

1. Introduction

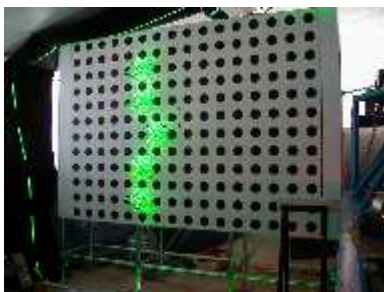
This report clarifies the situation of the project as it is at the end of the initial duration of the project.

As introduced in the periodic reports already delivered, the Infraclear project has encountered many technical issues, leading to a global delay approaching 2 years at the end of the last (4th) period.

2. Results achieved

Today, the concrete hardware that already exists is as follows:

- a freight wagon, duly modified with a free platform expected to receive the measuring container
- an isolated container designed to protect the measuring structure, fitted with windows allowing the laser beam to illuminate the outside infrastructure, and the camera to see the projected laser profile.
- a measuring structure supporting the green laser and the cameras, calibrated in front of a calibration wall installed in the lab
- 3 electronic cabinets equipped with power distribution, UPS module, Wifi antenna for communication with the supervisor and all the computers ensuring the acquisition process



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3. Main deviations/delays from the initial objectives

3.1 Wagon

No standard wagon was applicable to the Infraclear need as it was initially expected. The specific Infraclear need is a narrow frame allowing the laser beam and the cameras to continuously scan the infrastructure over 270° as close as possible to the rails.

It has been time consuming to determine the wagon type, to select an old one, then to move the necessary subcontracting budget (80 k€) to pay the wagon refurbishment that was not planned. This work was carried out by OeBB TS as subcontractor, after OeBB has been split into 7 separated companies.

In total, more than one year has been passed on this issue during the second period (2005) of the Infraclear project.

3.2 High speed smart camera

In 2004, when Infraclear started, no intelligent camera was able to reach simultaneously a high sensitivity (large pixels), a frame rate up to 200 im/sec and an online data processing delivering intelligent profile detection with oversampling.

The promising sensor initially selected for Infraclear was the LUPA 1300, and no camera was commercially available with this sensor. DMA formerly used such a sensor in their track geometry sensors: it has been decided to upgrade the DMA camera in adding a powerful FPGA in front of the embedded processor to reach the performances requested for the Infraclear project.

This key development has been really time consuming and totally delayed in the range of 2 years, during the second (2005) and third (2006) period of the Infraclear project.

Actually, a back-up solution was developed on the basis of a newly available commercial camera: part of the VHDL code that was developed for the smart camera has been deviated for introduction in a smart frame grabber. Consequently, the 2 clearance computers can only drive 2 x 2 cameras instead of 12 as originally expected.

This unexpected back-up solution has been carried out by Cybernetix during the fourth period (2007), in order to reach the milestone 4 = manufacturing completion of the measuring structure.

3.3 Project finalisation

During the third period (2006), Cybernetix as project coordinator decided to suggest stopping the Infraclear project: it has been rejected by the Consortium in the London meeting held in May 2007 then by the Commission. As a consequence, two requests for amendment have been prepared during the fourth period (2007) :

- amendment 3 = AKX is obliged to leave at the normal end of the Infraclear project
- amendment 4 = duration extension, with reduction of the objectives

No way was found for this amendment 4 that has been discussed over the year 2008-2009.

Cybernetix as project coordinator and on behalf of the Infraclear consortium actually request the finalisation of the Infraclear project at the initial end of the project i.e. January 31st 2008.

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