



Smart & Intelligent Green Region

A FOSS-First Approach to Smart Cities

Lightweight, Modular, Sovereign

Smart Cities Today: Complex, Closed, Costly

Many platforms, even open-source, are built for large cities

Heavy frameworks and complex dependencies

Municipalities lose technical and financial control

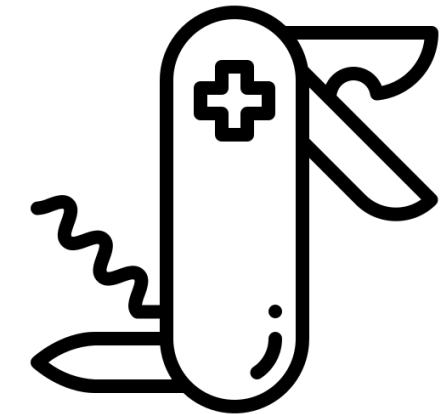
A Small, Smart, Open Swiss Army Knife

We wanted something different:

Lightweight and easy to deploy

Modular and adaptable

Fully open, with no hidden costs



MERAN/O



Stefan Mutschlechner, Sergio Srdjan Vemic, SFSCON 2025

The Birth of SIGRE

Born in MERAN by Stefan Mutschlechner (Stadtwerke Meran) &
Sergio Srdjan Vemic (Telmekom)

as a joint Project for simple and sovereign infrastructure



ASM Merano
Stadtwerke Meran



TELMEKOM
The future is easy

Introducing SIGRE

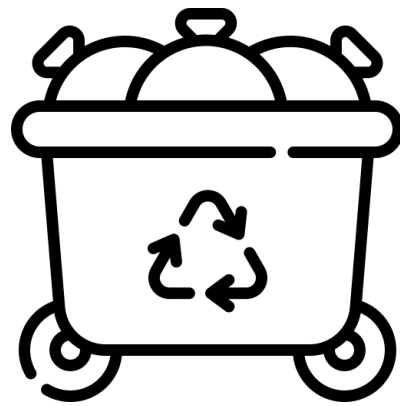
SIGRE = Smart & Intelligent Green Region

100 % Free and Open Source

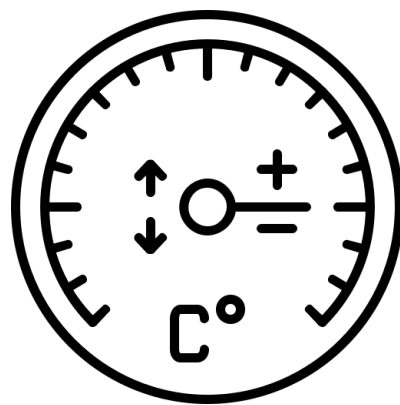
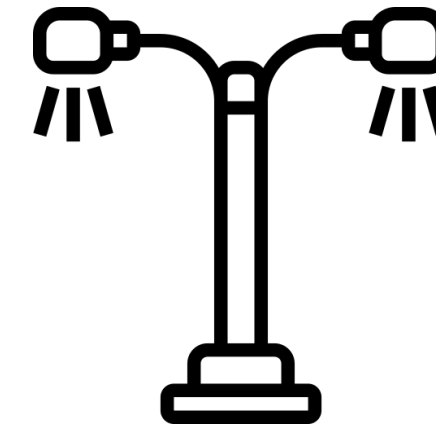
Modular, Lightweight and Scalable

Ethical & Transparent by Design

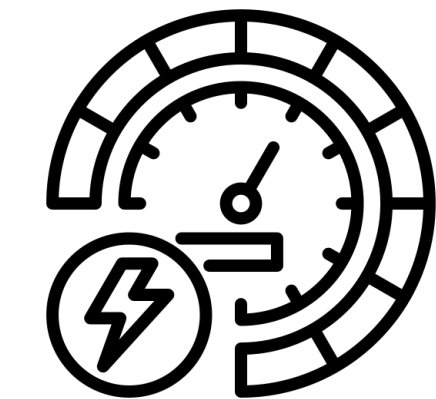
SIGRE Core Domains



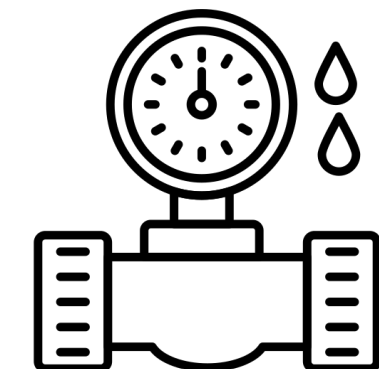
Street Lighting
Waste Management



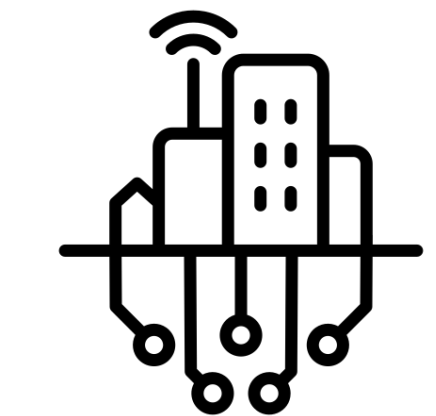
Smart Metering



Water & Energy Optimisation



Future-ready Extensions



ASM Merano
Stadtwerke Meran



SIGRE Architecture Overview

Runs on-premise or hybrid cloud

Interoperable Microservices

API-first and Standards-based

Edge-ready design for local control and scalability



ASM Merano
Stadtwerke Meran



Stefan Mutschlechner, Sergio Srdjan Vemic, SFSCON 2025

SIGRE Deployment in Merano

Started with smart lighting

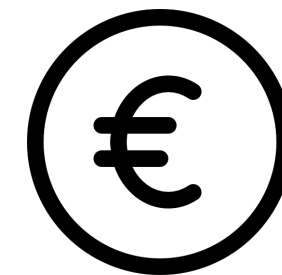
Expanded to Waste and Temperature Metering

Integrated with local OpenData Initiatives (OpenData HUB)

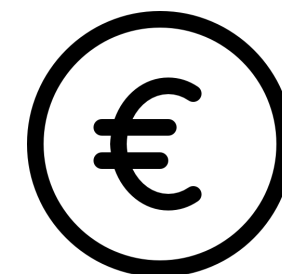
Added Water Metering

SIGRE Nice Side Effects in Meran/o

4.500 Prevented Interventions = 180.000 € in 3 Years



End of 2022 High Energy Prices
3 mouse clicks and 2.7% Energy saved

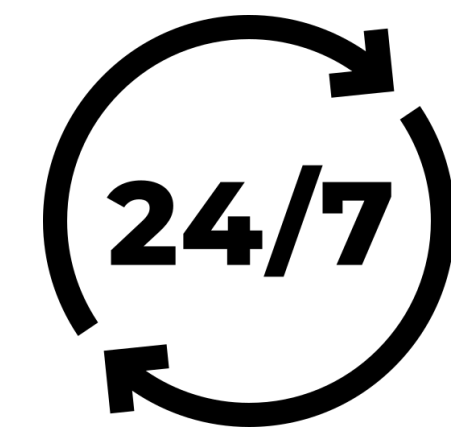


ASM Merano
Stadtwerke Meran



SIGRE Nice Side Effects in Meran/o

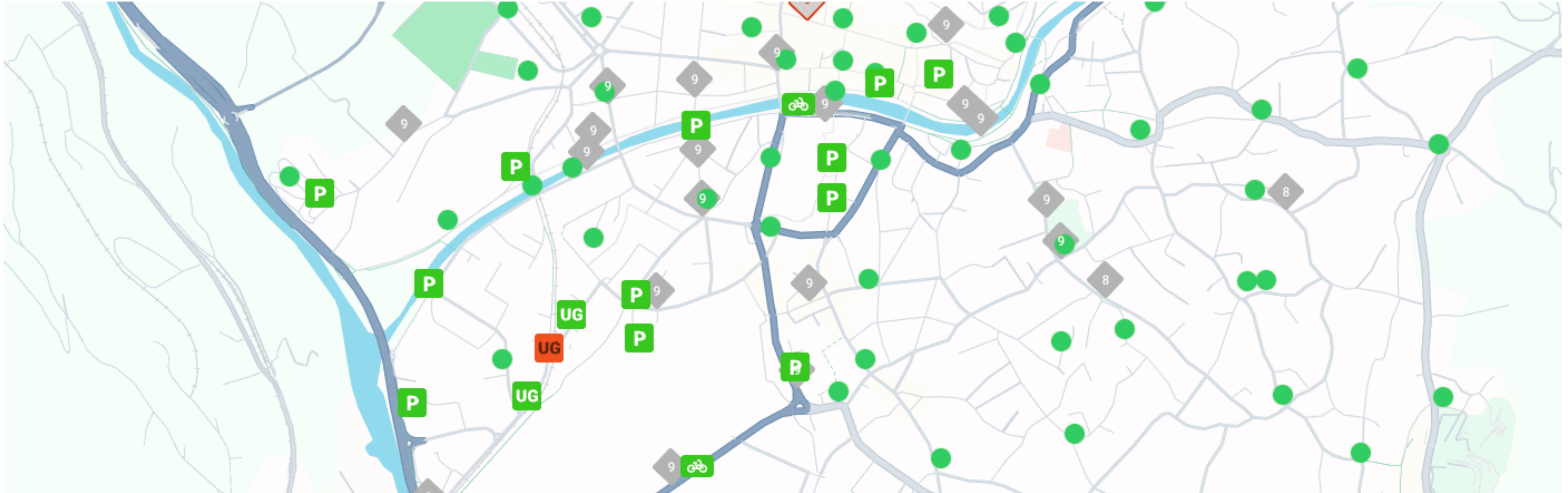
Automatic Voice Call on Failures
Saves H24 duty in Office



Remotely controlled Infrastructure
even from mobile phone



Name 		Address 	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Automatic mode	Lights ON	Status	Last data collected 	IP address	Actions
AEC		MEINHARDSTRASSE																				2025-11-02 23:57:57	10.64.20.11	
ALBERGHIERI		KARL-WOLF-STRASSE																				2025-11-02 23:57:58	10.64.21.11	
ARTINDUS		POSTGRANZSTRASSE																				2025-11-02 23:57:58	10.64.22.11	
ASILO		VERGILSTRASSE																				2025-11-02 23:57:58	10.64.8.11	
BIRKE		HAGENGASSE																				2025-11-02 23:57:58	10.64.23.11	
BORG VITTORIA		CESARE-BATTISTI-STRASSE																				2025-11-02 23:57:58	10.64.24.11	
CADORNA		VERSCHIEDENE STRASSEN																				2025-11-02 23:57:57	10.64.40.11	
Campo Sportivo LAN		SPORTPLATZ OBERMAIS																				2025-11-02 23:57:58	10.64.5.11	
CASA OPTANTI		MANZONISTRASSE																				2025-11-02 23:57:58	10.64.26.11	
COMBI		SPORTPLATZWEG, SCHIESSTA																				2025-11-02 23:57:58	10.64.27.11	
DORFMEISTER		CHRISTOMANNOSSTRASSE																				2025-11-02 23:57:58	10.64.28.11	





Rack: Aec

Racks

Event logs

Edit

Settings

Graph

Reload

Active

Turn the lights off

Turn the alarm off

Current recording

Rack Id:

01040101020

Name:

AEC

Address:

MEINHARDSTRASSE

Lat:

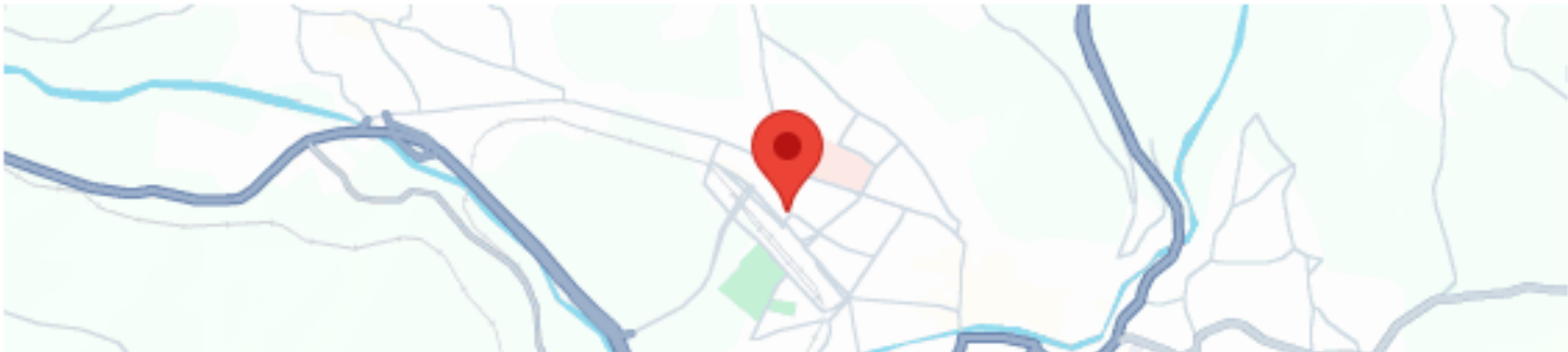
46.6748397710125

Lon:

11.1488055222084

IP Address:

10.64.20.11



Lines (RCBO Switches)

Nr.	Active Alarm:	Line Status:	Currents Differences:	24h Control:	Supply Lines:	Description:	
1:	Active	●	0			Via 4 Novembre Verso Lagundo	⋮
2:	Active	●	0			Via 4 Novembre Verso Stazione	⋮
3:	Active	●	0			Via Laurin / Punto	⋮

SIGRE Why FOSS Matters

Zero licensing costs

Transparent and auditable code

BUILDS LOCAL TECHNICAL CAPACITY

Sustainable, long-term independence



ASM Merano
Stadtwerke Meran

Stefan Mutschlechner, Sergio Srdjan Vemic, SFSCON 2025



SIGRE Ethics & Sovereignty

Data stored and processed locally

Privacy by design

Transparency strengthens public trust



ASM Merano
Stadtwerke Meran





ASM Merano
Stadtwerke Meran

Stefan Mutschlechner, Sergio Srdjan Vemic, SFSCON 2025



SIGRE The Road Ahead

Expand the SIGRE FOSS ecosystem

Collaboration with other regions and universities

Join us in building open, sustainable smart cities



ASM Merano
Stadtwerke Meran

Stefan Mutschlechner, Sergio Srdjan Vemic, SFSCON 2025





Smart & Intelligent Green Region

www.sigre.cloud