



Smart Transportation Alliance

**SMEV**

**SMART EMERGENCY VEHICLES**

*(Patent No. 10 2016 105 558 / 26.03.2016)-*

**DIGITAL OPTIMISATION OF MOBILITY FOR  
EMERGENCY VEHICLES  
IN SMART CITIES**

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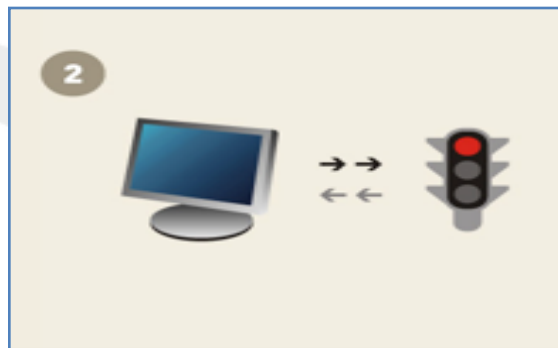
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# Digital Optimization of Mobility for Special Emergency Vehicles in Smart Cities



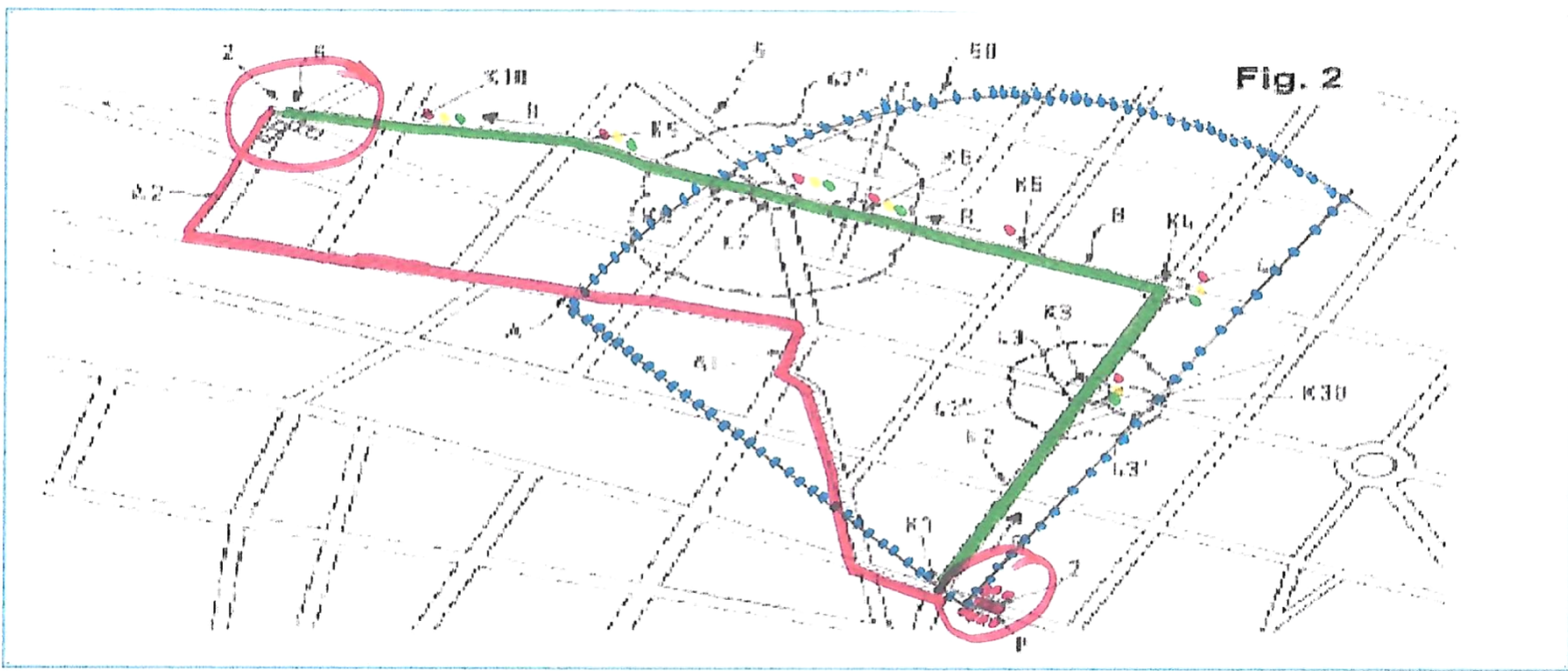


1. The emergency vehicle driver sends (via an app device—smartphone or tablet—) its current position -together with the route to the final destination- to the backend of the SMEV system **(1)**  
Then, the SMEV backend determines the traffic lights involved along the route and the required 'checkpoints'. Reaching a 'checkpoint' will be determined by the smartphone app (vehicle) and notified at the backend (TCC). The backend 'triggers' a traffic lights' programme at the city's Traffic Control Centre **(2)**
2. Finally, the TCC servers switch all traffic lights along the defined route of the vehicle (changing in real time if necessary), and in addition activate a temporary programme to block and/or deviate all vehicles and pedestrians in the area involved in the route to the incident **(3)** The switching process is triggered via OCIT standard protocol.

# shortest Route

# alternative Route

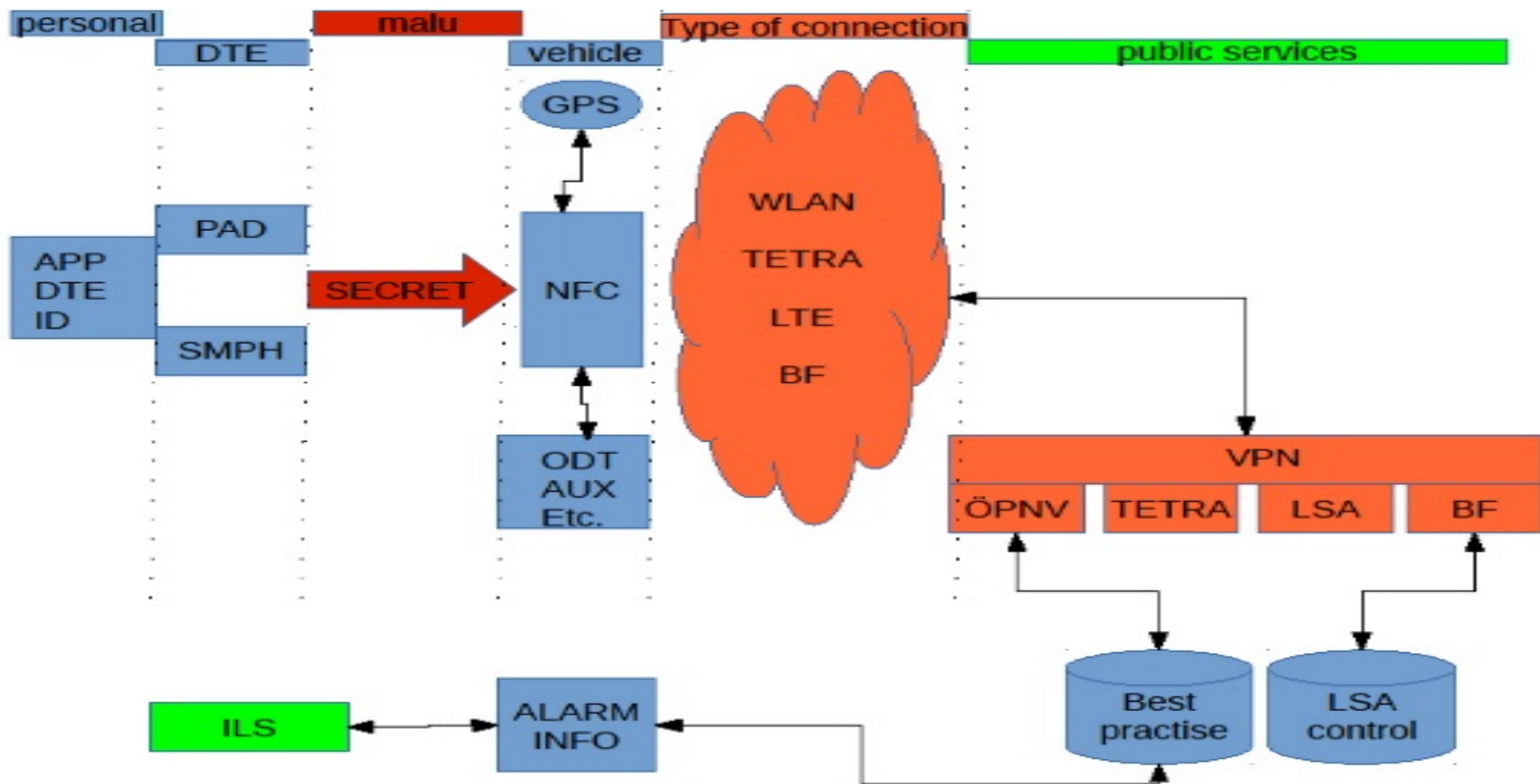




***SMEV uses and adaptes the existing TCC and installed servers in the cities for the temporary optimisation of the traffic lights by special programs***

*The fully implemented SMEV system protocols and analyzes always in line with the „ Latest State of the Art“ the following facts*

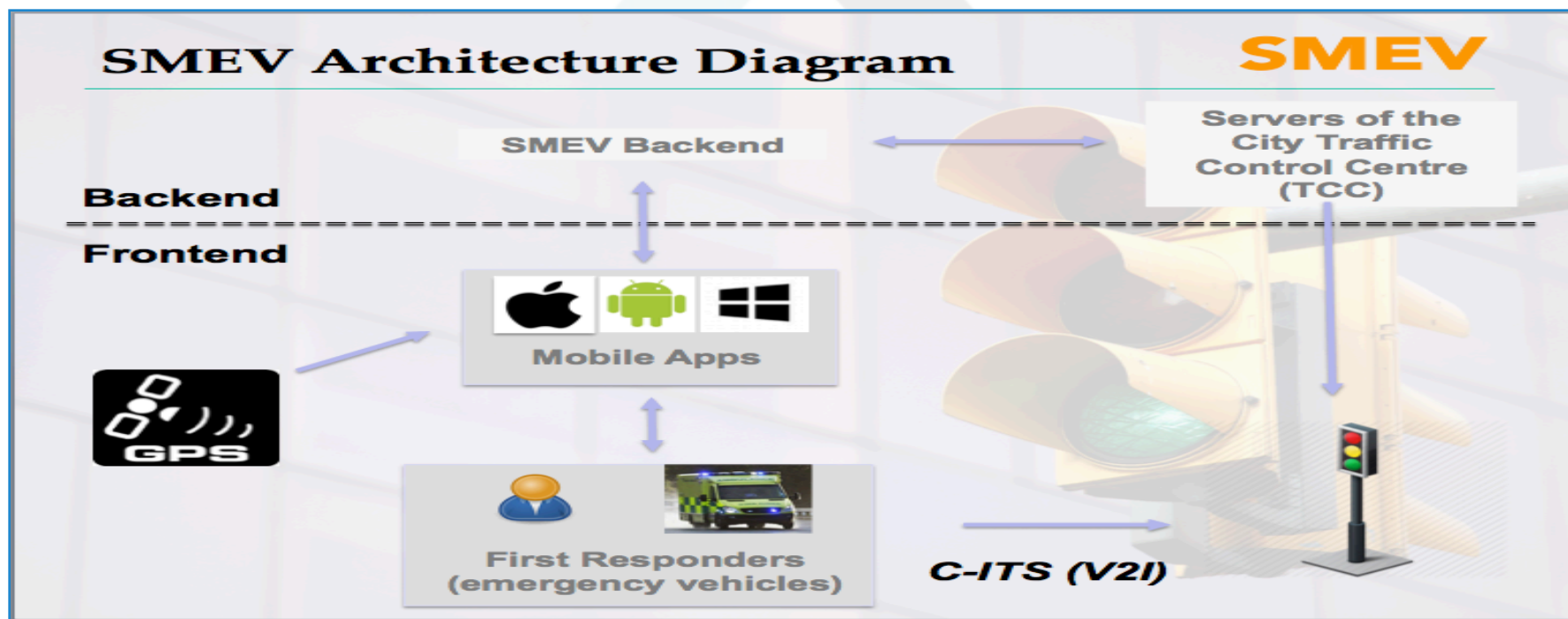
- a) reduction of risk of accidents ,*
- b.) reduced stresssituation of the crews ,*
- c) faster periods of intervention,*
- d.) security for driver and vehicle*



**Data security** is a very important issue in SMEV. In order to avoid any access of unauthorised persons or potential hacking, strong cryptography and protocol procedures are included in the system to ensure that only the emergency vehicle drivers are allowed to log into the system.

The revolution behind SMEV lies in i) providing a software-based approach, ii) iii) its outcompeting low cost of deployment and its **adaptability/flexibility** as compared with currently available hardware solutions.

The **software architecture diagram** of SMEV is illustrated in the below figure:





## *Reduction of mission time approach*

*SMEV reduces the arriving times to the  
mission localities by*

**35 %.**

*The real average arrival time of **12 minutes** is  
reduced to less than*

**8 Minutes !**

# ***SMEV reduces the risk of accidents during missions of up to 100 %***

***Proved by the prototype system*** (Green Wave Principle),  
*in use in the cities of Frankfurt / Oder and Ingolstadt*

*With already*

*0 accidents since the implementation and*

***reduction of operating cost by 75 % for repair and total loss.*** *Improvement of the budgets for the cities*

*Improvement of the security service for the population.*



Smart Transportation Alliance

*Digital Optimization of Mobility  
for Special Emergency Vehicles  
in Smart Cities*



smev

*smart emergency vehicle*

**SMEV**

**35 % TIME SAVING**

**75 % COST SAVING**



Smart Transportation Alliance

**THANK YOU  
FOR YOUR  
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