PILSEN USE CASES

DUET

01: HEALTH & ENVIRONMENT

HOW MIGHT WE BETTER UNDERSTAND THE EVOLUTION OF TRAFFIC-RELATED NOISE AND AIR QUALITY IN THE CITY, WITH THE GOAL OF IMPROVING THE LIVING ENVIRONMENT FOR CITIZENS?

As a policy maker, I want to have access to historical and real-time information as well as to predictive models related to air pollution and traffic-related noise levels in the city, with the goal to drive an era of informed, intelligent policy making towards citizens. In the long term, such policies can increasingly be co-created with citizens.

As an urban planner, I want to understand trends in the historical noise levels (at various spatiotemporal resolutions) and predict/model future scenarios, with the goal to take measures to reduce noise levels (such as sound walls, rerouting traffic, green space, physical interventions, noise absorption materials).

As an urban planner, I want to understand trends in the historical air pollution levels (at various spatiotemporal resolutions) and predict/model future scenarios, with the goal to take measures to improve air quality.

As a citizen, I want to have access to historical and real-time information as well as to predicted levels regarding noise and air pollution, with the goal to avoid areas risky for my health both in daily commutes and my housing/workplace choice. Cities should provide the needed data to enable this in multiple apps (however, route planning is not a specific goal within DUET).

02: URBAN PLANNING

HOW COULD WE GET A HOLISTIC DIGITAL OVERVIEW OF THE CITY PUBLIC SPACE AND OF VARIOUS CITY'S DIGITAL RESOURCES FOR URBAN PLANNING PURPOSES?

As an urban planning expert, I need to work with the 3D representation of the city (which for my work is sufficient in a lower level of texture detail), with the goal to achieve a higher quality of the public space, by using tools that allow to better simulate, plan in scenarios (e.g. related to the urban planning,), and regulate the future development of the city.

As a policy maker, I would like to motivate investors of major development projects to provide 3D data during the building planning and permission process, with the goal to inform citizens of future evolution of the city and achieve a higher architectural quality of the urban space.

As an investor, I'm interested to provide 3D data (as well as BIM data) of my envisaged major construction project to the city, thus allowing the city administration to assess my project in 3D and understand its value.

As a citizen, I want to consult a visually appealing and realistic digital twin of the city, with the goal to be informed about considered variants of the city's future development.

As an urban planning expert, I want to connect existing data resources of the city to the digital twin and make sure they are up-to-date, interoperable, and include all available attributes, with the goal to make my daily work more efficient thanks to working with different data sources in a single environment, especially by:

a) including attributes for all buildings and objects in 3D
b) including data on public space (and public infrastructure) such as surfaces bridges, walls and earth banks, public green, e.g. include data layer with trees – height, diameter of trunk, diameter of treetop
c) including the 'z' dimension for all objects and surfaces which is an attribute currently not supported by the GIS solution of the city (Marushka),
d) styling objects based on available attributes,.
e) making the digital twin data compatible with ESRI GIS Environment,
f) allowing import/export of the 3D data from investors and (ii) 3D data created by UKRI.
g) to make the points above possible, by setting up data management processes in the city that will define ownership and data update responsibilities.

03:
ENGAGEMENT & COCREATION

HOW MIGHT WE CREATE A DEDICATED TECH COMMUNITY AROUND THE DIGITAL TWIN, WITH THE GOAL TO DELIVER NEW AND INNOVATIVE SERVICES TO CITIZENS?

As a policy maker, I want to make the 3D data of the city available as open data (see data section for already opened data), with the goal of engaging the techie community and students to enrich the data and develop new services with the data. The city balances the relevance of opening the data with policy objectives, the price, the relevant level of granularity and so on.

As a city 3D expert, I want to create high-res 3D models of selected public buildings or areas (e.g. the cathedral or football stadium) with the goal to stimulate the further use of the 3D data (both commercial and non-commercial) by the data enthusiasts, students and professionals.

As a 3D data enthusiast, I want to be able to access the 3D data of the city (open data, web service, API), with the goal to import it into other applications, play with the data, enrich it, create own 3D visualizations of selected areas/buildings and share my work with the community. – Nice to have: interoperability/import back to the city 3D model, in which case agreements need to be made on how detailed or heavy the imported models can be, so they do not impede the user experience.

As an entrepreneur, I want to use the city's 3D data for my business (and I could even be ready to pay for using it under the right conditions), with the goal to deliver better services to my customers.