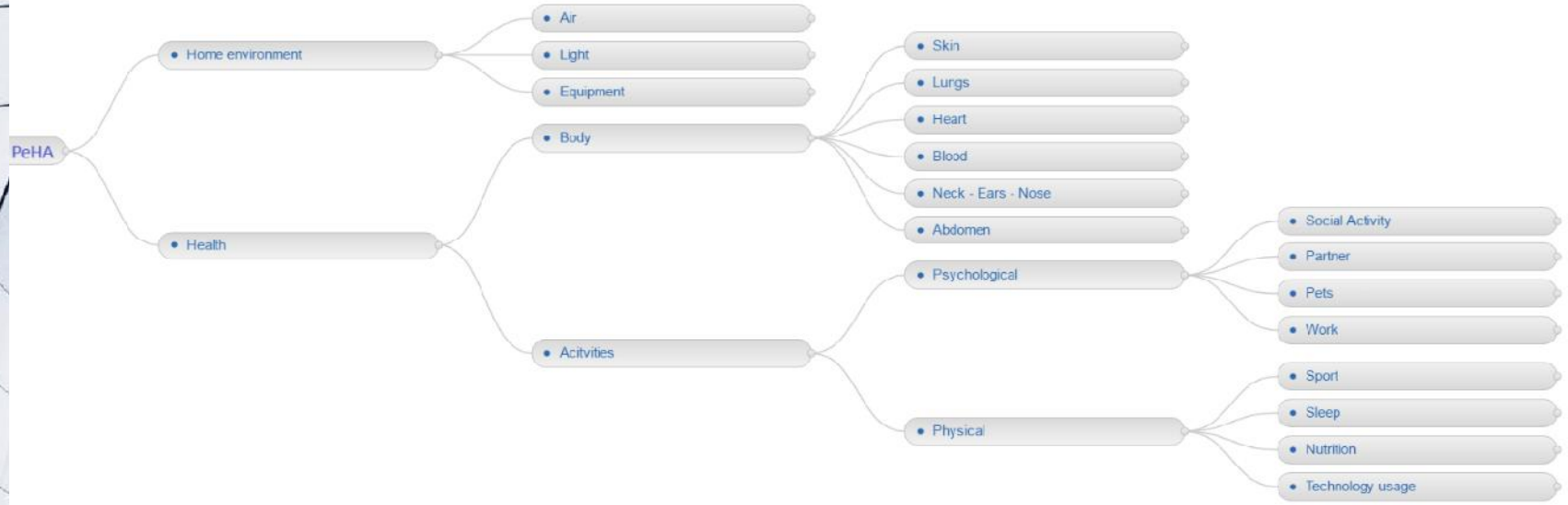
Generic Central Governance Twin Model for a country



Pharos Agri-Business Navigator model (UNIDO)

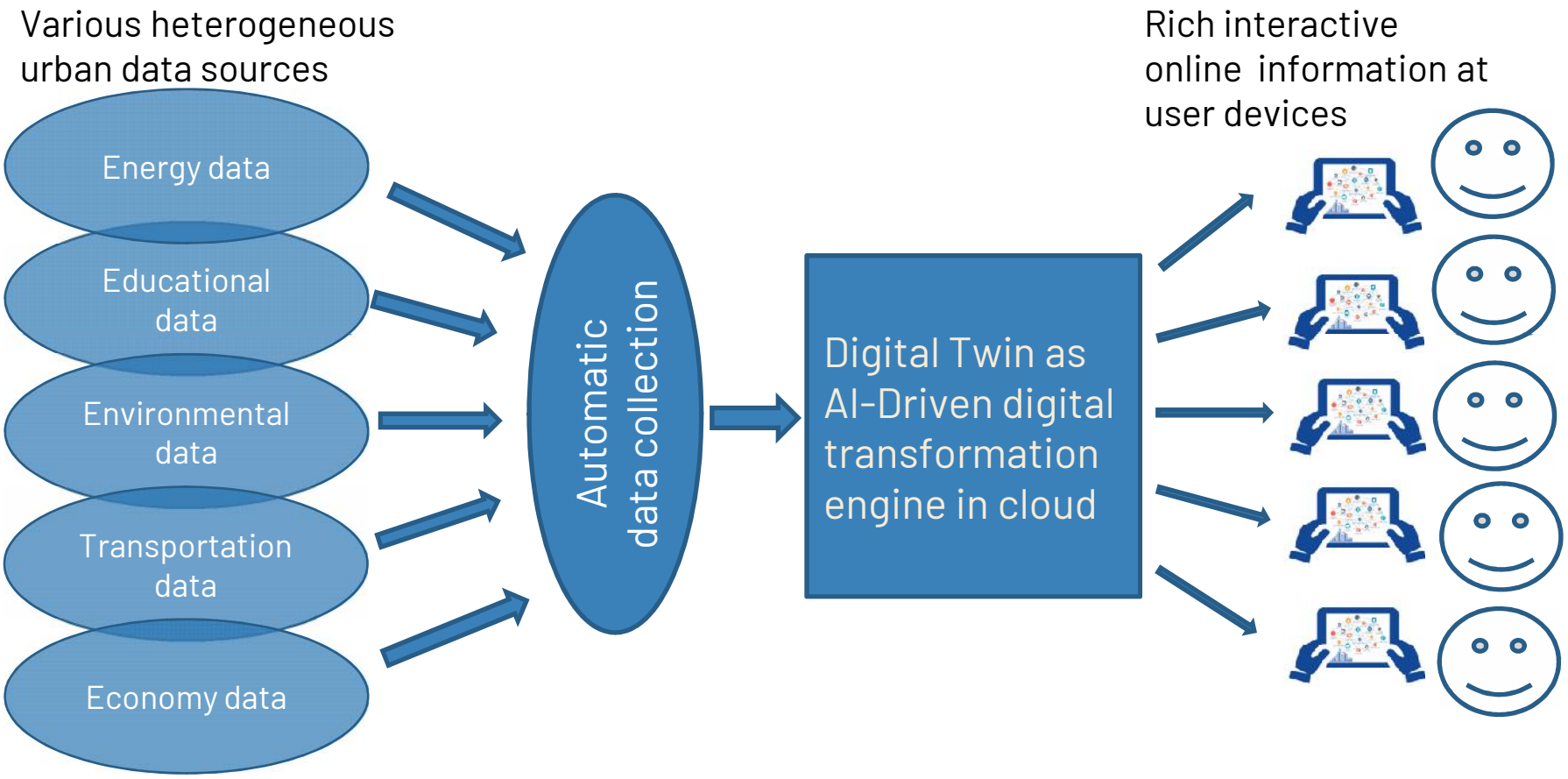


Digital Twin Model for eHealth @ PharosN

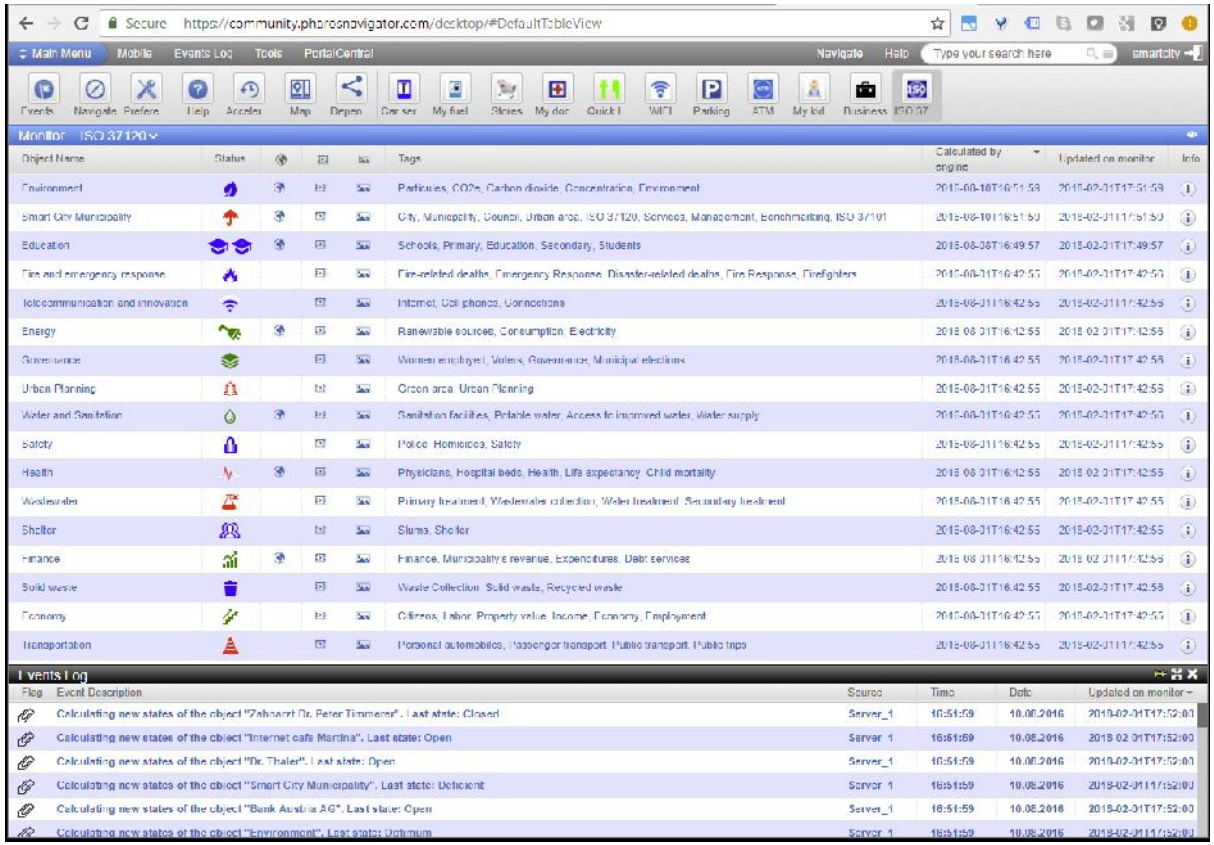


Model includes human Health, Environment and Activities

HOLISTIC CORE OPERATIONS: Governance case
Data, Transformation, Smart Governance Monitor, Stakeholders

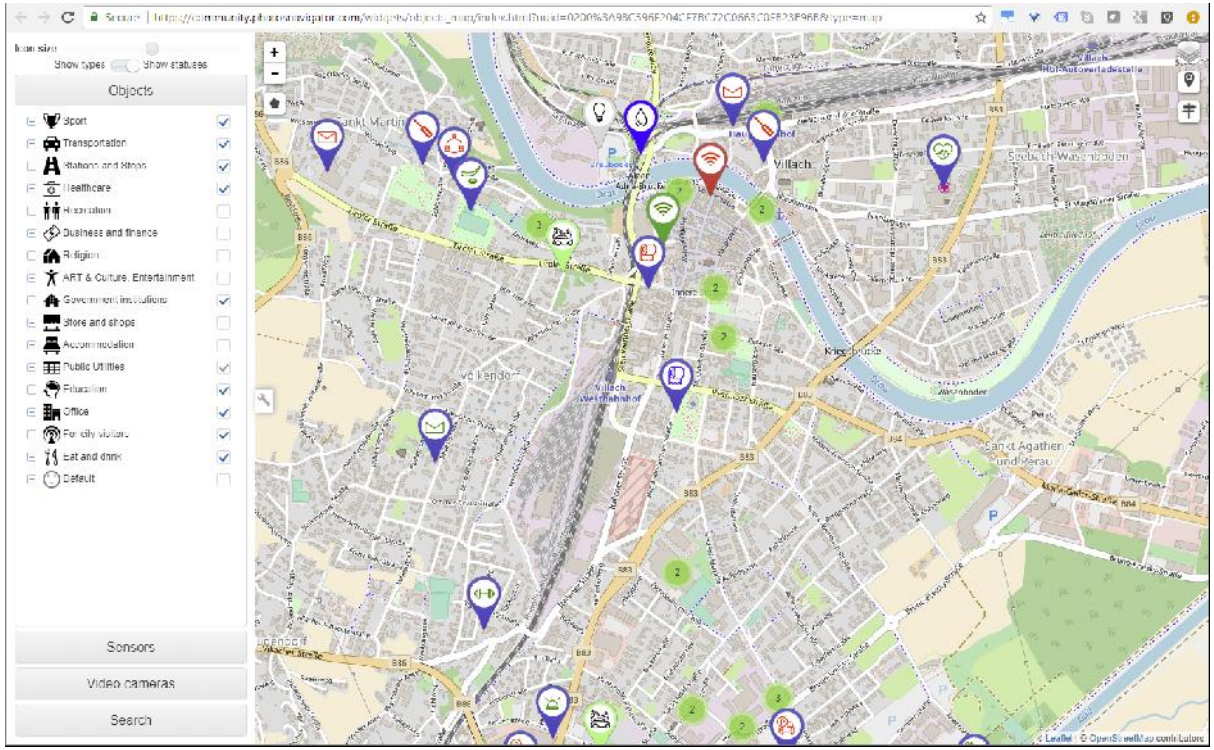


Presenting Digital Twin calculations simple and easy

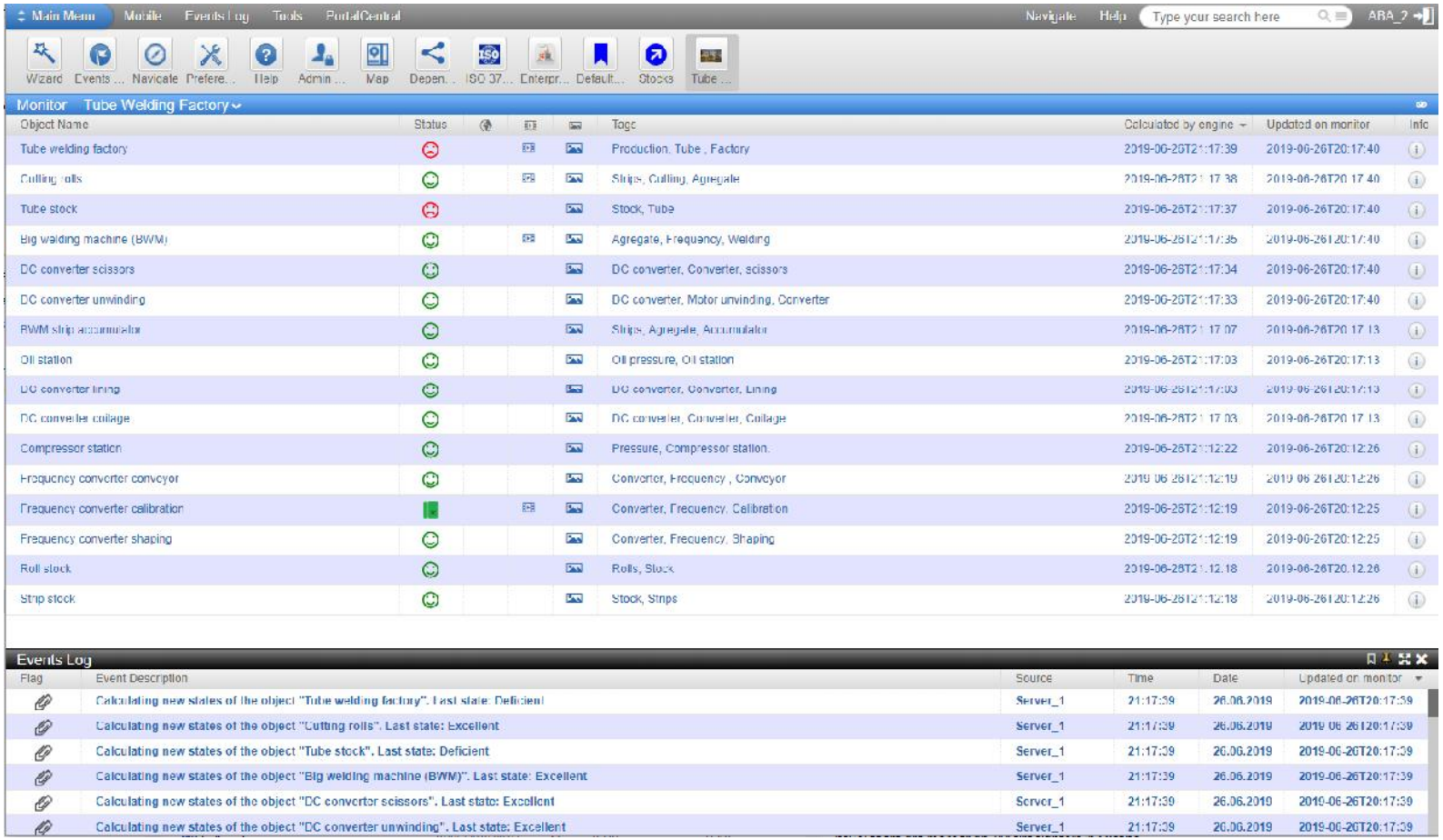


Monitoring Dashboard @ PharosN platform

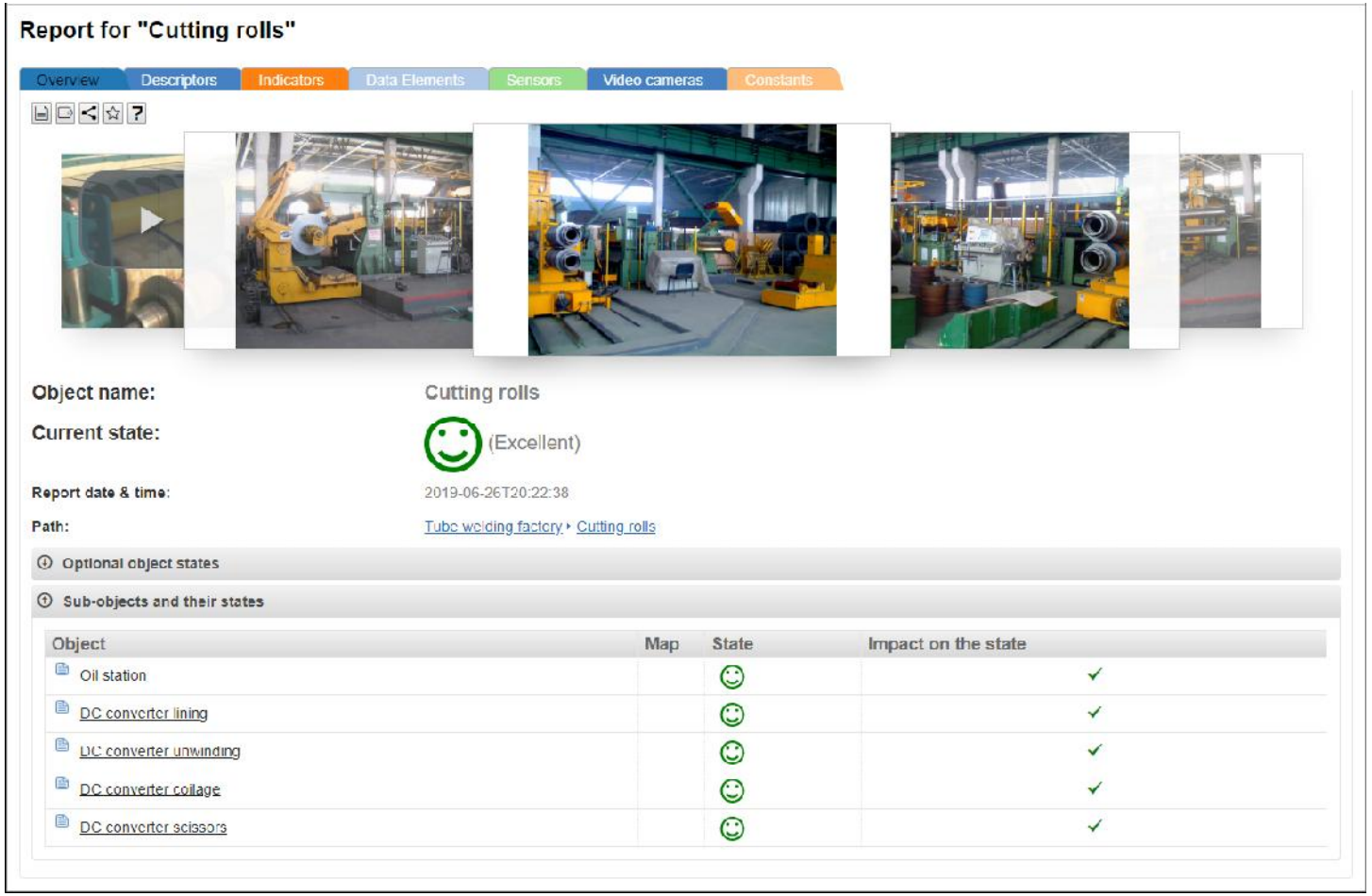
Digital Twin presents its results at GIS maps



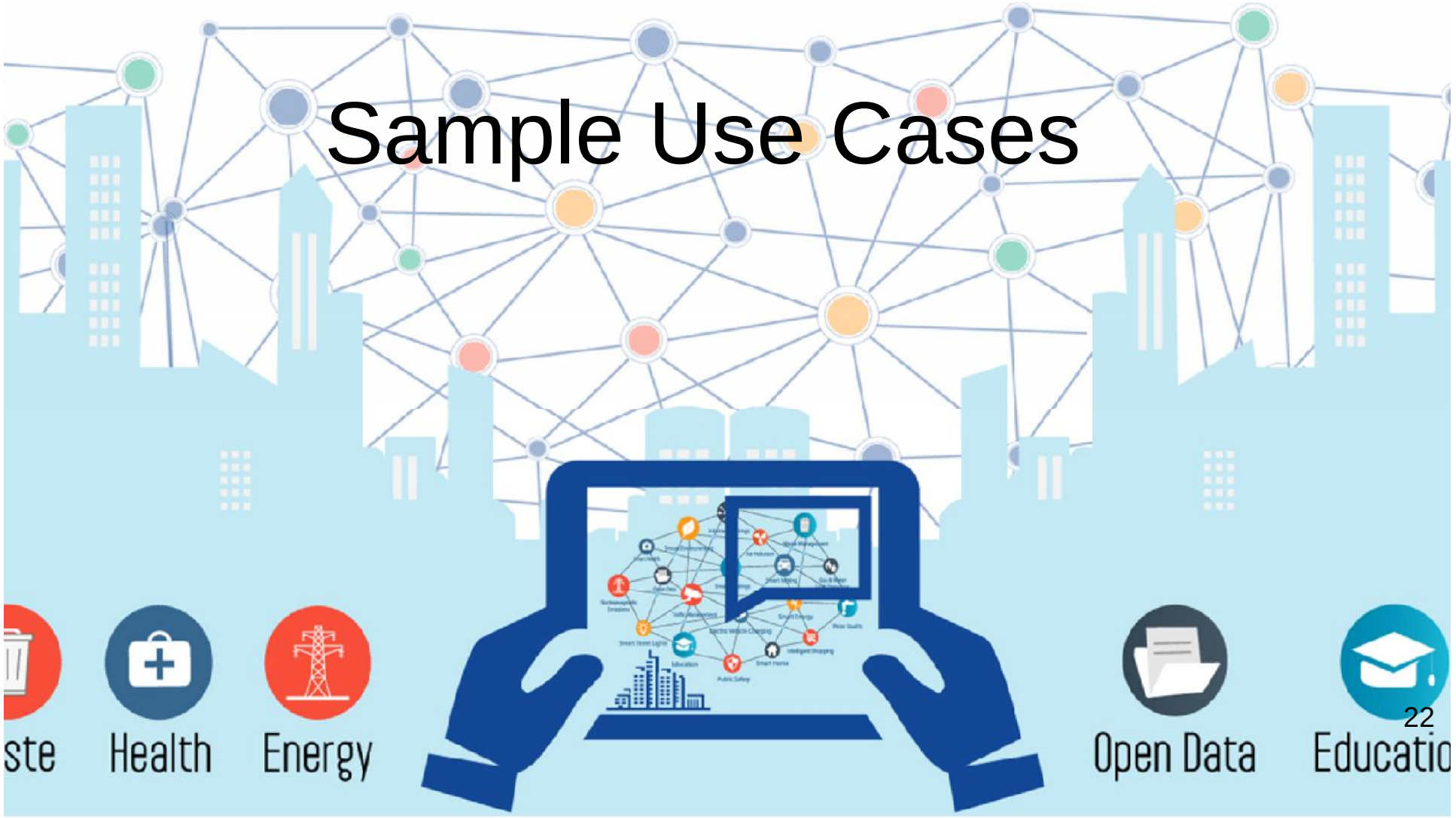
Monitoring dashboard for a tube welding factory



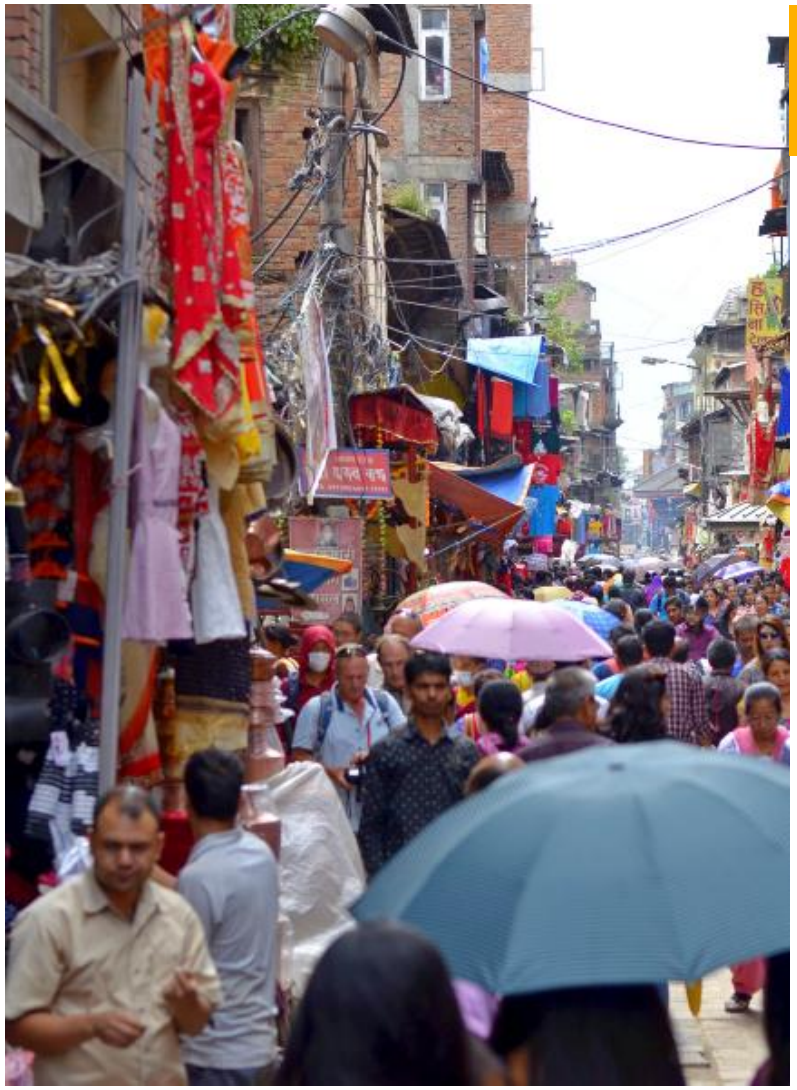
Interactive report for a tube welding factory - Overview



Sample Use Cases



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

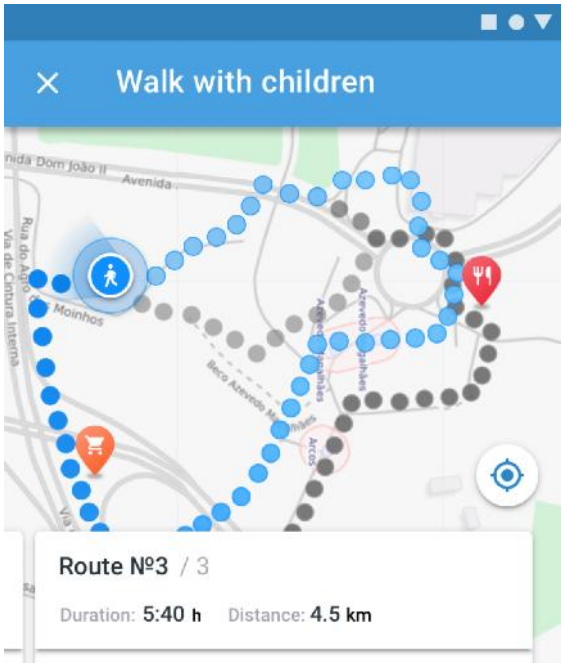
On their way SGM keeps monitoring each pedestrian location in the city (anonymous service using GPS)

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

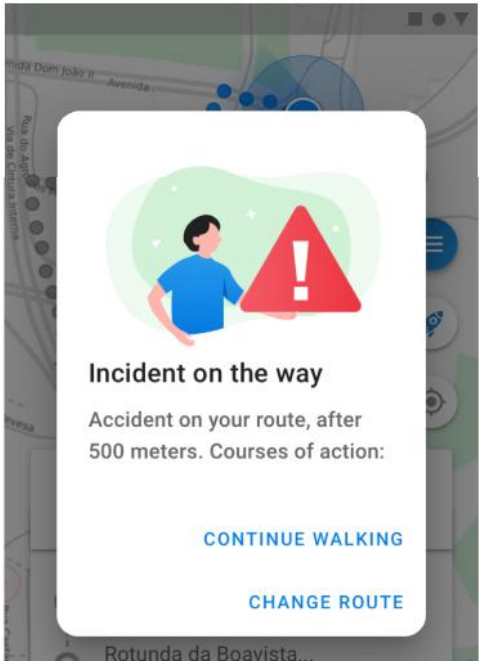
City operational center has full control of the situation and capacity to manage it.

SMART PEDESTRIAN ASSISTANT:
for citizens and city administrations

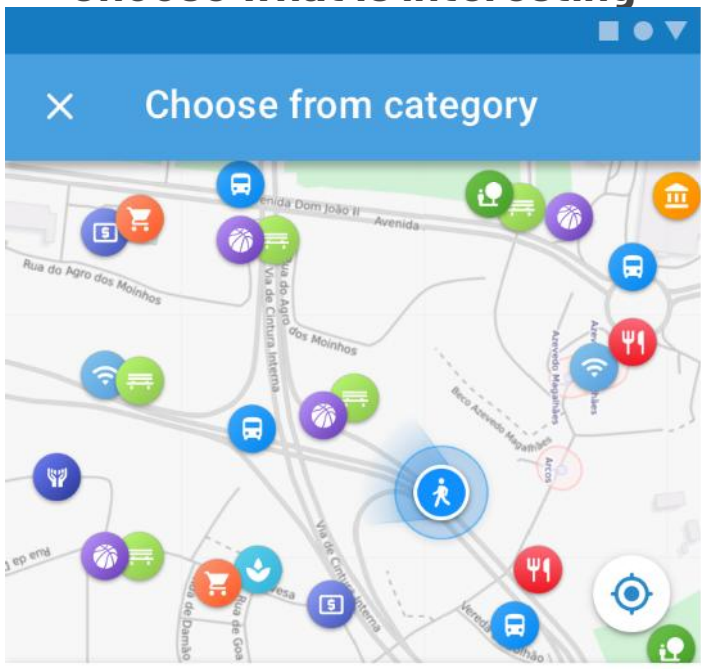
Route selection



Notifications



Choose what is interesting



REAL TIME PERFORMANCE ANALYTICS ABOUT ONGOING PROCESSES IN MANY APPS

OPERATIONAL TRANSPARENCY FOR MONITORING AND PERFORMANCE IN REAL TIME FOR DIVERSE APPLICATIONS

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

CO2, operational control, school performance, etc

EXAMPLE OF OPTIONAL DATA SOURCE IN MS EXCEL

Waste water city data by ISO 37120 in MS Excel spreadsheet

Wastewater.xlsx

	A	B	C	D	E	F	G
1	Date	Total amount of wastewater collected (data)	Total amount of wastewater undergoing no treatment (data)	Total amount of wastewater undergoing primary treatment (data)	Total amount of wastewater undergoing secondary treatment (data)	Total amount of wastewater undergoing tertiary treatment (data)	Total number of people served by wastewater collection (data)
2	01.01.2017	1594176446	90866636	1578909730	1094983798	69494952	75200
3	01.02.2017	1395724049	112444385	1381383160	1256725111	73460591	75194
4	01.03.2017	1339004633	87745538	1608803349	1315048304	73472893	75514
5	01.04.2017	1470272928	93074418	1471399800	1138110975	80099333	75503
6	01.05.2017	1321225534	88041963	1304687241	1311709287	63438276	75527
7	01.06.2017	1544380740	97297217	1457020305	1381808201	67232818	75542
8	01.07.2017	1454915159	95664025	1579359140	1345393441	62308471	75567
9	01.08.2017	1557539521	93918667	1452190054	1196863725	74304411	75584
10	01.09.2017	1304507473	109830430	1270446543	1098606066	75829266	75571
11	01.10.2017	1492904489	88304399	1441153819	1130573768	72005078	75643

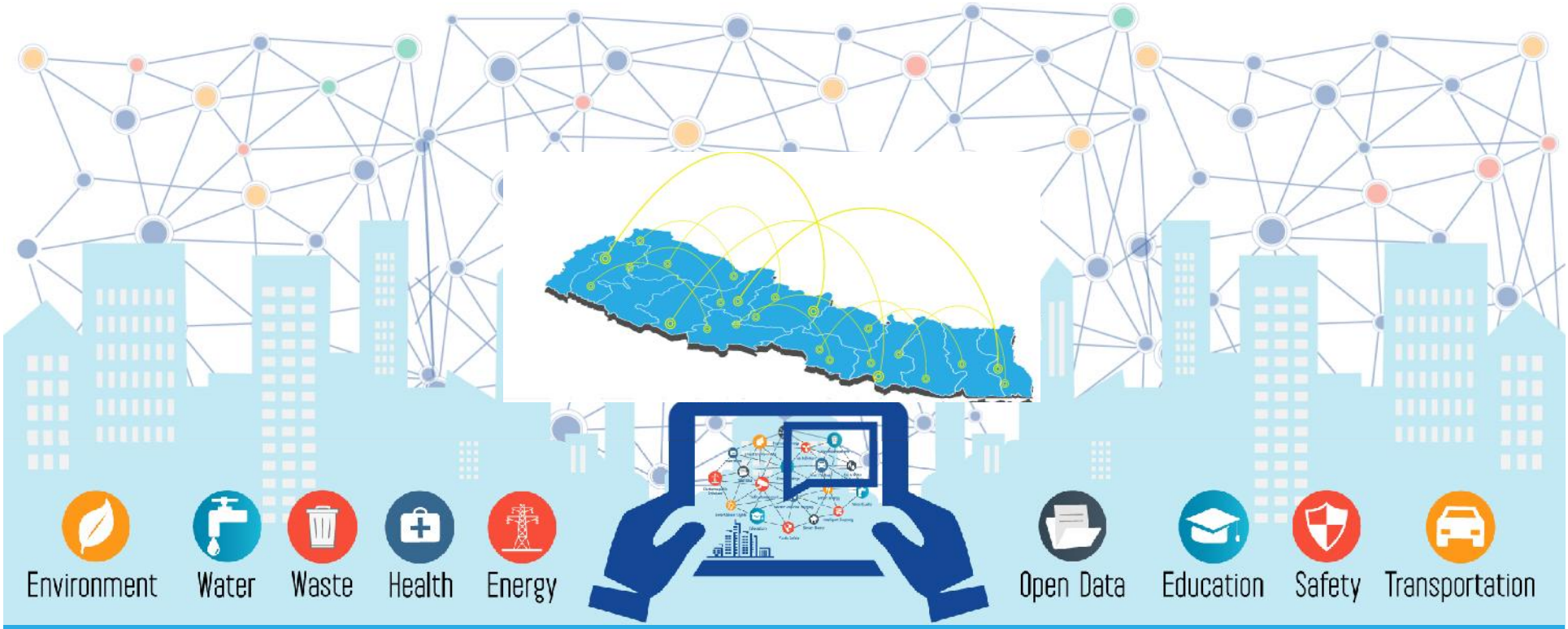
data_Wastewater

The 20 spreadsheet files for ISO 37120 urban model are periodically updated by different organisations and city departments e.g. monthly. Smart Governance Monitor automatically imports all of them from different city locations, servers, Google docs, Dropbox, etc to calculate KPIs and its presenting at Monitoring Dashboard

AUTOMATIC BIG DATA COLLECTION AND EVALUATION

Database example: Spreadsheets

1. Data import from multiple spreadsheets
2. Storing data locally in system database
3. Calculating indicators for each indicator
4. Analysing each KPI value against planned targets for the normal operations
5. Calculating totals for all system objects
6. Presenting results at interactive reports & dashboards for all stakeholders using common mobiles



Any questions about Smart Governance & Management & eHealth Monitoring apps, business opportunities and partnering for grants?

Contacts us by using feedback forms at web: http://pharosnavigator.com