



# Introduction to FME-based Data Processing Services

Marcel Sprotte (con terra)

# Who am I?

- Marcel Sprotte
  - > Geographer
  - > Started working in big data migration projects
  - > Since 2012 at con terra GmbH
  - > Team Project Service, Data Integration
  - > Consulting und Training



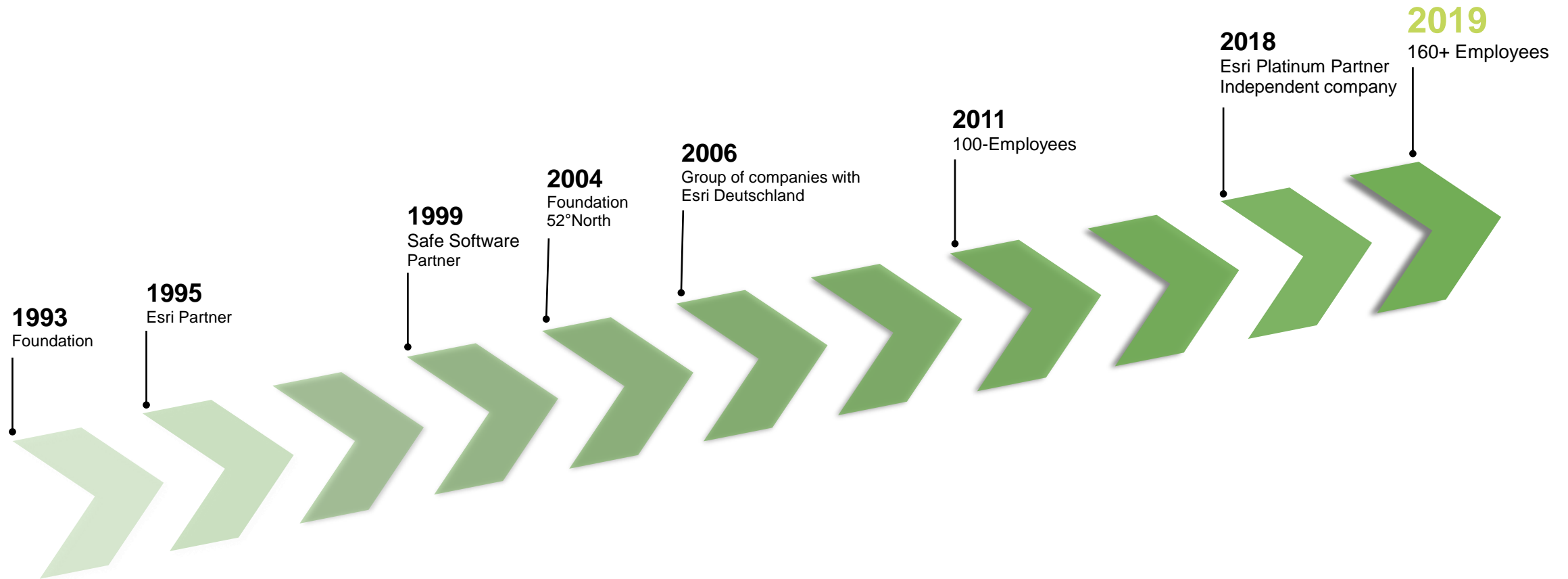




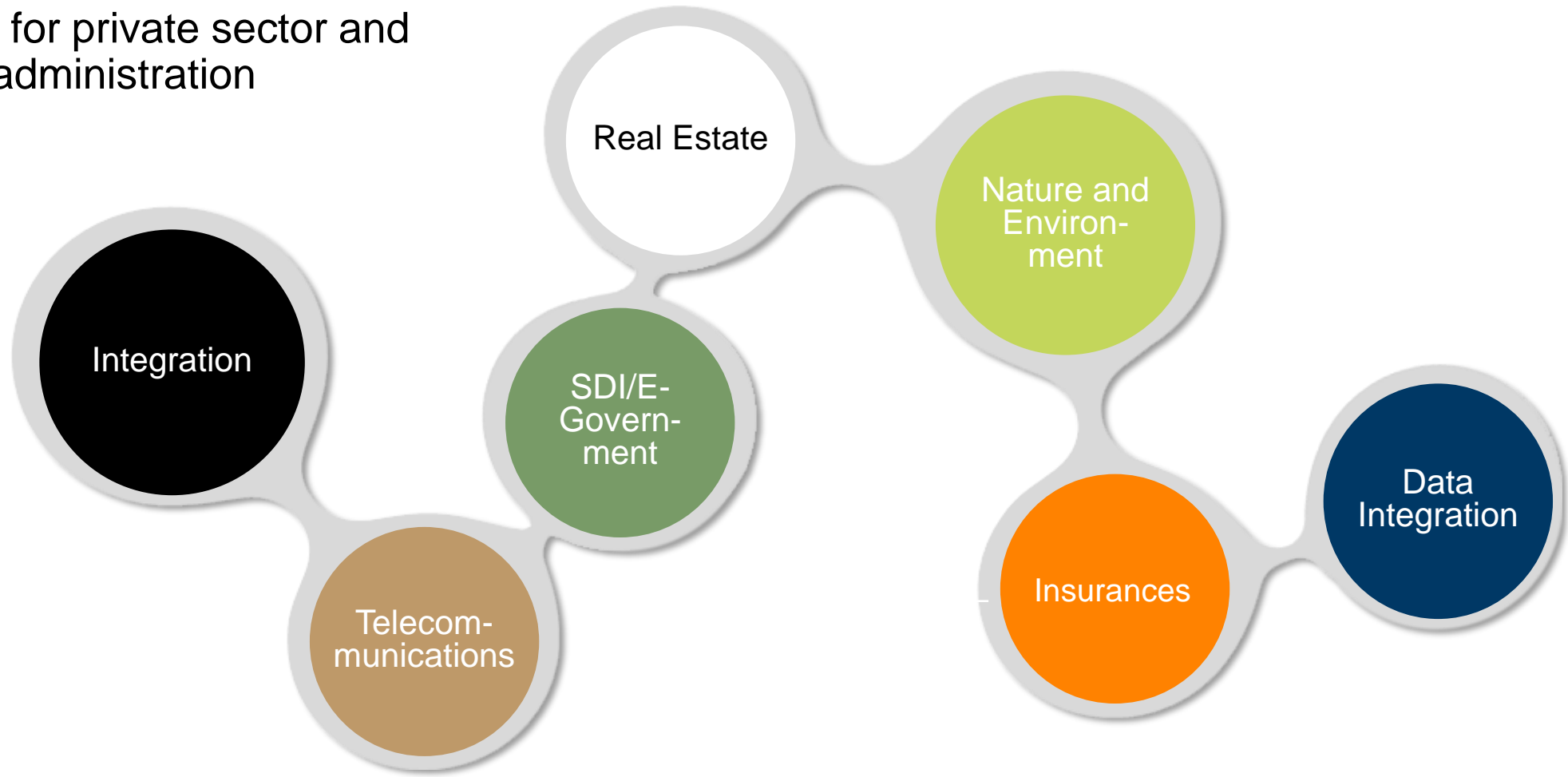
**Geo solutions that convince.**

We develop geo-solutions that make business processes more efficient, cost-effective and transparent.





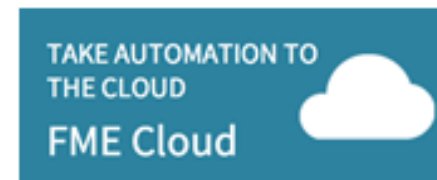
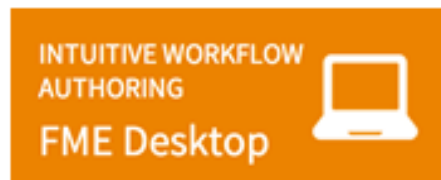
Geo-IT for private sector and  
public administration



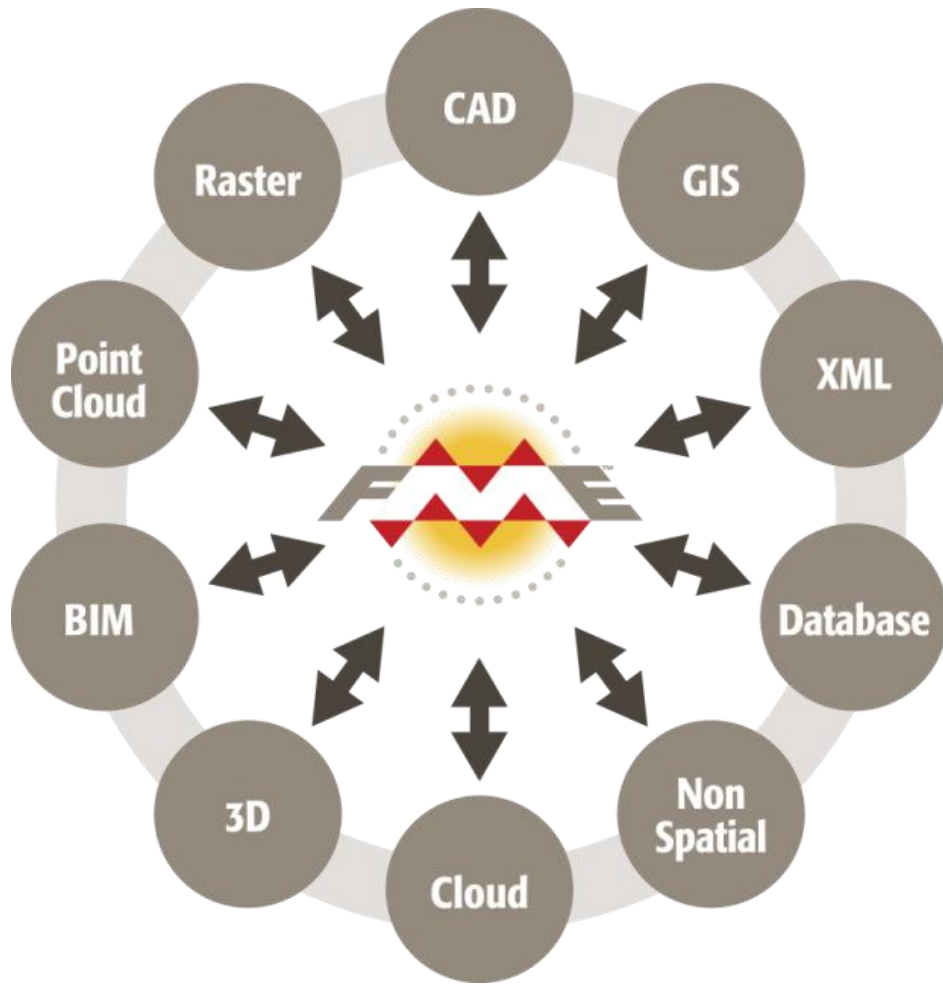
# Data Integration – mit FME Technologie

FME – the simple solution for complex Data Integration

- FME makes (spatial) information usable - independent of data source, data structure, data schema and data format
- FME supports importing and exporting of more than 450 data sources such as GIS and CAD data, raster data, web services and (spatial) databases
- Simple creation of complex workflows without coding using over 500 so called transformers



# Different Data Types and Formats – One Solution



# Safe Software Inc.

- Based in Vancouver, Canada
- Founded in 1993 by Don Murray and Dale Lutz
  - > Focused on development
- Worldwide Partner Network to provide professional services (VAR, OEM)
- [www.safe.com](http://www.safe.com)





# Partnership - Safe Software Inc. and con terra GmbH

- con terra is **Platinum Partner** of Safe Software
  - > Close relationship since 1998
  - > Reseller / Top Partner of the Year (2007 to 2019)
  - > European Service Center for FME
- > **Creating and developing solutions for the German and the Spanish market**
  - > German/ Spanish Version of FME
  - > INSPIRE Solution Pack for FME
  - > map.apps ETL Extension
  - > Plug-ins (Reprojektions, ISYBau, Geograf, ...)
  - > NAS, EDBS, XPlanGML, BIM, INSPIRE, S-57, OKSTRA...



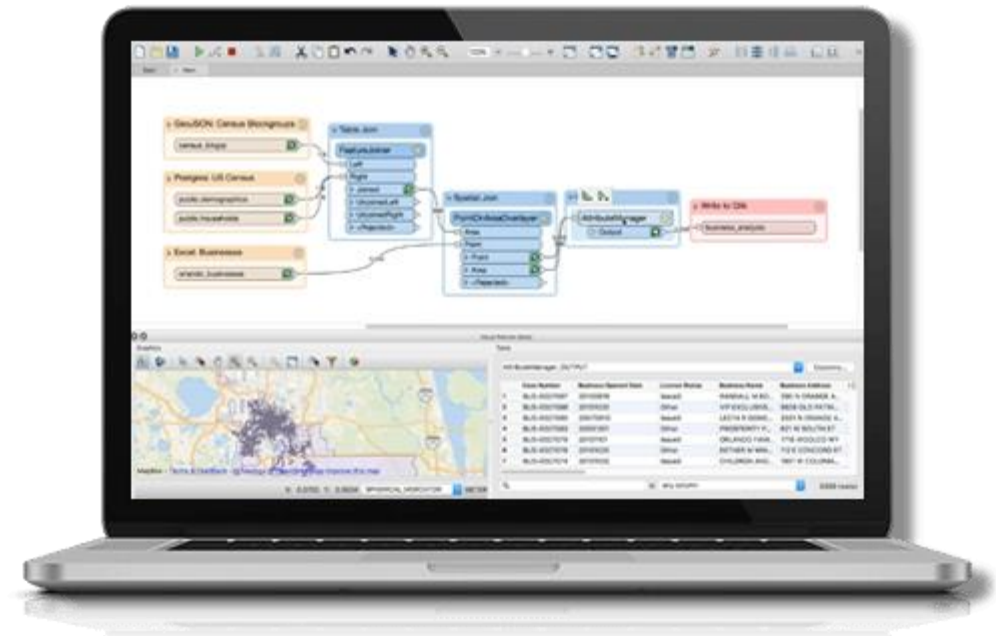
# Core Functionalities

- Format Conversion
  - > More than 450 different formats can be read and written
- Structural Transformation
  - > Manipulation of the data model
- Content Transformation
  - > Using/ adding information to the data
- Geometric Transformation
  - > Changing/ restructuring geometry
- Migrating Data
  - > Integrating various source formats into a new data structure



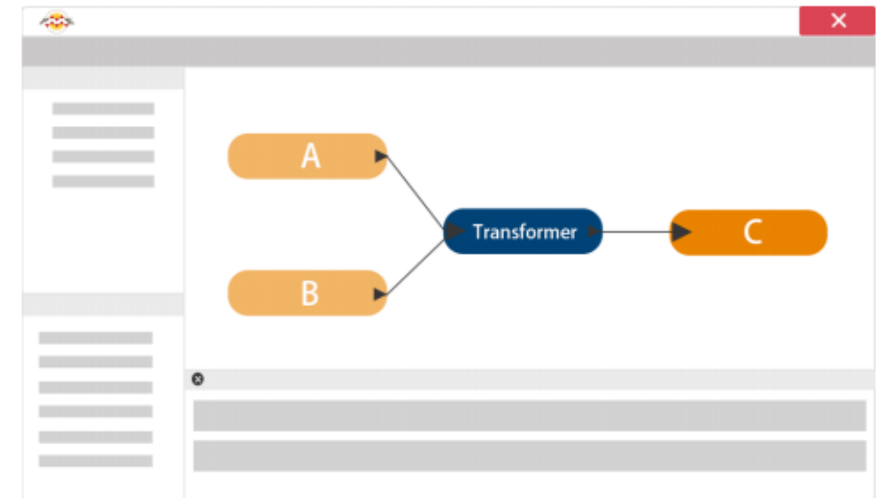
# FME Desktop

# FME Workbench



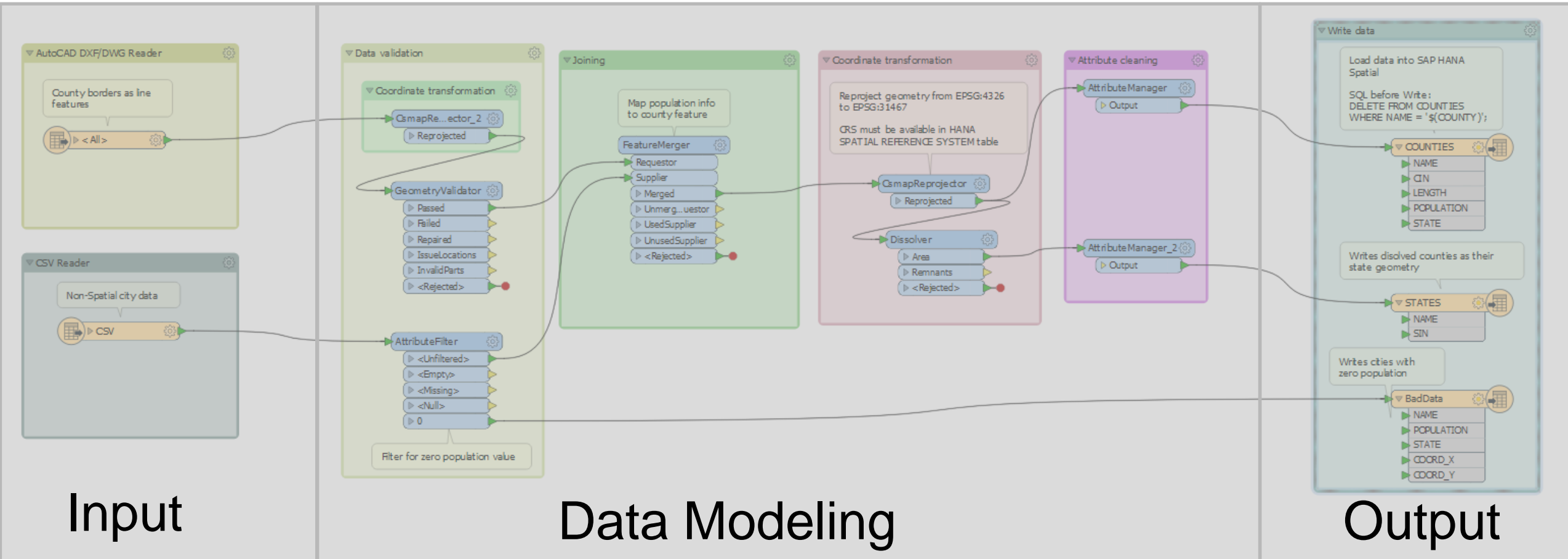
# FME Workbench

- Intuitive point-and-click graphic interface to enable translations to be graphically described as a flow of data
- Analysing Source and Destination Data and visual inspection
- Schema Mapping
- Geometric operations, Quality Assurance, data consistency, etc.





# Data Transformation with FME – Workbench



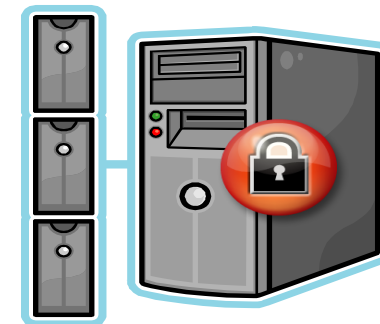
# FME Editions

- How do editions differ
  - > The number of supported formats
- Functionality and the number of transformer stays the same



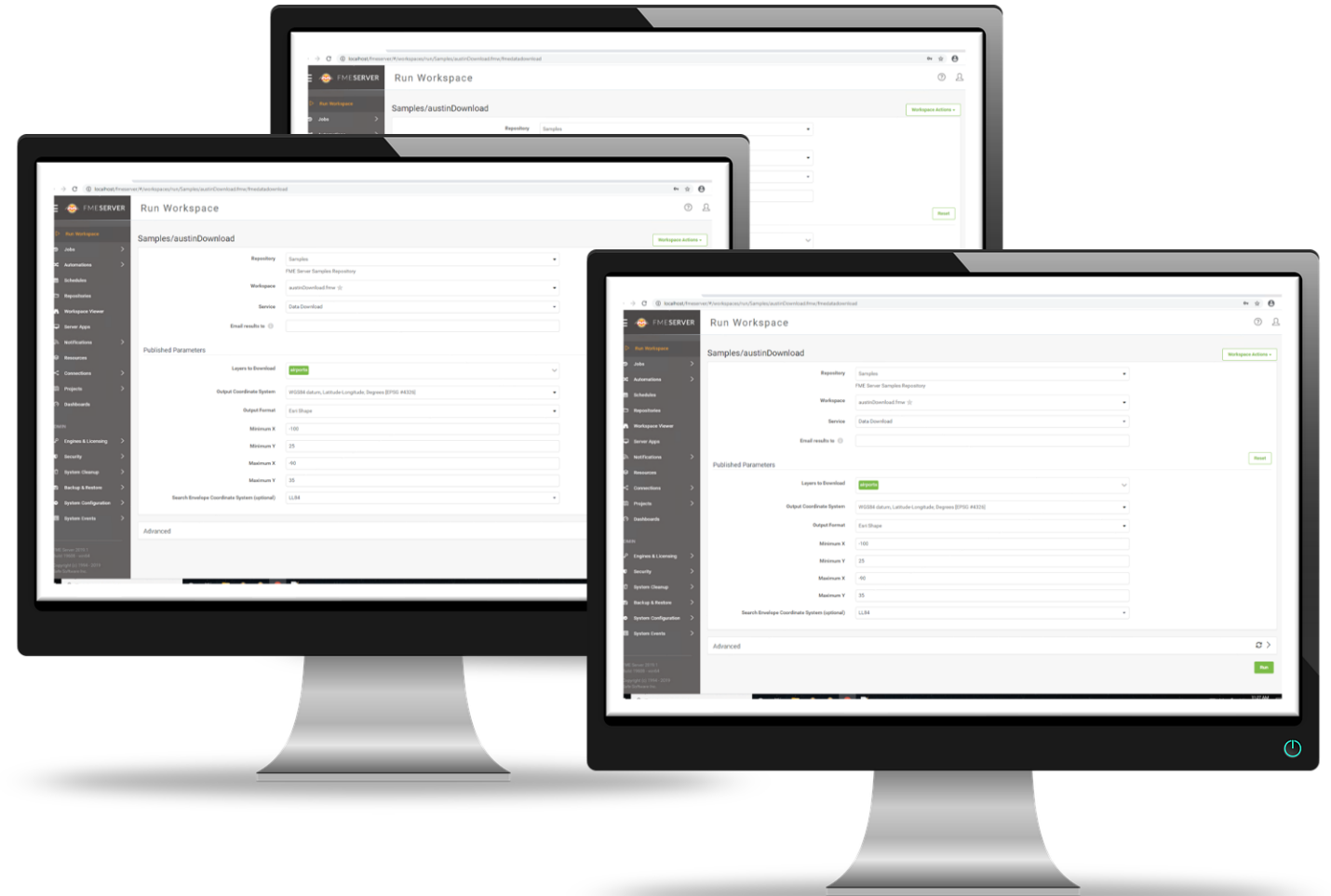
# FME Lizenzierung

- Single Use License
- Network license
  - > A license to borrow!



# FME Server

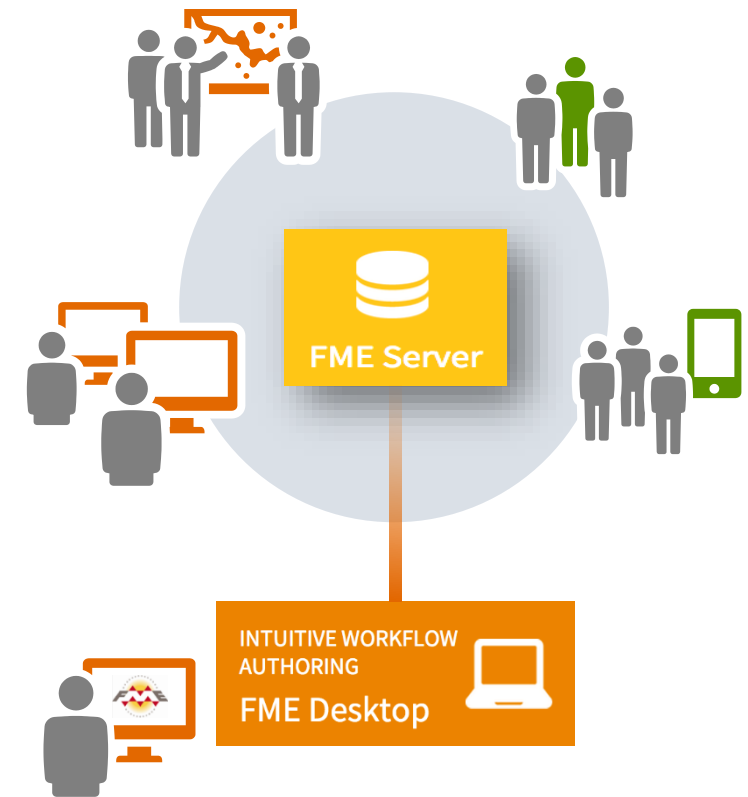
ENTERPRISE  
AUTOMATION  
FME Server





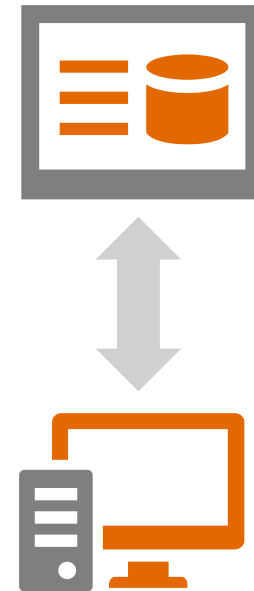
# FME Server

- FME Processes via the Internet
- Automations
- Data Distribution
- Data Upload
- Quality Assurance
- Integration in other Applications



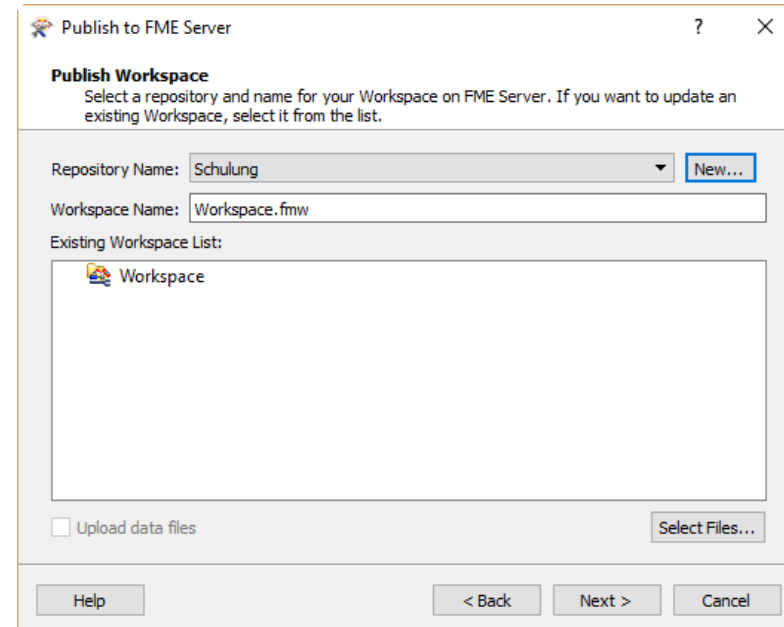
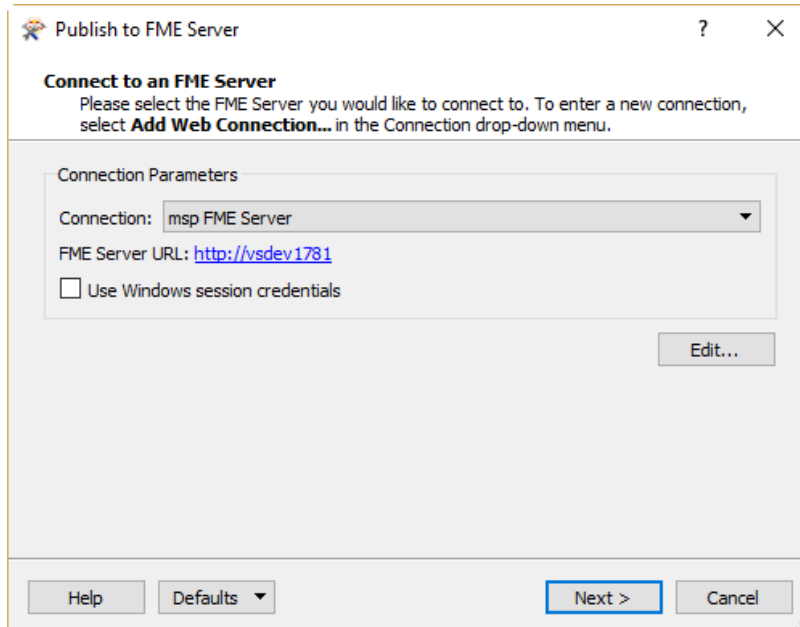
# Publishing a Workspace

- Creating a FME process in FME Workbench
- Publishing the Workspace onto the FME Server
  - > Connecting to the FME Server
  - > If needed, uploading source data
  - > Choosing the service
- Run the Workspace on FME Server



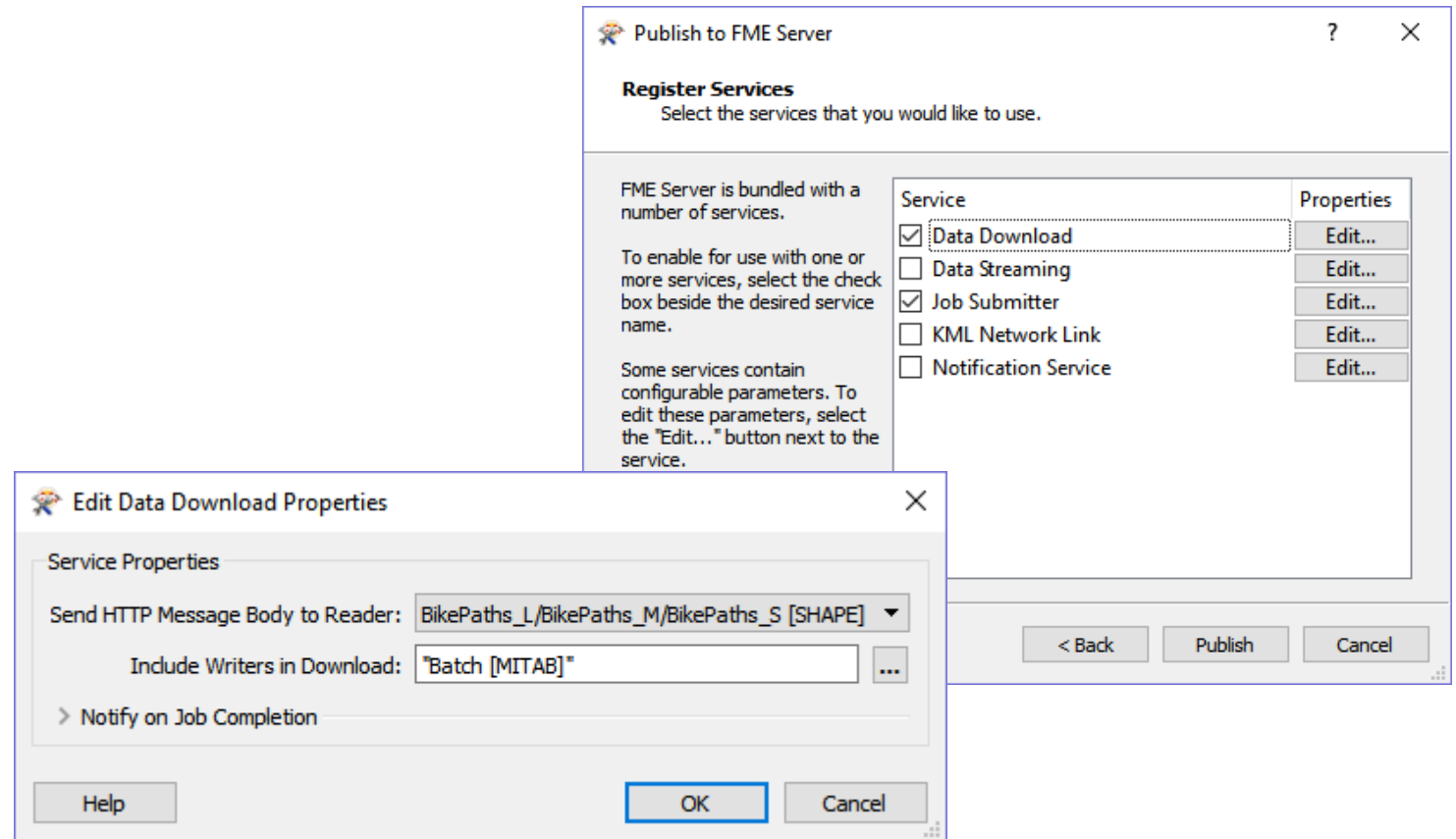
# Publishing a Workspace

- Connecting via WebConnection
- Storing the Workspace in a Repository



# Publishing a Workspace

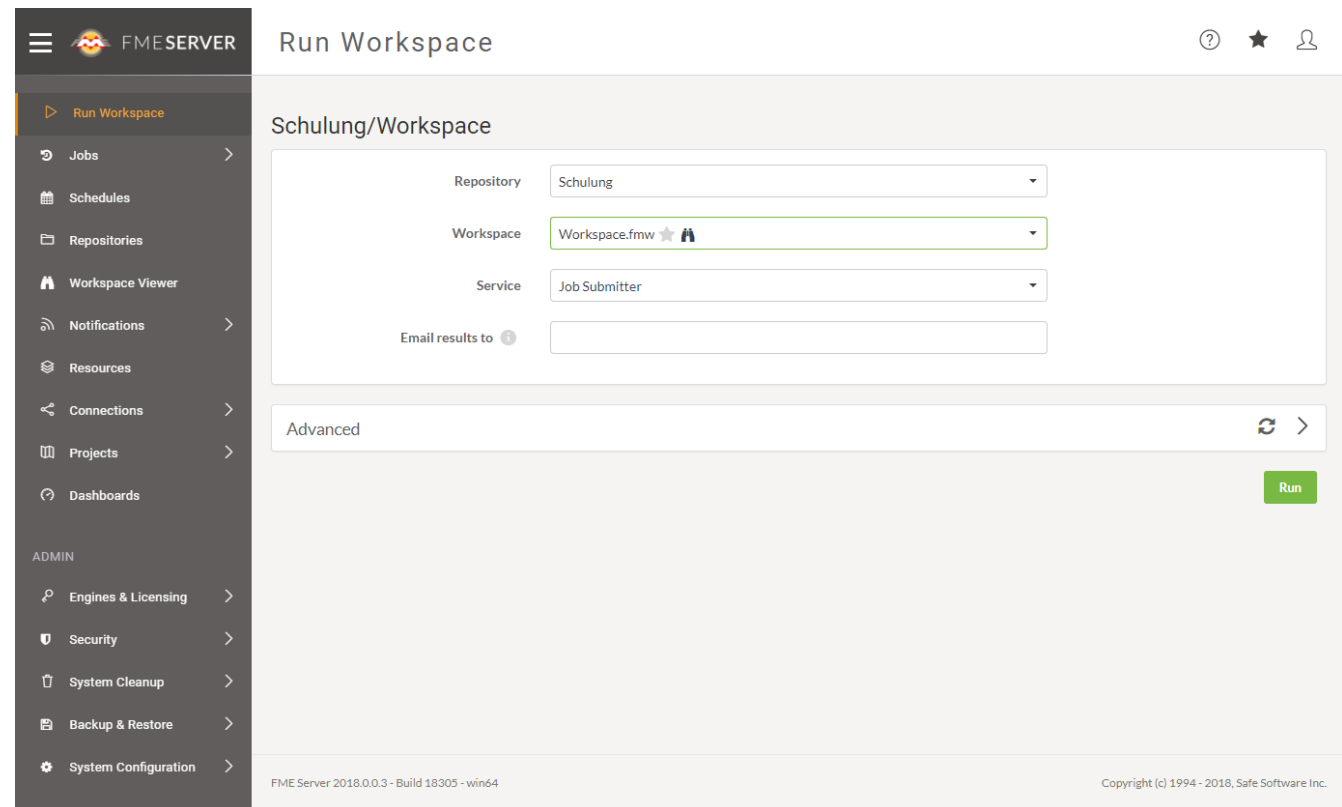
- Selection and Configuration of Services





# Running a Process on FME Server

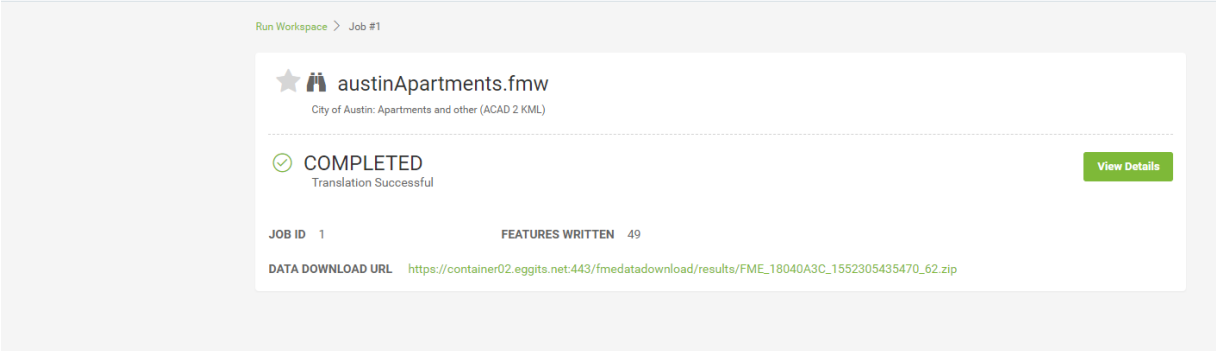
- Running a Process via
  - > Website (manually)
  - > Event-based
  - > REST
  - > Scheduling
  - > FME Workbench
  - > FME Server App
  - > Other Apps



# FME Server – the Result

- Synchronous
  - > Result is directly processed and delivered
  - > Download via http://...
- Asynchronous
  - > Result will be written later
  - > Receive via email attachment
- Stream / Service
  - > Data is processed on the fly

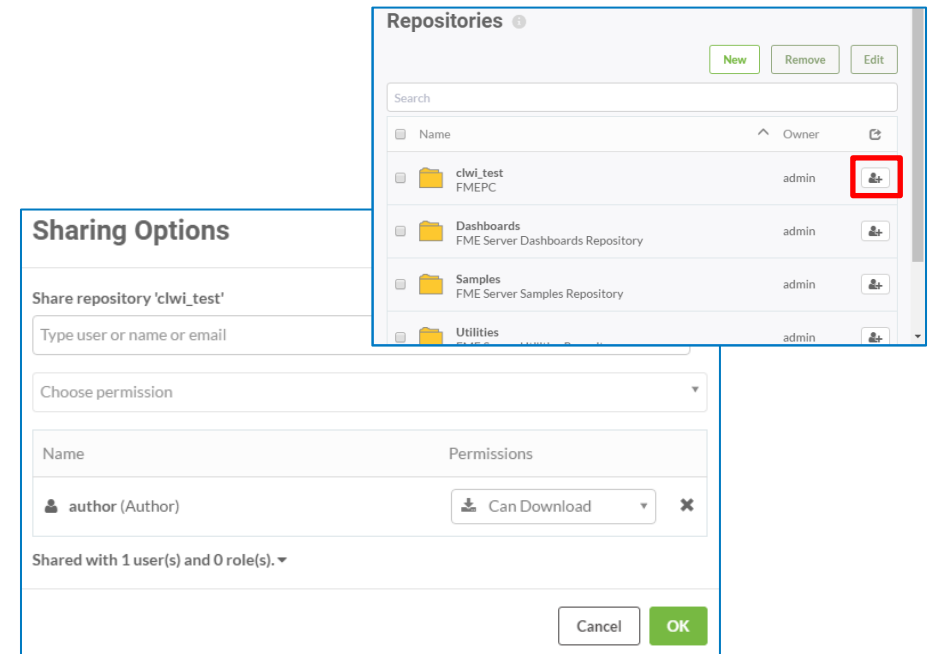
## Run Workspace



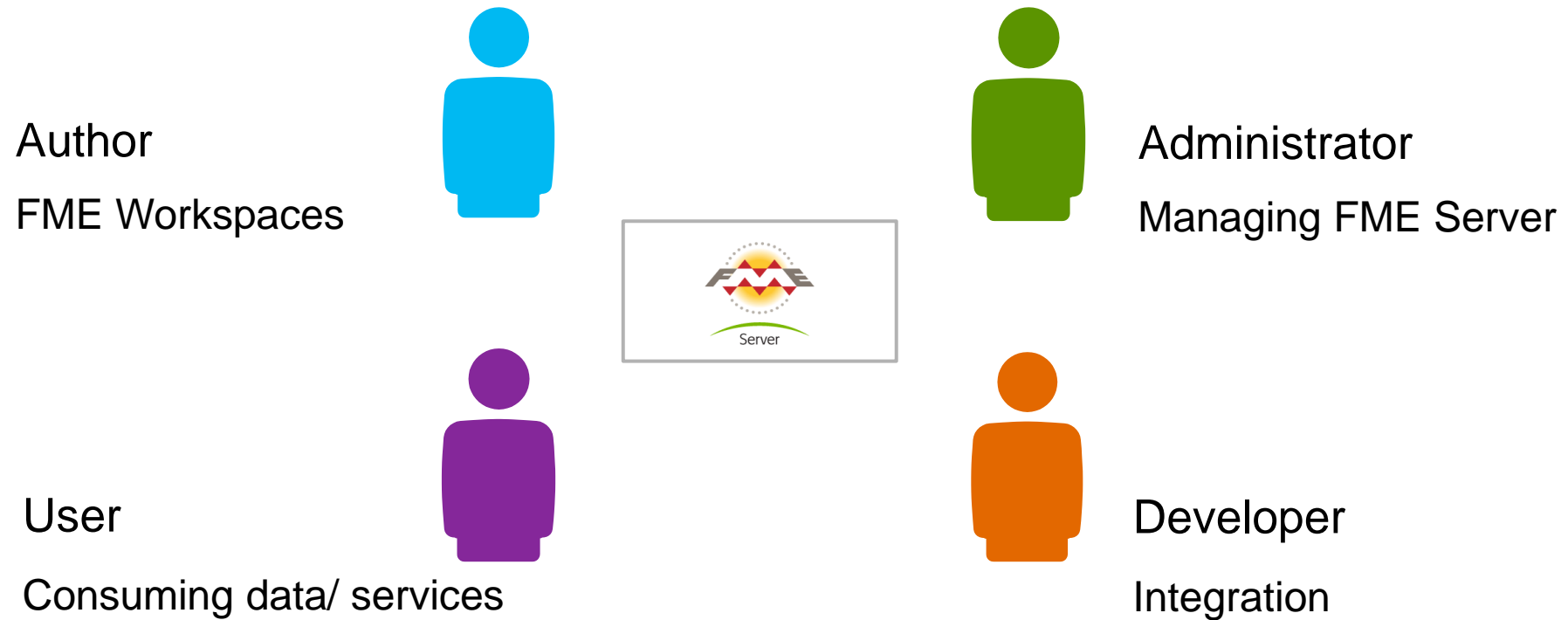
The screenshot displays the 'Run Workspace' interface for a job titled 'austinApartments.fmw'. The job description is 'City of Austin: Apartments and other (ACAD 2 KML)'. The status is 'COMPLETED' with a green checkmark icon and the text 'Translation Successful'. A 'View Details' button is located to the right of the status. Below the status, the 'JOB ID' is 1 and 'FEATURES WRITTEN' is 49. At the bottom, the 'DATA DOWNLOAD URL' is provided as [https://container02.eggits.net:443/fmedatadownload/results/FME\\_18040A3C\\_1552305435470\\_62.zip](https://container02.eggits.net:443/fmedatadownload/results/FME_18040A3C_1552305435470_62.zip).

# Security

- User centered („create and own“)
- A user owns the resource he has created (Workspace, Repository, etc.).
  - > Full Control
  - > Sharing
- Role based
- Active Directory
- HTTPS



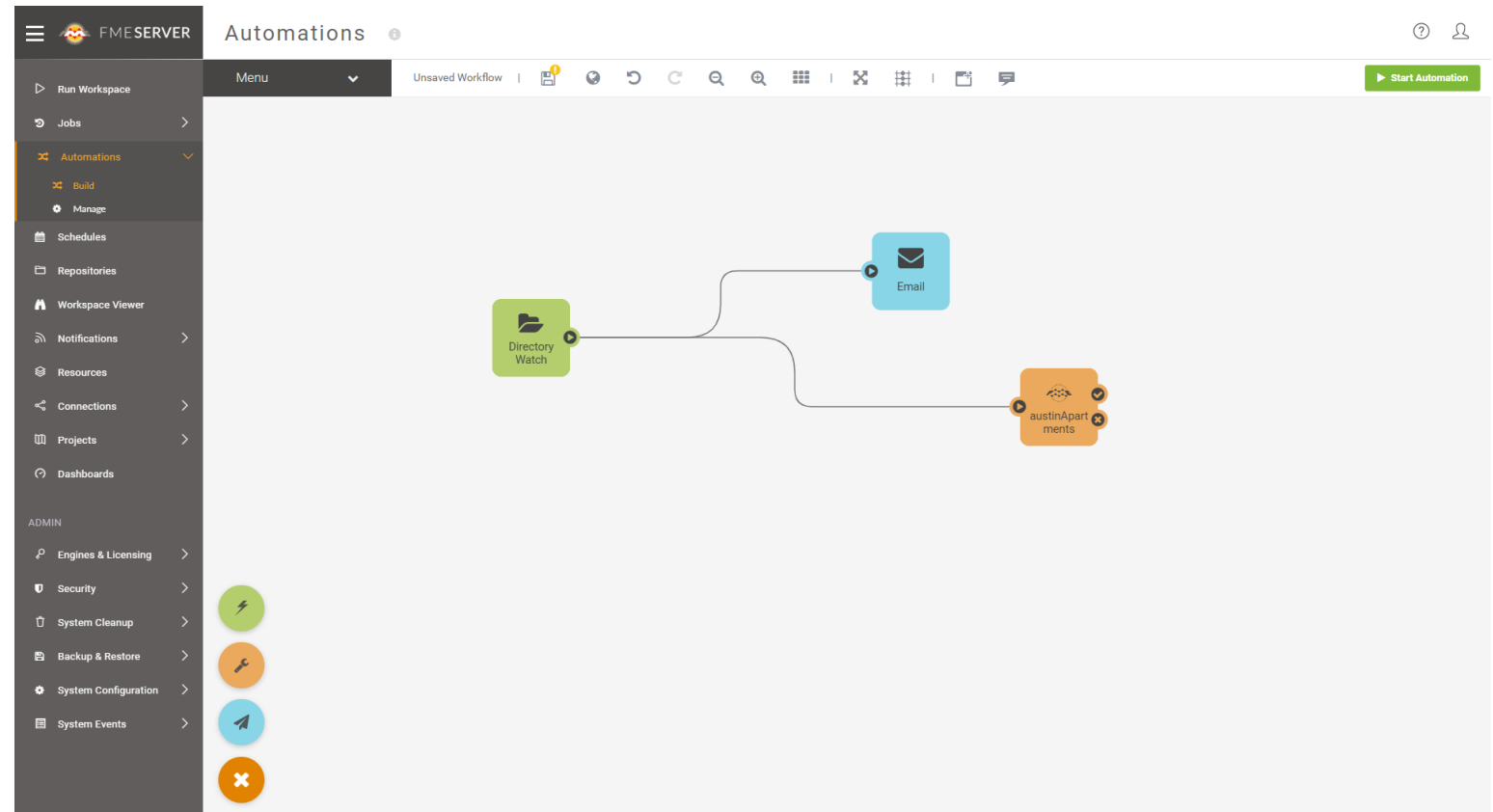
# Roles and Actors





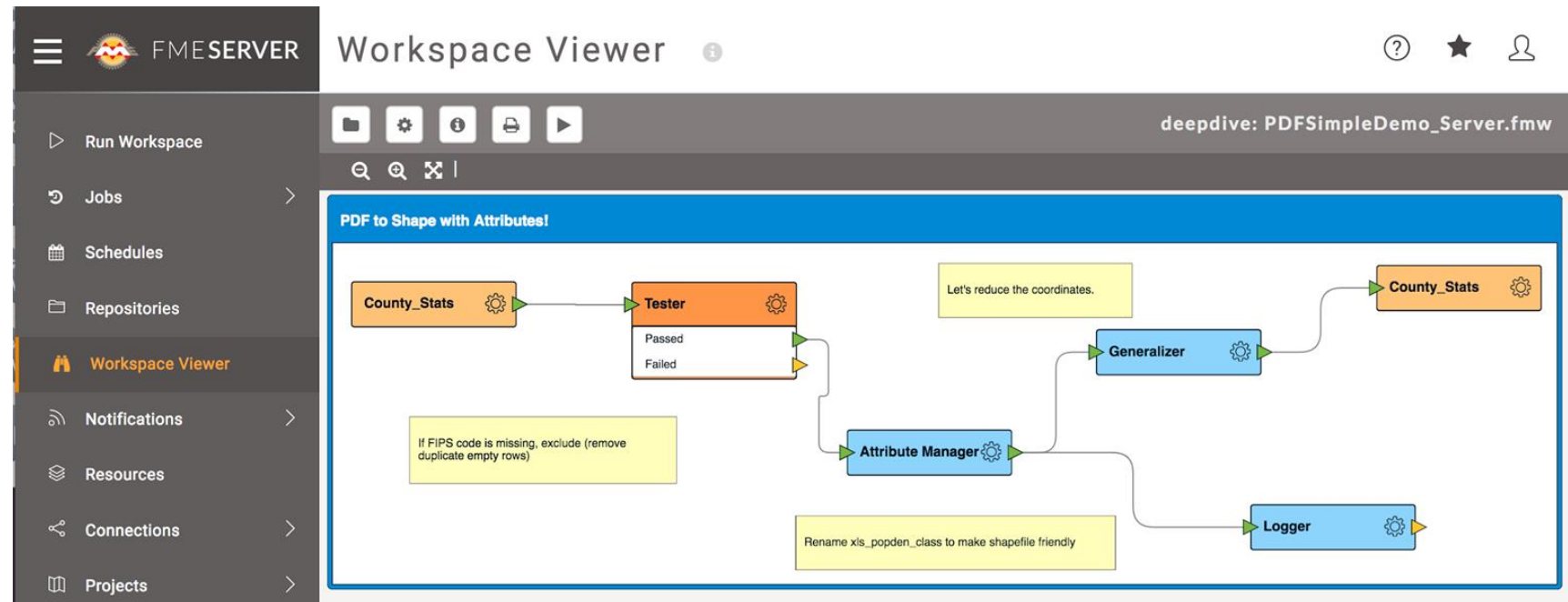
# Automations

- Event based Processing
- Directory Watch
- System Events
- Schedules
- ...

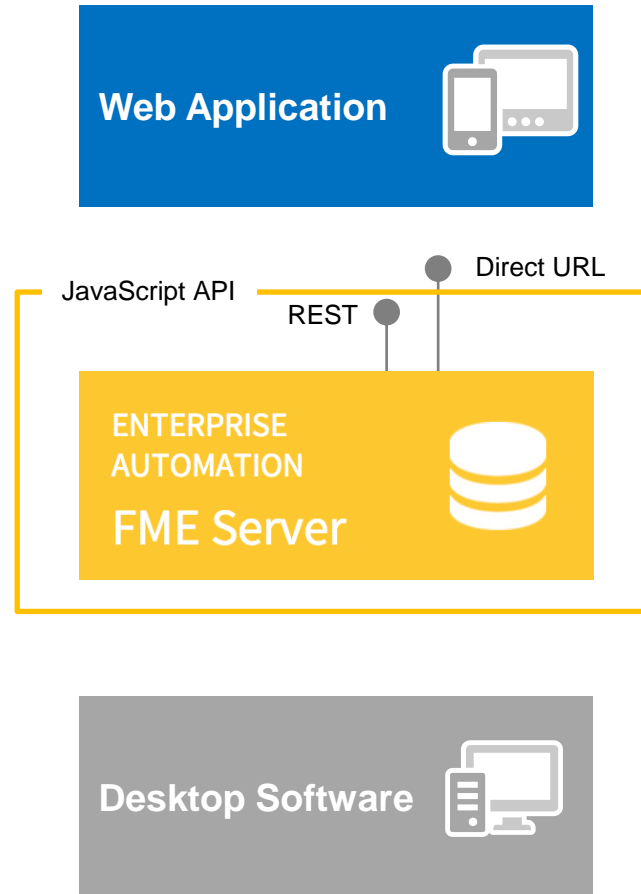


# Workspace Viewer

- Ansicht von Workspaces im Web UI
- Weitere Ausbaustufen folgen



# Possibilities to integrate FME Server in (Web)-Apps





CONNECT. TRANSFORM. AUTOMATE.

One Powerful Transformation Engine - Three Ways to Deploy



FME Desktop

Intuitive Workflow  
Authoring



FME Server

Enterprise Automation



FME Cloud

Take Automation to the  
Cloud





# Let's step into the real world...

## Examples



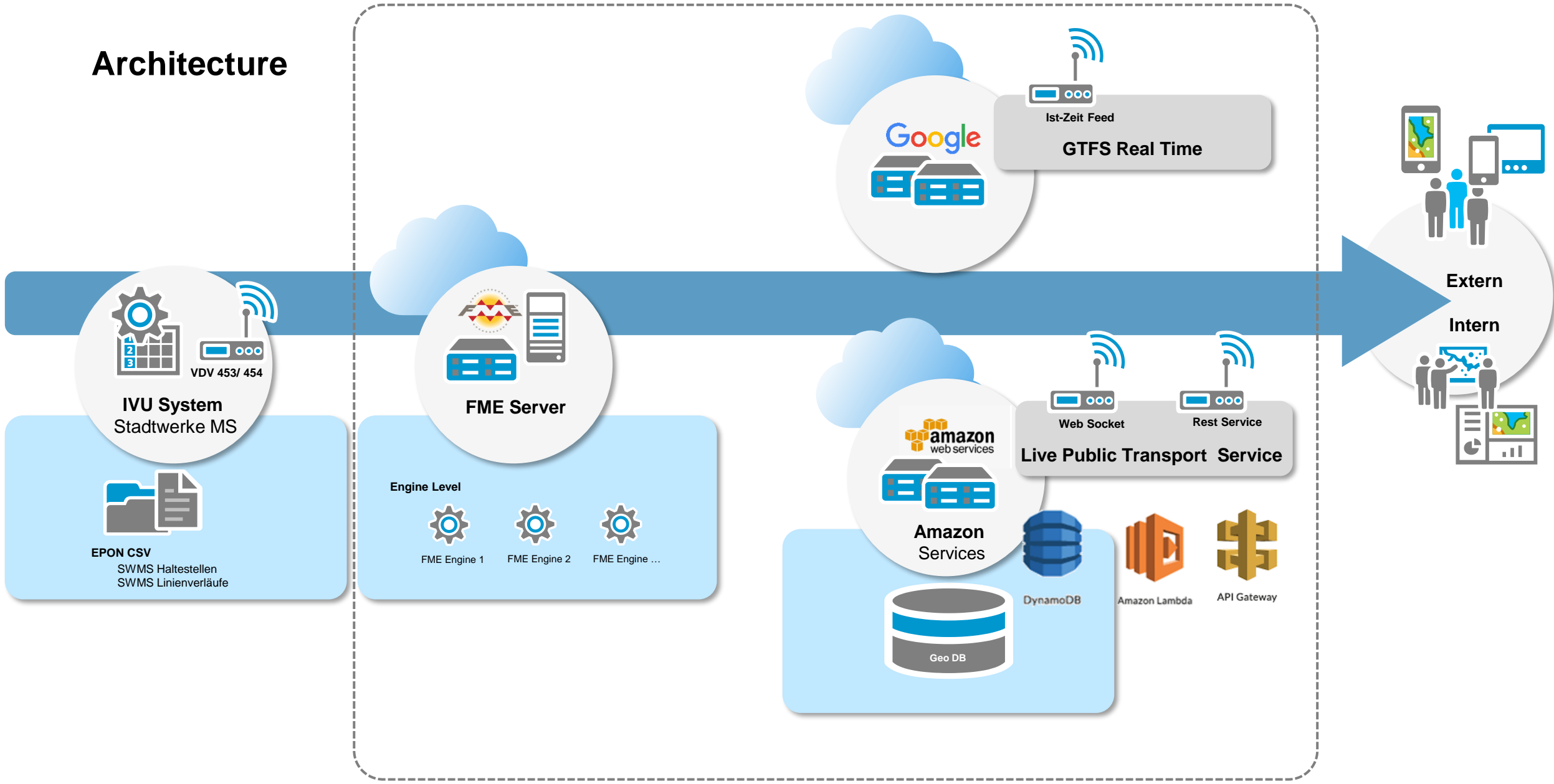


# The Netzplan

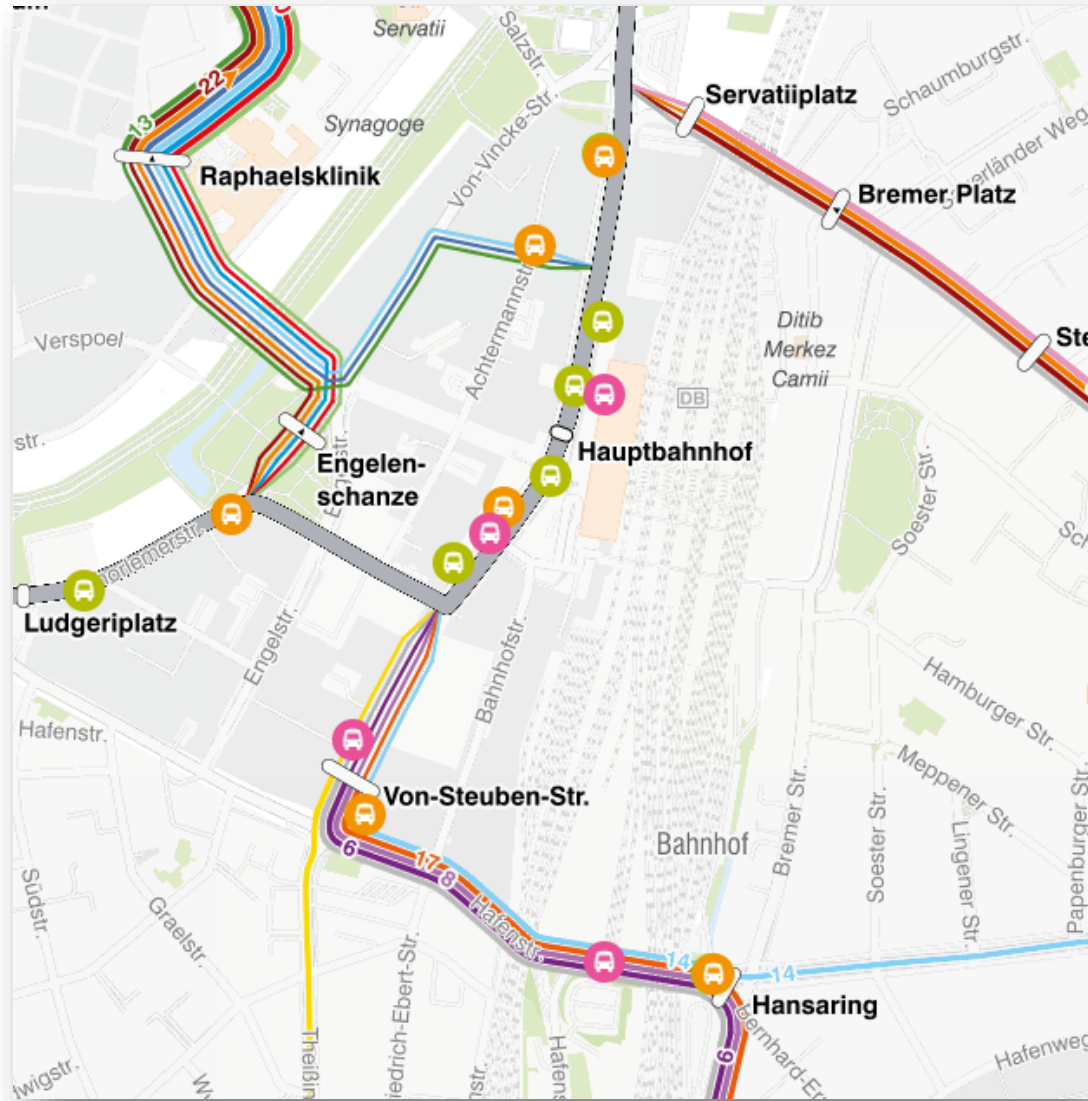
# Netzplan Münster

- A new service by Stadtwerke Münster GmbH
- Real Time Display of bus positions in Münster
- FME Server is connecting to the open API to get data
  - > Processing
  - > Reformatting
  - > Making it available for displaying on <https://netzplan-muenster.de/>

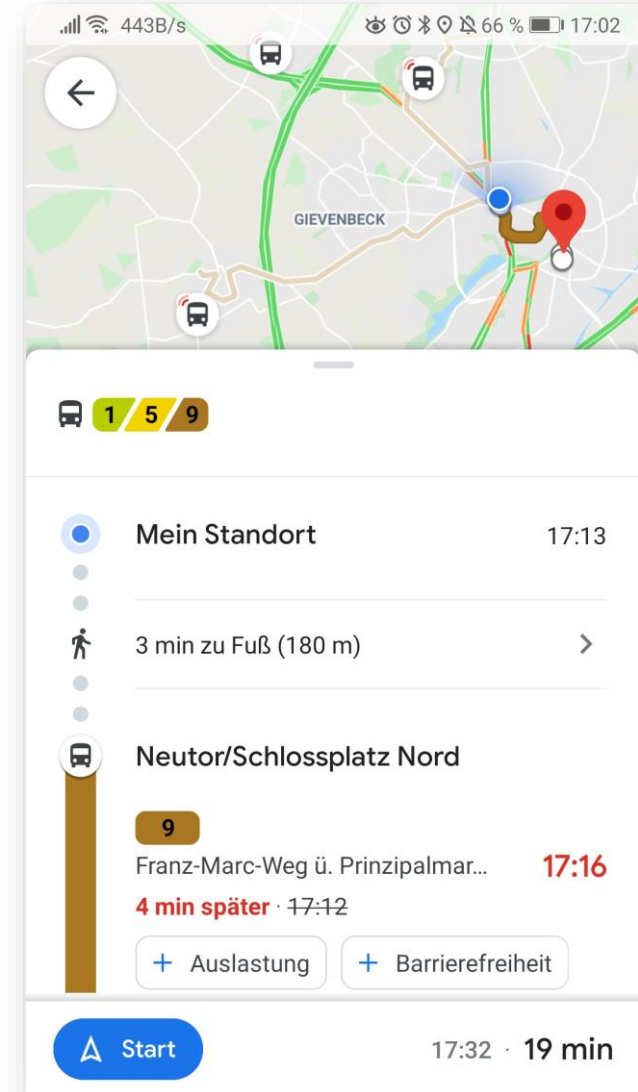
# Architecture







Netzplan Münster



Google Maps



map.apps and map.apps ETL

con•terra

# map.apps

## Software component of con terra technologies

- software component of con terra technologies
- Individual and user-centered
- Open, adaptable and integrable
- Sustainable and efficient
- Established and mature

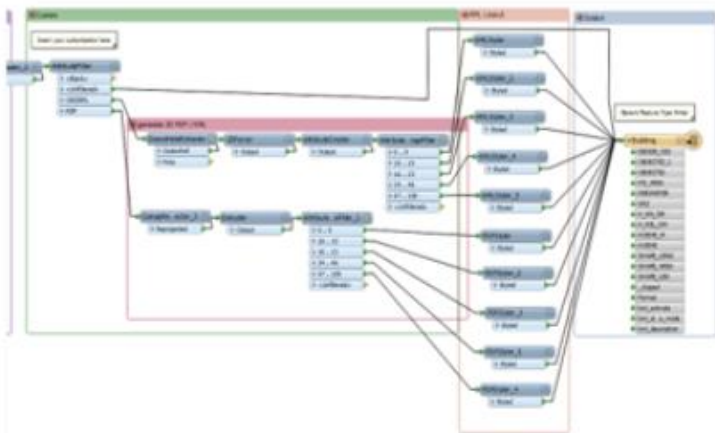


# map.apps ETL

- Integrate FME Server possibilities into map.apps
- No coding needed!
- File Upload
- File Download
- DB Import
- DB Export
- Web Connect
- Real Time



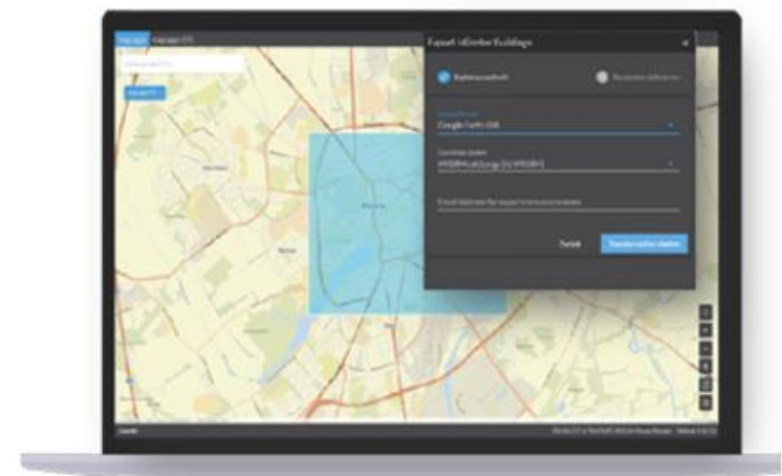




### Neues ETL Tool erstellen

- Allgemeine Einstellungen
- FME Verbindungseinstellungen
- Eingabe Methode
- Ausgabe Methode
- map.apps Parameter
- Prozess Parameter

Ausgabe Methode	Name
<input checked="" type="radio"/>	Ergebnis
<input type="radio"/>	Karte
<input type="radio"/>	anzeigen
<input type="radio"/>	Ergebnis
<input type="radio"/>	Download
<input type="radio"/>	Ergebnis
<input type="radio"/>	Status



FME-Process

1:1

map.apps ETL -  
Configuration through the  
administrator

map.apps ETL -  
App for the user

# Orientation at a conference before the Pandemic



An Interactive  
Floor Plan

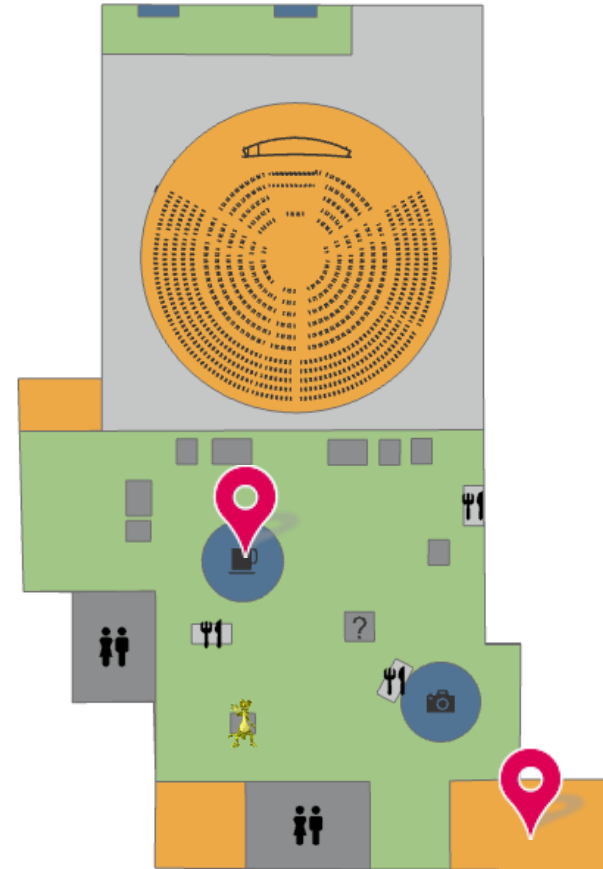
# FMEdays Interactive Floor Plan

*Where is the room „Saal Bonn“?*

*Which presentation is coming up in the room I sit in?*

*Where can I get a cup of coffee?*

*What is this guy talking about?*



Saal Bonn

Aktueller Vortrag

Nächster Vortrag

T

Verfahren zur automatisierten Generierung von Geofachdaten

Dr. Andreas Hagemeister - Regierungspräsidium Freiburg, Joachim Schuff - Regierungspräsidium Freiburg

15:00 - 15:30

Kurzbeschreibung

Organisations need high quality data for their daily operations. Most countries have basemaps that are used as an official reference for digitising asset networks. Multiple departments use the data, both in the office and on the field. The data is not static, making it challenging to keep it up-to-date. The Basemap Manager makes the data available as single point of truth, at the speed of Business.

The service consist of in two main pieces of software. Firstly, we rely upon the Spatial Data Warehouse solution of Spatial Eye. This Warehouse software treats spatial data as a first-class citizen. It automatically detects changes in the data, compared to previous versions and makes the current state available immediately. Besides, it is also possible to retrieve the situation of any time in the past. This timeframe of the reference map can be combined with the asset data of the organisation at that particular time. This historization of the data supports several business processes. During the presentation, the architecture of this database model

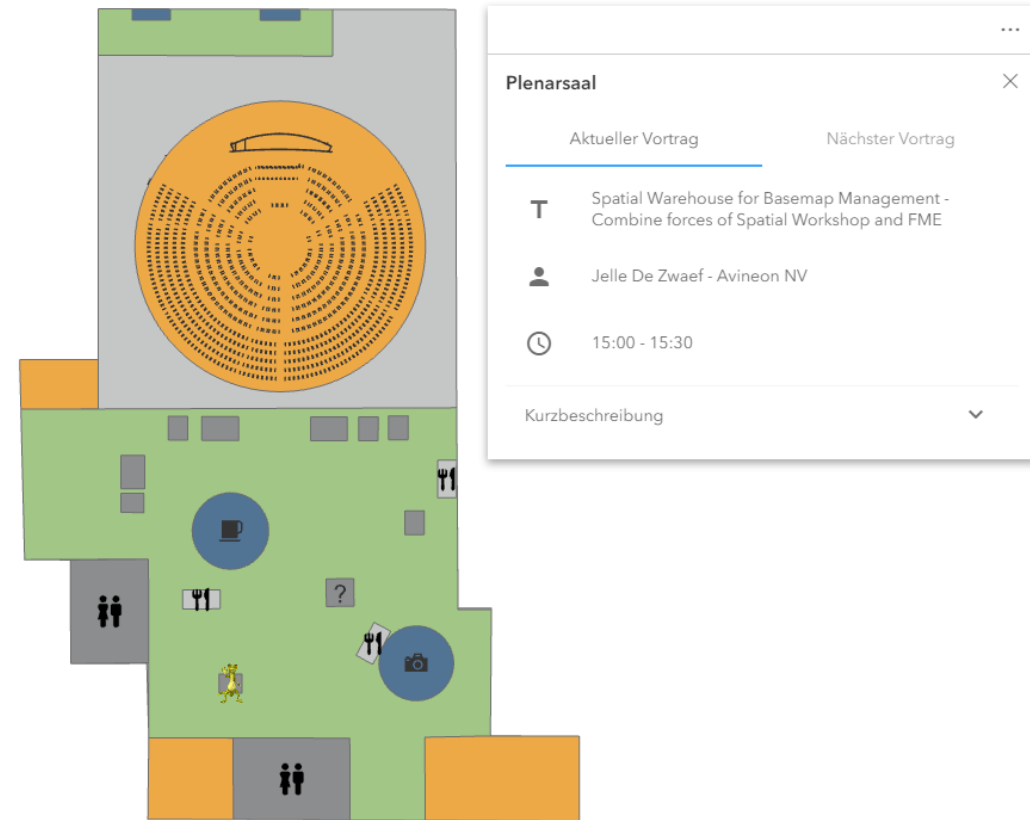
# Requirements

- Fully responsive design
  - > Mobile usage
- Re-usable
- Needful event information
- Connection to the agenda database
- Linked within the FMEdays App
- Using con terra solution patterns

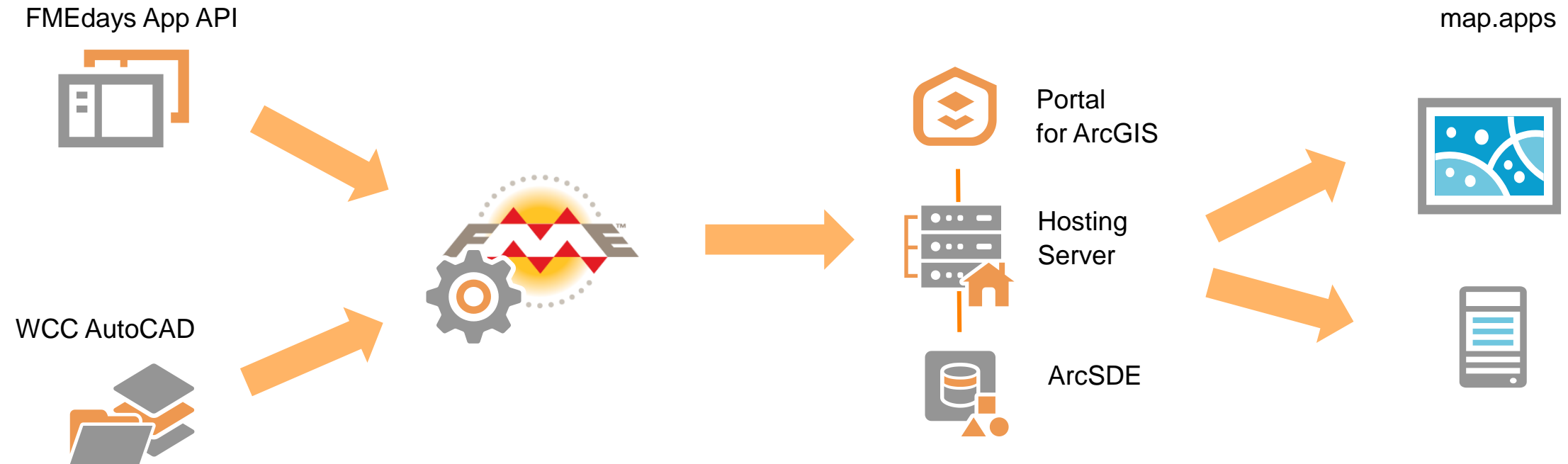


# FMEdays Interactive Floor Plan

- Using con terra solution patterns
- map.apps 4.6
- ArcGIS Enterprise
- FME Technology



# The Infrastructure





It's been a while...  
getting hungry?

Tracking down a  
Food Truck



# The Greenhouse Company

- Food Truck Start Up from Münster
- Fresh Salads and more for a healthy lunch break
- Always honks when it arrives
- Long queues before the truck even arrives!



# The Idea

- Developing a mobile app for positioning and notification
- Map service with map.apps and map.apps ETL
- Using the FME Server Notification to the max



# Preparation

- Creating Android-App
- Using a mobile device as a sensor within the truck
- Identifying stops and times
- Creating Geofences

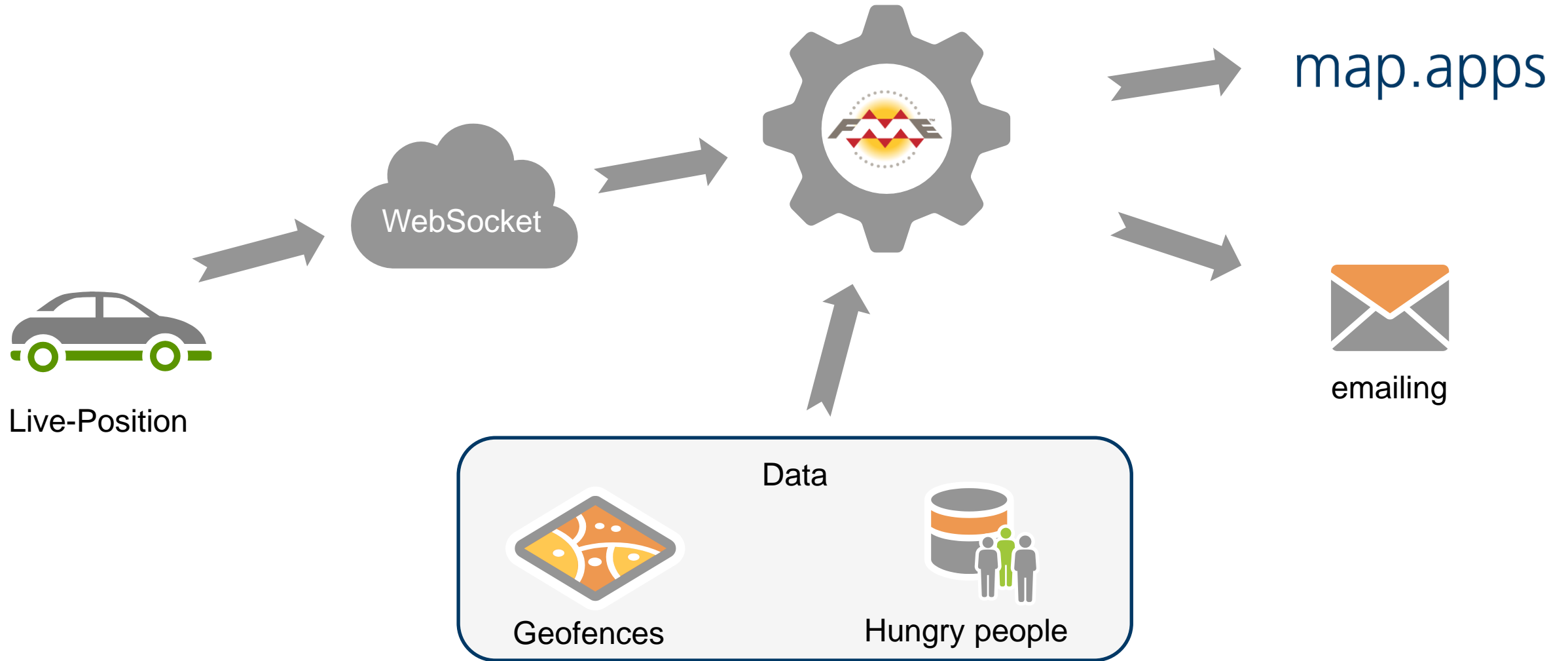


# Implementation

- User Registration
- Tracking of Food Truck position
  - > Via Geofence
  - > Emailing to users if the truck is near their position
- Using last known spot for map extent



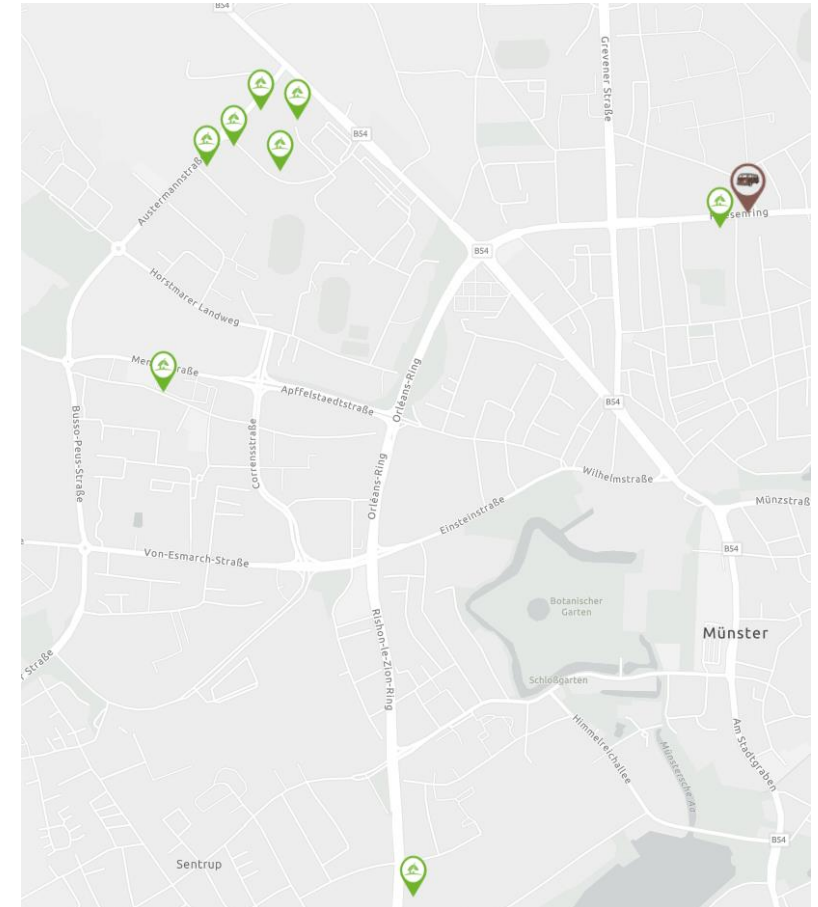
# Architecture

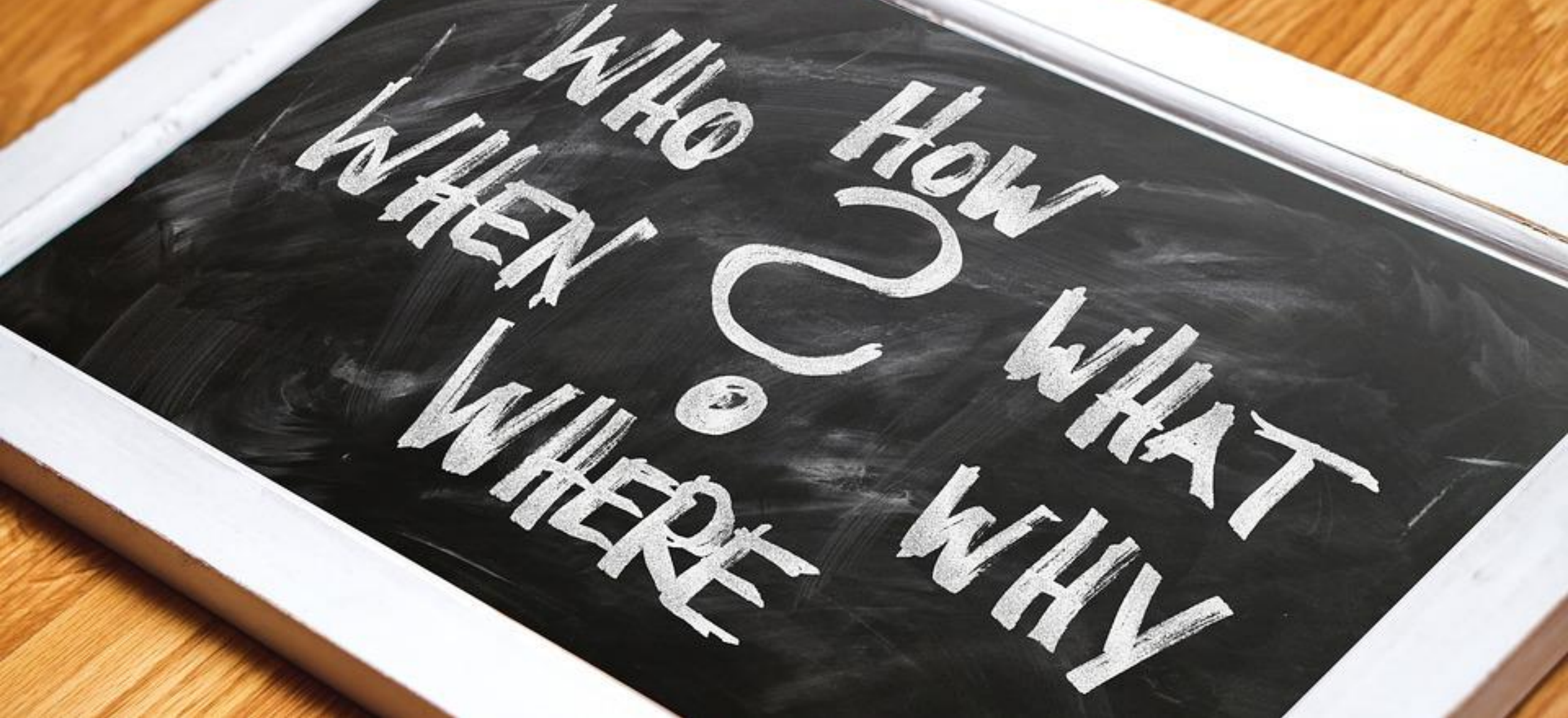




# Result

- Responsive application with map.apps
  - > Live Positioning
  - > Stops
- Registration
- Roll Out to the customer









*thanks!*

[m.sprotte@conterra.de](mailto:m.sprotte@conterra.de)

con•terra