cooperative governance
Department:
Cooperative Governance
REPUBLIC OF SOUTH AFRICA

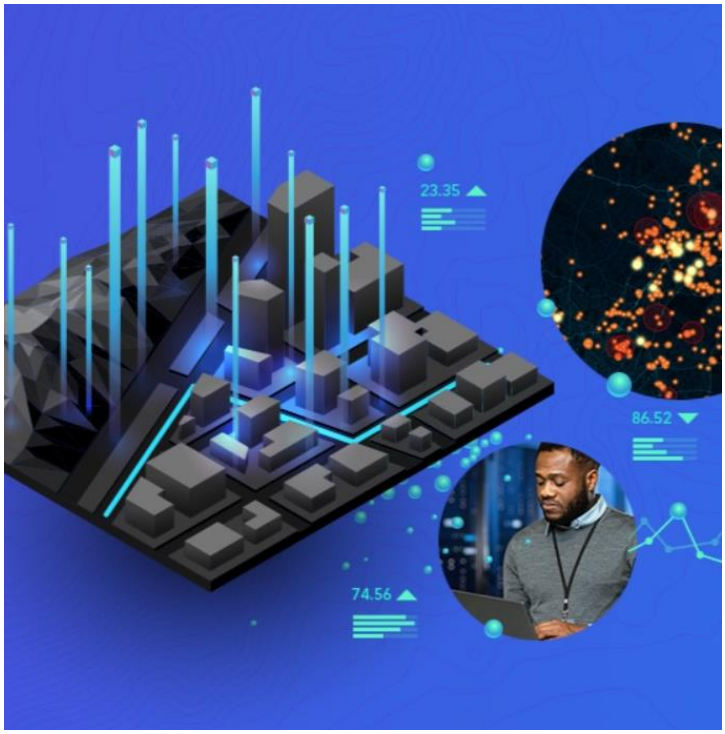
MUNICIPAL INFRASTRUCTURE SUPPORT AGENT (MISA)

MISA
MUNICIPAL INFRASTRUCTURE SUPPORT AGENT
Today, Creating a Better Tomorrow

CPD (SAGC)

Advanced Topics for Geographic Information Systems (GIS) in Local Government

The Municipal Infrastructure Support Agent (MISA) in partnership with SAICE Professional Development & Projects (SAICE-PDP) invites you to attend this 2-day course which aims to provide the foundational knowledge and practical skills required to effectively manage utility networks using ArcGIS.



Effective utility management ensures the efficient delivery of essential services, promotes public safety, and supports sustainable development.

By integrating GIS technology into utility management practices, local government officials can streamline operations, optimize resource allocation, and make informed decisions that benefit their communities.

This course will primarily focus on the management of utility infrastructure, incl. roads, water, and electricity.

The course is taught using ArcGIS Pro.

Presenters:

Basil Rabophala (Geospatial Lecturer)
Tendai Dupwa (Geospatial Lecturer))

COURSE SCHEDULE

Venue: Online via MSTEAMS
Dates: 14 – 15 September 2023
Time: 08:30 for 09:00 to 16:30

REGISTRATION

To register, visit www.saicepdp.org
For more details contact Zan Mlambo:
Email zan@saicepdp.org / Tel: 011 476 4100

WHO SHOULD ATTEND

The course helps municipal attendees to apply their theoretical training in practice.

It is therefore recommended for:

- GIS practitioners
- Planners
- Infrastructure asset managers
- Anyone wishing to map municipal features and data

COURSE OUTLINE – DAY 1

LESSON 1: FOUNDATIONS OF THE UTILITY NETWORK

- Benefits of the utility network
- Software and architecture
- Elements of a utility network
- Structure networks
- Domain networks
- Asset groups and asset types
- Exercise 1: Explore the elements of the utility network

LESSON 2: NETWORK TOPOLOGY MANAGEMENT

- Network topology
- Network connectivity
- Branch versioning
- Feature restrictions and network rules
- Maintaining data integrity
- Attribute rules
- Exercise 2A: Explore features with shared geometry
- Exercise 2B: Add a rule to the utility network

LESSON 3: MANAGING CONNECTIVITY AND ASSOCIATIONS

- Feature templates
- Associations
- Exercise 3A: Create a group template
- Exercise 3B: Examine an assembly with containment associations

LESSON 4: NETWORK MANAGEMENT

- Tier definitions
- Tier groups and tiers
- Subnetworks and subnetwork controllers
- Terminals
- Exercise 4A: Add a subnetwork controller to the network

COURSE OUTLINE – DAY 2

LESSON 5: TRACING ANALYSIS

- Connectivity vs. Transversality
- Network categories
- Attributes
- Functions
- Exercise 5: Perform tracing with a utility network

LESSON 6: NETWORK DIAGRAMS

- Network diagrams
- Diagram templates
- Exercise 6A: Work with network diagrams

LESSON 7: CREATING A UTILITY NETWORK

- Asset packages
- Creating a utility network
- Exercise 7A: Create a utility network
- Exercise 7B: Perform post processing

Managing utilities is of paramount importance for local governments as they play a critical role in ensuring the well-being and quality of life for residents.

By understanding the foundational concepts and workflows involved in utility network management, participants will be equipped to address various challenges associated with utilities effectively.

Furthermore, managing utilities using GIS helps local governments achieve long-term goals such as reducing downtime, minimizing service disruptions, and optimizing maintenance schedules.

THE PARTNERS

esri South Africa – THE SCIENCE OF WHERE

SAGI – South African Geomatics Institute

SAGC – South African Geomatics Council

GISSA – Geo-Information Society of South Africa

saice professional development & projects – A Non-Profit Company (NPC)

This course is presented in collaboration with Esri South Africa – proud suppliers of the world's most powerful mapping and analytics software

SAGI – South African Geomatics Institute | SAGC – South African Geomatics Council | GISSA – Geo-Information Society of South Africa

SAICE-PDP's Municipal Academy was established to support practitioners employed in local government with applying theoretical knowledge and relevant legislation in practice.

municipal academy – the road to service delivery

MISA – MUNICIPAL INFRASTRUCTURE SUPPORT AGENT – Today, Creating a Better Tomorrow

MISA's mandate is to provide technical support and advice to municipalities, whilst strengthening their capacity, for effective infrastructure planning, delivery, operations and maintenance.