



Common C-ITS Service Definitions

Hazardous Locations Notification (HLN)

Alert Unsecured Blockage of a Road (I2V)

C-Roads Platform

Working Group 2 Technical Aspects

Taskforce 2 Service Harmonisation

Publication History

| Version | Date | Description, updates and changes | Status |
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| 0.1 | 16.10. 2019 | Input from France | Input |
| 0.2 | 17.10.2019 | Minor editorial improvements | Draft |
| 0.3 | 18.10.2019 | Including comments from TF2 conference call | Draft |
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1 Functional Description of Hazardous Locations Notification (HLN - UBR)

1.1 Unsecured Blockage of a Road service introduction

| Service introduction | |
|----------------------|------------------|
| Summary | Already existing |
| Background | Already existing |
| Objective | Already existing |
| Expected benefits | Already existing |
| Use Cases | Already existing |

1.2 Alert Unsecured Blockage of a Road (I2V)

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|------------------------------|---|
| Type of road network | All |
| Type of vehicle | All |
| Use case introduction | |
| Summary | An operator in the TCC gets the information that there is a blockage of a road. Till the time that operating agents arrive to the site to protect and manage it, the operator sends a warning message to road users. A blockage means that there is no traffic going through the road segment and passing it by on a single or several lanes., The complete road is blocked (not an obstacle on one or more lanes). |
| Background | <p>Today, this information is provided only by the VMS or the radio.</p> <p>With C-ITS, the availability of information is better.</p> <p>In mountainous regions for example, where there are a lot of kilometers be driven before road operators reach a site , providing such warning information to drivers before the road operator arrives to the site can be essential.</p> |
| Objective | <p>The objective of this use-case is two-fold:</p> <ul style="list-style-type: none"> • For vehicles that are very close to the blockage: to alert them about a danger ahead • For vehicles much more upstream, to allow them to reroute early enough <p>This use case concerns one whole road, or one direction of a dual carriage way.</p> |
| Desired behaviour | <ul style="list-style-type: none"> • Increased vigilance of the approaching drivers • Adaptation of the speed • Rerouting if blocked road is far away and rerouting possible for the targeted destination |
| Expected benefits | <ul style="list-style-type: none"> • Reducing the risk of accidents • Improved traffic management • Reduce the number of drivers impacted by the road blockage |
| Use case description | |
| Situation | <ul style="list-style-type: none"> • a vehicle close to the blockage is warned of the dangerous situation ahead • a more upstream vehicle is informed to adapt the driving route <p>Causes of blockage:</p> <ul style="list-style-type: none"> • rocks falling • accidents of HGV • water flood • etc. <p>This use case does not include a single broken down vehicle, or a vehicle blocking a single lane of a dual carriage way road.</p> |
| Logic of transmission | I2V Broadcast |

| | |
|---|---|
| Actors and relations | <ul style="list-style-type: none"> • Sender is an operator in the TCC • End-receiver is the driver in the vehicle • Sources of information can be: <ul style="list-style-type: none"> ◦ others vehicles which have detected the danger ◦ Cameras ◦ Phone call of a witness ◦ etc. |
| Scenario | <ol style="list-style-type: none"> 1. The operator in the TCC gets informed about a section of road that is blocked 2. He puts the information in his TCC and the message is then broadcasted to the road users 3. The vehicles receive the information and display it to the driver. 4. The driver adapts his behavior, depending from the distance and driving situation compared to the accident location 5. When the operating agents arrive on site, the blockage becomes managed, and additional use cases activated. 6. This C-ITS message will be terminated and enhanced with more accurate information and use cases. |
| Display / alert principle | <p>The information to the driver needs to be send in time and the display to the driver needs to be early enough to adapt his speed or even his itinerary. However, since he should not forget about the alert, it could be repeated closer to the location.</p> <p>The message of this use case should be enhanced when road operator vehicles get on the blocked road segment and terminated the warning message.</p> |
| Functional Constraints / dependencies | <p>The information quality of this use case depends highly from the information source and the detection quality of the information, but as a first warning it is for sure useful to enhance aware driving.</p> |
| Relation to C-Roads C-ITS Infrastructure Functions and Specifications | <p>Input awaiting from France</p> |