

An aerial photograph of a coastal area. The left side shows deep turquoise water. A rocky shoreline with large, light-colored boulders separates the water from a sandy beach. To the right of the beach is a dense forest of green trees. A winding road or path is visible through the trees on the far right.

Building an API for real time transit data

Dennis Wilhelm

Geospatial Sensing | Virtual 2020



Origins

- Stadtwerke Münster GmbH is using *IVU System* to manage their bus network internally
 - > Management Tool to plan routes, timetables, etc.
- However:
 - > Complex hierarchical XML format for specific software components
 - > Not scalable for many users
 - > Only available through a VPN tunnel



Stadtwerke Münster

<https://www.ivu.de/>



API

- REST endpoint to query specific information
 - > Bus stops, routes, vehicles, etc.
 - > Simple (Geo-)JSON format
- Websocket endpoint
 - > Realtime push notifications to update vehicle positions
- Publicly available:
 - > <http://api.busradar.conterra.de/>



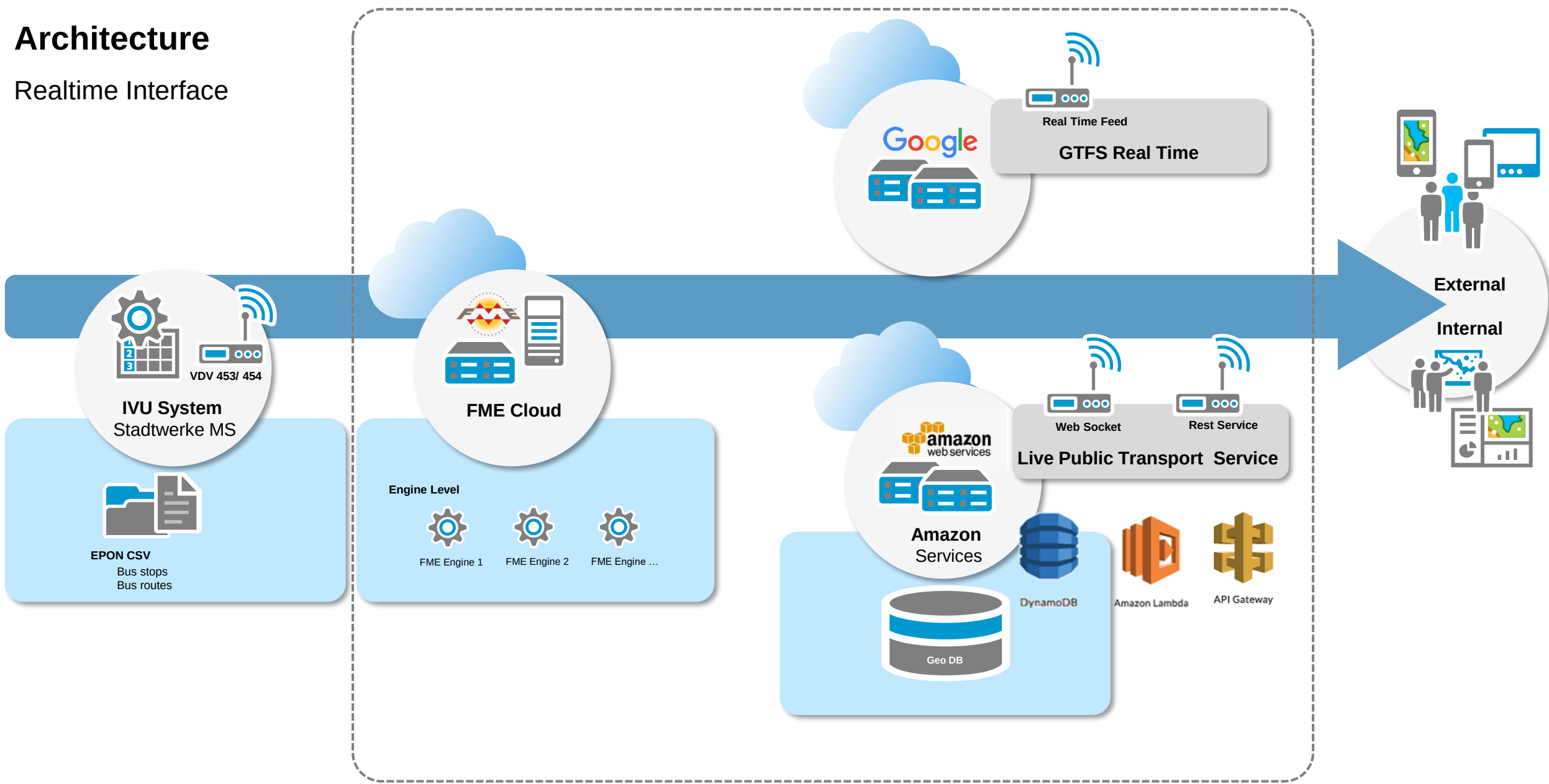
Building an easy to use and scalable API

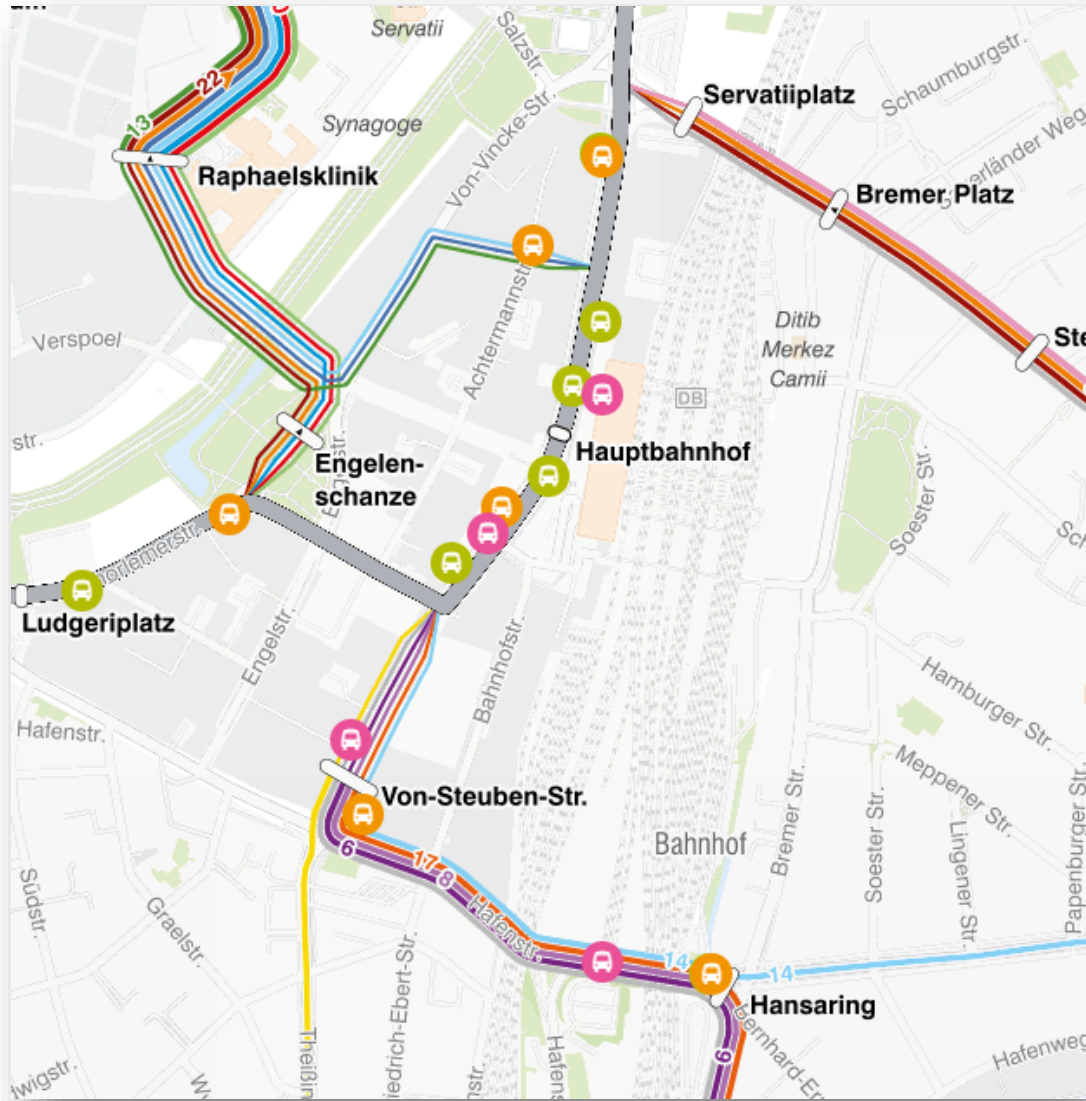
- Using the Open API Specification → API complies to existing standards
- Separation of data processing and data delivery
- Periodic data processing using FME Server in the background
 - > Access to the original IVU data
 - > Format conversion and reformatting
- Data delivery using scalable managed AWS services

More information about FME: <https://conterra.de/fme>

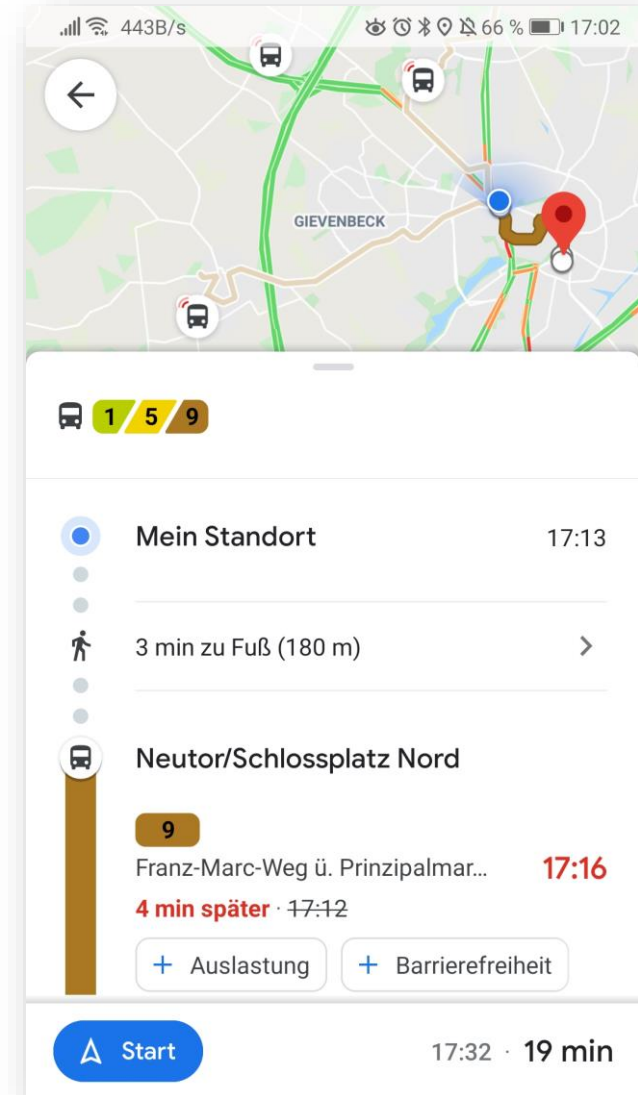
Architecture

Realtime Interface





Netzplan Münster



Google Maps



Final remarks

- The API is ready to use:
 - > <http://api.busradar.conterra.de>
- Feedback:
 - > d.wilhelm@conterra.de