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# Libre Software Methods for E-Education

## **EDUKALIBRE**

**4<sup>th</sup> project meeting**  
**Genoa, 15 July 2005**

**Activities of DFIU**

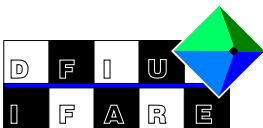
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Institute for Industrial Production

French-German Institute for Environmental Research (DFIU)

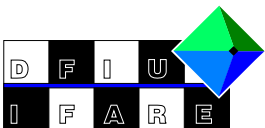
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# Activities of the Institute for Industrial Production between December 2004 and July 2005

- Conducting the Seminar “Multi-Criteria Decision Support for Emergency Management” using the platform
  - × 10 February, 11 May, 6 and 8 July 2005: Meetings with the students.  
In the course of the summer term (April – July), continuous use of the EDUKALIBRE Platform
  - × The new questionnaire developed by the partners from Leeds was answered by the students at the end of the seminar
  
- Development of a MADM tool for OpenOffice in Java
  
- Use of Docbook for collaborative writing of technical Documents



# Course "Multi-Criteria Decision Support for Emergency Management" on the platform

The screenshot shows a Microsoft Internet Explorer browser window displaying a course page. The browser's address bar shows the URL: <http://edukalibre.comp.leeds.ac.uk/groupware/course/view.php?id=14>. The page title is "Kurs: Entscheidungsunterstützung im Notfallmanagement - Microsoft Internet Explorer".

The course page has a yellow header with the title "Entscheidungsunterstützung im Notfallmanagement" and a user login status: "Sie sind angemeldet als [Valentin Bertsch](#) (LogOut)". Below the header, there is a navigation menu with "groupware" and "DFIU\_SS05".

The main content area is divided into three columns:

- Left Column (Administration):** Includes "Aktivitäten" (Arbeitsmaterialien, Foren, Groupware) and "Administration" (Jetzt bearbeiten, Einstellungen..., Betreuer..., Teilnehmer..., Sicherung..., Wiederherstellung..., Bewertungsskalen..., Punkte..., Statistiken..., Dateien..., Hilfe..., Trainer/Innen-Forum).
- Middle Column (Themen dieses Kurses):**
  - IIP Seminar Sommersemester 2005**
    - "Entscheidungsunterstützung im Notfallmanagement"**

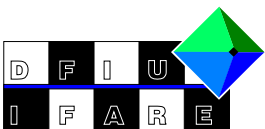
Natürliche und vom Menschen ausgelöste Krisensituationen können sich erheblich unterscheiden. Gemeinsam sind ihnen jedoch ihr plötzliches und unerwartetes Auftreten, komplexe Entscheidungen und die Notwendigkeit für ein effektives Notfallmanagement.

In diesem Seminar sollen Teams von je zwei Personen für die verschiedenen Branchen die auftretenden Risiken und möglichen Sanierungsmaßnahmen klassifizieren und mögliche Bewertungsstrategien beschreiben.

[News forum](#)
    - 1 Organisatorisches**

Die **Seminarvorträge** werden am 6.7. 8:30-17:00 und am 8.7. 8:30-12:30 stattfinden. Für eine **Zwischenbesprechung** ist Mittwoch der 11.05.2005 14:00-15:30 Uhr im Seminarraum EG des IIP (Gebäude 6.33) vorgesehen. Bei der Bewertung werden die schriftliche Ausarbeitung, die Präsentation und die anschließende Diskussion berücksichtigt.

[Handout Vorbesprechung](#)  
[Seminardaten](#)
- Right Column (User and News):**
  - Onlinenutzer** (Dauer 5 in Minuten): [Valentin Bertsch](#)
  - Neueste Nachrichten**
    - [Ein neues Thema hinzufügen...](#)
    - 28 Jun, 15:20 - Jens Ludwig: [Problem mit Seitenzahlen? mehr...](#)
    - 24 Jun, 09:27 - Jens Ludwig: [Allgemeine Anmerkungen mehr...](#)
    - 20 Jun, 09:39 - Valentin Bertsch: ["Ökonomische Bewertung und methodische Ansätze" mehr...](#)
    - [Ältere Diskussionen ...](#)
  - Neueste Aktivitäten**
    - Aktivität seit Tuesday, 12 July 2005, 08:47
    - [Alle Aktivitäten der letzten Zeit](#)
    - Nichts Neues seit Ihrem letzten Besuch
  - Suche**

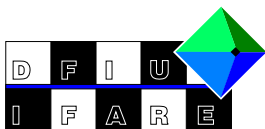


## Seminar:

# “Multi-Criteria Decision Support for Emergency Management”

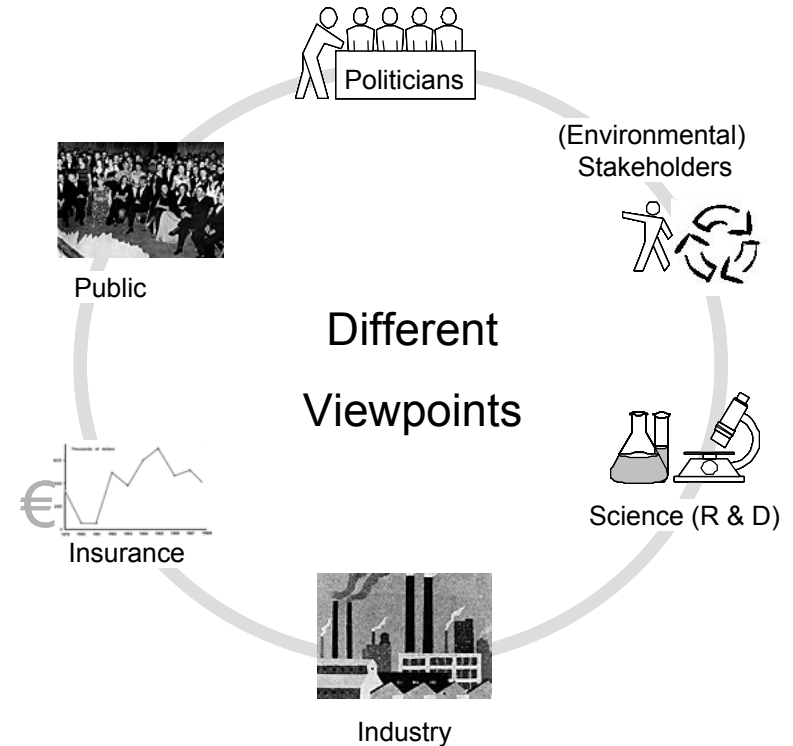
Goal of the Seminar of the Summer Term 2005

- Environmental **emergency situations** can differ in many ways, for instance according to their causes and the dimension of their impacts. Yet, they share the characteristic of sudden onset and the necessity for a **coherent, transparent and effective emergency management**.
- Teams consisting of two students each, categorised and classified **potential risks** and also **remediation strategies** in the following sectors:
  - × Energy Production
  - × Traffic and Transportation
  - × Chemical Industry
  - × Food Production
  - × Natural Disasters
- In a second step each team analysed and evaluated the alternative remediation strategies with respect to multiple criteria after building a model (an **attribute tree**) in the **multi-criteria evaluation tool Web-HIPRE**.
- The platform was used to communicate with the students and to upload documents and papers.

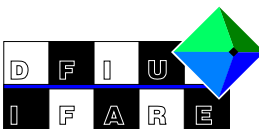
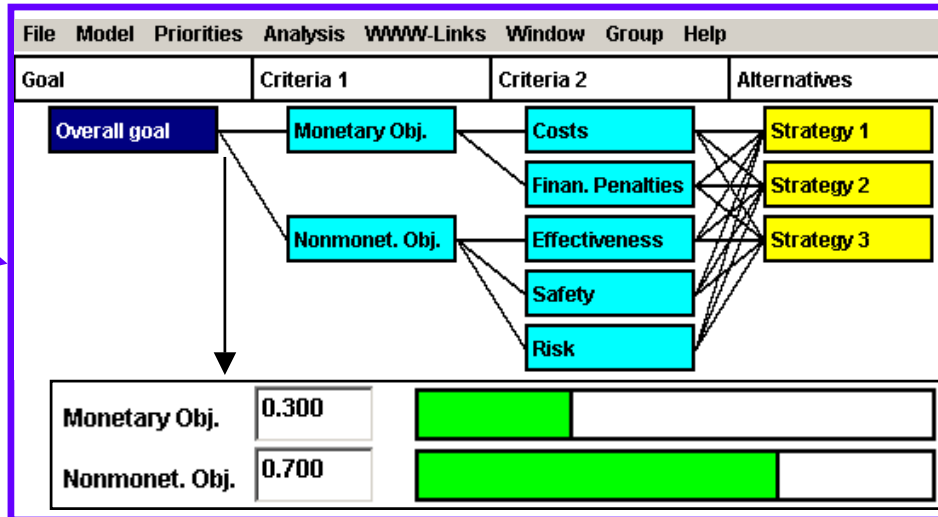
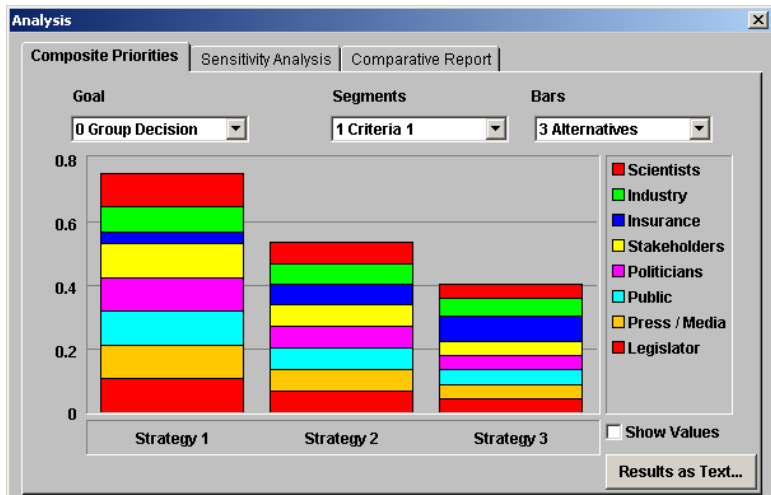
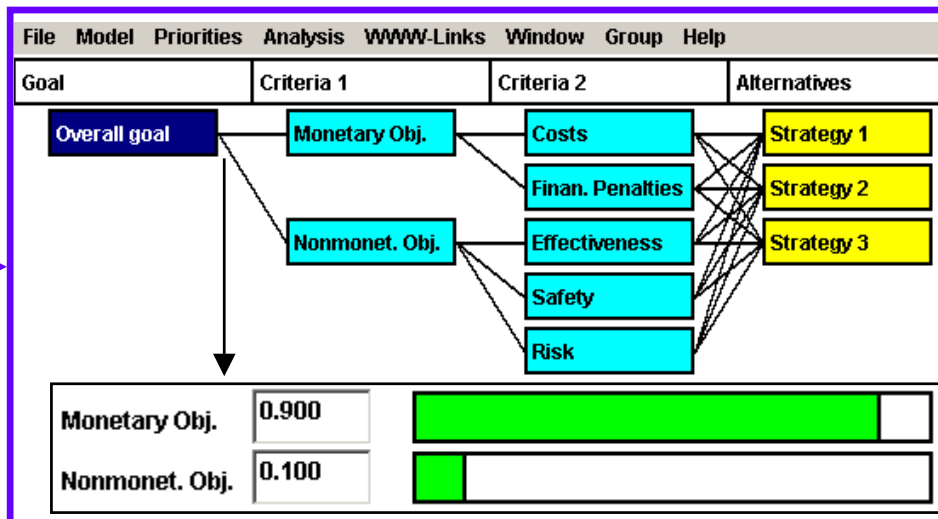
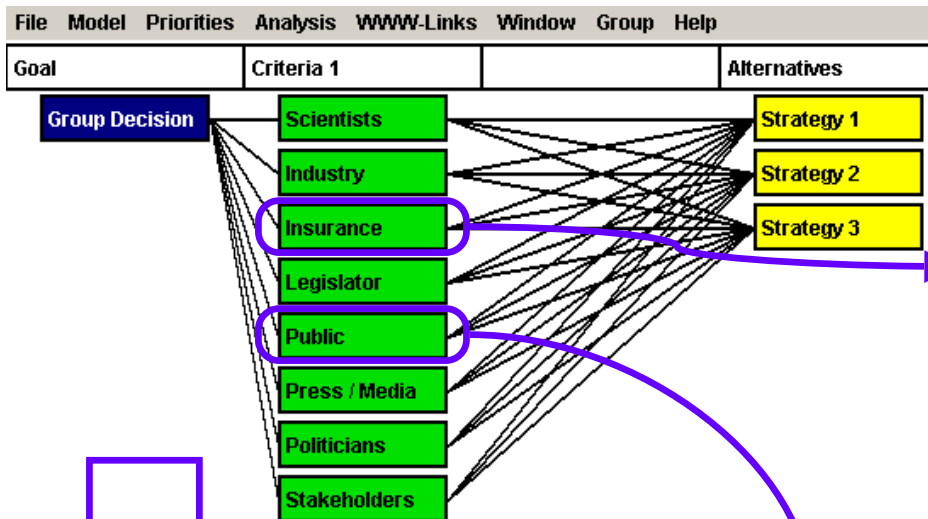


# Work in the Seminar of the Summer Term 2005

- Emergency situations involve complex decisions
- Many conflicting objectives must be resolved
- Priorities must be set
- Various perspectives and different viewpoints must be brought into some form of consensus
- In order to ensure transparency during the decision making process multi-criteria decision analysis is very important

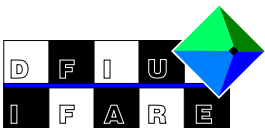
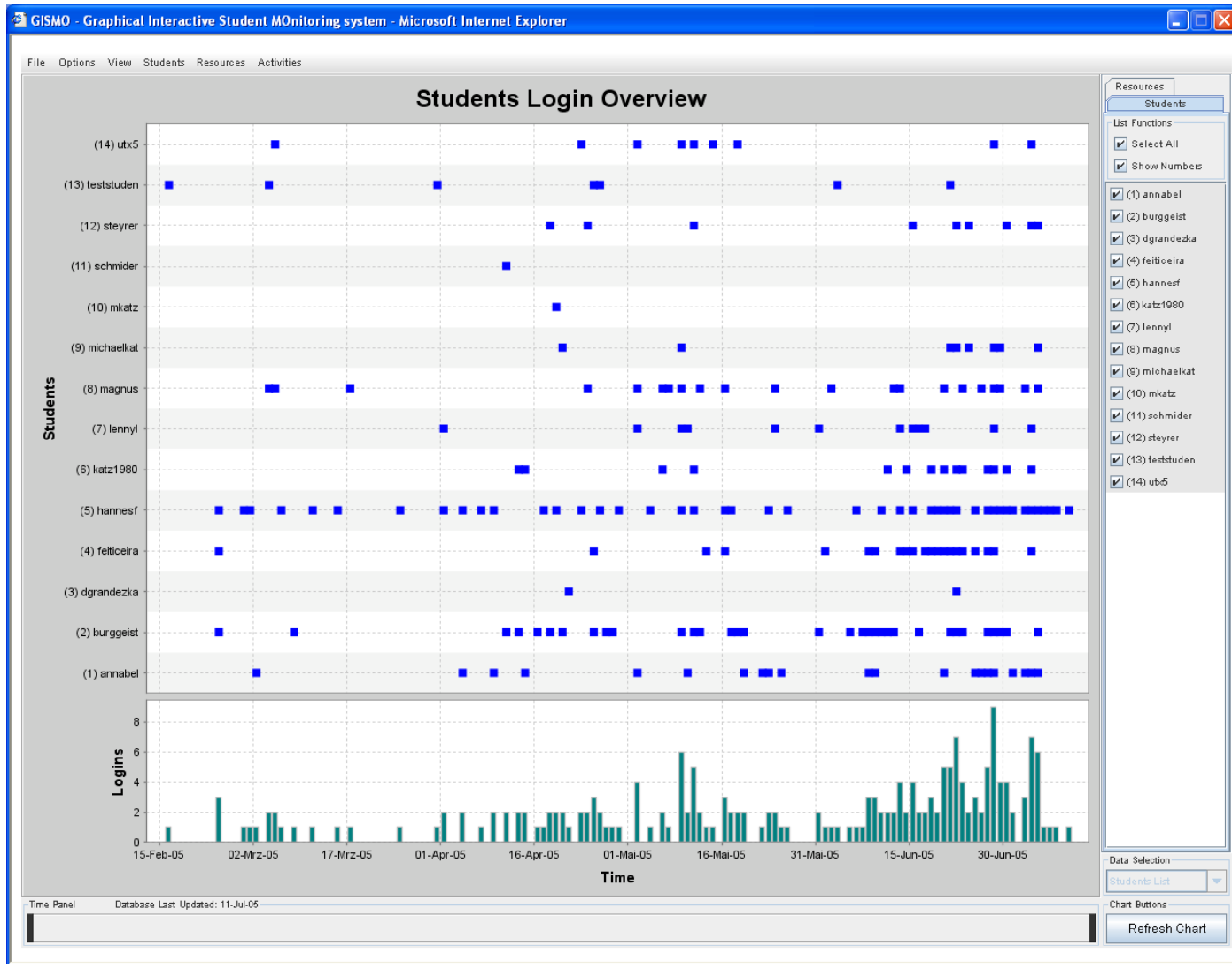


# A group model helps to support decisions in emergency management



# Use of the platform during the course

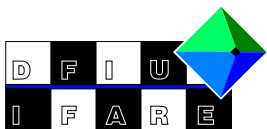
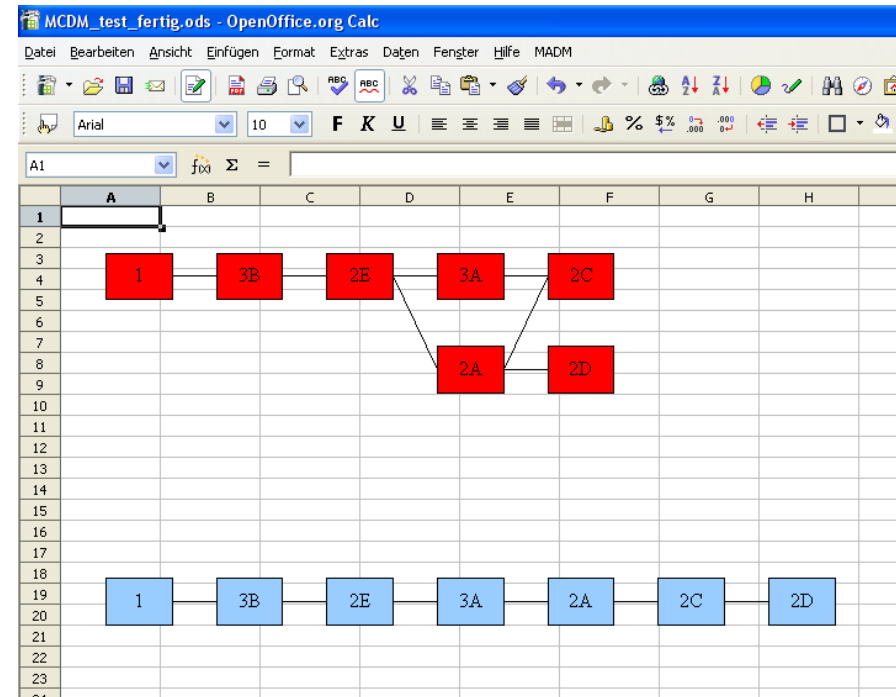
## “Multi-Criteria Decision Support for Emergency Management”



# A MADM-Tool has been developed in OpenOffice

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Criteria	1	2A	2C	2D	2E	3A	3B	Min Limit	Max Limit	Min/Max	Weighting	Preference type	p	q
2	Paint	-0,45	0,00	0,00	0,00	-0,45	0,06	-0,41	-	-	Min	0,13	1	0,4	0,05
3	Diluting solv	-0,45	0,00	0,00	0,00	-0,45	0,06	-0,41	-	-	Min	0,13	1	0,7	0,05
4	Paint sludge	-0,60	0,00	0,00	0,00	-0,60	0,00	-0,60	-	-	Min	0,13	1	0,5	0,05
5	Operating co	0,00	0,00	0,00	0,00	0,00	-0,75	-0,75	-	-	Min	0,13	1	0,65	0,05
6	Solvent emis	-0,42	-0,03	-0,60	-0,72	-0,81	-0,78	-0,87	-	-	Max	0,13	1	0,8	0,08
7	PM: Operati	-0,43	0,00	0,00	0,00	-0,43	0,02	-0,44	-	-	Min	0,13	1	0,4	0,05
8	PM: Investm	200.000	350.000	750.000	350.000	550.000	25.000	225.000	-	-	Min	0,13	1	450	35
9	Waste gas c	0	255.000	20.000	40.000	40.000	0	0	-	-	Min	0,13	1	200	15

- The tool can be used to perform multi-criteria analyses (e.g. the evaluation of different painting techniques with respect to multiple criteria)
- The tool offers (inter alia) the “Simple Additive Weighting” (SAW) as well as the PROMETHEE method
- The MADM algorithms are realised as Java macros



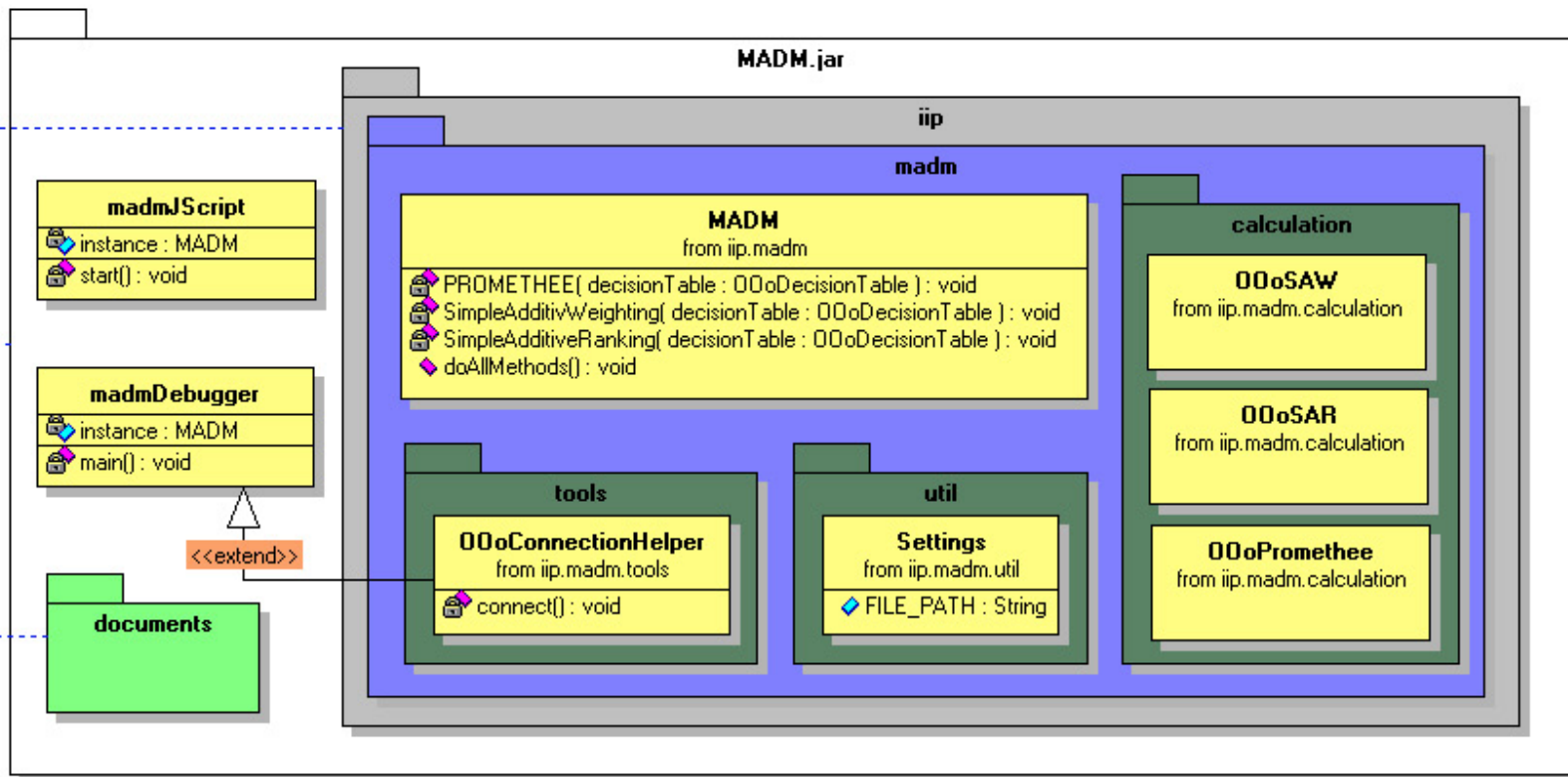
# Programming Structure of the MADM-Tool

iip is the PACKAGE holding all class files

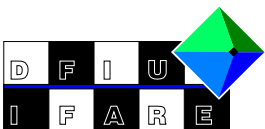
The RAR file MADM.jar contains the package iip plus the documents folder and executing classes:

- 1) madmJSript
- 2) madmDebugger

The FOLDER documents contains sample files in ods format for debugging mode



- Further (collaborative) development / improvement of the tool is planned
- Can the platform or EDUKALIBRE tools in general be used to support this?



# Use of Docbook for Collaborative writing of technical Documents

## Example: “Technical Background Document for the Actualisation and Assessment of UN/ECE Protocols related to the Abatement of the Transboundary Transport of Volatile Organic Compounds from Stationary Sources”

The screenshot displays a software interface for editing DocBook documents. The main window shows a hierarchical tree view of a document titled "7.4.1.1 a Manufacture of Automobiles.xml". The tree structure includes:

- 1 Solvent and Other Product Use
  - 1.1 Application of Paint
    - 1.1.1 Manufacture of Automobiles
      - 1.1.1.1 Manufacture of Passenger Cars

The main content area displays the text for the selected section, "1.1.1.1 Manufacture of Passenger Cars". The text describes the source category (SNAP 94 extension 06 01 01 01) and its application to the coating of new cars. A "Technology Description" section follows, detailing the assembly and coating process of the automobile body.

On the right side of the interface, there is a table with two columns: "Attribut" and "Wert". The table lists various attributes and their corresponding values:

Attribut	Wert
arch	
condition	
conformance	
id	
lang	
os	
pagenum	
remap	
revision	
revisionflag	
role	
security	
userlevel	
vendor	
wfrelabel	

- Open source software to support the administration of references in Docbook?

