ANNEX 1 - GA Technical Ajustements

Grey : unchanged text

Red : proposed deletion

Green : proposed additions

A3.1 Pilot 'Mediterranean'

This pilot focuses on the experimentation in a high-density urban setting. The activities will take place within the metropolitan area of Marseille on the roads managed by DIRMed, the metropolitan government ,with the involvement of the city of Aix-en-Provence and ESCOTA. The intersections connected with the motorway network will receive special attention, particularly the one close to the urban area of Aix-en-Provence.

The site comprises a network of urban motorways that spans 100 km of which 7 km are tunnels, and supports one million trips per day. The traffic on the main segments of this network reaches 140,000 vehicles/day. The importance of this infrastructure for the economy of the metropolitan area has led to the construction of an advanced traffic management system. Speed and flow are measured at 120 locations, 100 cameras enable the operators of the control centre to examine visually the situation of the most sensitive road sections.

Infrastructures are equipped with many kinds of sensors (such as traffic lights) with automatic incident detection to alerts to the traffic control centre and manage the congestion and events.

The purpose of the pilot is to upgrade the existing information system toward C-ITS capabilities.

Section/Equipment: The site covers 3,000 km2. C-ITS Services will be provided on 1,000 km of highways through 4G and short-range communication. At least 20 RSUs will be deployed on motorways. At least eight road maintenance and road intervention vehicles will be equipped with OBU. Additionally, integration of C-ITS within bus monitoring system will be studied.

Services: Day 1 and Day 1.5 services will be implemented.

A3.2: Pilot 'South West'

The pilot will cover 3 different sites. Traffic management services will be developed in a first zone from Poitiers to Bordeaux and Spain. This site includes interurban and suburban roads and motorways and the metropolitan area of Bordeaux. The second zone includes the Toulouse urban motorways (A620, A621, A624) and the main connected highways to the city ring-road. This zone will enable to prepare the coordination and pooling of equipment already installed on infrastructure with C- ITS equipment in order to improve service level. A third zone aims to experiment C-ITS services on transit infrastructure usage on A20 between Toulouse and Limoges.

A3.2.1: Poitiers/Bordeaux/Spain

The pilot site comprises 200 km of motorways supporting the traffic of transit with Spain, the Bordeaux ring road and the metropolitan area of Bordeaux. The road management is ensured by a unique traffic control centre based in the Bordeaux vicinity. Transit traffic from Spain is

supported by RN10, A63 and the Bordeaux ring road (approximately 10,000 trucks/day).

The metropolitan area of Bordeaux is a key hub on the Atlantic Arc, between Northern and Southwest Europe, at the gateway to the Iberian Peninsula. This area is served by a dense road network (up to 130,000 vehicles per day) and 4 motorways linking Bordeaux to the rest of France and to Spain. Since January 1st, 2021, Bordeaux Métropole operates the entire road network on its territory (3 003 km of urban roads).

The site also includes interurban and suburban roads and motorways. 40 47 RSUs have already been deployed through SCOOP@F and C-Roads France projects on Bordeaux ring road and A63, and 11 RSU on the metropolitan area of Bordeaux.

The technologies developed in the project will be implemented on the pilot site, especially hybrid communication (cellular and short range) and HD cartography. Evolution of traffic management system of road operator to handle autonomous vehicle will be studied.

Section/Equipment: 200 km of motorways will be equipped with approximately 25 new RSUs, a short section of A63 and the Bordeaux ring road to complete with at least 2 RSUs.

Services: All available use cases will be considered for implementation. At least 4 road operator vehicles will be equipped with Road Operator OBU. On the metropolitan area of Bordeaux, new cellular services are planned to be studied, and if feasible and consistent, integrated and deployed, such as:
- Parking, park and ride and multimodality at a park and ride located at the entry of Metropolis: improvement of the service with information on 'travel time by modal shift' and information about carpooling areas.

- Road Works Warning and maintenance operation: improvement of the service and standards and flooded roads information.

- Protection and guidance of vulnerable road users in urban areas
- Update of traffic lights delivering C-ITS services.

A3.3: Pilot 'North'

Paris TEN-T Urban Node constitutes a real national and European bottleneck aggregating pendulum and long distance traffic on a daily basis and the corridor Paris – Normandy faces massive international traffic including seasonal peak migrations and towards the UK.

North East pilot site will cover different use cases under different configurations. In Paris city, use cases for autonomous vehicles and HD maps will be tested, including 5G connectivity with the infrastructure. In Paris sub-urban areas, motorway sections will be equipped on COFIROUTE network and toll collection in a south Île-de-France toll-plaza will be tested. Highways connecting Paris to Normandy will also be equipped for C-ITS services. The East site cover the Metropolitan area of Strasbourg and A35 motorway managed by the European Collectivity of Alsace (CeA).

A3.3.6: East

This pilot site comprises a network of urban area with 33 municipalities linked with interurban motorway. InDiD aims to deploy at least 10 new RSU and to update existing RSU installed within C-Roads France projects.

Sections/Equipment: RSUs will be installed mainly on A35 and A36.

Services: The objective is to deploy urban services such as vulnerable users protection, information on bicycle paths, information on parking slots, multimodal traffic information, carpooling information, depending on the prioritization work.
Day1 and Day 1.5 services that are deployed in other pilot sites will also be considered for operations, such as accidents, roadworks, VMS, etc.

A3.4.2: Pilot 'City of Grenoble' and départament de l'Isère

The city is surrounded by the Alps mountain range and is crossed by the rivers Isère and Drac. The intensity of traffic and associated air pollution problem are amplified by theses geographic factors. There are significant daily traffic congestions on all major traffic arteries. The A48 is connected to some parks and ride of Grenoble urban transport authorities (Syndicat Mixte des Transports en Commun (SMTC) and Département de l'Isère (San Marino car park)) all located at the entry of Grenoble. They are served by Tramways or high frequency interurban express coaches driving on the A48 on a reserved bus lane, and used as a car sharing area.
A park and ride of Département de l'Isère (San Marino car park) located at the entry of Grenoble is served by Tramways or high frequency interurban express coaches driving on the A48 on a reserved bus lane, and used as a car sharing area.
The interurban road network of Département de l'Isère connects to Grenoble Métropolis road network and the A48 to near ski resorts in Vercors area (less than 40 km). The interurban road network also includes particular road sections which could be used for test with autonomous vehicles because closed to the public during winter period.

Section/Equipment: At least 4 multimodal parks and ride of SMTC and 1 multimodal park of 36. Département de l'Isère will be equipped with connected sensors and RSU stations. One intersection will be equipped to detect vulnerable users and alert vehicles/drivers. At least 5 buses and 5 garbage trucks will be equipped to receive alerts. At least 4 car sharing stops will be equipped with digital device to make users capable to inform drivers/vehicles of their destinations. Around 100 km interurban road (connected with Grenoble metropolis, ski resorts and A48) will be equipped with at least 8 RSU. At least 4 patrol vehicles equipped with OBU of Département de l'Isère (patrol or intervention vehicles, snow removal trucks) will run across these 100 km interurban roads.
At least 1 multimodal park of Département de l'Isère will be equipped with connected sensors and RSU stations. Around 100 km interurban road (connected with Grenoble metropolis, ski resorts and A48) will be equipped with at least 8 RSU. At least 4 patrol vehicles equipped with OBU of Département de l'Isère (patrol or intervention vehicles, snow removal trucks) will run across these 100 km interurban roads.

Services: The following specific use cases may be implemented, based on the use case prioritisation:
-   Parking, park and ride, multimodality at park and ride located at the entry of Grenoble metropolis. Information on 'travel time by modal split' will be available on A48 (AREA) and RN481 (DIRCE) due to their equipment.
-   In vehicle information on people waiting for dynamic-spontaneous car sharing.
-   Roadworks warning and winter maintenance operation. This case is supported by the Métropole, because there are the same problems of winter maintenance, and it can be transposed in urban case to inform of garbage trucks or delivery trucks presence
-   Information on roads covered by snow (on roads connecting Grenoble and A480 to ski resorts)
-   Cyclists detection in intersection and vehicle-driver alerts
The following specific use cases may be implemented, based on the use case prioritisation:
-   Information on 'travel time by modal split' will be considered on RN481 (DIRCE), depending on their equipment.

- Information on roads covered by snow (on roads connecting Grenoble and A480 to ski resorts).