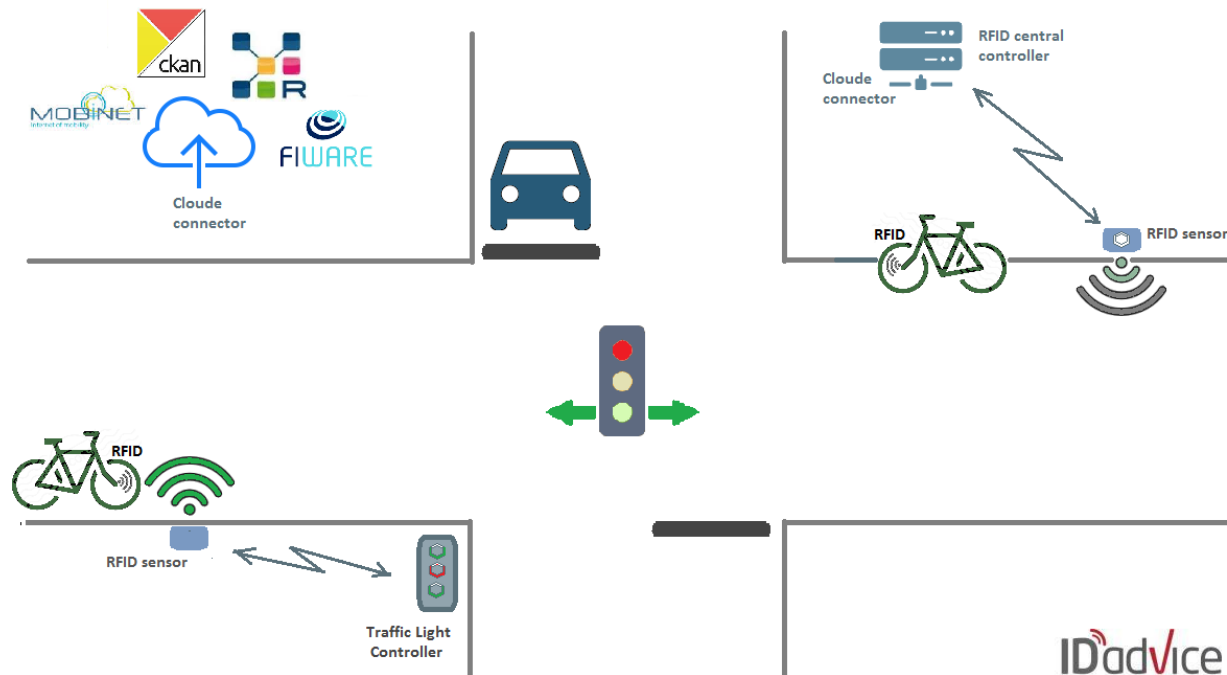


2GREEN System

What does 2GREEN do for the City?

2GREEN is a new and proven method for intelligent traffic control. 2GREEN is an effective method to prioritize cyclists in all types of traffic controllers worldwide. Most commonly used will be traffic lights but it can also be in restrictive areas.

A cyclist with a RFID tag mounted on the front wheel of the bike, approaches a traffic light. 50-100 meters before the intersection, the RFID box on the ground detects the bike, and sends the signal 'cyclist' to the traffic light. The traffic light controller will then prioritize the cyclist, in accordance with the built-in algorithm, and provide green light. In this way the cyclists will pass the intersection without stopping for red light. Simultaneously the data is sent to the central RFID controller which monitors the system and makes the data available for city traffic planning and ICT department.



How does this benefit the City?

Large cities in Europe and around the world battle with congestion, cars are too dominating and cities are looking for ways to provide a better flow. Smart green cities are motivating citizens to bike more as a way to deal with congestion and pollution and paving the way for a healthier lifestyle. 2GREEN solves the problem in an efficient way. Bicycles are prioritized at intersections via smart RFID and 2GREEN intelligently shortens the transport time and minimizes the congestion.

Existing solutions have problems detecting bicycles. 2GREEN is the first solution to use RFID and breaks down data silos, 2GREEN integrates to all big European data platforms, and makes data available across administration

2GREEN has proven itself as being the best detection method for cyclists and works without failure. It is cheaper than Inductive Loops, and provides streamlined experience for the cyclist.

2GREEN has an impact on congestion problems and earns budget. The economic benefits of 2GREEN are visible. Direct savings on installations are approx. 40% the saving in other spending are € 62.4 million per year per 100,000 cyclists. Part of the earning comes from a healthier lifestyle, which has an impact as well on the city image and branding. 2GREEN helps to achieve the goal for citizens to bike more and contribute to CO2 targets for 2020.

- High level of CO2 and particle emission in the City
- Too many cars in the City centre
- No passability in the City centre
- No detailed traffic data
- Low brand value for the City

Pains in the City



- Lower pollution in the City centre
- Less congestion
- Good traffic flow
- Attractive City / High brand value
- Economic relief for traffic budgets
- Decrease in lifestyle diseases

Gains for the City



Key benefits:

- ✓ Better mobility for cyclists, more frequent green light, fewer stops. Short transportation time
- ✓ Lower investment, costs less than the Inductive loops, saving about 35% per installation
- ✓ Best in class detection of cyclists
- ✓ Traffic safety, 2GREEN incites the cyclist to not pay attention to the technology. Works seamlessly and is easy to use
- ✓ Open data from cycling without private data, for Urban Planning and citizen services, the City has access to all data generated in the city for free
- ✓ Integration with European open data platform: FIWARE, optional for the customer
- ✓ Integration with other cycling services, join of systems and data.
- ✓ Clean air in a City contributes to achieving CO2 climate targets for 2020

Financial Gains

The direct savings compared to induction coils amount to 40% meaning the 2GREEN is very competitive and gives the city an attractive cost reduction in ITS for cyclists. 2GREEN can move 2-4% of the commuter km from cars to cycling for distances of up to 5 km. The figures are conservatively set, but even such a minor increase will contribute € 624 per commuter per year for a city of 100,000 commuters giving it a saving of **€ 62.4 million per year**

Calculation: $(0.23+0.16 \text{ €}) * (2*4\text{km}) * 200 \text{ working days}$

Specifications

RFID sensor

- RFID antenna UHF EPC GEN2, RFID controller
- Wi-Fi
- Mobile data connection 3G/4G
- Data encryption
- ITS interface for traffic controllers
- System monitoring service

RFID central controller

- System monitoring service with alerts
- Wi-Fi
- Mobile data connection 3G/4G
- Data encryption
- No personal data - Data on individuals requires personal key
- Interface for open data platform: FIWARE



Budget

Budget for installation with small reader box:

| | |
|---|-----------------|
| • Equipmentment | |
| • Box with small RFID-reader and controller | |
| • 2 boxes @ € 3991 | € 7982,- |
| • RFID central controller | |
| • Bike tag reflex, with click on, no logo, MOQ 1000 stk € 3,- | € 3000,- |
| • Installation and implementation | |
| • Estimated travel cost, invoiced by expenses | € 1000,- |
| • Installation hours 16 hours @ € 148 | € 2368,- |
| • Travel time 10 hours @ € 50 | € 500,- |
| • Total | €14840,- |

