Standardized GIS-Services
in the context of Computer Aided Dispatch Systems (CAD)

2022-05-11

Standards in Action (SiA) Workshop, Vienna
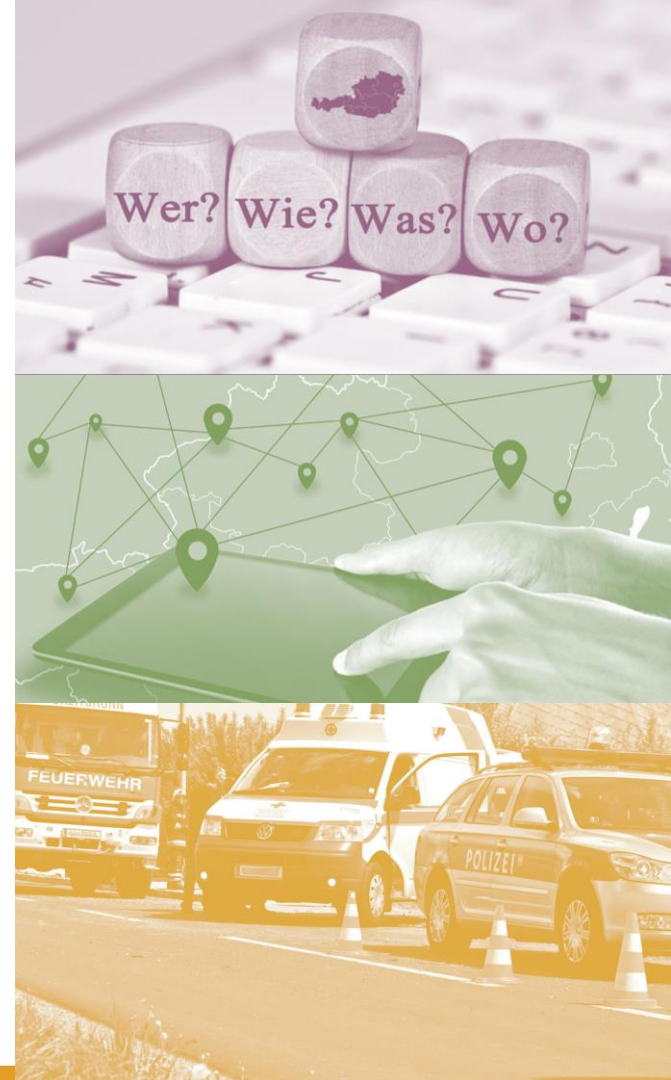
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Key figures:

❖ Founded 1995

❖ 12 Employes

❖ Turnover: 1.5 Mio €

Experts for:

❖ Planing, Consulting and System Integration for GIS-Systems

❖ Spatial Data

❖ GeoMarketing

❖ Safety and Security Applications and Systems

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Computer Aided Dispatch System

Computer-aided dispatch (CAD) systems are utilized by dispatchers, call-takers, and 911 operators to prioritize and record incident calls, identify the status and location of responders in the field, and effectively dispatch responder personnel.
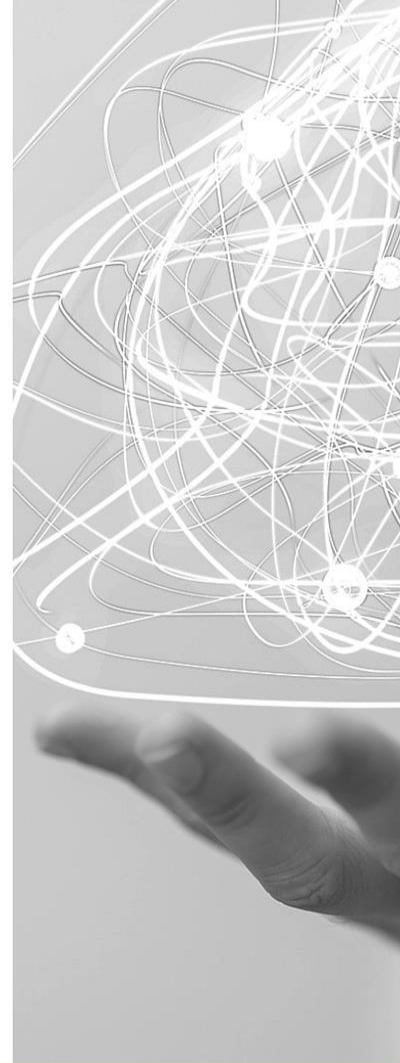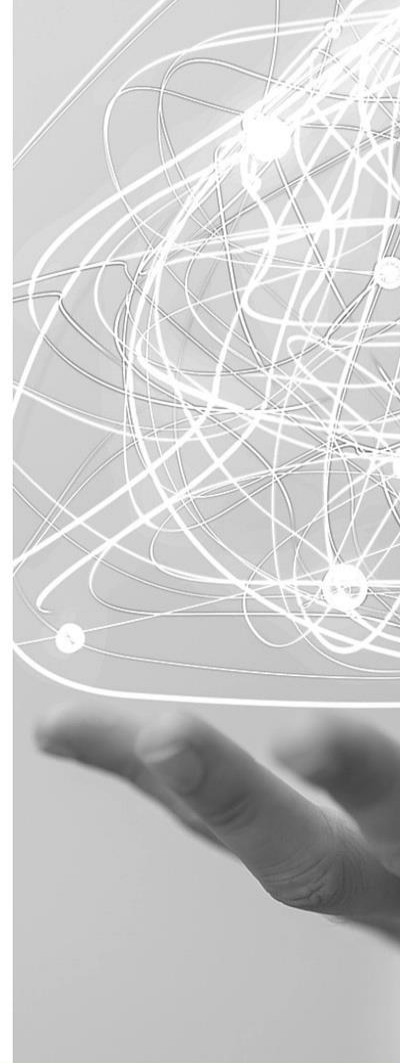
No CAD without GIS

Core GIS functionality:

❖ Mapping

❖ Location Verify

❖ Routing for recommendation of units

Requires:

❖ Always up-to-data Spatial Data

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State of the art 1997

❖ No Standard GIS-components

❖ Spatial Data stored in DBMS of CAD

❖ Map-Display only with raster-tiles

❖ Local Coordinate-Systems

❖ Adress-, Street- and Map-Data not available in standardized GIS-Formats

$\Rightarrow$ Complicated Workflows for implementation or updating of Spatial Data

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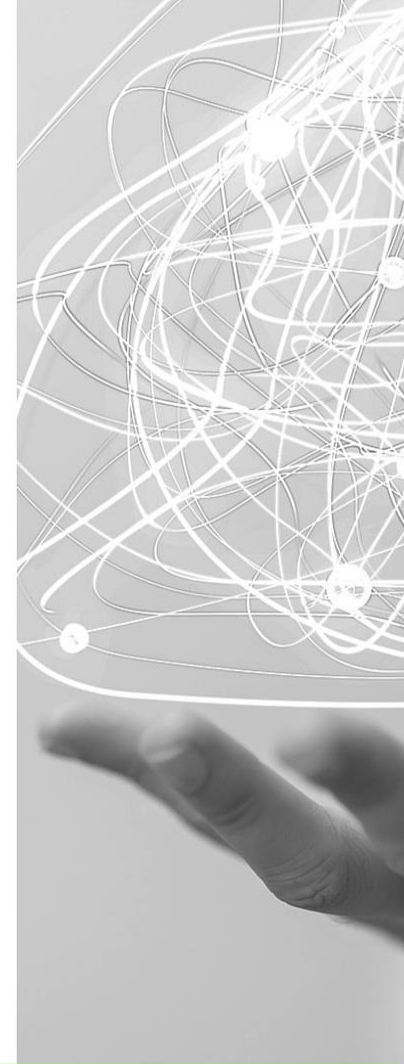
Project Requirements 2020

Start of a renewal-project exchanging the whole infrastructure of a dispatch center. A substantial part of the project was a powerful GIS-Infrastructure servicing not only the CAD but also other systems of the organization with services for:

- ❖ Location verification
- ❖ Reverse Geocoding
- ❖ Routing
- ❖ WMS/WMTS
- ❖ Feature Services
- ❖ Projection Services

⇒ We need to find a CAD-System able to consume all services without storing Spatial Data in its own DBMS

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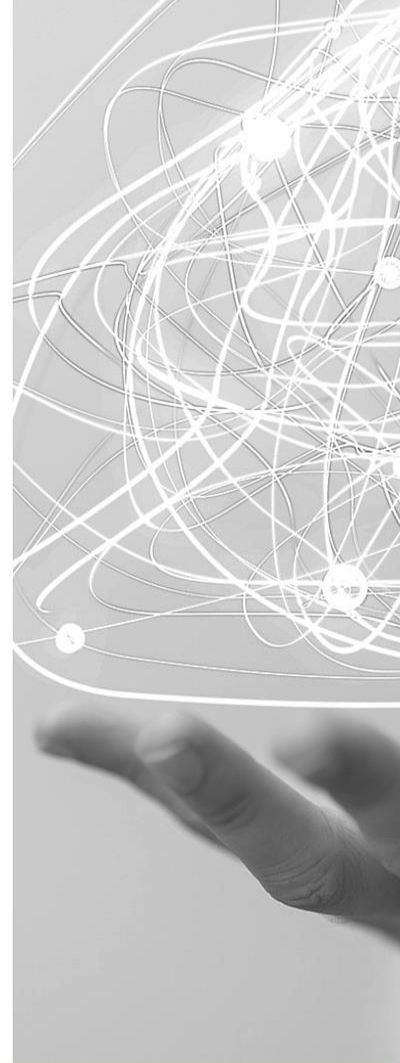
Market Research

❖ Many systems still do not use standard GIS-Components

❖ Some Systems are using GIS-Clients based on available technology

❖ Most Systems are capable to consume Map-Services

❖ Most System are capable to work with standard formats of Spatial Data

❖ Only some systems are capable to use Routing-Services

❖ But still all Systems implement Spatial Data into their own DBMS (at least adress- und streetdata for location verify)
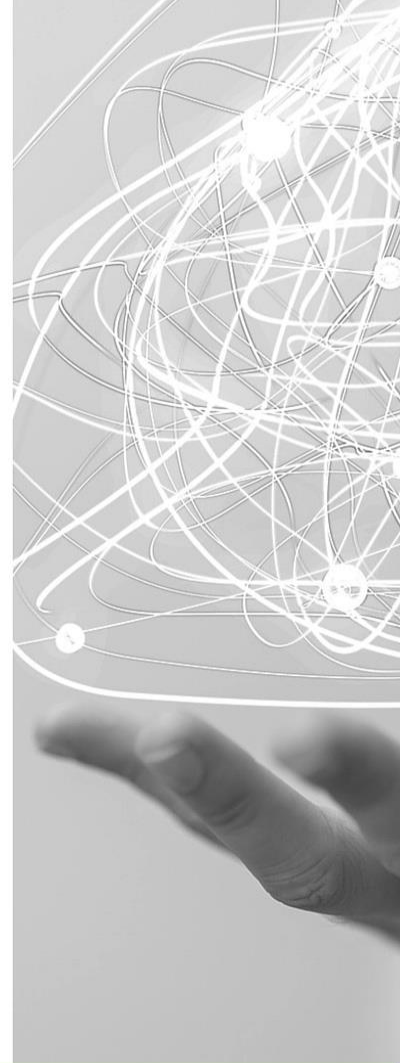
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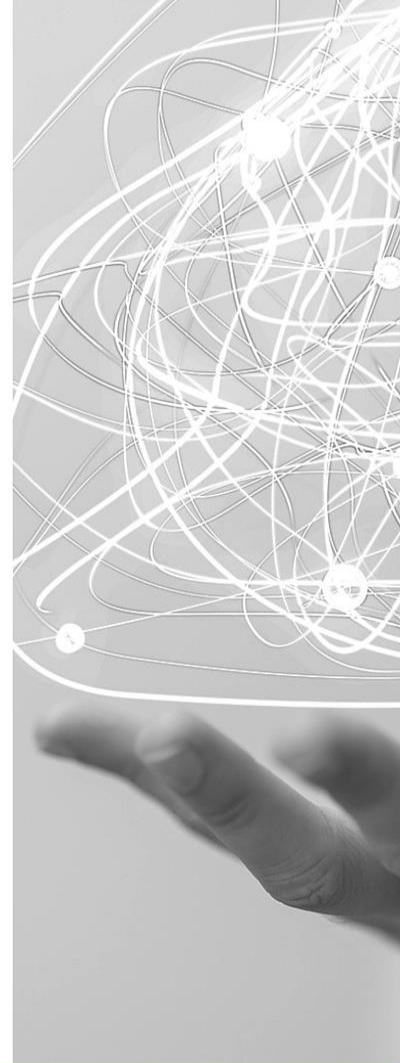
Development of CAD-Systems

❖ Part of critical infrastructur

❖ Implementation projects last for 2-3 years

❖ Systems are up and running for at least 10 years

❖ Renewal projects last for 1-2 years

❖ Very long development cycles

⇒ It takes a long time for new technology to be implemented
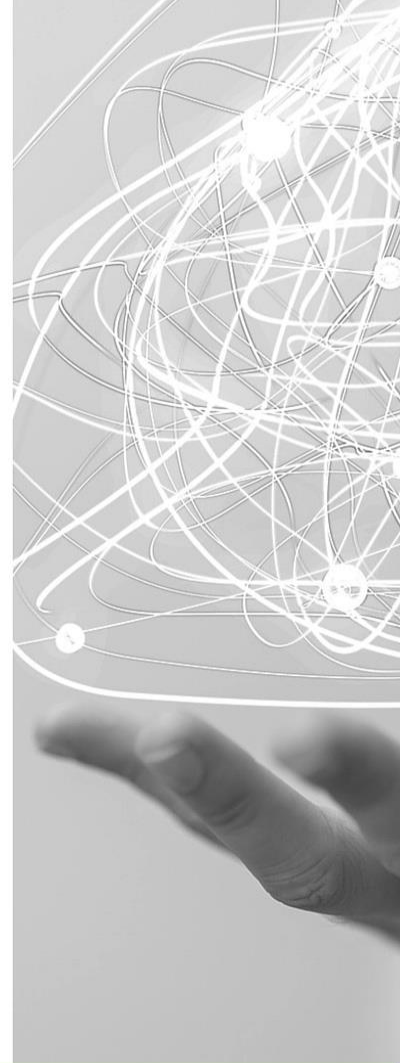
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Our Challenge

Despite the lack of a commercial available standard CAD-System we want vendors offering a system able to consume all services provided by the newly designed GIS-Infrastructure.

How to achieve that goal respectively how can we convince vendors to enable their systems?

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Our Idea

Tender with the following requirements:

❖ Usage of WMS/WMTS-Services is mandatory
❖ Usage of other Services is optional
❖ Better rating of proposals for systems using more services
❖ Better rating of proposals for systems not storing Spatial Daten in ist own DBMS

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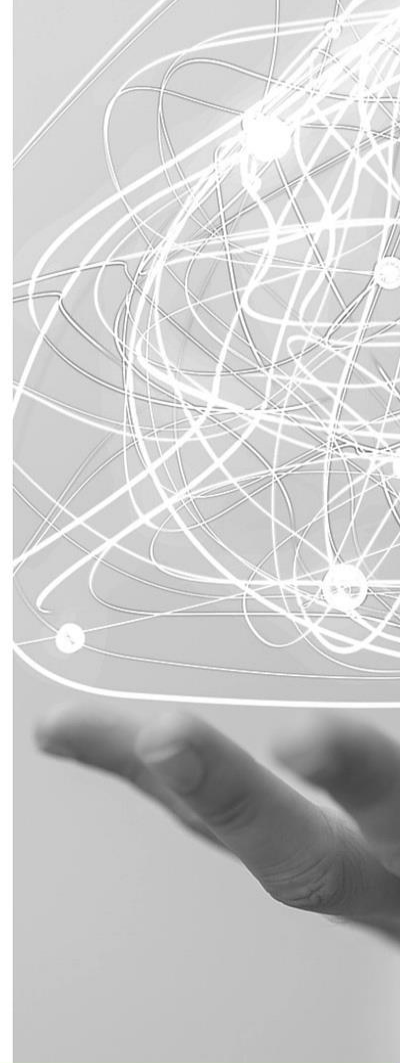
The result

ALL bidders promised to implement ALL required GIS-Services even if this functionality is not available in the latest release of their CAD-system.

Most of the bidders even presented proof of concepts of the newly implemented capabilities.

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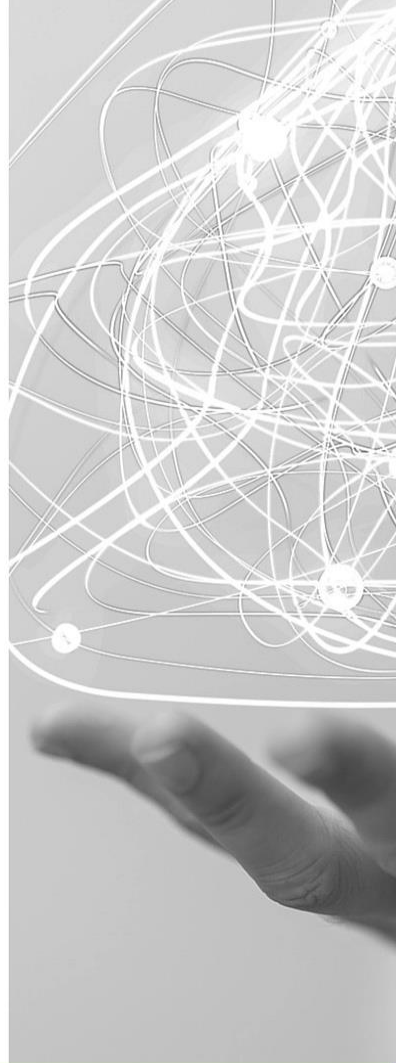
Conclusion

It is not enough to define standards or to make them available.

We also need forerunners:

❖ Vendors willing to enable their systems
❖ Customers aware of the advantages of using standards
❖ Planning offices and consultants supporting the vision of standards

And sometimes creative methods to convince the market…

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