Summary

The project SOCHART (competitiveness cluster I-Trans) addresses a niche market in logistics and especially multimodal platforms and therefore carriers, stevedores, port platforms and all shippers who wish to improve and/or better control the logistical process of loading, unloading, packing, stripping and optimized management of areas and ways of handling. The project’s goal is to provide tools for decision support, to cover all foreseeable and unforeseeable constraints (random) flow (between the terminal and multimodal platform).

Objectives of the project:

- optimize the management area of the site,
- optimize the assignment of container to wagons,
- optimize the loading plans of containers / trucks,
- exploiting tools offering Web services to enhance collaboration
- improve the preparation of loading trains, ships, trucks and containers,
- anticipate the loading plans of trains based on interactive planning capabilities

Exploration of Full Web technologies

Client side: ExtJS, Ajax, java3D, Applet, Html5, Json
Server side: Java ,J2EE, JSP, Struts, iBatis, Json, XML, PostGresql, TomCat

Architecture and Final Prototype

Publications / Communication


MIWAI 2011 : The 5th Multi-disciplinary International Workshop On Artificial (India-Hyderabad)
Online assignments of containers to trains using constraint programming,
Ahmed Rhiat, Abder Aggoun and Jean-Pierre Grassien
KLS OPTIM, ICAM Lille, Port Autonome de Dunkerque, France.

Mi-parcours du Prod 4 : le Carrefour de la recherche et de l’innovation dans les transports terrestres 10 - 12 mai 2011 | Espace Bourse à Bordeaux

(SOCHART) : Plate-forme logistique d’optimisation du conditionnement et d’aide à l’affectation de moyens de manutention en fonction des contraintes du chantier intermodal,

Ahmed Rhiat (ICAM) Abder Aggoun (KLS-Dyn), Jean-Pierre Grassien

ICam-ле: Thèses de Master in Engineering: Master in industrial management (2010-2011) : How to manage the storage area of containers?

Sudesthesia: Méthodes d’approche du Forez, Arnaud de Tallandier, Louis Henguell :

Ahmed Rhiat (Advisor), Jean, Dirk Cathyh (Advisor)XU Leuven, Jean-Michel Rigaut (Assessor),

Abder Aggoun (Project Coordinator) : XU Optim, Djamel Ramlia (Coach)

META’10 : The 3rd International Conference on Metaheuristics and Nature Inspired Computing, Djerba Island – October 27th-31th,
Interactive planning of assignments of containers to trains,

A. Rhiat (ICAM de Lille, France), D. Lebrun (LDCT, France), Aggoun (KLS OPTIM – France) JP. Grassien (Port Autonome de Dunkerque)

IT’S’09 : Innovation Technologique et Système de Transport, ENSTA ParisTech PARIS 15ème – France 26, 27, 28 & 29 OCTOBRE 2009
Planification interactive des affectations des conteneurs aux trains,

A. Rhiat (ICAM de Lille, France), Aggoun (KLS OPTIM – France), D. Lebrun (LDCT, France), JP. Grassien (Port Autonome de Dunkerque)

Exhibitions

I’AFT-IFTIM / Itrans : JOURNEE DU TRANSPORT ET DE LA LOGISTIQUE PICARDIE juin 2012

SITL : Salon des Solutions Logistiques , Paris SITL’2009, SITL’2010

Predit’2009, Predit’2010

Conclusion

This work uses advanced algorithms from Operational Research to develop dedicated engine solvers to model and to solve the problems defined in the project SOCHART among them the optimization of the allocation of containers to wagons.

One of the major contribution of the project is the ability to exploit and to combine several technologies among them AJAX, Full Web, SOA, J2EE for embedding in an efficient way the optimization engine solvers developed in the research project SOCHART.

Experiments are underway using representative samples provided by our industrial partners to validate the results and extend this application to other areas.