Open System for inter-enterprise information Management in dynamic virtual envirOnmentS

Fact Sheet

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<th>Project Information</th>
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<td>OSMOS</td>
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<td>Grant agreement ID: IST-1999-10491</td>
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Objective

The OSMOS project will enhance the capabilities of construction enterprises, including SMEs, to act and collaborate effectively on projects by setting up and promoting value-added Internet-based flexible services that support team work in the dynamic networks of the European construction industry.

It will:
Specify Internet-based services for collaboration between dissimilar construction applications and semantic cross-referencing between the information they manipulate;
Specify Internet-based services allowing the co-ordination of interactions between individuals and teams in a Construction virtual enterprise;
Specify a model-based environment where the release of, and access to, any shared information (including documents) produced by actors participating in projects is secure, tracked, and managed transparently:
The work will be structured and carried out in five work packages, with a sixth forming the project management:

- Team Work Analysis and Requirements Capture;
- Architecture Definition and Specification;
- Infrastructure Implementation;
- Testing and Evaluation;
- Dissemination and Exploitation;

and Project Management.

The three major milestone events; Testbed 1, Testbed 2 and the Demonstrator all took place, although slightly later than originally scheduled. The vast majority of project objectives were met. The Demonstrator took place over a two-week period in March 2003 at the Barcelona Metro (TMB). Live video was analysed at the Sagrada Familia Metro station and sent over a 5km link to the system’s HCI PC at the TMB control room in Segrera. TMB and Brussels metro security officers took part in a formal evaluation of the system in the first week. Two four-hour presentations also took place the following week with translations into Catalan. The events were attended by a total of over 50 visitors from TMB, the Brussels Metro, the European Commission reviewers and other European commercial transport related bodies. The EC declared the project to have successfully completed on 10th April 2003, subject to receipt of final contractual deliverables and response to reviewers comments. The detailed outcome of the Objectives listed in the previous section of this Project Summary (‘Expected Deliverables’) are listed below using the same ‘Objective’ numbering system.

1. The demonstrator clearly showed the potential for ADVISOR to be used to monitor and record all camera outputs, only alerting operators when interesting events occur.
2. Same as item one outcome.
3. ADVISOR has developed the following new operator services: Automatic detection of interesting behaviours, Archiving of all camera captured image sequences, Ability to randomly access, retrieve, annotate and replay image sequences.
4. The ADVISOR test beds and demonstrator provided a vehicle for potential users to feedback comments on the suitability of the system. This information can be used to develop requirements for future product developments and system procurement.
5. ADVISOR demonstrated detection of the following events: Overcrowding, Blocking, Fighting, Vandalism, Jumping over barriers. ADVISOR is not limited to these events and others were developed but not in the demonstrator.
6. The Archive is able to retrieve all images efficiently from hard disk drives using a VCR like control panel. Images can be individually stored as files for further analysis.
7. Quantitative analysis was not part of a work package task. However, the system
Quantitative analysis was not part of a work package task. However, the system does record all the data required to perform such an analysis, in the Archive database.

End-user requirements capture conducted by VIGITEC, fed into an evolving Functional Requirement specification.

The ADVISOR system has demonstrated the benefits of using scalable distributed processing. Open standards have been followed: JPEG, XML, CORBA, Ethernet. Scalability is possible both ways: up and down.

The CONVERGE guidelines were used to guide the development of the HCI. The crowd monitor used in ADVISOR was developed from the CROMATICA software.

Input was taken from the AVS-PS project. The RU work on people tracking was intended to be used within ADVISOR but was finished too late to be integrated. Bull provided their expertise by supplying the archive, search and retrieval sub-system. TRT provided expert assistance in the provision of digital video services as planned.

The use of JPEG compression was successfully demonstrated.

The system demonstrated an overall detection probability of 89% and a false alarm rate of 6.5%.

The Archiver demonstrated continuous recording of four camera video and annotation data, and the ability to retrieve specific sequences based on behaviour annotations.

Not fully achieved in the integrated system. However work on Supervised Learning was presented. The behaviour recognition algorithms were tuned manually using the results of the learning algorithm.

Analysis was not performed, but it is clear that ADVISOR would offer a significant and quantifiable reduction in operator workload.

The flow rate of people is measured by the crowd monitoring module. This information could be suitably summarised and displayed to operators.

Use of COTS PCs demonstrated.

Evaluations were conducted on test bed 1 and test bed 2. The results of the evaluations were used to make modifications to the design of the next stage.

Thales hosted a non-integrated series of capability demonstrations.

Owing to schedule delays, test bed 2 was validated and evaluated at TRT using recorded sequences taken from TMB and STIB.

The demonstrator was installed at TMB’s Sagrada Familia station and the HCI remotely connected at the Sagrera dispatching centre. The system was installed for in excess of 2 weeks. Installation at STIB was not feasible because the cameras had been replaced.

Both TMB and STIB operators were involved in the Test Bed 2 and Demonstrator evaluations.

The evaluation plans and reports have followed the guidelines.
Topic(s)

Funding Scheme

CSC - Cost-sharing contracts

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