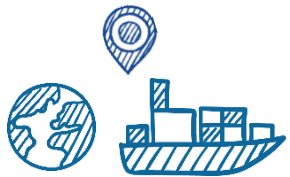




# FELA IoT-Tracking

20.12.2022

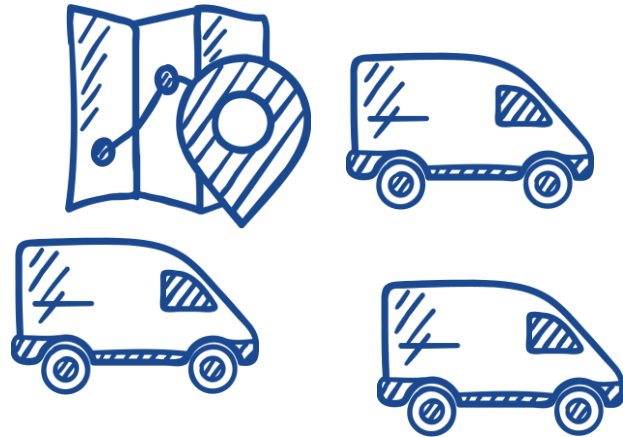
# Do you know that?



# Is my cargo safe?



# Where are my vehicles traveling?



# Are we driving economically?



# Where is my transport of dangerous goods located?



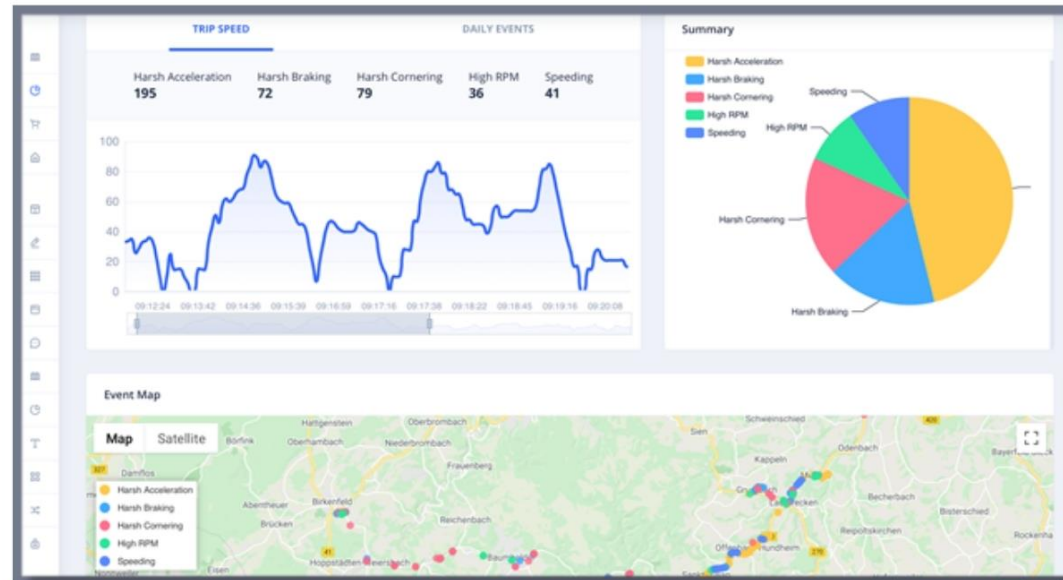


# Is my cold chain intact?



# We have a solution for you!

FELA CarLoc®

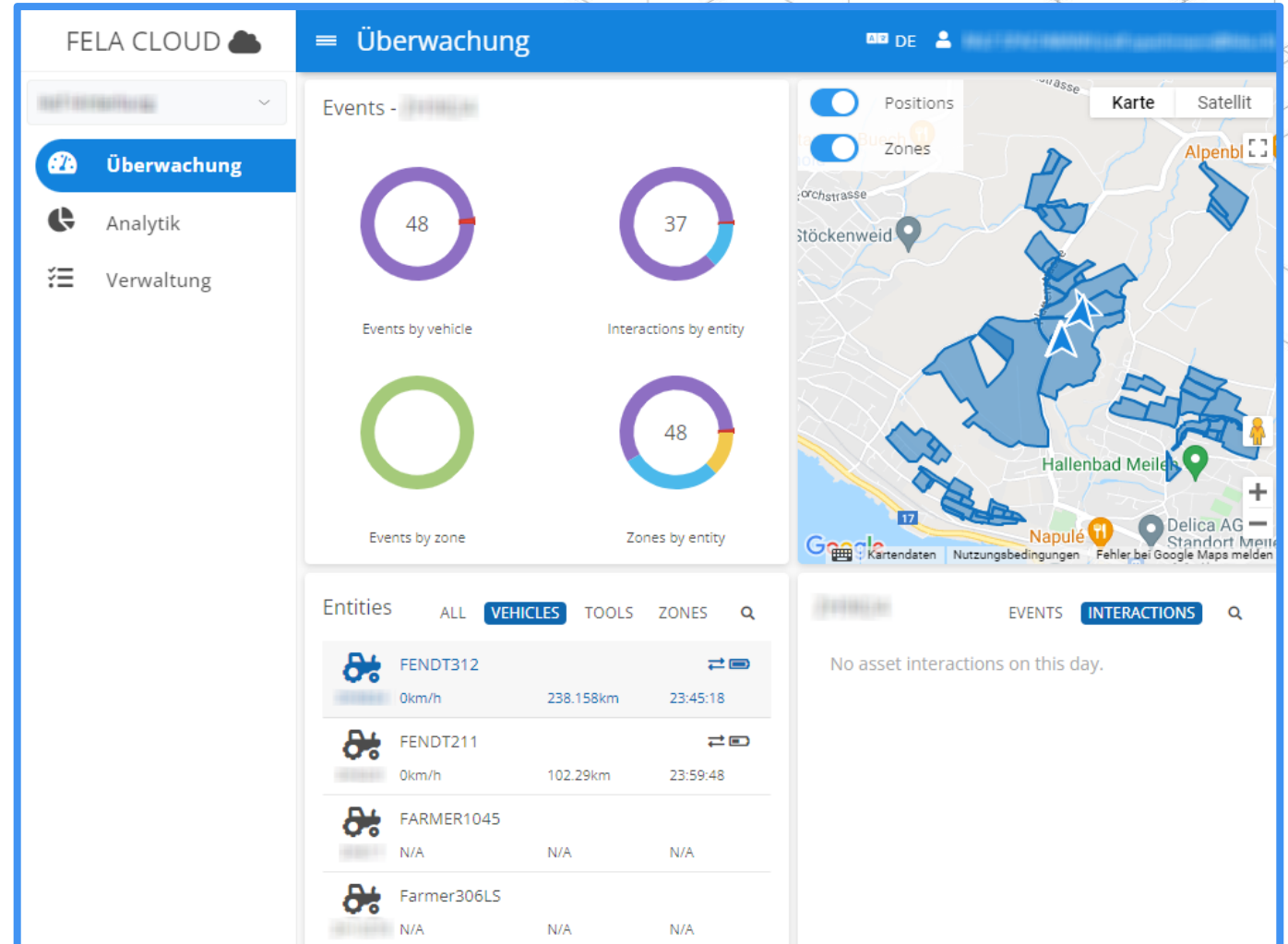




# IoT-Tracking CarLoc

## Your benefits

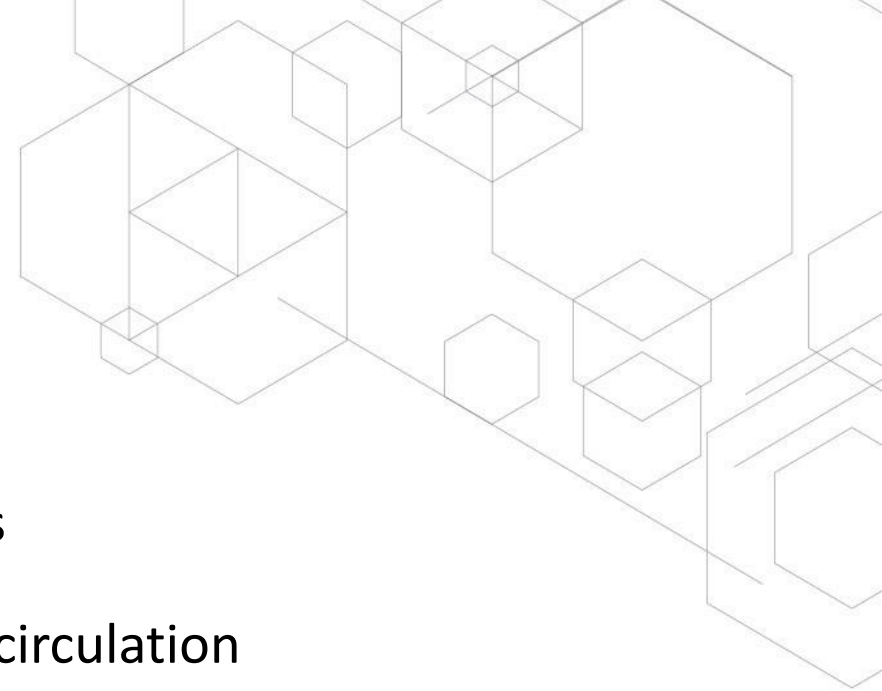
- Easy handling
- First class maps
- FELA Cloud – for secure data
- CarLoc client portal monitors, manages and analyzes data
- generate reports



# IoT-Tracking

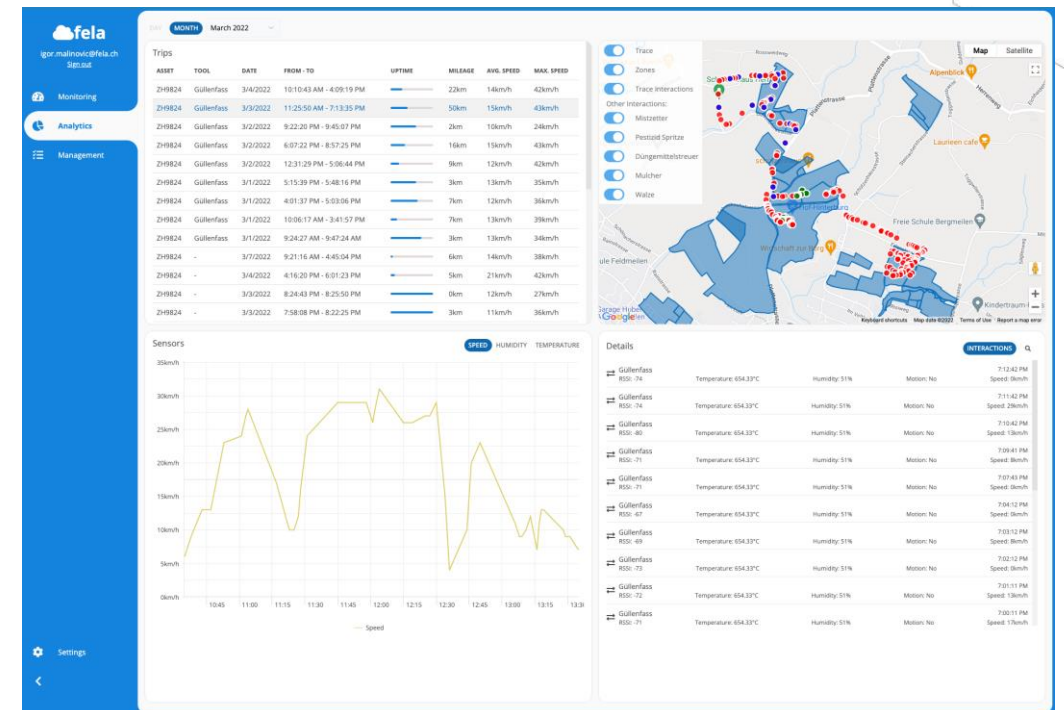
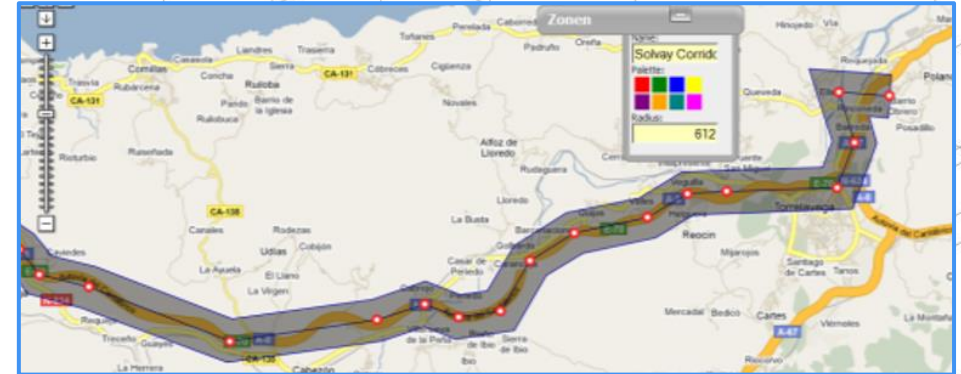
## Supervised

- Dangerous goods
- Electronic logbook
- Door and its opening via RC
- Mileage
- Shocks using three-axis MEMS sensor
- Timetables
- Container circulation
- Temperature
- Eco driving
- Geo-fencing routes



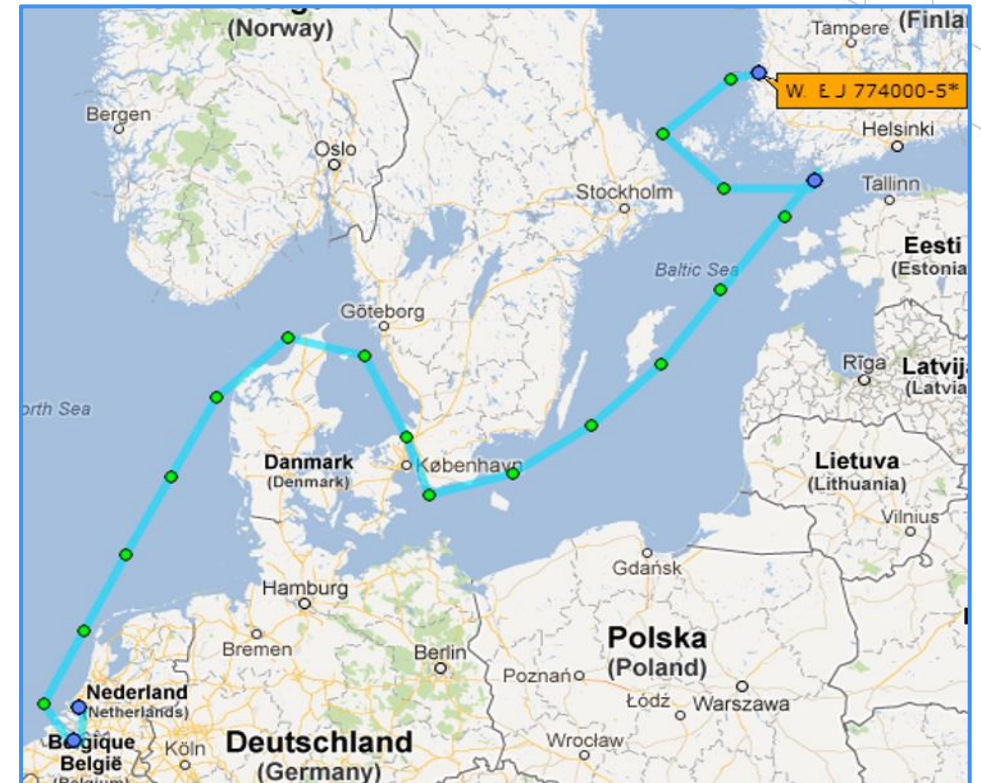
# Route monitoring

- Geo-fencing more than 6000 geo-zones
- Base: Maps from Google
- Definition of Geo-Fences as: Circle, polygon and corridor
- For security and safety-relevant tasks such as
  - Dangerous goods monitoring
  - Money transport
- Process optimization through data analysis
- Monitoring of arrival, stay and departure times in real time
- Line chart showing the location of the timetable



# Mileage recording

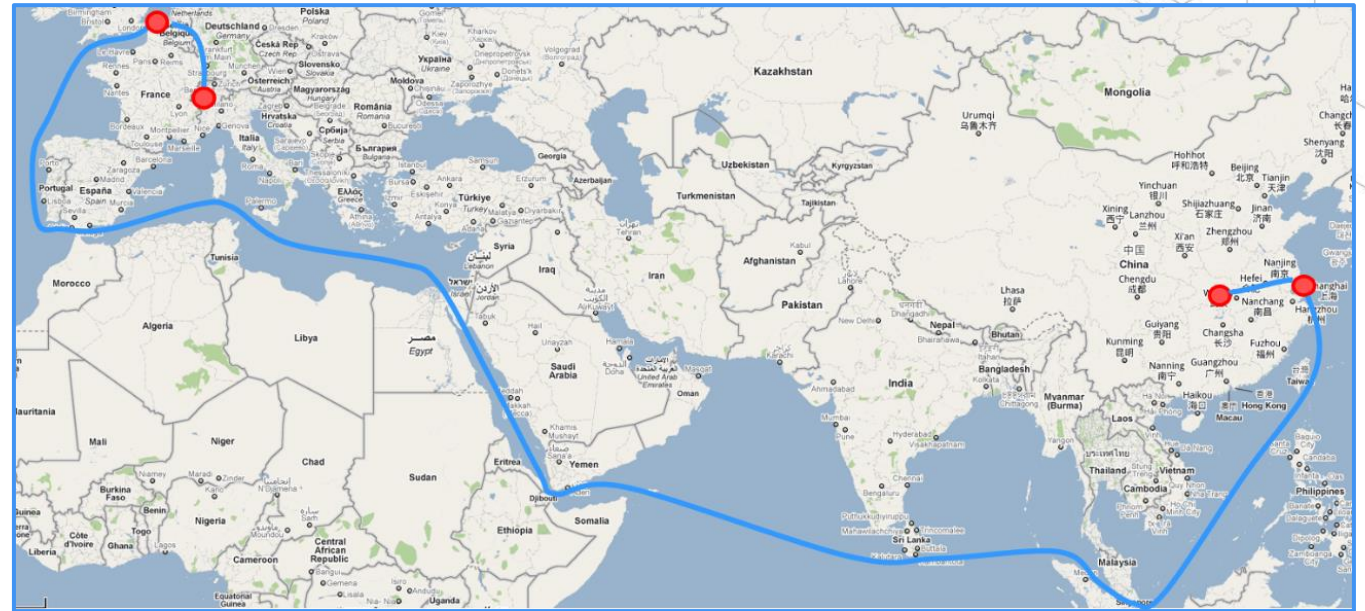
- Distance measurement on end device
- Statistics
- Classification in mountain and flat routes
- Automatic transmission (e.g. weekly)
- Automatic report dispatch
- Management of mileage in wagon management



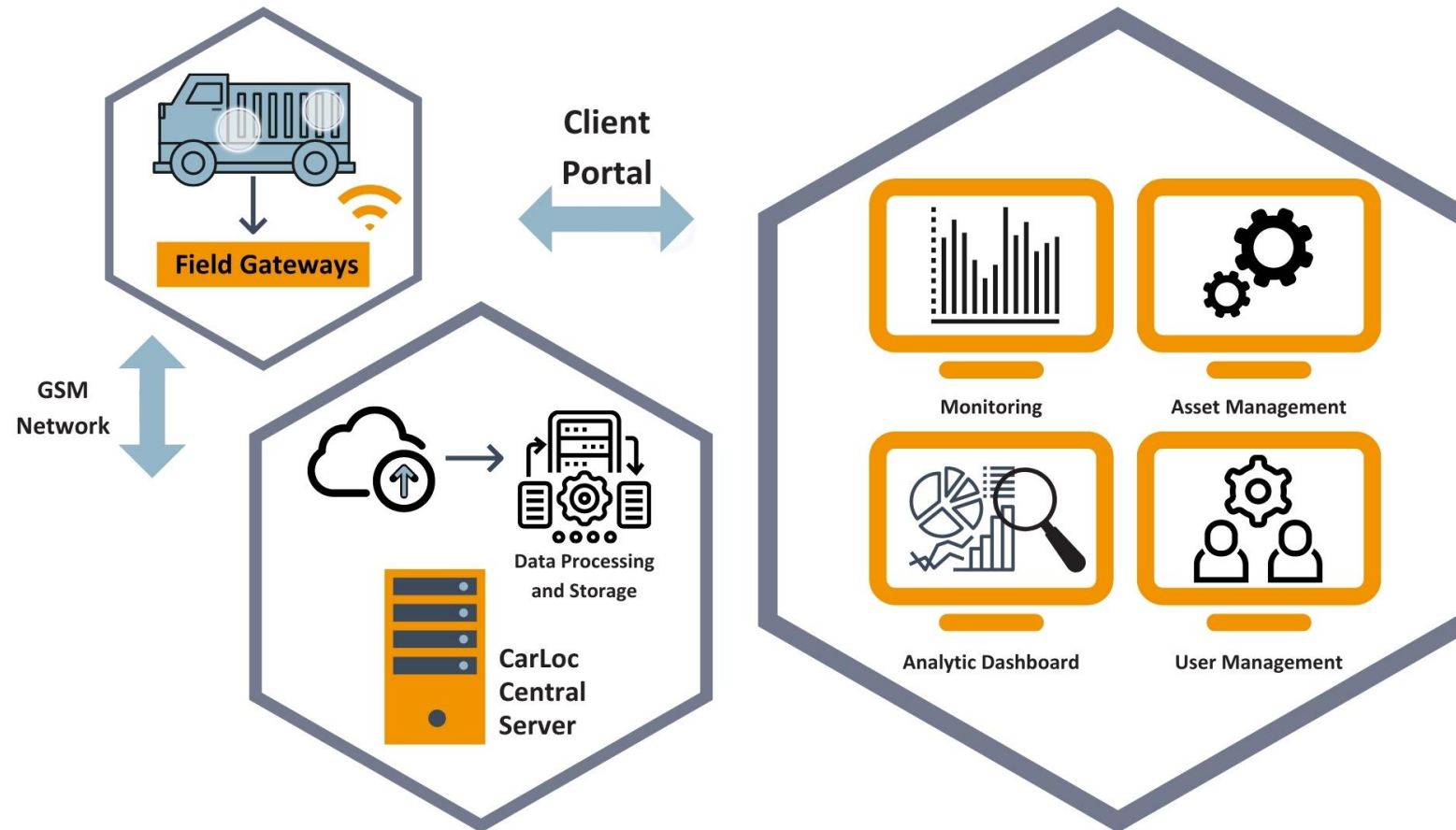


# Tracking worldwide

- Optimization of turnaround times
- Fleet monitoring
- Route monitoring
- Daily real-time location tracking
- Worldwide operation included
  - Cards
  - Satellite imagery
  - Communication at a fixed price
- SIM card valid worldwide
- Adjusted roaming countries to sea container routes



# CarLoc architecture





# Asset tracking architecture

## BLE bluetooth sensors

- Wireless networking of the sensors
- Capture of
  - Air pressure
  - Temperature
  - Closure
  - ID of devices or personal transponders
  - Movement and much more
- Transmission via OBU to the backend



# Interfaces

## Flexible communication and data exchange

- Classically, the FELA tracker delivers the data to the FELA Cloud.
- Of course, you can also transmit your backend data to the FELA Cloud.
- You want the data of the FELA tracker in your backend? No problem with life export.
- Thousands of trackers can also be connected to the FELA Cloud using Flespi.
- Full flexibility in the combination of different solutions and systems.
- Sensor technology with Bluetooth Low Energy expands the range of functions in asset tracking.

# Usecase „load securing“

## Combined lock and tracker solution

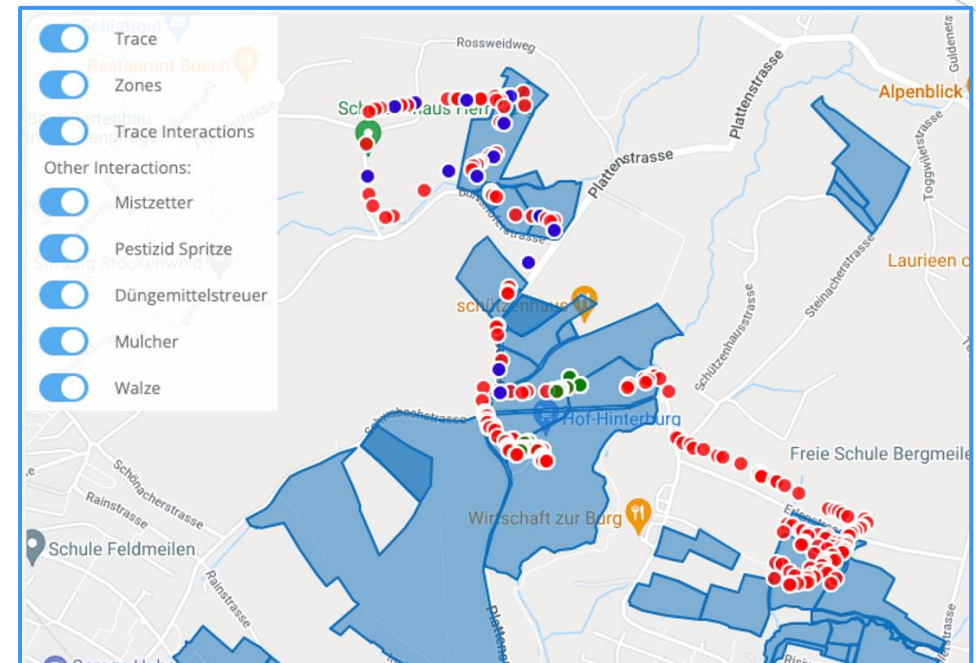
- Alert criteria according to BAT / TAPA
- Connect electronic locks
- Alarm in case of shock, vibration or intrusion
- Detection by magnetic switch, gyro or motion detector
- Release doors by code or in defined zones
- Unlock locally or remotely
- Flexible combination of alarm events



# Usecase „agriculture“

## Speed monitoring, area detection and more

- Fewer transmission repairs
- Reduce improper handling of vehicles
- Determine cultivated fields in m<sup>2</sup>
- Subsidy report
- Record fertilizer quantities per plot
- Ensure correct speed of use of the attachment





# Usecase „eco parameters & eco driving“

- Speeding
- Engine idle times
- Heavy braking and acceleration
- Sailing phases
- Gear changes and speed
- Number of braking processes
- Smart, fuel-efficient driving -> 5 – 15% savings on fuel
- Generate an eco-metric for comparative analysis



Ø-Speed

fuel consumption

→ very efficient

# Usecase „Rail fleet “

## Active and passive tracking

- Fleet overview
- Locate and route proof
- From the service vehicle to the tool
- Unlocking by transponder at the employee
- Aptitude and authorization check
- Proof of use digitized





# IOT tracker hardware for every situation

## The right choice for every application

- Do you already have trackers in use? We integrate these into our solution.
- We would be happy to supply the right tracker for your project.
- From the FELA development to the 3rd party unit.

# AT-Fleet

## IoT-Tracker-plus for:

- Cars, trucks, trailers, construction and agricultural vehicles
- FELA development
- Software and hardware adjustments possible
- High connectivity
- Connection of refrigeration units, loading area doors,...
- CAN, FMS, speedometer
- Other external sensors



# Tracking rail cargo

**IoT-Tracker – we will find the right solution for your project**

- Tracker freight cars and containers
- Self-sufficient power supply and solar operation
- Lifetime of up to 10 years
- Event-controlled information can be called up
- Automatic alarms for 6000 geo zones
- Easy construction





# Tracking ATEX

## FELA competence in the ATEX environment

- ATEX officer
- Many years of project experience
- Joint planning and implementation
- References on rail and road
- Transport of dangerous goods
- Solutions with self-sufficient power supply
- Up to ATEX-class II 2 G Exi ib IIB T4



# IoT-Tracking with FELA: Your benefits

## Our GPS-based information and tracking system

- Adapted to your situation and scalable
- Sustainable
- Innovative engineering
- High quality
- Extensive selection of tracker models for the respective application



Thank you!



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