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## “URBAN MOBILITY, ROADS NETWORK OPERATION AND ITS APPLICATIONS”

### SCORE@F : Uses-cases ad HMI (part 2/3)

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End user services is a set of Uses Cases (UC). which can be classified into the following categories: safety services (SR), Traffic management services (GT), Mobility and comfort services (MC), System life cycle management services (GCVS). Safety services itself regroups two different set of uses cases depending on their latency time : 1) cooperative awareness services which latency time is in the range 30s -5 minutes and don't requires an immediate driver's action and 2) alert services which latency time is in the range 1-30 seconds and require an immediate driver's action. Man-machine interaction is supported by an HMI on an interactive tablet for both event triggering and end user notifications.

## Technical aspects

Various use cases for safety, mobility or comfort provide services for drivers or road operators. To comply with the modular structure of SCOREF, each use case is supported by a software component (plug-in) that interacts with the traffic management centers, vehicle sensors, road side equipments (road side units, traffic lights) and driver.s Use cases are closely related to events (supported by DENM messages) as events trigger the execution of use case. Events can be generated automatically by vehicle sensors or manually by a road operator or by the driver itself thanks to an onboard HMI.

Depending on the kind of service, information flows according to different paths. For example, a vehicle on a standstill broadcast a message to neighbor vehicles thanks to direct vehicle to vehicles communication. Conversely dynamic speed limits are transmitted from traffic management centre (PCE) to road side units (RSU) which relays the information to vehicles driving in its vicinity. Use case are supported by software components implemented into a telematic unit which is wireless connected (using Wifi) to a tablet for HMI.

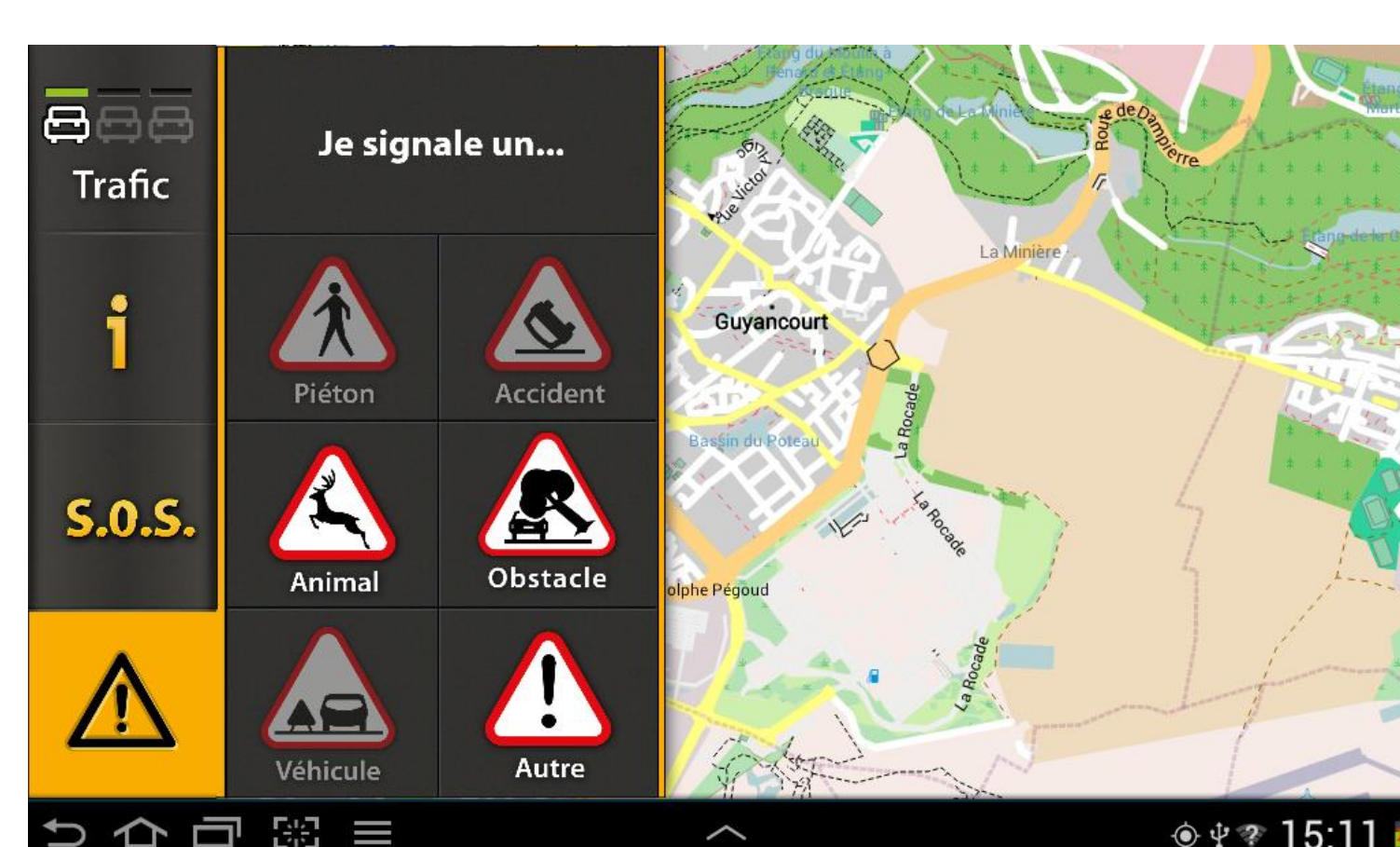
## Uses cases examples

### Definition

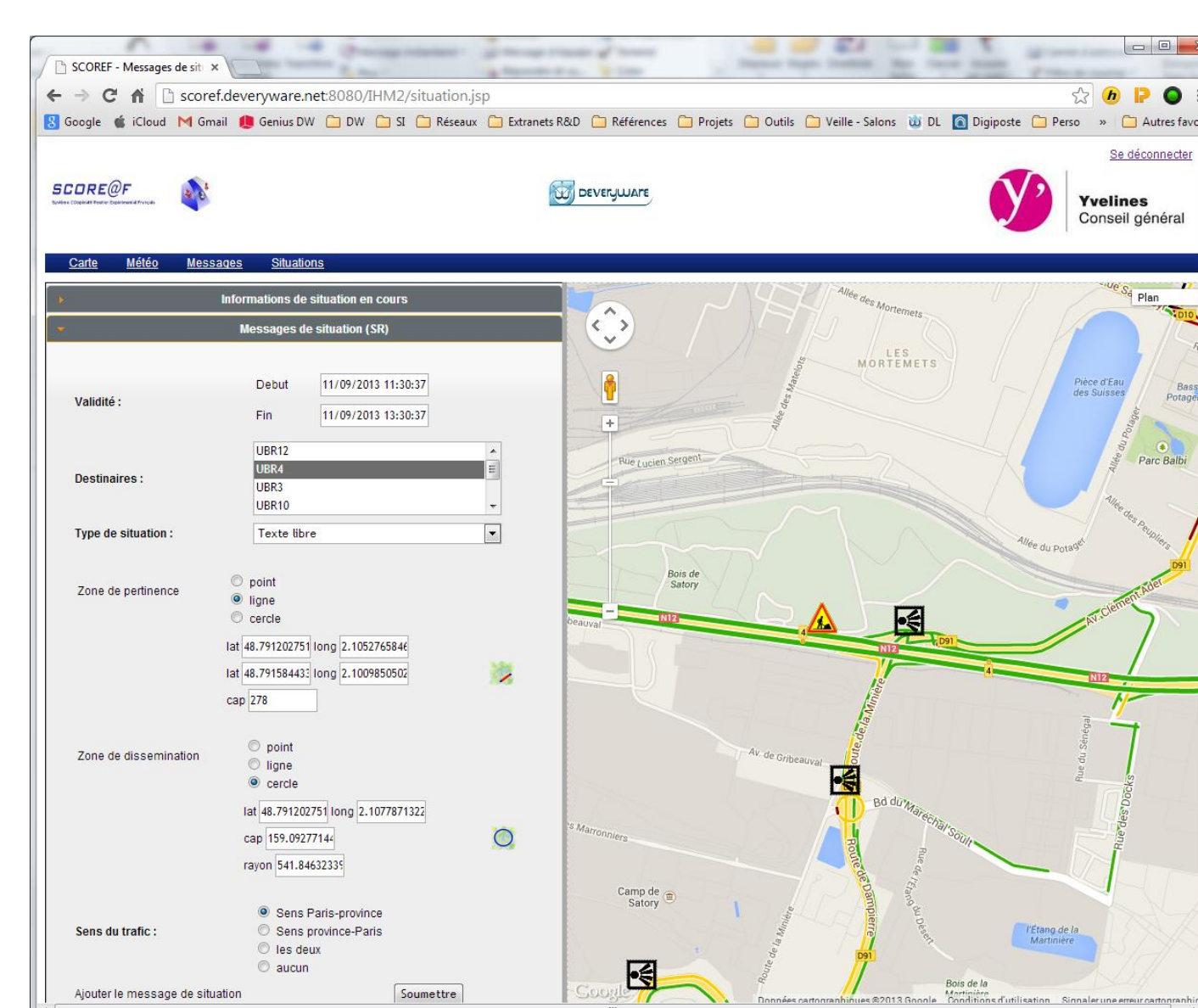
**OBSTACLE ON THE ROAD (SR04)** : Information triggered by a vehicle driver or passenger on obstacle observation and transmitted to neighbors vehicles thanks to direct V2V communication. On reception by a vehicle information is displayed only if the vehicle is concerned.

**ROAD WORKS (SR01)** : Information triggered by a traffic management center and transmitted to road side unit. Then information is broadcasted from road side unit to neighbor vehicles On reception the information is displayed if the driver is concerned.

### Emitting side HMI

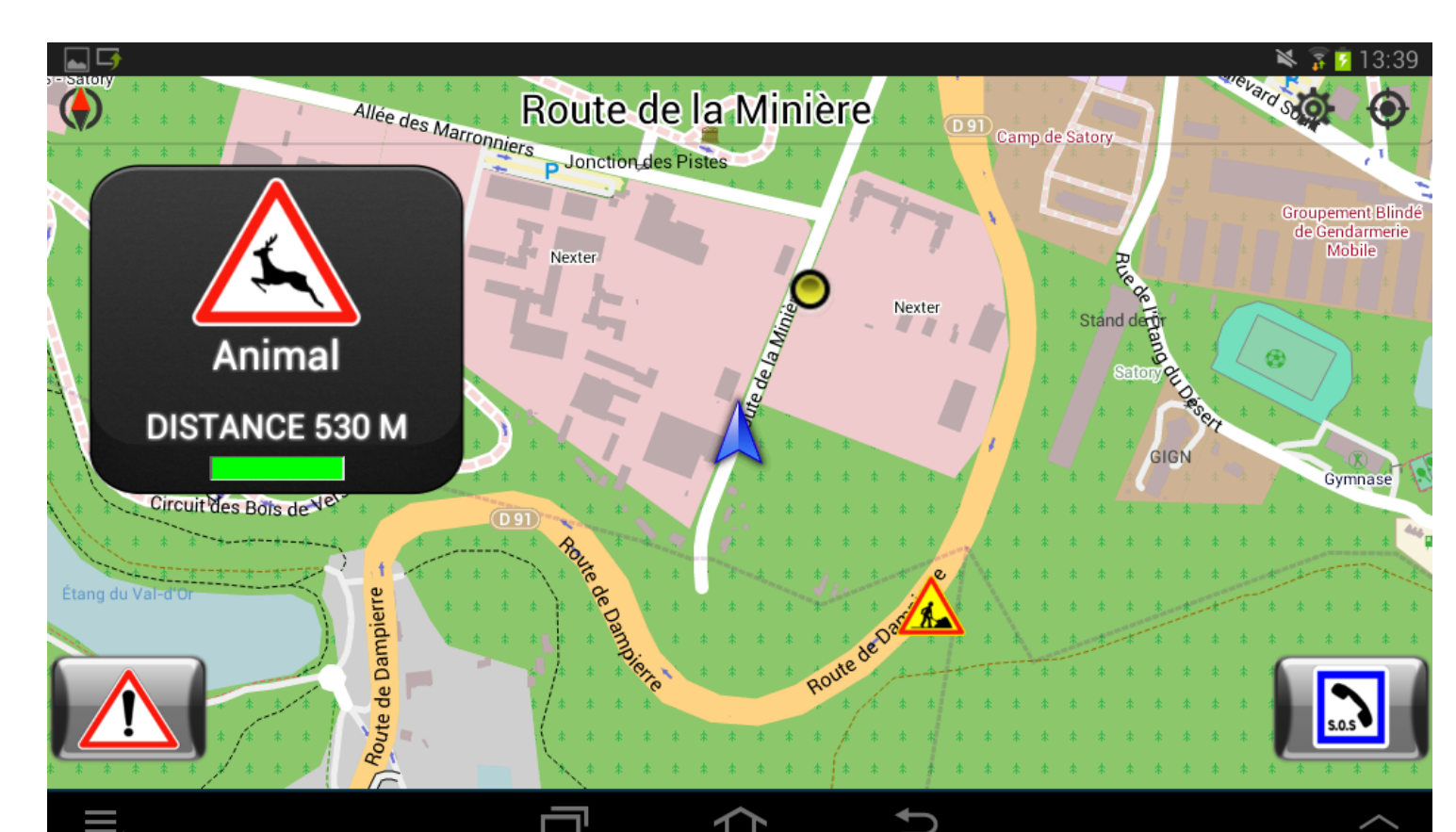


RENAULT HMI



DEVERYWARE HMI

### Receiving side HMI



IFSTTAR-CETE HMI



PSA HMI

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