Integration Platform for City Management

NeoCityLab B.V.
The Idea

Development of an integrational platform for unification and mapping of all geodata with photopanoramic view and laser scanning data to

- visualize
- navigate
- integrate
- analyze

the surrounding geo-environment to be a basis for **Smart City solutions**.

Smart City

- Emergency & Disaster Management
- Inter-Agency Collaboration
- Infrastructure Management
- Citizen Services
- Law Enforcement
- Information Management
- Public Administration Services
- Education
One Platform as a Basis for Smart City

3 main stages of the platform creation:

- **Data processing to visualize, navigate**
  from mobile scanning from different types of scanning systems (*LAS files*), panoramic images, data from the top (aircrafts, drones), any other geo data (maps, etc.)

- **Analytical tools**
  algorithms to analyze the city environment (measure, object recognition, embedding objects, retrospective analysis, etc.)

- **Data integration** from other different urban data bases
  real estate register, cadaster, land agreements, historical info, etc.
The Basis Idea of the Platform

The idea is based on combination of panoramic photography with a depth buffer created out of point cloud and so each pixel at the panorama has a geo reference.

End user gets a user friendly tool – easy to operate, navigate, analyze and manage any area.

1. NeoCity Depth Buffer
2. Panoramic Photography
3. NeoCity 3D map

Each NeoCity point has a geo reference & 3 visual solution
The major problems in the field we solve:

- **Data quality improving** received from the drones, satellite, aircrafts.
  
  *a significant amount of information is not available from the top*

- **Complete image** of the surrounding space
  
  *we use the combination of raster and vector data.*

- **Flexible, operable and modular system** *(API)*
  
  *Our solution is for all kinds of devices (mobile, IOS, Android, etc.)
  API to integrate and be integrated*

- **Time and costs effective technology**
  
  *one average European city is ready in a month. 100-150 km per day.*
New 3D form of representation of urban space.

- **Resource Management**
  Urban Asset Inventories, Property Tax Management, Infrastructure management, Water and Land Management, Emergency, etc.

- **Territory Planning**
  Plan development, visualization and maintenance

- **Urban Data Integration and Analysis**
  all data from different resources in one panorama to evaluate an analyze

- **Retrospective Analysis of territory changes**
Urban Inventory: Object Recognition

- Standard Infrastructure Object Recognition
- Building recognition
- Other objects recognition

Automatic recognition of road signs, poles, hatches, billboards, building facades, bus stops, road boundaries and other road infrastructure objects with a high level of accuracy (up to 95%).
City Planning: Embedding New Objects

Any object can be embedded into panorama.

Once embedded the object becomes a part of environment and can be seen from any place on the panorama.
One Platform – Many Unlimited Users Benefits

Municipalities & Ministries

Urban Plan Development and maintenance
practical realization, budgeting, maintenance and control, emergency planning

Resource management

- Infrastructure
- Land
- Garbage
- Transportation
- Cleaning
- Tax

Platform
1-2 times a year (survey and processing)

Citizens
Communication with Business Government Citizens

Business
Road Maintenance Development & Construction Communal Service Automotive Industry Real Estate Companies Cleaning Companies, Advertising Agencies Etc.

Public Institutions
Education Projects Statistics and Logistics Navigation for visually impaired people
Benefits of the Platform

➢ Synergy – One solution for many different types of users

➢ Unification and standardization of geo data flow in general

➢ User friendly – you can use the data and work with it from any device (including mobiles); no special learning is needed.

➢ Time savings - average European city is ready in 4-5 weeks for end users.

➢ API to integrate and be integrated to other software, data

➢ Cost optimization – synergy and automated data processing
Thank you!

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