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Yearly reports on Rome demonstration progress

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1 Introduction

The objective of the CityMobil project is to contribute to a more effective organisation of urban transport, resulting in a more rational use of motorised traffic with less congestion and pollution, safer driving, a higher quality of living and an enhanced integration with spatial development. In order to achieve this objectives advanced concepts for advanced road vehicles and passengers are developed. Further more new tools for managing the urban transport are introduced and barriers that are in the way of large-scale introduction of automated systems are removed.

In the first sub-project of CityMobil (SP1) those advanced concepts and tools are validated and demonstrated in a number of different European cities under different circumstances. Therefore three large-scale demonstrators have been chosen, which will present real implementations of innovative new concepts. Theses three innovative concepts will be implemented in the city of Heathrow, Rome and Castellón.

Concerning the Rome Demonstration, CTS will be implemented in the main car-park that will take the costumers from the car-park to the main entrance of Rome Exhibition.

In this deliverable the yearly progress concerning the Rome demonstrations is described. The main achievement of the Rome Demonstration in this years’ period are:

- The definition of the Cybercar requirements for the civil works;
- The CTS final design ready;
- The construction and test of the first Cybercar;
- The application of the CityMobil certification procedure to the Rome Demonstration.

Some institutional and political problems have been experienced and also because of the missing of the contract amendment ATAC was unable to issue call for tender for the implementation of civil works. Once the contract amendment will be available the civil work call for tender will be published.
2 Rome Demonstration

Rome has built a new exhibition centre to replace the old one. The old one is currently inside Rome with big problems of parking, public transport and with a limited exhibition area. The new one aims to become one of the important European exhibition areas.

It will be located in the direction of Fiumicino airport (the main international airport of the city) on the west side of the city 3 km outside of the outer ring road and 16 km away from the city centre, along the airport highway and railway link.

The new exhibition area is on the lower side of the airport highway and railway link and it is shown in Figure 2-1, whereas the new building for the Rome exhibition centre is shown in Figure 2-2. Around a 1.5 km long central corridor, each block represents an exhibition stand of 72 by 12 metres each.

Figure 2-1 The area where the new exhibition is being built

In front of the building, there is a car-park with about 2500 car-slots. The transport system that will be the core of the Rome demonstration will serve the car-park with two objectives:

- To improve visitors' accessibility to the buildings, for people coming both by car and by train;
- To eliminate the shuttle, which would be needed to serve the farthest car-slots.

A further objective in the longer term is to demonstrate the financial viability of automated systems for providing an effective feeder transport service; if successful, similar systems are expected to cover the feeder public transport needs for the new housing currently under construction along the railway and toward the airport.

With respect to the initial design, the car-park in front of the building has been re-designed in order that a “Cybercar” network can be built inside it. Its aim is to pick-up the visitors once they have parked their private cars and to bring them to the building entrance. On the return trip a “Cybercar” drives them to their car-slots.
The car-park capacity with the present design is 2500 car-slots. Visitors park their cars in the slots without any order searching for a free place at their arrival. However there are parking zones inside the car-park about 600-700 metres distant from the building entrance, meaning that some people would need to walk for more than 10 minutes to reach the exhibition, and to return to their cars. In such cases, it is common experience in Italy, to park illegally in the proximity of the entrance rather than use parking spaces. In order to avoid this problem, the car-park has been re-designed introducing a “Cybercar” corridor inside it to pick-up visitors once they have left their cars and to bring them to the building entrance. Once they finish their visit inside the building, the “Cybercar” returns them near to their cars.

These features contribute to the achievement of four different objectives:
- Improvements in transport performance.
- Increased public acceptance of public transport services.
- Proof of financial viability.
- Demonstration of the technical maturity of the technology.

2.1 The current status of the work
During last year the Rome demo moved forward on many sides:
- Definition of the civil works project;
- Definition of the CTS final project;
- CTS certification aspects,
- Cybercar construction;

The definition of the civil works designed required more time than planned for different reasons such as the need to meet all the requirements of the Ministry of Transport (MoT) to allow a smooth certification procedure and the need to consider also the Cybercar requirements in the civil works design. This last issue is very important because the Cybercar are provided by Robosoft and the civil works are designed and implemented by ATAC. The final Cybercar requirements were agreed among Robosoft, ATAC and ITR in a meeting held in Bidart in February 2009. According to these requirements ATAC provided the civil works final design at the end of March 2009 to the Municipality of Rome to start all the administrative procedures for the call for tender publication.

After the civil works design definition it was possible to finalize the CTS final design (D.1.3.2.2). The CTS final layout is reported in Figure 2-3. The CTS final design was...
delivered at the end of April 2009 and it is now under review. The CTS final design will be also translated in Italian and delivered to the MoT (July 2009). Once the CTS final design will be delivered to the MoT the certification procedure will officially start.

**Figure 2-3 CTS final layout**

The meetings with the MoT started before the beginning of the official certification procedure, as reported in previous reports, and many requirements were provided by MoT to allow a smooth certification procedure. The last meeting with the MoT was on the 2nd of April 2009 about the latest version of the civil works design and no further suggestions were provided by MoT.

In December 2008 TNO proposed to the Rome Demo Partnership to apply the CityMobil Certification procedure developed within CityMobil WP 2.5 to Rome Demonstration. The procedure is now being applied to Rome Demonstration and the final report will be translated in Italian and provided to the MoT. The CityMobil certification procedure required an intense analysis of the CTS to find out all the possible weak points and the FMECA (Failure Mode Effects and Criticality Analysis) methodology was used. The analysis was coordinated by TNO and Robosoft, ITR and ATAC only for the part concerning the Civil Works were involved. The analysis lasted over 4 month and required 6 weeks of panel work, 3 in Rome and 3 in Bidart. The final report is expected for September 2009 then it will be translated in Italian and provided to the MoT.

Concerning the Cybercars construction, it is on schedule and the first vehicle has been finalized in January 2009 (see Figure 2-4) and is now in under deeply testing. Because the delay in finalizing the civil works design and in the publication of the call for tender it was agreed to delay the construction of the second Cybercar until the first car has been extensively tested. This will allow to run all the modifications arose during the testing only on one Cybercar and to build from scratch the second one.
2.2 Problems experienced in this third year

Concerning the DoW III of the Rome Demo there is a strong delay. This delay it is due to three different issues.

First of all in Rome, in April 2008 there was the election for the Major and it caused a change in the Administration from centre-left to centre-right. In July 2008 the New Administration decided to review all the research projects on-going. This review caused delays of about 3-4 months in the project work plan. On the other hand the New Administration is now fully supporting the Rome Demonstration.

The second issue was the need of a clear definition of the CTS requirements for the Civil works to avoid major problems and delays once the civil works would be implemented. This definition, as reported above, required many meetings between ATAC, Robosoft and ITR and took a couple of months.

The third issue was the delay in the Contract Amendment. Indeed, ATAC has not yet received the contract amendment and without it ATAC is not official partner of the project. For this reason ATAC can not publish the call for tender. Once the contract amendment will be available ATAC will be able to publish the call for tender.

Without the publication of the call for tender for the civil works it is not possible to test the CTS on site for this reason this is a key activity.

2.3 Adaptations of work and time plan

Nevertheless the Rome Demonstration experienced many delays it would be possible to publish the call for tender for the civil works in April 2009 but without the contract amendment it was not possible. Once the contract amendment will be available it will be possible to publish the call for tender for the civil works implementation and provide a recovery plan.
3 Sources

3.1 Reference List

CITYMOBIL CONSORTIUM, 2008, Rome demonstration detailed design, Deliverable D1.3.2.2 of CityMobil project