



What lessons for the future have we learned from our validation tests?

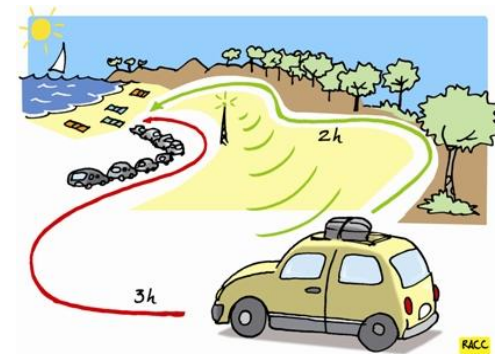
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EXAMPLE OF VALIDATED APPLICATIONS

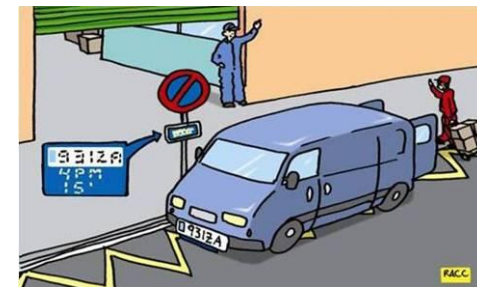
- Cooperative Inter-Urban Applications

- Dynamic Speed Limit
- Ghost Driver Detection



- Cooperative Freight & Fleet Applications

- Dangerous Goods Application
- Parking Zone Application
- Access Control Application

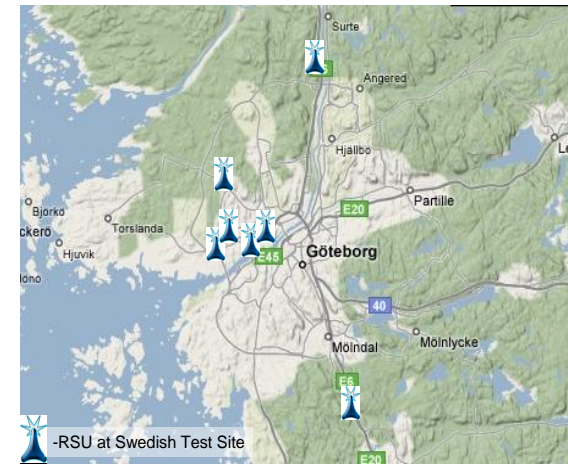


CVIS TEST SITES

- France
- Germany
- Italy
- Netherlands-Belgium
- Sweden
- United Kingdom

TEST SITE SWEDEN

- Applications tested in Sweden
 - Dangerous Goods
 - Dynamic Speed Limit
 - Ghost Driver Detection



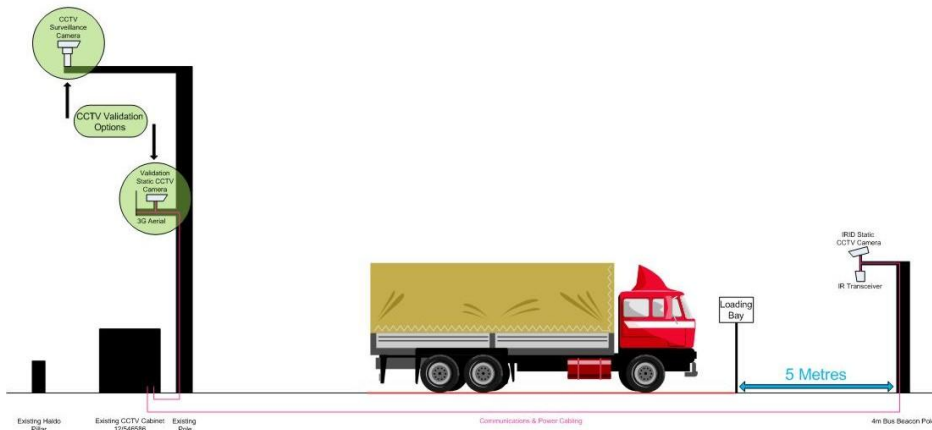
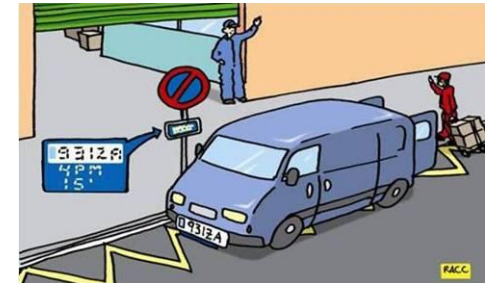
TEST SITE FRANCE

- Applications tested in France
 - Parking Zone Application
 - Access Control Application
 - Dynamic Speed Limit
 - Ghost Driver Detection



TEST SITE UK

- Application tested in UK
 - Parking (Delivery) Zone Application
 - 8 fleet operators – 10 vehicles
 - Real daily operations



CHALLENGES IN THE TEST SITE SET-UP

- 3G connection problems
- IPv6 setup and routing was hard in practice
- Communication latency issues
- Unstable hardware
- Late arrival of stable core software components

LESSONS LEARNED

- Test Sites
 - Crucial to involve commercial actors at an early stage
 - Necessary to have an on-site verification period
 - Application needs to be adopted to the specific test site requirements
 - Need for application developers to be closer connected to the test site planning
 - Need for verification software to assess the proper working of core technologies

LESSONS LEARNED

- Applications

- All of the applications functioned very well during the validation test using the testing vehicles
- Scenario-based validation including multiple applications makes the (limited) tests more valuable
- Using commercial drivers and vehicles gives high value results but demands more robust components
- The modular application framework enabled easy reuse of base components and application updates

CONCLUSIONS

- Beta and gamma tests were invaluable for sorting out major issues before the test site validation
- Executing trials with commercial actors demands robust test systems
- The application evaluation was successful and the applications has the potential to be developed further
- Further validation through large-scale Field Operational Tests (FOT) is needed to further assess user acceptance and long term safety and efficiency effects

cooperative

Conference 2010

mobility