

# Net-WMS Project Management

The governance of Net-WMS is exercised via a Scientific Co-ordinator, a Technical Manager, and a Finance & Administration Coordinator. Together with the Work package Leaders, they form the project Steering Committee, which is the main decision-making body of the project.

For more detailed information on the project, feel free to contact one of the Net-WMS liaisons:

### Scientific Coordinator



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## Net-WMS Fact Sheet

Net-WMS is a Specific Targeted Research Project co-funded by the European Commission's ICT for Enterprise Networking. It contributes to the Ambient Intelligence (AITPL) European cluster.

Start Date: Instrument EC Project No

3 years September 1st, 2006. Specific Targeted Research Project

Project management : Duration:

Research Institutes Manufacturing Companies:

Peugeot Citroën Automobiles (PSA), CRF / FIAT Group INRIA, CEA, Swedish Institute of Computer Science

KLS Optim (France), Mind2Biz (Turkey), WideScope (Portugal)

Ecole des Mines de Nantes

Technology SMEs:

EC Funding: Total Project Cost:

Further Information: http://net-wms.ercim.org/











## Networked Businesses in WMS ET WMS



Towards integrating Virtual Reality and optimisation techniques in a new generation of Networked businesses Warehouse Management Systems under constraints

Project co-funded by the European Commission









## Net-WMS Project Summary

services. Net-WMS will handle networked communication and co-operation processes through a that will form the basis for a new generation of Warehouse Management Systems networked variety of technologies: The Net-WMS project aims at proposing interactive optimisation tools and prototype software



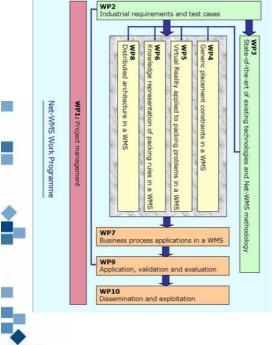
- the integration of decision-making technologies,
- generic 2D/3D and higher-dimensional placement constraint solvers
- visualisation and interaction with the solvers in virtual reality,
- packing models and knowledge modelling with business rules.

It will have direct technological impact on Supply Chain Management at both the WMS and TMS (Transportation Management Software) levels, especially in the areas of packing, vehicle loading, space management, planning & scheduling, inventory control and packed item visualisation The project scientific outcome will be relevant to the whole domain of combinatorial optimisation

# Net-WMS Work Programme

The Net-WMS project is structured around 10 Work Packages (WPs), each led by one of the consortium partners. The different areas of research and development can be logically illustrated as follows:

- Overall project management
- Analysis identify WMS best practices, existing technologies and algorithms
- WP 4,5,6,8: Research Placement constraints and solvers, knowledge modelling, virtual reality Networked Architecture and prototype application of an integrated networked WMS
- WP 7,9,10: Outcome Apply prototypes to business cases, evaluate, disseminate and prepare for commercialisation. Integrate generic technologies in Open Source constraint programming software.



# Net-WMS Consortium Members



















**PSA PEUGEOT CITROEN** 

mind Wbiz





 Algorithmic treatment of global placement constraints for objects of higher dimensions including space and time

From a **scientific** standpoint, significant advances are expected from Net-WMS in terms of:

- Expression of constraint optimisation problems with a language of business rules
- Control of an optimisation tool with interactions in virtual reality

vative technologies that will enhance operations in industrial warehouse environments, such as: On the **technological** side, the project will pave the way to next generation WMS software by applying inno-

- A set of J2EE interfaces for interoperability and mobile services, enabling communications between planning components across a network
- A mobility interface, allowing remote users (e.g. truck drivers) to report planning changes,
- New interactive modules combining Constraint Programming, Rule Programming and Virtual Reality, in support of modelling, simulation and optimisation of the packing process.
- A set of high-level modelling libraries for the Constraint Programming system Choco
- Extensions to Rule Programming tools such as CHR and Drools.

In terms of **commercial** impact, Net-WMS aims at improving European competitiveness in the area of ware-house management by significantly reducing costs related to packing, manpower and transportation. To this end, the project will produce innovative tools and plug-ins such as:

- A packing modeller of items based on optimisation techniques and interactions in virtual reality
- A palletising tool using optimisation techniques.
- A dispatcher including the virtualisation of a truckload.

