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Discussion document

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How to link between existing risk management advice for workers and REACH exposure scenarios?

The Federal Institute for Occupational Safety and Health (BAuA) launched a project to assess how existing occupational safety and health (OSH) guidelines might be linked with exposure scenarios derived from existing exposure estimation methods used in REACH.

Examples of existing RMM guidance systems were selected for a systematic analysis of both structure and content. This served as a basis to define an interface/correlation between guidance documents and ES. The structural analysis supplied an overview of the diversity of existing systems. The content analysis showed that these systems can be divided into three groups

Single activity systems:

In these systems one document refers to exactly one exposure situation and names the necessary RMM. Single activity documents mostly follow not only a common structure but also a common format (template). Guidance document systems belonging to this group are for example

- BAuA EMKG Control Guidance Sheets
- HSE/COSHH Essentials Guidance Sheets
- ILO Guidance sheets
- BGBAU/GISBAU "GISCODE documents"
- AISE GEIS
- ESIG GES

Multi activity systems:

In these systems one document describes several (or even many) exposure situations with the specific RMM required for each case. The systems are different from each other, and also the single documents of specific system/series will not necessarily be homogeneous in terms of content and structure. Guidance document systems belonging to this group include:

- BGBAU/GISBAU "Brochures on Hazardous Substances"
- BGBAU/GISBAU "Exposure descriptions"
- BGHM guidelines (German Social Accident Insurance Institution for the woodworking and metalworking industries)
- BG ETEM guidelines (German Social Accident Insurance Institution for the energy, textile, electrical and media products sectors)

- BG RCI guidelines (German Social Accident Insurance Institution for the raw materials and chemical industry)
- Process- and substance-specific criteria ("VSK")
- LASI guidelines (Committee of Federal States Occupational Safety and Health)

Generic Exposure Scenarios (GES) by ESIG

These documents describe the "safe conditions of use" for the different activities of workers within a use in the form of "contributing scenarios" and based on risk management phrases existing in the sector. Each GES has its applicability domain in terms of substance properties. The conditions of use match 1:1 with the input parameters of the ECETOC TRA tool.

A generic interface/correlation between ES and existing guidance documents could be derived for all three types of system. This interface/correlation was defined with regard to parameters of Exposure scenarios / contributing scenarios (ES/CS) for workers currently given by the harmonised [ES-Template](#): The **Title** section and **Conditions of Use** section for the worker contributing scenario contain the most relevant parameters. This interface proved to be functional, when existing RMM guidance was evaluated by experts and the link was made manually.

The detailed analyses of the selected guidance documents showed that especially for older RMM systems, in many cases relevant parameters are missing or have to be retrieved by expert analysis. Not surprisingly recent "GES", which have been developed in the REACH context show a good fit to ES.

In the examples, it is shown that data gaps can be filled with medium (to high) effort, but in many cases expert knowledge of the relevant branch would be needed, as especially parameters regarding the operational handling were missing.

This reveals the major problem associated with the attempt to build the link between existing risk management advice for workers and REACH exposure scenarios. Most RMM systems have been designed with the end users as target groups. The authors/developers of these systems knew end users to be familiar with the standard procedures and operating conditions of their tasks. Thus, expert knowledge on operational conditions and procedures was taken for granted and was therefore not included in the guidelines.

On the other hand authors of ES in general are located high on the upstream side of the supply chain, which is rather remote from the end users. Thus it cannot not be expected that they make correct use of the existing guidelines in their CSA without help of experts knowing the end-user situation.

In order to truly support the interface between REACH and existing OSH Guidelines, it would be necessary that experts with domain specific knowledge of the end uses - i.e. the authors of OSH guidance documents - would include a comprehensive list of parameters for generating a REACH exposure scenario (ES) as a summary table to each document.

Without adding such comprehensive list or exposure relevant parameters and measures to existing RMM documents it will be difficult to make links between current ES and occupational RMM guidance. This holds especially true, as existing RMM documents show a big variety in structure and content and relevant parameters are not always displayed in the document itself but rather in Annexes or the background documents of the systems. However note: It may also be possible to use existing RMM advice if corresponding measured data sets exist that can be used for the exposure estimate under REACH.

In spite of these obstacles it must be pointed out that the comprehensive analysis undertaken in this project made clear that the existing OSH guidance systems contain highly useful information on exposures and specific risk management and process specific conditions which can support the generation of ES. However it seems questionable to use existing systems as a “drop-in–extension” to existing exposure scenarios based on ECETOC-TRA or comparable models.

Overall - the working hypothesis that links between RMM-guidance documents and REACH-ES would be possible and useful, was confirmed.

To move forward, OSH RMM documents should be amended to include structured comprehensive lists of exposure relevant parameters and measures. This would support the building of a repository of RMM systems that might be used under REACH

- to select appropriate OSH guidance documents to generate (higher tier) exposure scenarios or
- to provide additional (voluntary) advice to handling and use in existing ES
- For the OSH side such a repository would facilitate the usage of comprehensive (and partly lengthy) documents and might initiate EU-wide exchange of OSH-information.