Development of Company EHS (Environmental, Health and Safety) Information Management System in Multinational Environment

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Abstract

In case of multinational companies there is an emerging demand to introduce uniform company EHS Information System in support of EHS processes, that on the one hand fulfils the local legal requirements and specific business needs characteristic to the given country and on the other hand provides uniform EHS and business information for the management of the company.

As a possible solution a model has been elaborated and implemented in the course of the development of MOL Group (MOL Group comprises some major central European oil, gas and chemical companies) EHS Information System. The model is able to fulfill different national requirements and it can achieve the necessary level of integration. The Oracle10g Developer Suite development environment has to be used for developing the EHS Info system, and it contains the Oracle10g JDeveloper J2EE development environment, as well as the Oracle10g Reports Developer environment.

The system does not stipulate any special hardware requirements for the client computers. The database server is IBM Z800 type server, the applications server is also an Intel-based IBM server. Every one of the network connections function over a TCP/IP-based network protocol. The clients communicate with applications servers over the http protocol, while there are Oracle NET protocol based communications among the applications and database servers.

The system stores the data in the Oracle9i Database Release2 Enterprise Edition database engine software. The applications server is implemented on the Oracle10gAS Enterprise Edition software package. The HTTP server functionalities are based on Apache’s HTTP server version 1.3.22. The clients run Microsoft operating systems, there are only constraints concerning the Explorer, and Acrobat Reader.

As regards functionality the information system comprises two distinct types of modules: the national modules and the integration module. The national modules serve the purpose of data recording and maintenance. This surface supports the data providing and report generation for local authorities in the format defined in the national legislation (e.g. waste management reports, air emission reports etc.). Until now the national modules for Hungary and Slovakia have been introduced. The integration module ensures the possibility to generate management information and statistics as defined by the internal rules of the company. The surface of the integration module generates the reports from data stored in the national modules, but these reports are generated according to the general rules applying to the entire company.

As the result of the applied model the information system is able to support the EHS management processes and decisions of the company, register and store EHS data in a structured database (currently contains all EHS related data of more then 2000 sites), generate EHS reports according to national legislation.

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