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T3.03.: C-ITS Corridor Services to the port of Livorno

Overview/ summary (around 200-300 words) To be used on website and newsletters, together with pictures

This task develops the proof of concept, pilot, and kick-off of first day 2 C-ITS services relaying the port of Livorno to the hinterland (see Fig.1). The task delivers a comprehensive approach to the development of these services, defining the standards and requirements based on Day 1 experience drawn from UMneo project, outlining the IT platform integration needed, the infrastructural requirements along the corridor, the security issues and the potential benefits for the supply chain. The action entails both software development and hardware (physical installations) at nodes such as ports and freight villages. The task foresees the involvement of potential end users of Corridor Services and targets the wider dissemination of benefits along the corridor through the broadening of such services to inland distribution services. This task also creates a first virtual and integrated control room for remotely managing traffic flows along the transport Corridor (see Fig. 2).
The idea is not to create a new structure, but to make existing platforms work more smoothly. The virtual control room sets up integration systems that help each node platform to steer the traffic inflows and outflows in a synchro modal manner, avoiding the overlap of functionalities and pooling capabilities of the systems. The virtual control room supports the integrated management of fleet capacity and the integrated collection of data for the C-ITS services.

Introduction: General background: why is this project happening?

In the MERIDIAN project the ADSPMTS intends to continue the positive experience gained with the Ursa Major Neo project, enhancing the offer of ITS Cooperative services available for the Port System nodes.
The project, whose core is heavy road transport on primary roads, aims to validate and provide innovative services, of the so-called "day 2", of interaction between vehicles and transport road infrastructure, allowing the management of increasingly complex traffic situations, reaching a cooperation during overtaking, lane changes, and reservation of parking areas between heavy vehicles; furthermore, drivers of heavy vehicles will be able to know in real time the status of traffic and the infrastructure on board the vehicle, by means of voice messages that represent a more efficient and safe solution even compared to driving vehicles.
The project activities are integrated into the MONICA monitoring and control platform, thus ensuring full interoperability of the digital services created with MERIDIAN, in particular by making available to heavy road transport services information relating to the operational status of port nodes, such as weather and sea conditions, arrival/departure delays, predictive elements on the route, scheduled and actual location of the ship in port. This information is already present in MONICA, which already provides it externally with a variety of media, including the MONICA-On Board app. This set of information would be conveyed, in the logic of the Cooperative ITS, to the road infrastructure and, from there, to the user vehicles.
Therefore, day 2 of the cooperative ITS is a step towards a progressive automation of vehicle driving, up to the prospect of the so-called Platooning, which sees the participation in Meridian of the main European road, interport and port transport nodes with a view to integrating an offer of corridor services.

In the MERIDIAN project, the objective of the AdSP MTS is to create a Virtual Control Room, a first virtual and integrated control room for the remote management of traffic flows along the Transport Corridor. The general purpose of the activity envisaged in the project is not to create a new structure, neither physical nor digital, but to make existing digital platforms work more easily, which can be integrated into the AdSP solution. The virtual control room provides integration systems that allow each one to direct incoming and outgoing traffic flows to the node platform in a synchromodal way, avoiding the overlapping of functionality and pooling capacity of the systems. The virtual control room supports the integrated management of port and periport road traffic and the integrated collection of data for C-ITS services.

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The core message Objectives, Results expected, Project description, Implementation schedule

The activities that will have to be carried out in Task 3.03, are structured according to the following scheme:

A. Ante operam analysis: analysis of the road infrastructure with the assessment of traffic conditions and any problems and identification of C-ITS solutions present along the stretch in question.
B. Proof of concept: creation of a proof of concept of a series of automated services for a port terminal and an inland terminal (attributable to Milestone MS3.03.2 of the MERIDIAN project).
C. Definition of the Virtual Control Room: analyzing the current state of the UMN platform owned by AdSP MTS, following output B, drafting of a preliminary project for the creation of a Virtual Control Room (in accordance with Milestone MS3.03.2 of the MERIDIAN project).

The VCR has the purpose of collecting information from the different HW devices and SW applications and making them usable with graphic representations to the central operators such as the service level of a specific road infrastructure or an area (for example the port) as well as the operating status of each component of the VCR and the interfaced systems.

The main IT / ICT systems of interest in the different areas (port, urban and road) and interfaceable with a VCR are listed below:

- [S01] - Smart Parking Monitoring system – truck / car parking areas
- [S02] - Access control to limited traffic areas via digital gates.
- [S03] – Charging system via equipped columns.
- [S04] – Automated Vehicle Monitoring system - control of public transport and freight transport fleets.
- [S05] – Urban Traffic Control system - Traffic light control.
- [S06] – Variable Message System.
- [S07] – Air quality monitoring units.
- [S08] – Monitoring system for flooding underpasses.
- [S09] - Urban video surveillance system (CCTV).
- [S10] – Monitoring system for heavy vehicle flows [license plate reading, etc.]
- [S11] – Network of sensors for detecting road flows and C-ITS devices.
- [S12] – Port gate control.
- [S13] – Speed control.

We have not completed the definition of the requirements and characteristics of the VCR, which will be developed in the following months.

Further reading If readers want to know more, where can they go to? Whom can they contact?

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Pictures/Media/video's/newsitems

Please deliver images as .JPG or .PNG aside the Word document, do not include in Word document this will create images with really bad quality.