Developing a Publicly Available Specification (PAS) to Exchange Material Flow Data between ERP Systems and Environmental Management Information Systems.

Institut für Arbeitswissenschaft und Technologiemanagement (IAT)
(Institute for Technology Management),
University of Stuttgart

Fraunhofer-Institut für Arbeitswirtschaft und Organisation (IAO),
(Fraunhofer-Institute for Industrial Engineering)
Stuttgart

Corporate Environmental Management

Dipl.-Ing. Claus Lang, M. Sc.
Dipl.-Math. Uwe Rey
Dipl.-Ing. Severin Beucker

Nobelstrasse 12
D-70569 Stuttgart, Germany
Telephone +49 (0) 7 11/9 70-22 22
Fax +49 (0) 7 11/9 70-22 87

Email claus.lang@iao.fhg.de

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Abstract

Material flow management comprises the analysis and assessment of the most important material flows inside a company. An assessment comprises environmental impacts as well as cost aspects. Material flow management can be effectively conducted with the help of Environmental Management Systems (EMIS). EMIS reduce the expenses to evaluate data and information to be analysed with material flow management. Their use can increase the transparency concerning environmental and cost aspects and therefore be an important tool to systematically optimise the environmental performance of a company.
Two points have shown to be critical in the use of EMIS:

- Poor availability and quality of suitable data leads to high expenses for material flow data collection, modelling and evaluation.
- A poor connection of material flow assessments to controlling, accounting and production planning issues inhibits the regular use of such systems.

Most companies keep data on material and substance flows inside their Enterprise Resource Planning System (ERP System). These systems can be used to deal with production planning, accounting, logistics and human resources and in order to deal with the variety of business processes that are taking place inside a company.

Connecting Environmental Management Information Systems with ERP Systems leads to the following advantages:

- ERP Systems can serve as data suppliers for EMIS. This leads to a significant reduction in costs for data collection for EMIS.
- Calculations performed by EMIS can be used and displayed by ERP Systems. This leads to versatile applicability of EMIS functionalities in a company's organizational structure..

Thus, connecting ERP Systems with EMIS can be seen as a key function to integrate environmental issues into corporate actions .

Connecting different software systems can be realized with data transfer and/or interfaces. A pre-standardization process is currently under way with the goal to agree upon a so-called Publicly Available Specification (PAS). Different partners, among them software companies are involved in this process. The PAS will comprise a data structure for material flow relevant data. This work is based on data structures formulated with the eXtended Mark-up Language (XML). Developed data structures will be explained and the work progress will be presented. In the future, these data structures shall not only serve as structures to transfer material flow data inside one company, but also to transfer product data along the different members along the logistics chain to allow environmental evaluations of products along their whole life-cycle product data along in the future. Theses issues will be addressed as well.