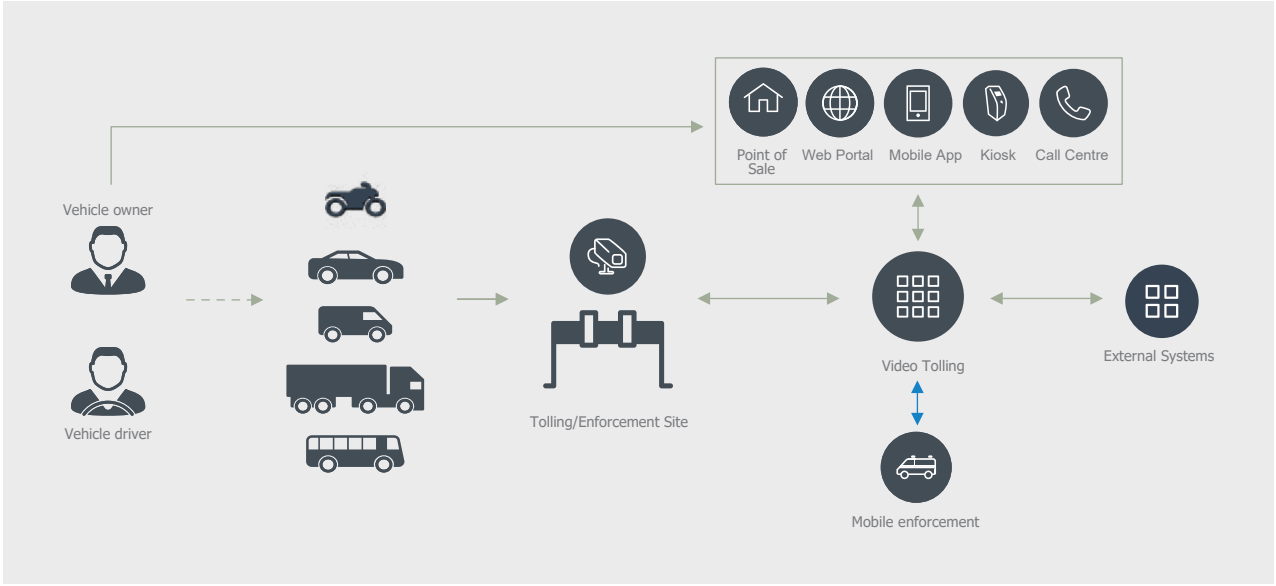
Platform

Video Based Electronic Toll Collection (ANPR)

A great advantage of our Video Tolling System lies in the fact that no burden is put on the vehicle owners. The Video Tolling System does not require any vignettes, electronic tags, or on-board units to be installed in the vehicle, removing the need for complex logistical operations and the high financial costs they usually entail.



Our Video-based Electronic Toll Collection System is a flexible, state-of-the-art solution for free flow toll collection using video technology. It relies on cameras and computer and AI algorithms to identify and record vehicles passing through designated tolling points. Video Tolling System offers several benefits over traditional tolling methods.

SCAN ME

More information:
qrfy.com/p/2023_trc_p12

Key benefits

- **Elimination of the need for physical toll booths** resulting in reduced congestion and improved traffic flow
- **Increased accuracy and efficiency in toll collection**, minimizing errors and the need for manual intervention
- **Convenience for drivers** by enabling seamless, contactless payments and reducing the need for stopping or slowing down at toll plazas

Our Video Tolling System is able to process large amounts of data at a time. The number-plate-reading ANPR technology is capable of reliably functioning with all models of vehicles, ranging from motorbikes to heavy goods vehicles. This makes it a suitable solution for a wide range of environments, including busy urban freeways, country-spanning highways, high-density expressways and car parks.

The cameras are equipped with advanced optical character recognition (OCR) technology that can read license plates and extract relevant vehicle information. The Video Tolling System can be customized for each of the toll modes in regard to the manner of collecting toll data. It is also possible to implement a combination of those modes together.

Modes

- **Open Mode**

Is used in the case of charging for an entrance of a vehicle into the toll section. This mode has a wide range of applications, spanning from toll bridges and tunnels to isolated objects, such as rest areas. Financially effective, Open Mode is fit for use on long-spanning roads such as highways and expressways. Its use requires only a singular gantry at every entrance of the toll section.

- **Closed Mode**

The entry to and exit from the tolled area are recorded and the toll is calculated based on the length of the toll road the vehicle has passed between those two points. Closed mode can be used for charging for passages through cities or closed areas, where it is possible to reliably monitor all entry and exit points, such as paid parking lots. Due to the nature of this mode, it is also possible to reliably detect the amount of time the vehicle has spent in the area and then link the data to the relevant toll event.

Once the vehicle is identified, the central system calculates the appropriate toll fee based on factors such as distance travelled, vehicle category, and any applicable discounts or fees. The system allows for a full customization of the way vehicle passage data are rated, being able to be custom-tailored to the needs of the toll operator. Apart from calculating toll based solely on the collected vehicle information, toll operator can opt in to apply additional factors. These range from the current season all the way to a particular hour of the day or the type of the road. Toll operator can use these settings to influence flow of traffic within an area, as drivers might want to avoid higher tolls, lowering congestion even further.

Toll charges calculated based on gathered data can be paid by several payment methods and payment regimes. The main supported regimes are the Post-Pay Mode and Pre-Pay, differing mainly in the way and frequency of requiring payments for tolls.

In addition to the flexibility of the system, many different sales and communication channels can be involved. Popular options include smartphone applications, kiosks, or online self-care portals. Points of sale and call centres where vehicle owners can personally interface can be also utilized. This makes the system accessible to all kinds of vehicle owners, who wish to stay informed about their toll transactions.

The check of compliance with toll obligations is executed by the enforcement part of the central system based on data about the real usage of the tolled roads captured by cameras and mobile enforcement vehicles.

The architecture of the Video Tolling System also allows for monitoring of traffic density or, from a long-term perspective, calculation of traffic trends once enough data has been collected. This data can be utilized for evaluating traffic trends and creating accurate predictions for future traffic development. These predictions can assist in future infrastructure development and with implementation of future changes in toll rates, allowing the entire toll system to evolve solely within itself without the need for additional external software.

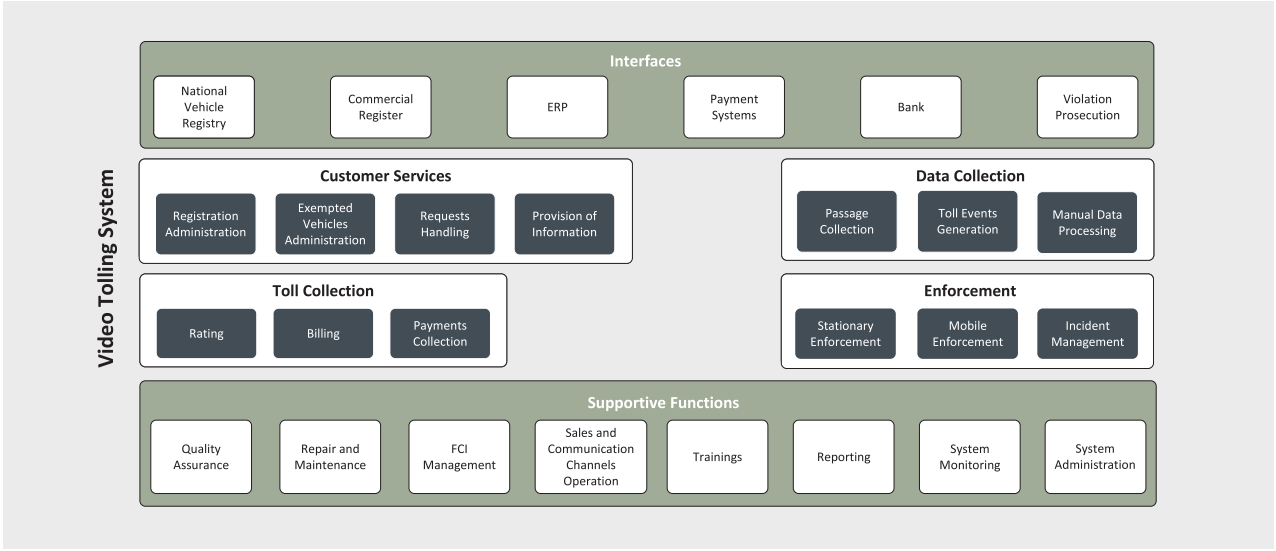
The Video Tolling System can operate through a datacentre or on a cloud, which is effective and flexible, providing a solution with an almost unlimited computing power and data storage.

Despite the versatility and wide scope of possible applications, the system remains accessible to toll operators as well as commuters and travellers. Although it is complex and sophisticated, the deployment and operation of this Video Tolling System can be carried out in an inexpensive manner without any cost to accuracy or reliability.

Overall, Video Tolling Systems streamlines the toll collection process, improving traffic management and enhancing the overall driving experience for commuters and travellers alike.

Components

- Strategically placed **stationary gantries** that hoist cameras, capturing images and/or videos of vehicles as they enter and exit tolling zones
- **Central system** processing the data from cameras, matching them with the vehicles registered in the system, calculating and collecting the toll fees as well as evaluating the toll violations
- Sales and communication channels for providing customer services
- **Mobile enforcement vehicles** evaluating toll violations the toll area



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