

GEOSPATIAL DIGITAL TWIN CONFERENCE 2023

The Role of Comprehensive Integrated Infrastructure Plan for Sustainable Urban Planning and Management

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Institute of Territorial Planning Grad

20
years

50
regions

3000
projects

200
employees

Strategists
Architects
Urban planners
Engineers
Land surveyors
Mathematics
Economists
Analysts
Lawyers
Ecologists
Sociologists
Conflictologists
Anthropologists
Methodologists
System architects
Developers
Designers
etc.

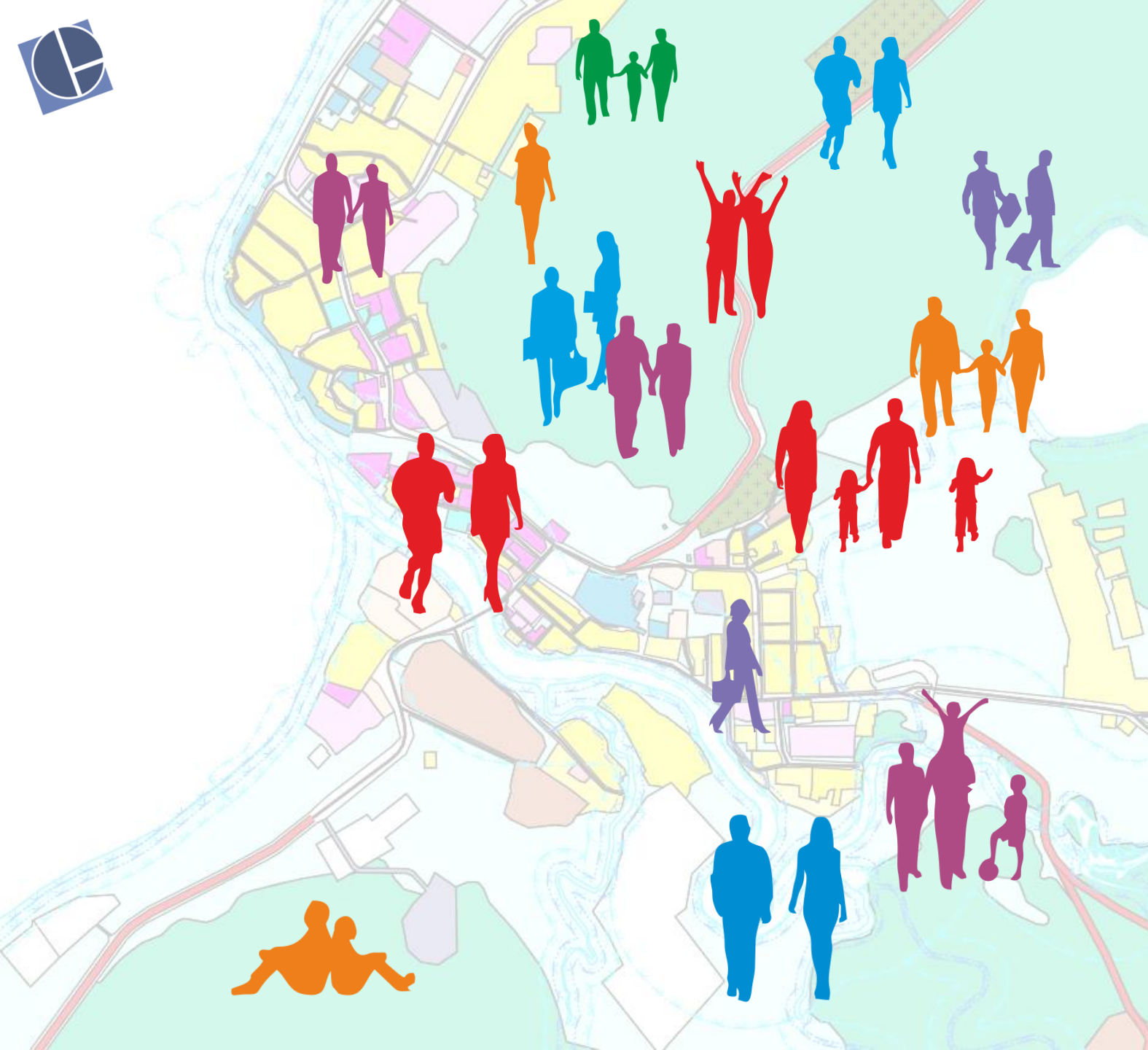


Our experience:

- ▣ Strategy of Social and Economic Development
- ▣ Complex of Urban Planning and Management Solutions
- ▣ Digital multi-scale Scheme of Territorial planning
- ▣ General Plans
- ▣ Master Plans
- ▣ Concepts for the Development of Urban areas, Concepts of Spatial development
- ▣ Land use and development rules
- ▣ Digital Information Models of Territory Development Management
- ▣ Information and Analytic System for Territory Development Management
- ▣ Geoportals
- ▣ Software for Design, Planning and Engineering based on Machine Learning technologies and Artificial Intelligence
- ▣ Software for Verification in Compliance with Technical Standards

Our international R&D projects:

- ▣ 2013 – GEORBAN: Exploiting Earth Observation in sustainable urban planning & management, <http://geourban-fp7-eranet.com>
- ▣ 2016 – SEN4RUS: exploiting Sentinels for supporting urban planning applications at city and regional levels in Russia, <http://sen1.enthalpy-ltd.com/hq1/>



**HOW
PEOPLE
CHOOSE
A CITY
TO LIVE IN?**

ROADS

UTILITY NETWORKS

SCHOOLS

HOSPITALS

THEATRES

PLAYGROUNDS

PARKS

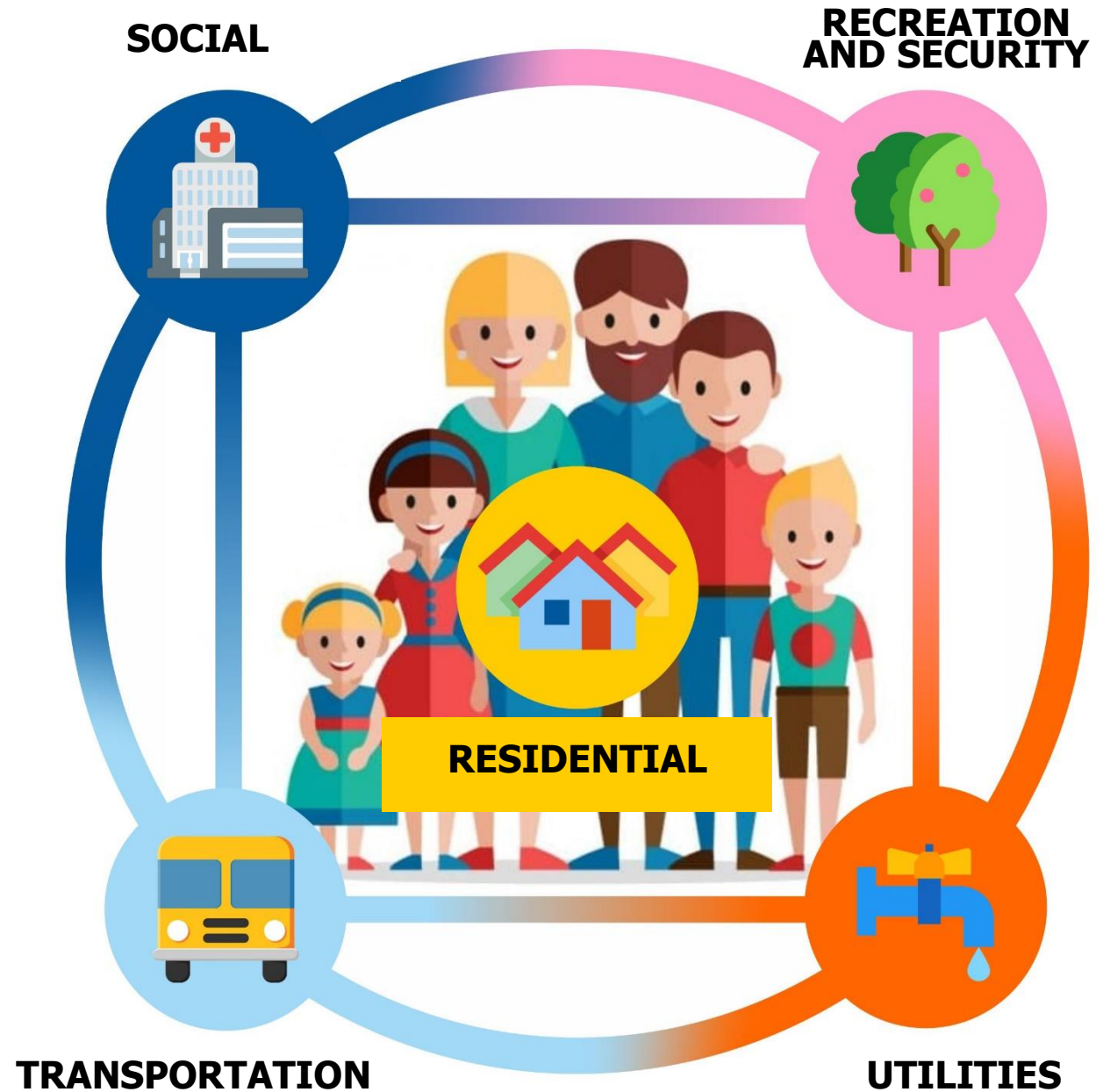
WE CHOOSE CONVENIENCE,
SAFETY
BEAUTY,

IN OTHER WORDS –

INFRASTRUCTURE



HOW TO MAKE INFRASTRUCTURE DEVELOPMENT MORE SUSTAINABLE AND EFFECTIVE?



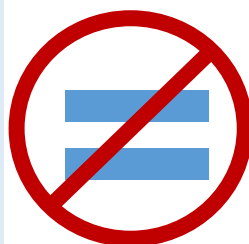


THE PROBLEMS OF SUSTAINABLE URBAN PLANNING AND MANAGEMENT

CASE STUDY: Sakhalin region in 2020

Urban planning

- **5** State Maps
- **1** Regional Map
- **18** Municipals Map



Budgetary planning

- **19** Municipal integrated infrastructure development programs for social, transportation, utilities spheres
- **30** State and investment programs with events or activities based on specific decisions

Urban planning decisions and Budgetary planning activities are **ASYNCHRONOUS AND SPATIALLY SEPARATED**

Urban planning and Budgetary planning **NOT AGREED**

Development, agreement and approval of maps and programs **REQUIRES A LOT OF TIME AND MONEY**

Changing maps and programs is **SLOW AND DIFFICULT**



INNOVATION APPROACH AND DIGITAL TRANSFORMATION OF URBAN DEVELOPMENT

FROM urban planning not related to budget programs
TO a digital model of the territory with Set of Analytical Tools

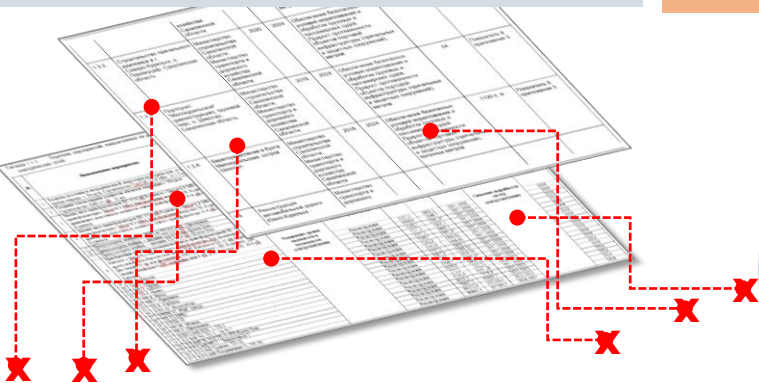
Budget planning

AND

Urban planning

STATE, MUNICIPAL AND INVESTMENT PROGRAMS
– budget planning tool

URBAN PLANNING AND MANAGEMENT
– spatial development tool

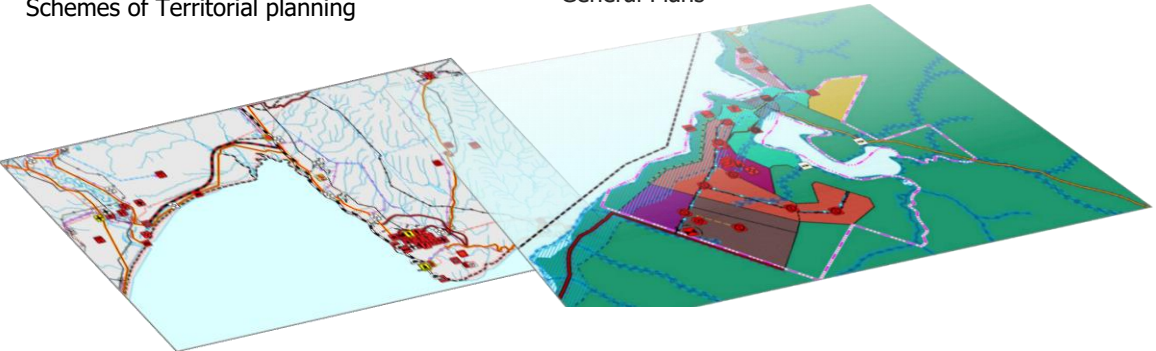


**NEVER
KNOW**

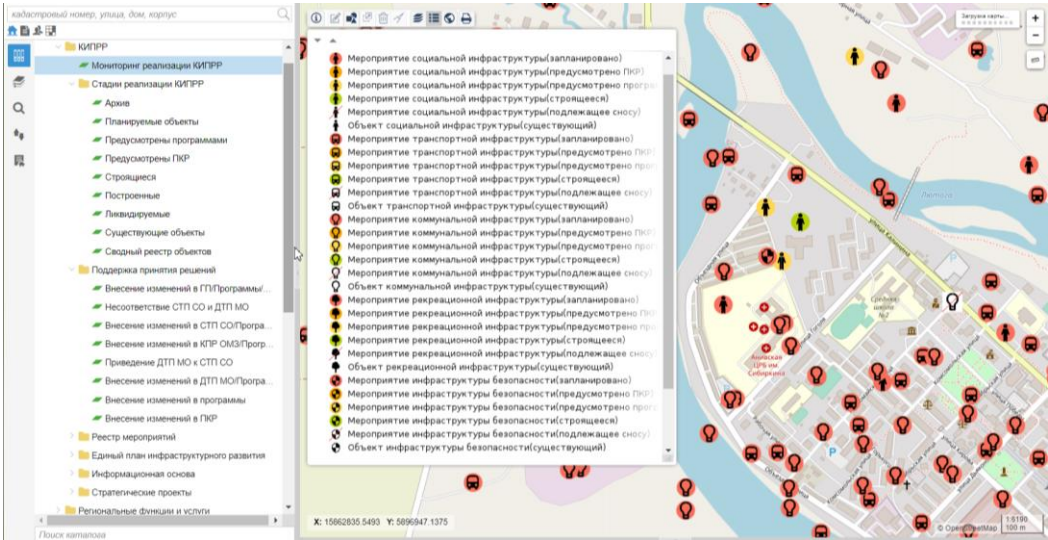
Where is new
school?
Where is the road?

State and Regional
Schemes of Territorial planning

General Plans



Comprehensive Integrated Infrastructure Plan configured in
the State system and powered by the Geometa platform



1. Digital Information Model

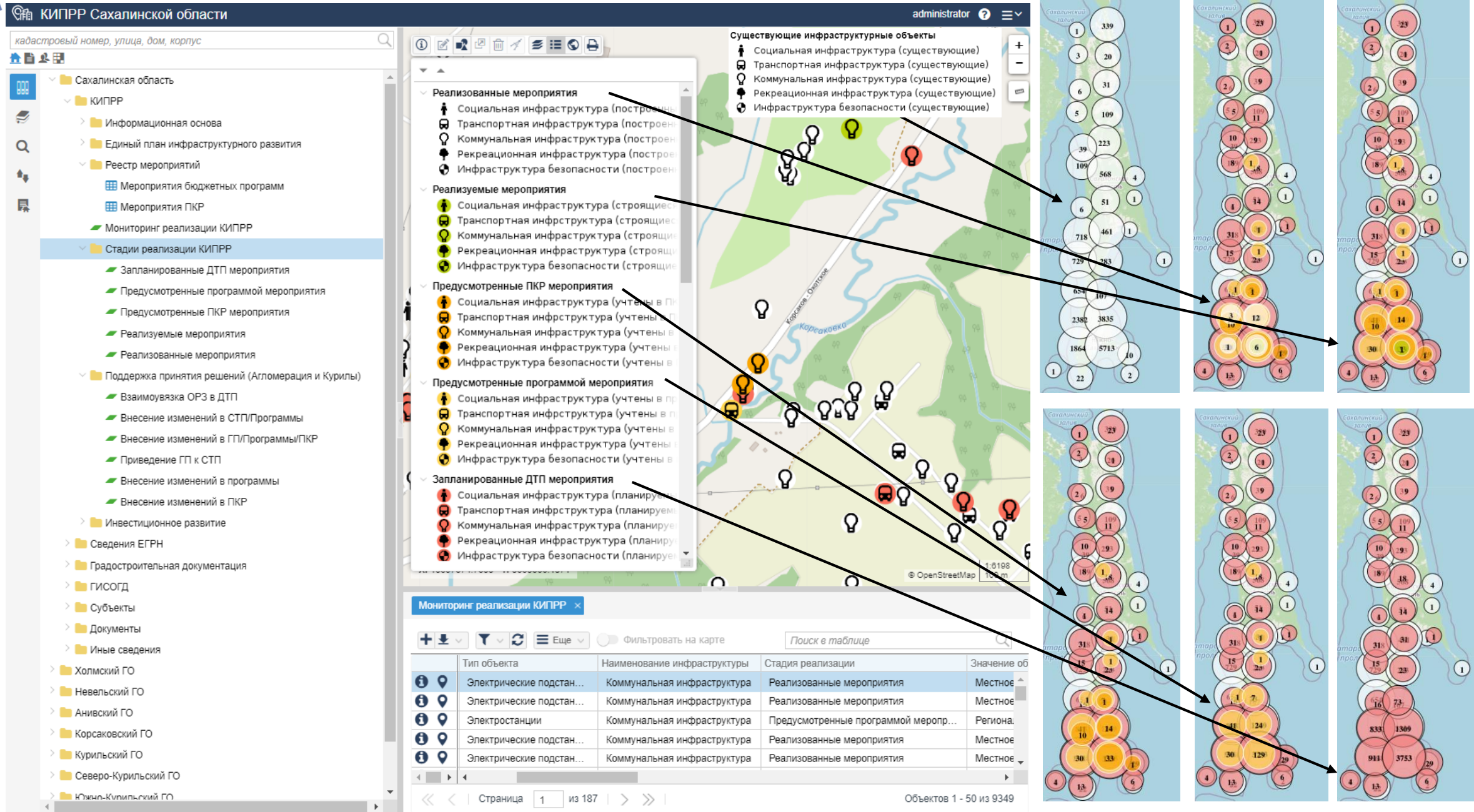
Digital Information Model is created
and provides object searching and identification,
monitoring of objects or decisions at all stages of their lifecycles

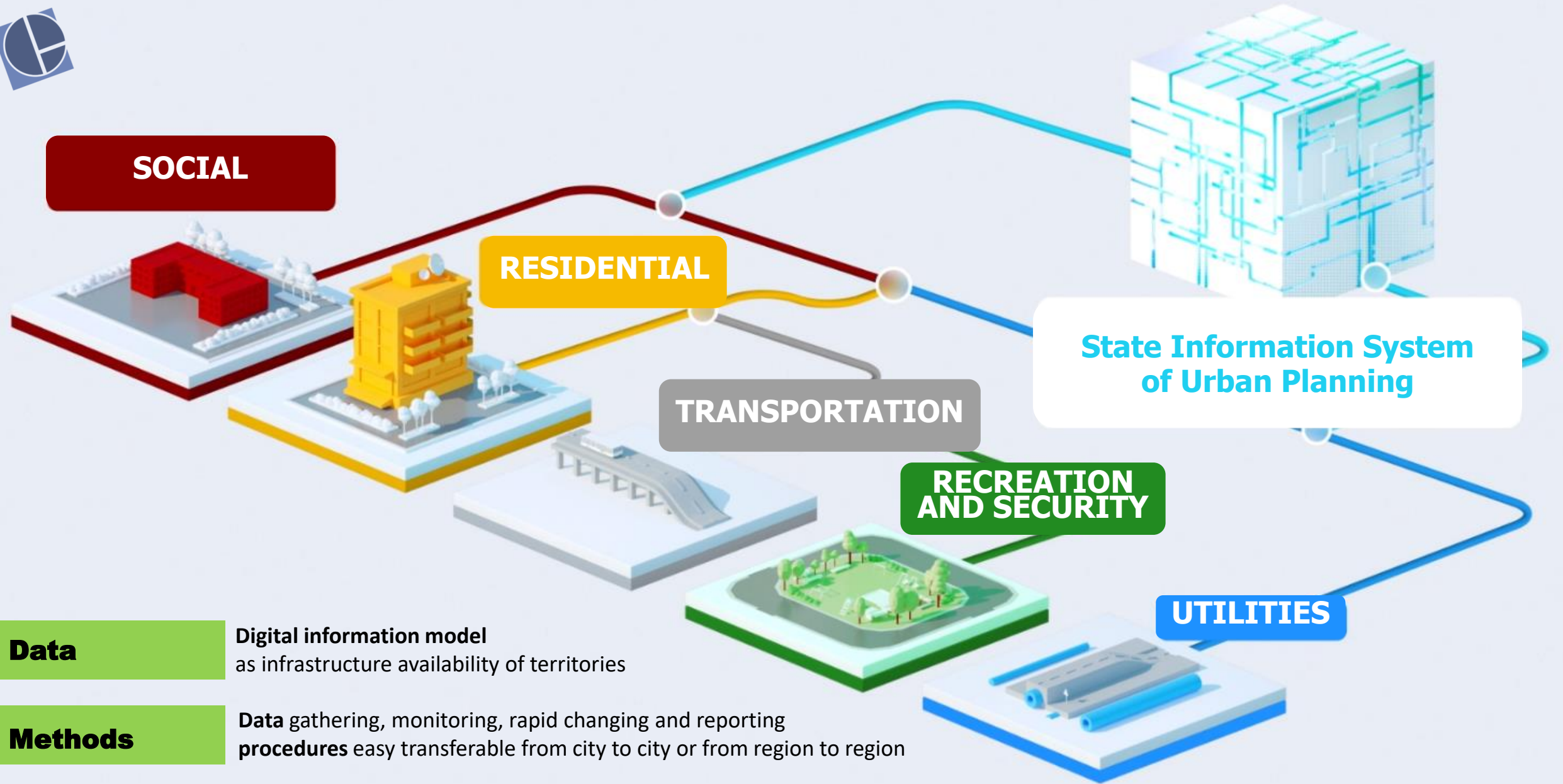
2. Set of Analytical Tools

Advanced functionality
for State Information System of Urban Planning in regions
using Geometa platform



AVAILABILITY OF INFRASTRUCTURE OBJECTS TODAY AND IN FUTURE





Data

Digital information model as infrastructure availability of territories

Methods

Data gathering, monitoring, rapid changing and reporting procedures easy transferable from city to city or from region to region

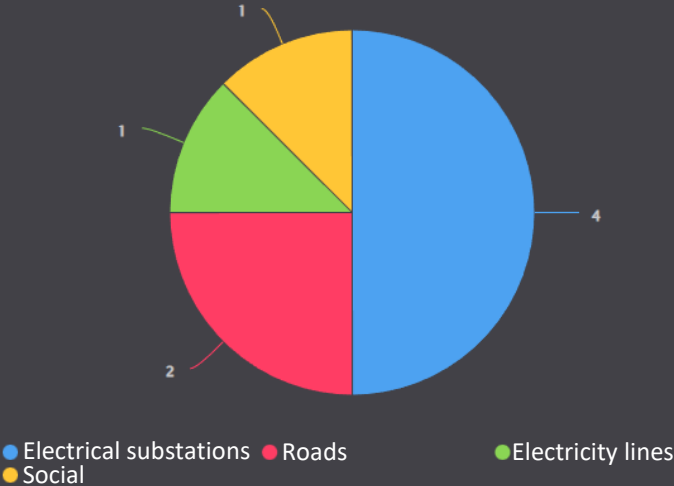
Technologies

Automated features that use data and methods to provide decisions-making system for public authorities and local government

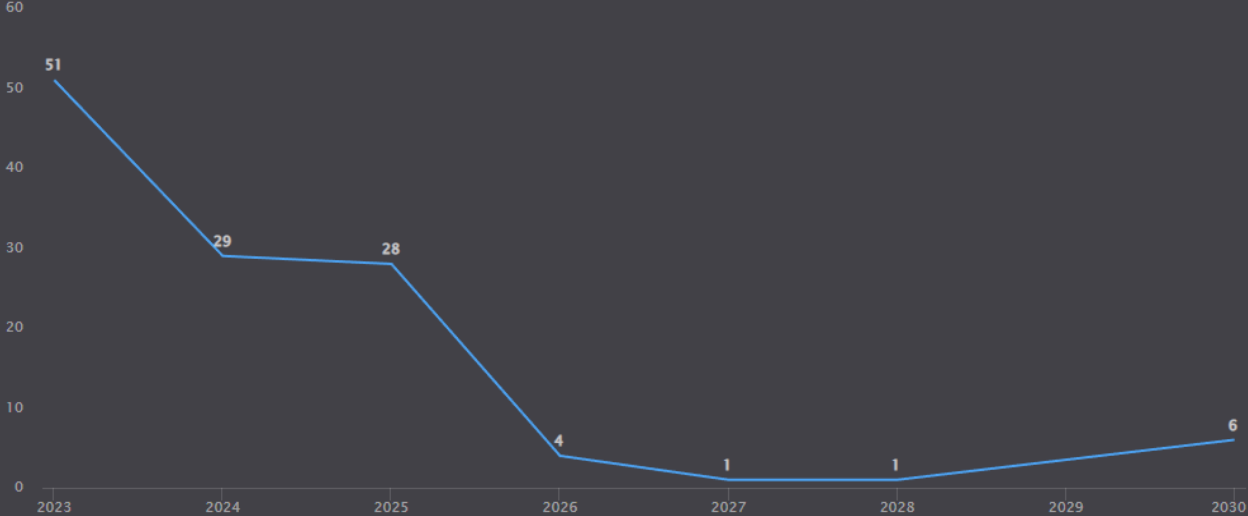


DASHBOARDS FOR COMPREHENSIVE INTEGRATED INFRASTRUCTURE PLAN

Registry of planned Events in the City

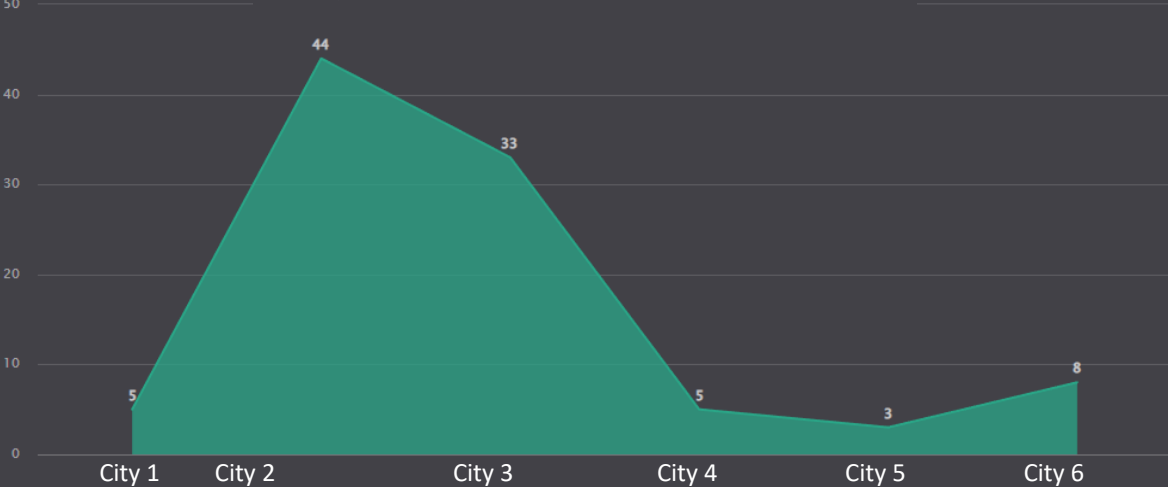


Schedule of planned Events in the Region

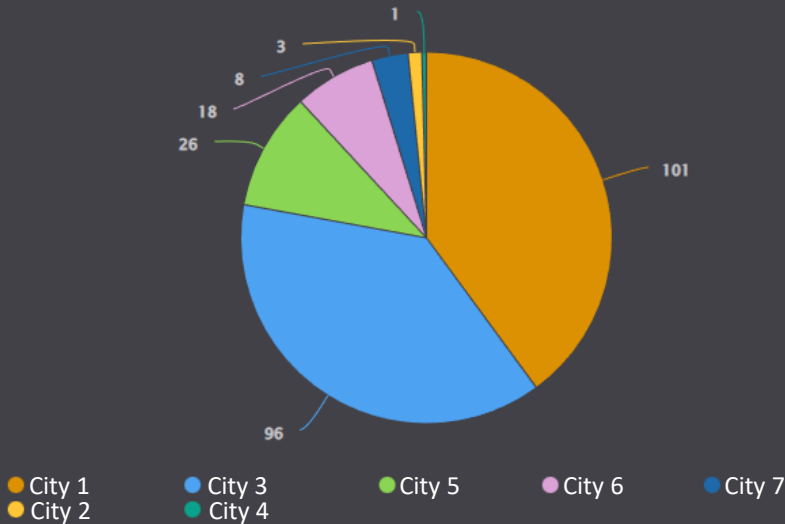


Year: 2023

Registry of planned Events for the Year



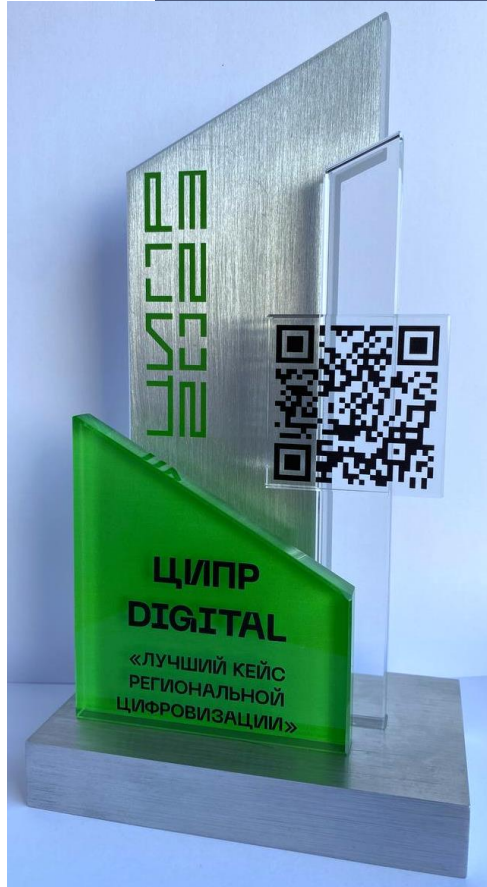
Registry of Expired Events for the Year





THE BEST CASE OF REGIONAL DIGITALIZATION IN 2023

COMPREHENSIVE INTEGRATED INFRASTRUCTURE PLAN OF SAKHALIN REGION
IS THE WINNER OF 3RD ANNUAL BUSINESS AWARD “CIPR DIGITAL-2023”
IN NOMINATION OF “THE BEST CASE OF REGIONAL DIGITALIZATION”



THE IDEA OF DEVELOPING
COMPREHENSIVE INTEGRATED INFRASTRUCTURE PLAN

2021

INCLUDED INTO ANNIVERSARY ISSUE OF
RUSSIAN ACADEMY OF ARCHITECTURE
AND CONSTRUCTION SCIENCES'S ALBUM

2020

WAS HIGHLY-PRIZED IN ASI FORUM
“STRONG IDEAS FOR NEW TIME”

GEOSPATIAL DIGITAL TWIN CONFERENCE 2023

11-12 October

#GDTConf2023

Thank you for being a part
of the Geospatial Digital Twin Conference 2023
and welcome with questions

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