Intellistride

KATHREIN

Can You See Us?
RAIN RFID Can, @220 km/h
with Full 128 bit AES Encryption

Source: Kathrein Solutions' Racetrack Event 2019

Background

The world is getting smarter and IoT is on the advance. The automatic detection of vehicles with RAIN® RFID is no exception. Whether it is Electronic Vehicle Registration (EVR), Electronic Toll Collection (ETC), Automated Vehicle Identification (AVI) or Intelligent Transportation Systems (ITS), every application requires highly accurate identification at the highest speed. Last but not least, the communication between a reader and a transponderas well as between a reader and a back-end system requires the highest level of security.

Solution

To meet all these market requirements, Kath- rein Solutions is constantly further improving its product portfolio. In cooperation with TÖNNJES, the world leader in secure vehicle identification, and NXP Semiconductors, the world leader in secure connectivity solutions for embedded applications, we were able to develop an end-to-end high-security solution for an optimal detection of vehicles in Multi-Lane Free Flow (MLFF).

Vehicles are equipped with a front and rear licence plate (IDePLATE®), as well as a windscreen transponder (IDeSTIX®) which functions as a "third license plate".

Motorcycles have a rear license plate and a headlamp tag (IDeSTIX HLT). All transponders feature a UCODE® DNA IC from NXP with 128-bit AES encryption technology. The vehicles can be identified by authorized readers, which are mounted overhead in a gantry or on a tolling plaza. Their identity is reliably authenticated via a secure end-to-end solution composed of secure tags, secure readers, and the secure backend. If a vehicle has illegal number plates or the license plate data doesn't match the information contained on the sticker, readers will raise an alarm. This creates maximum security. It is almost impossible to misuse the winshield label or a headlamp tag because it self-destructs when removed from the windscreen. Special holographic features guarantee optical protection against forgery.

Results

Contactless GS1 UHF RFID Gen2 v2.0 provides long-range identification and cutting-edge cryptographic security implementation for tag authentication which also work at highest speed of more than 200 km/h. This allows our customers and partners all over the world to use an established, smart, secure and efficient solution.

NXP

TÖNNJES
THE VEHICLE IDENTIFICATION COMPANY

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