SWARCO

PEEK TRAFFIC IMFLOW 5

EFFICIENCY AND SAFETY FOR ALL ROAD USERS

SWARCO | The Better Way. Every Day.

SWARCO is a growing international group providing the complete range of products, systems, services and solutions for road safety and intelligent traffic management.

With five decades of experience in the industry, the corporation supports the growing mobility needs of society with turnkey systems and solutions in road marking, urban and interurban traffic control, parking, public transport, infomobility and street lighting. Cooperative systems, I2V communication, electromobility, and integrated software solutions for the Smart City are latest, future-oriented fields in the group's portfolio.

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Increasing urbanization leads to congestion on the roads. This poses challenges in the areas of accessibility, traffic flow, road safety and emissions.

IT IS OFTEN NOT POSSIBLE TO INCREASE ROAD CAPACITY THROUGH INFRASTRUCTURAL CHANGES, EITHER DUE TO LACK OF SPACE OR LACK OF BUDGET.

Road authorities are faced with making choices to strike a balance between different starting points of view. At the same time, the complexity is increasing as road users become more connected and expect smooth and safe traffic flow.

Policy objectives

ImFlow offers road authorities an instrument to convert policy objectives into efficient and safe traffic light schemes in real time. Connected traffic is fully integrated into the underlying algorithms, ensuring accurate and predictable results. The traffic performance is visualized in real time. With ImFlow, road authorities have an innovative and future-proof solution!
The philosophy behind ImFlow is to create an opportunity to regulate traffic based on the traffic policy of the road authority. The policy objectives and traffic engineering form the basis for the regulations. For example, the road authority manages environmental policy, traffic flow on important routes, prioritization of target groups or slow traffic safety.

With the help of the optional ImFlow central management system, it is even possible to adjust the policy objectives in real time.

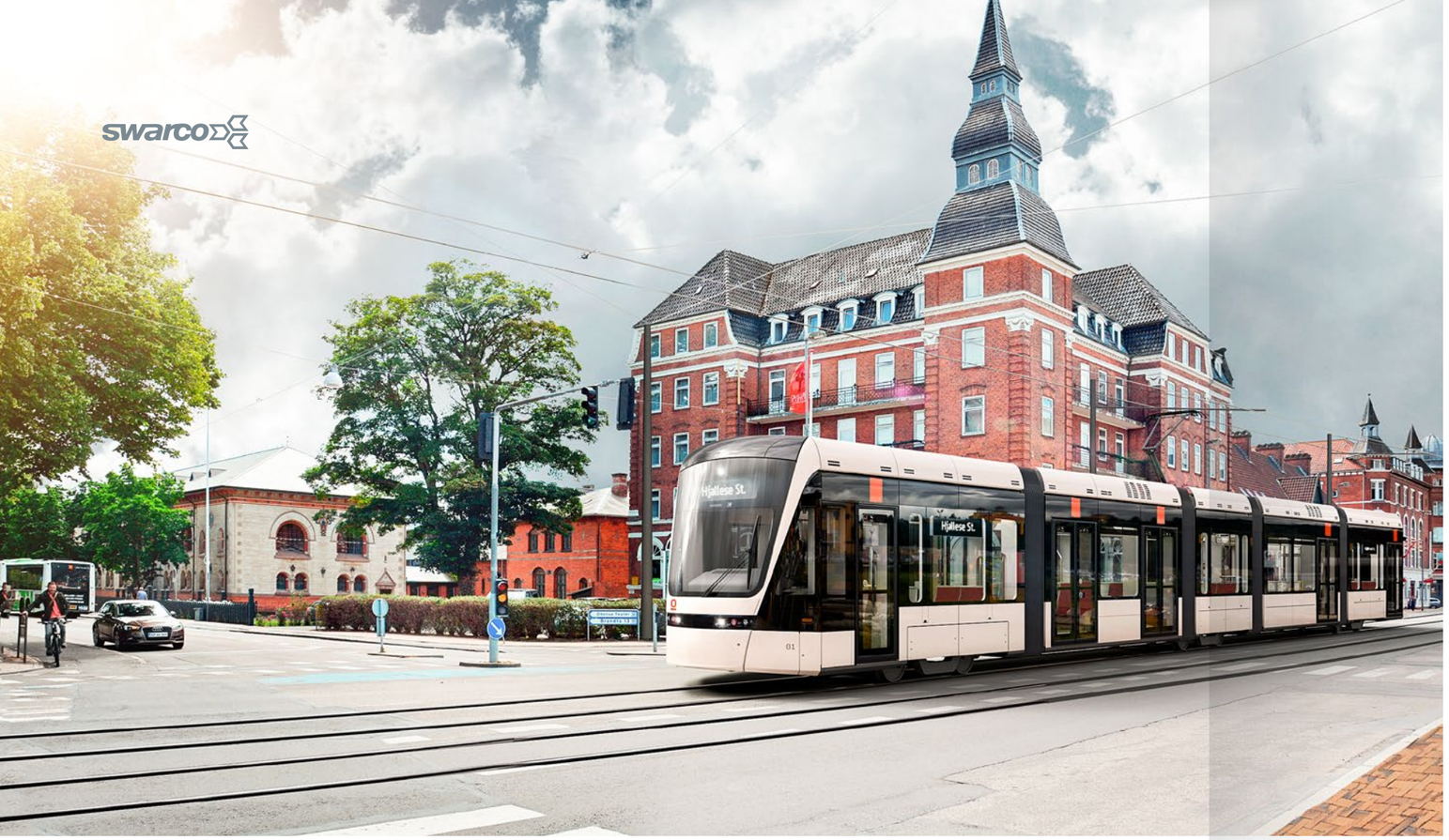
Connected road users

ROAD USERS ARE BECOMING INCREASINGLY MORE CONNECTED. IMFLOW OFFERS FULLY INTEGRATED USE CASES THAT THE ROAD AUTHORITY APPLIES TO THE DESIRED LOCATIONS AND DIRECTIONS.

THESE USE CASES INCLUDE:

- Absolute priority for emergency services
- Conditional priority and EcoDriving for target groups such as public transport and freight traffic
- Traffic detection (including cyclists) beyond the traditional detection area
- Priority for groups of cyclists
- Reliable speed advice for road users in motorized vehicles
- Extended green areas for pedestrians

Connected road users are informed in good time about the planning of the scheme and the status of any priority requests. The resulting adapted driving behaviour leads to a reduction in fuel consumption and emissions. In addition to reducing emissions, prioritization also improves road safety due to a decrease in the number of conflict situations.



Transparent analytics

In addition to traffic logging, ImFlow offers graphical and real-time performance information via the web interface. The analytics information is available in an interactive form, and enables road authorities to quickly find out which decisions have been made by the algorithms.

ImFlow facilitates road authorities' traffic analysis and potential adjustment of policy objectives. The performance information is easy to download and available for offline processing. The optional ImFlow central also offers greater historical insight into traffic performance.

Sustainability

With ImFlow, the road authority has a sustainable solution. ImFlow offers the option of minimizing stops and loss time which leads to a reduction in emissions. Priority for HGVs or other target groups leads to a reduction in stops of up to 75% for these highly polluting vehicles. Reliable speed recommendations for motorized traffic lead to less braking and acceleration, resulting in fuel savings.
ImFlow's continuous innovations are rolled out without adjustments to equipment required. In short, ImFlow is an extremely sustainable solution.

Detection

The traffic present is mapped by available detection and floating car data. ImFlow possesses an advanced data fusion mechanism to merge detection inputs from the traffic controller with modern detection technologies. This facilitates a shift from traditional detection technology to connected traffic within a road authority and makes regulation less sensitive to malfunctions in peripheral equipment.

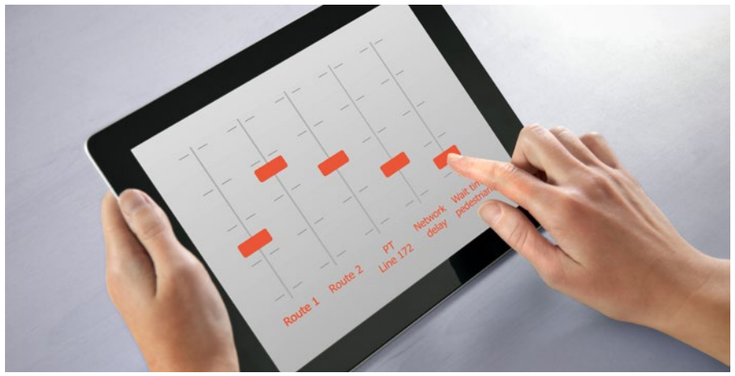
In addition, ImFlow offers virtual detection points and intelligent detection replacement measures so that failures do not lead to reduced performance.

Optimization

From a traffic point of view, ImFlow offers a unique combination of traffic-dependent and vehicle-dependent control mechanisms. This makes it easy to combine policy objectives at network, area and intersection level.
ImFlow has distributed intelligence with an optimization process for each intersection, so that control at the intersection level is based on the traffic present in real time. At the network level, schedules of the schemes are brought together, and an optimal situation is created for the entire network.
Due to its distributed nature, ImFlow is very robust against potential temporary failure of system parts due to maintenance or malfunction issues.

Traffic modelling

ImFlow is a complete ITS application. The generic traffic model projects the predicted traffic over time, from which the optimal control for the network is calculated every second. This provides an extremely flexible level of control with the best possible performance.
The model is scalable, from solitary intersections and corridors to large networks. This makes it possible to apply and expand ImFlow in any desired situation. The model is rich in traffic engineering functions and avoids any need for customization. This means ImFlow is future-proof, and innovations can be quickly and easily implemented.



Deployment models

ImFlow is a software product with distributed processes per intersection. Upon the choice of the road authority, ImFlow is implemented locally in the cabinet or in a private cloud environment. With a local deployment, a separate processing unit (BACU) is provided for each intersection. ImFlow is an open system and uses a TCP/IP network to exchange information between the various components. ImFlow offers open and standardized interfaces for elements along the chain, such as the traffic controller via the TLC-FI interface and the roadside unit via the RIS-FI interface. ImFlow also incorporates an IVERA-APP interface and various logging formats such as VLOG, TDC and PrioLogbook. The optional ImFlow exchange runs in a cloud-hosted environment and is available to the user via a web page. ImFlow is independent of the manufacture of other elements in the chain.

Proven uses

ImFlow has proven itself as a robust and reliable solution for over a decade. ImFlow is operational in more than 40 cities in eight different countries. These include Rotterdam, The Hague, Helmond, Deventer, Nijmegen, Hasselt, Copenhagen, Warsaw, Tampere, Jelgava and Almaty. ImFlow has demonstrably improved the traffic flow by approximately 20% on the congested Pleyroute bypass around Arnhem in the Dutch province of Gelderland. In the provinces of Utrecht and South Holland, ImFlow has demonstrably reduced the number of stops of connected freight traffic by between 60% and 75% without adversely affecting traffic flow. ImFlow is certified for use in conjunction with Talking Traffic and Mobilidata.