

# CATEGORIZATION SYSTEMS FOR SUBSTANCES (CSS) IN POISONS CENTRES

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PCs: 1) ZÜRICH 2) ERFURT 3) GÖTTINGEN 4) MAINZ

# CONTENT

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- Preliminary evaluation of the **current use of CSS** in PCs
- Description of the **basic structure** of the CSS
- Identification of the **interfaces** to other parts in PCs
- Presentation of an example with it's **structural and technical realization**
- Introduce a model of **multi-centre** use, maintenance & update of a harmonized **CSS**
- 3 Questions:
  - Shall we harmonize CSS?
  - Do we want to harmonize CSS?
  - Can we harmonize CSS?

- CONTENT/SOURCES

- CURRENT USE

- BASIC STRUCTURE

- INTERFACES

- REALIZATION

- MULTI-CENTRE

- CONCLUSION

# SOURCES

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- CONTENT/SOURCES

- CURRENT USE

- BASIC STRUCTURE

- INTERFACES

- REALIZATION

- MULTI-CENTRE

- CONCLUSION

- Retrieval of PCs homepages and annual reports
- 13-year experience with software development of the case recording system ADAM<sup>©</sup>
- 5 year experience with the working group „categorization systems“ within the german TDI-network
- Personal vision of „the optimal structure“ of a PC

# CURRENT USE OF CSS

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■ CONTENT/SOURCES

■ CURRENT USE

■ BASIC STRUCTURE

■ INTERFACES

■ REALIZATION

■ MULTI-CENTRE

■ CONCLUSION

- Categorization of substances in grouping systems plays a crucial role in the work of a PC
- Grouping systems are essential for retrieval and processing of large data volumes
- Current situation in the European PCs reveals different categorization systems for substances (CSS) and only some parts (ATC-Code) are harmonized, but not in every PC
- At present it is not possible to generate a uniform annual report of the EU PCs

# PROJECTS -> FOCUS ON CSS

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■ CONTENT/SOURCES

■ CURRENT USE

■ BASIC STRUCTURE

■ INTERFACES

■ REALIZATION

■ MULTI-CENTRE

■ CONCLUSION

- TDI-network:  
(research project, 10 german PCs + Federal Institute for Risk Assessment)
  - 5 year experience with a harmonization process of CSS
  - continual work in completing and maintenance of the System
- Case recording system ADAM<sup>©</sup>:
  - main aspect in development of the system was a comprehensive integration of the CSS for daily work routine
  - System is running in daily work of 3 PCs

# MAIN TASKS OF PCs

## PROVIDE INFORMATION

- Consultation:  
-> Retrieval on substance names and product names to identify toxicologically relevant information for the competent assessment and treatment of poisonings

## RECORD CASES

- Case collection:  
-> Record of all substances or products, exposed in a poisoning
- Evaluation of poisonings:  
-> Find all cases with an exposure to a single/group product/s or substance/s

## INDEX WITH NAMES OF SUBSTANCES

- Names of substances and products as well as non-ambiguous numbers take a crucial role in the achievement of these main tasks

■ CONTENT/SOURCES

■ CURRENT USE

■ BASIC STRUCTURE

■ INTERFACES

■ REALIZATION

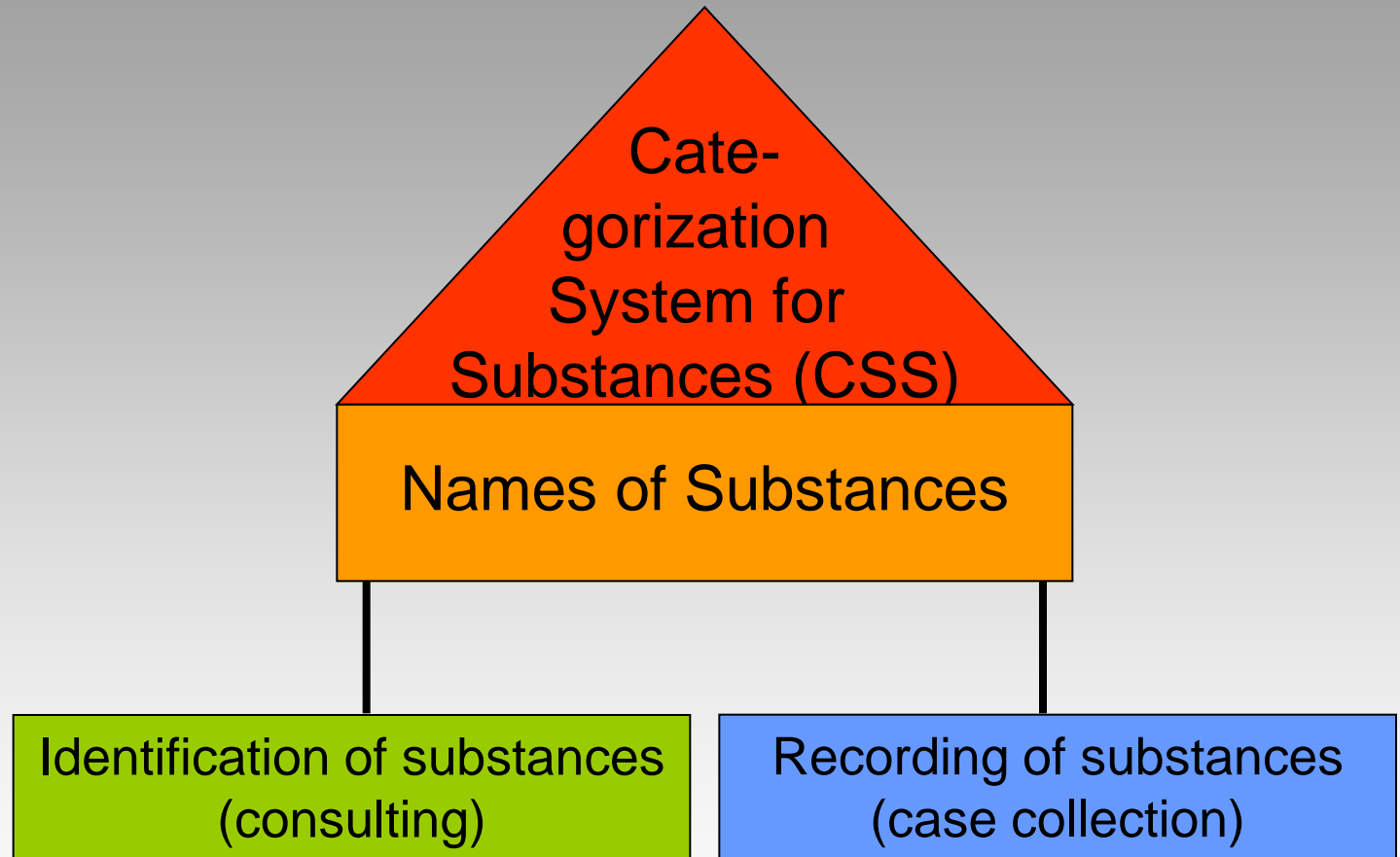
■ MULTI-CENTRE

■ CONCLUSION

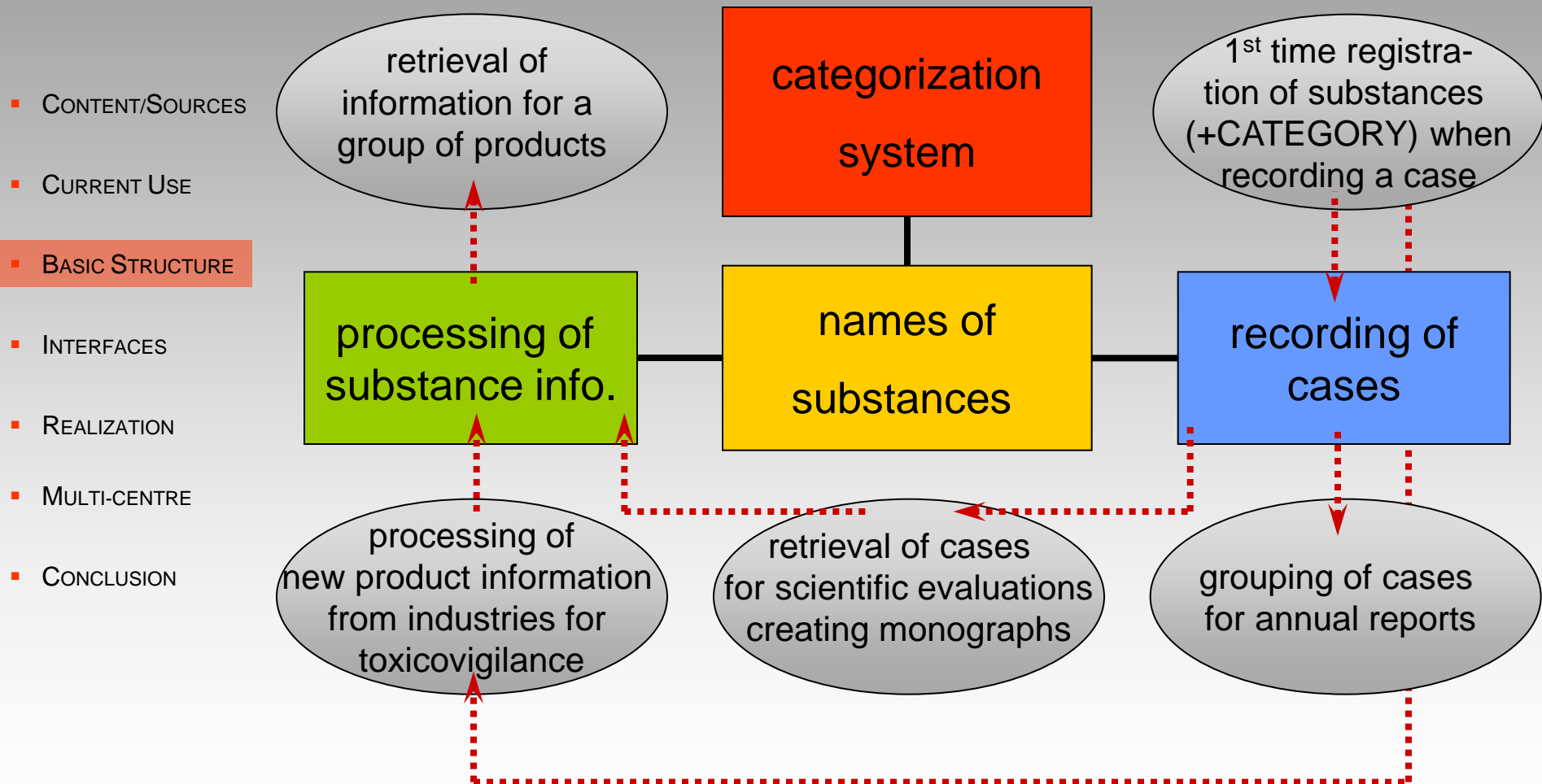
# ROLE OF THE CSS

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- CONTENT/SOURCES
- CURRENT USE
- BASIC STRUCTURE
- INTERFACES
- REALIZATION
- MULTI-CENTRE
- CONCLUSION



# CATEGORIZATION OF SUBSTANCES





# STRUCTURE OF CSS - hierarchical

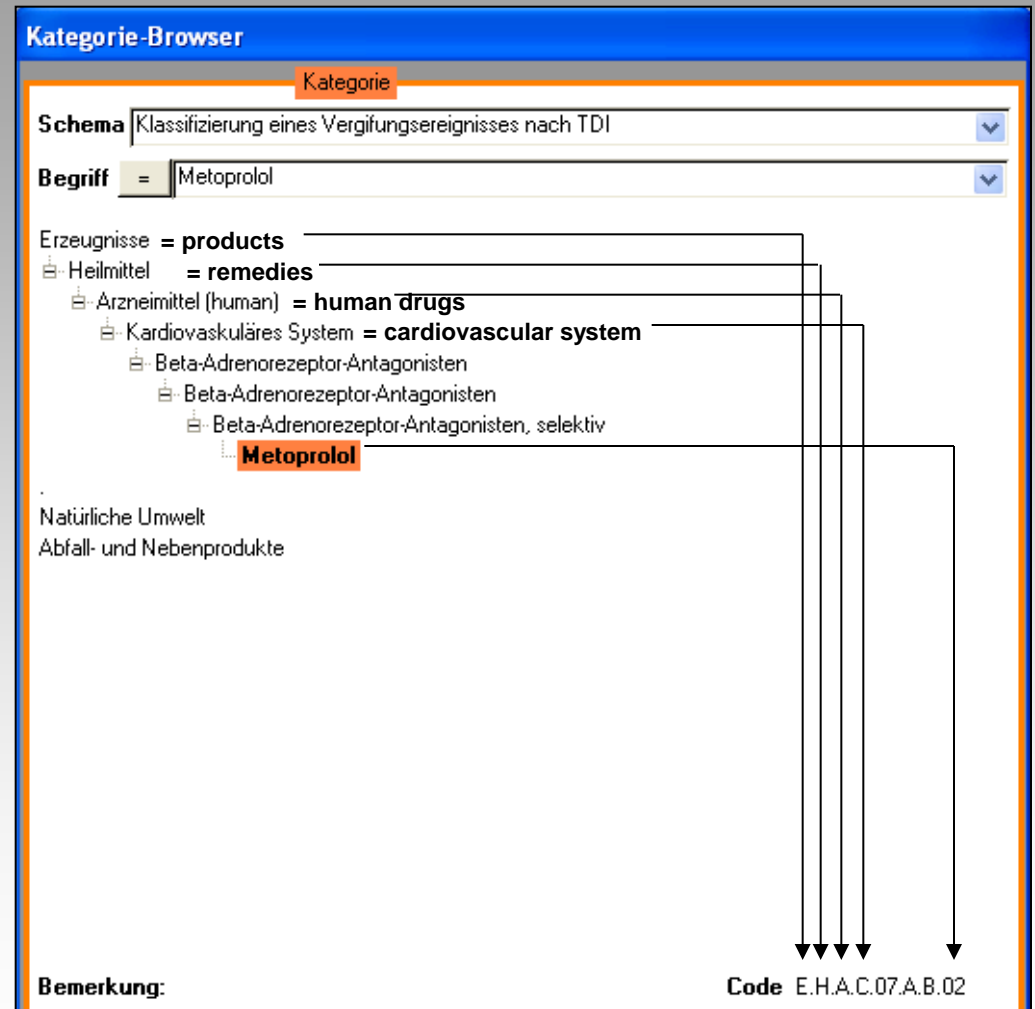
- CONTENT/SOURCES
- CURRENT USE
- BASIC STRUCTURE**
- INTERFACES
- REALIZATION
- MULTI-CENTRE
- CONCLUSION

- Drugs
  - Metoprolol

ATC-Code 2005  
(n = 5300)

(n = 5900 Vet-ATC)

**WHO**  
*Collaborating  
Centre for Drug  
Statistics  
Methodology,  
Oslo*

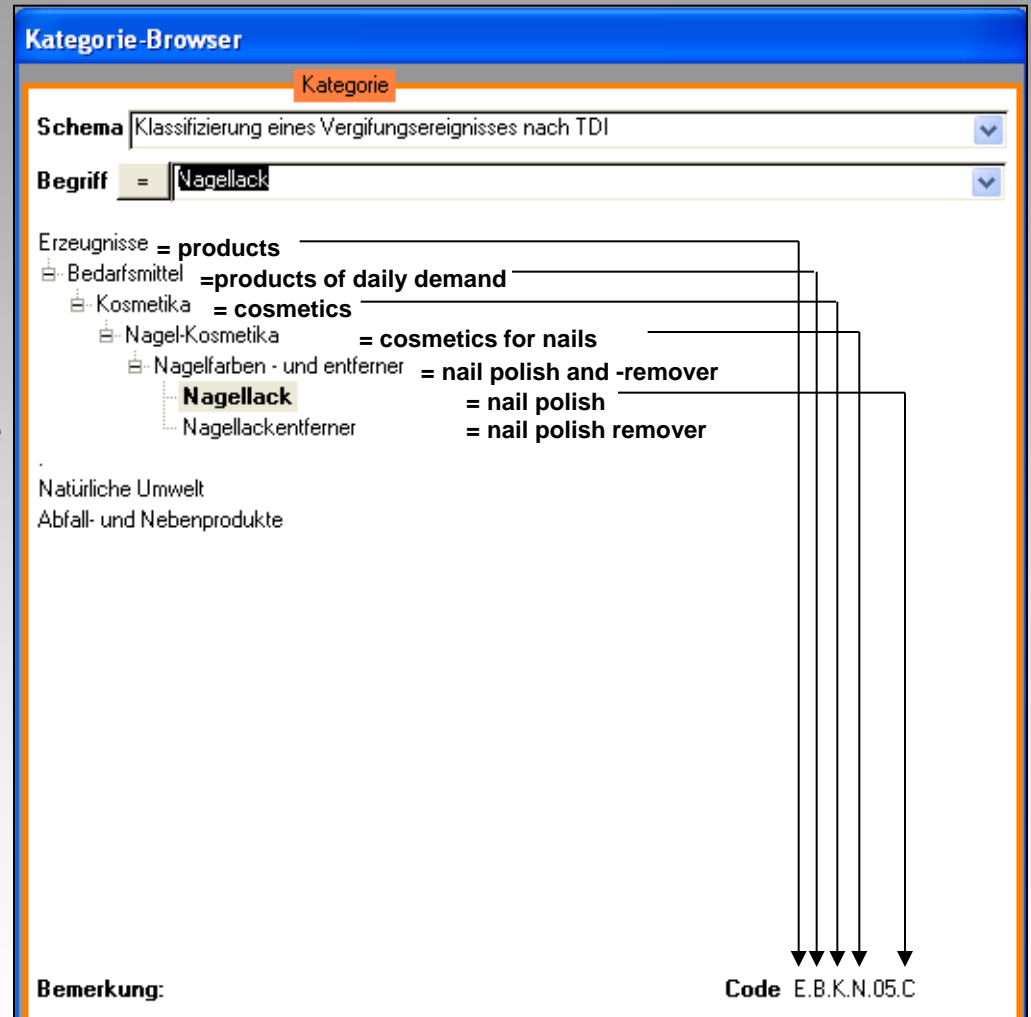


# STRUCTURE OF CSS - hierarchical

- CONTENT/SOURCES
- CURRENT USE
- BASIC STRUCTURE
- INTERFACES
- REALIZATION
- MULTI-CENTRE
- CONCLUSION

- Cosmetics
  - Nail Polish

Cosmetic Frame Formulations  
**EAPCCT & COLIPA, 2000**  
completed by some own categories  
(n = 180)



# STRUCTURE OF CSS - hierarchical

- CONTENT/SOURCES
- CURRENT USE
- BASIC STRUCTURE**
- INTERFACES
- REALIZATION
- MULTI-CENTRE
- CONCLUSION

- Plants
  - Golden Chain Tree

Taxonomical classification according to:  
**Zander, ed.:  
Dictionary of plant names,  
Kater publ. 2000,  
16th edition  
(n = 2'700)**

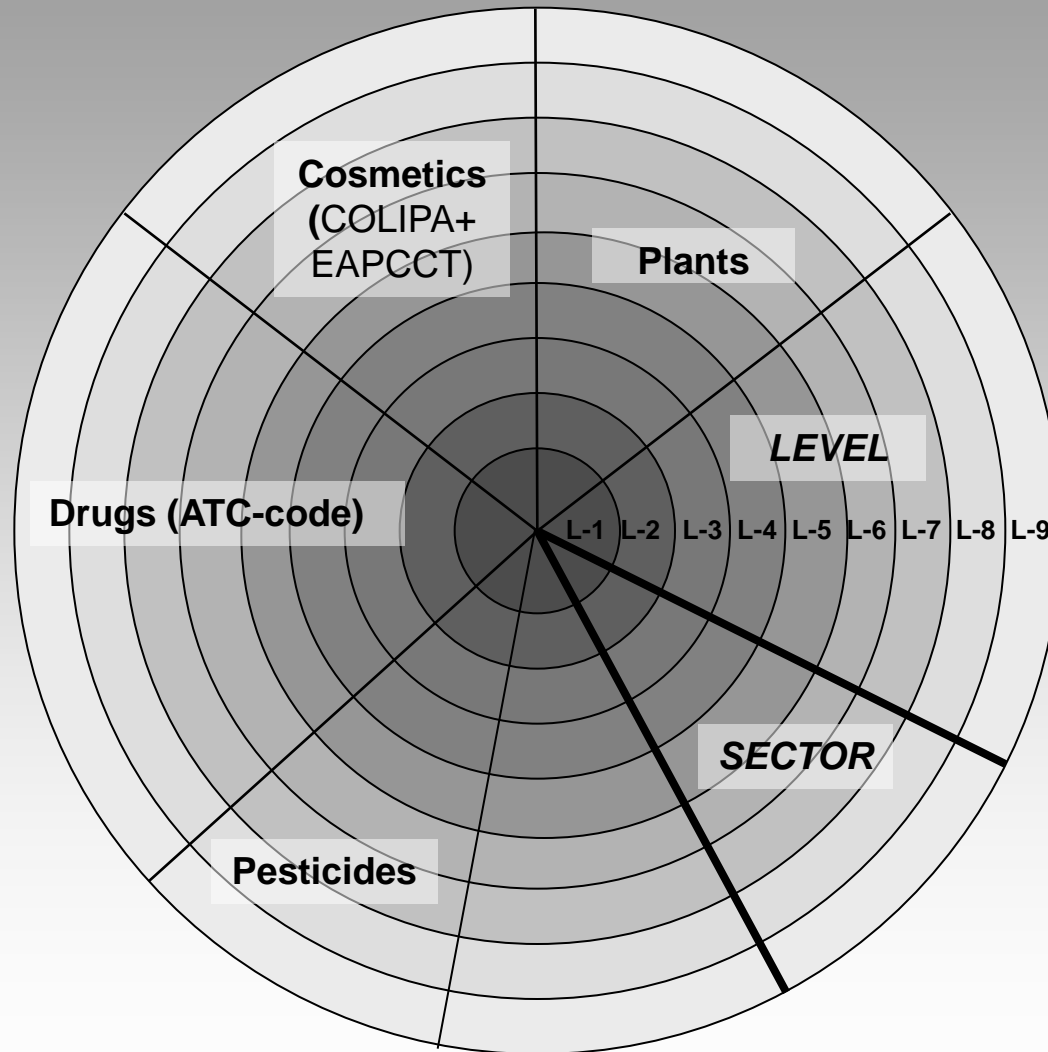
The screenshot shows the 'Kategorie-Browser' interface. At the top, there is a 'Kategorie' dropdown menu. Below it, the 'Schema' is set to 'Klassifizierung eines Vergiftungsereignisses nach TDI' and the 'Begriff' is 'Laburnum anagyroides'. The main area displays a hierarchical tree structure:

- Natürliche Umwelt = natural environment
- └─ Pflanzen = plants
  - └─ Spermatophyta >>> taxonomical classification >>>
    - └─ Magnoliopsida
      - └─ Fabales
        - └─ Fabaceae
          - └─ Laburnum
            - Laburnum anagyroides**
            - Laburnum alpinum
            - Laburnum watereri

Below the tree, there are sections for 'Erzeugnisse' and 'Abfall- und Nebenprodukte'. At the bottom right, a 'Code' field contains 'N.P.B.E.17.B.BB.03', with arrows pointing from the tree levels to the code segments. A 'Bemerkung:' field is at the bottom left.

# STRUCTURE OF CSS

- CONTENT/SOURCES
- CURRENT USE
- **BASIC STRUCTURE**
- INTERFACES
- REALIZATION
- MULTI-CENTRE
- CONCLUSION



# STRUCTURE OF CSS (TDI)

1 2 3			A	B									C	D	E	F	G	H	I	J	K	L	M	N
1			ID	NAME	L1	L2	L3	L4	L5	L6	L7	L8	L9	CODE	COMMENT	DECISION								
			900	4901020204	Drogen	E	D							ED		16.11.2005								
			901	4901020984	Aphrodisiaka	E	D	A						EDA		16.11.2005								
			905	4901020995	Zentral dämpfende Stoffe	E	D	D						EDD		16.11.2005								
			915	4901020985	Halluzinogene	E	D	H						EDH		16.11.2005								
			921	4901021013	Psychotimulantien	E	D	P						EDP		16.11.2005								
			934	4901021009	Drogen - nicht klassifiziert	E	D	Z						EDZ		16.11.2005								
			935	4901020737	Heilmittel	E	H							EH		16.11.2005								
			936	4901000003	Arzneimittel (human)	E	H	A						EHA	ATC-Code nach 2005 WHO	16.11.2005								
			937	4910001306	Alimentäres System und Stoffwechsel	E	H	A	A					EHAA		16.11.2005								
			938	4910001307	Stomatologika	E	H	A	A	01				EHAA01		16.11.2005								
			939	4910001308	Stomatologika	E	H	A	A	A	01			EHAA01A		16.11.2005								
			940	4910001309	Mittel zur Kariesprophylaxe	E	H	A	A	A	A			EHAA01AA		16.11.2005								
			941	4910001310	Natriumfluorid	E	H	A	A	A	A	01		EHAA01AA01		16.11.2005								
			942	4910001311	Natriummonofluorphosphat	E	H	A	A	A	A	02		EHAA01AA02		16.11.2005								
			943	4910001312	Olaflur	E	H	A	A	A	A	03		EHAA01AA03		16.11.2005								
			944	4910001313	Zinn(II)-fluorid	E	H	A	A	A	A	04		EHAA01AA04		16.11.2005								
			945	4910001314	Kombinationen	E	H	A	A	A	A	30		EHAA01AA30		16.11.2005								
			946	4910001315	Natriumfluorid, Kombinationen	E	H	A	A	A	A	51		EHAA01AA51		16.11.2005								
			947	4910001316	Antinfektiva und Antiseptika zur oralen Lokalbehandlung	E	H	A	A	A	A	B		EHAA01AB		16.11.2005								
			948	4910001317	Wasserstoffperoxid	E	H	A	A	A	A	B	02	EHAA01AB02		16.11.2005								
			949	4910001318	Chlorhexidin	E	H	A	A	A	A	B	03	EHAA01AB03		16.11.2005								
			950	4910001319	Amphotericin B	E	H	A	A	A	A	B	04	EHAA01AB04		16.11.2005								
			951	4910001320	Polynoxylin	E	H	A	A	A	A	B	05	EHAA01AB05		16.11.2005								
			952	4910001321	Domiphen	E	H	A	A	A	A	B	06	EHAA01AB06		16.11.2005								
			953	4910001322	Oxychinolin	E	H	A	A	A	A	B	07	EHAA01AB07		16.11.2005								
			954	4910001323	Neomycin	E	H	A	A	A	A	B	08	EHAA01AB08		16.11.2005								
			955	4910001324	Miconazol	E	H	A	A	A	A	B	09	EHAA01AB09		16.11.2005								
			956	4910001325	Natamycin	E	H	A	A	A	A	B	10	EHAA01AB10		16.11.2005								
			957	4910001326	Verschiedene	E	H	A	A	A	A	B	11	EHAA01AB11		16.11.2005								
			958	4910001327	Hexetidin	E	H	A	A	A	A	B	12	EHAA01AB12		16.11.2005								
			959	4910001328	Tetracyclin	E	H	A	A	A	A	B	13	EHAA01AB13		16.11.2005								
			960	4910001329	Benzoxoniumchlorid	E	H	A	A	A	A	B	14	EHAA01AB14		16.11.2005								
			961	4910001330	Tibezoniumiodid	E	H	A	A	A	A	B	15	EHAA01AB15		16.11.2005								
			962	4910001331	Mepartricin	E	H	A	A	A	A	B	16	EHAA01AB16		16.11.2005								
			963	4910001332	Metronidazol	E	H	A	A	A	A	B	17	EHAA01AB17		16.11.2005								
			964	4910001333	Clotrimazol	E	H	A	A	A	A	B	18	EHAA01AB18		16.11.2005								
			965	4910001334	Natriumperborat	E	H	A	A	A	A	B	19	EHAA01AB19		16.11.2005								
			966	4910001335	Chlortetracyclin	E	H	A	A	A	A	B	21	EHAA01AB21		16.11.2005								
			967	4910020433	Doxycyclin	E	H	A	A	A	A	B	22	EHAA01AB22		16.11.2005								
			968	4910020434	Minocyclin	E	H	A	A	A	A	B	23	EHAA01AB23		16.11.2005								
			969	4910001336	Corticosteroide zur oralen Lokalbehandlung	E	H	A	A	A	A	C		EHAA01AC		16.11.2005								
			970	4910001337	Triamcinolon	E	H	A	A	A	A	C	01	EHAA01AC01		16.11.2005								
			971	4910001338	Dexamethason	E	H	A	A	A	A	C	02	EHAA01AC02		16.11.2005								
			972	4910001339	Hydrocortison	E	H	A	A	A	A	C	03	EHAA01AC03		16.11.2005								
			973	4910001340	Prednisolon, Kombinationen	E	H	A	A	A	A	C	54	EHAA01AC54		16.11.2005								
			974	4910001341	Andere Mittel zur oralen Lokalbehandlung	E	H	A	A	A	A	D		EHAA01AD		16.11.2005								

technical non-ambiguous

retrieval (daily work)

hierarchical structure (tree)

- CONTENT/SOURCES
- CURRENT USE
- BASIC STRUCTURE
- INTERFACES
- REALIZATION
- MULTI-CENTRE
- CONCLUSION

# INTERFACES

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- CONTENT/SOURCES
  - CURRENT USE
  - BASIC STRUCTURE
  - INTERFACES
  - REALIZATION
  - MULTI-CENTRE
  - CONCLUSION
- Management
    - workflow between advisors and experts in the team of a PC
    - cooperation with external partners
  - External Partners
    - other PCs (multi-centre)
    - EAPCCT / COLIPA
    - WHO (ATC-/Vet-ATC-Code)
    - industries
  - Procedures of a PC
    - establish – maintain – update
    - train the team
  - Technique
    - structurally fitting, user-friendly tools
    - integration into the complete system of a PC
    - necessity for daily use

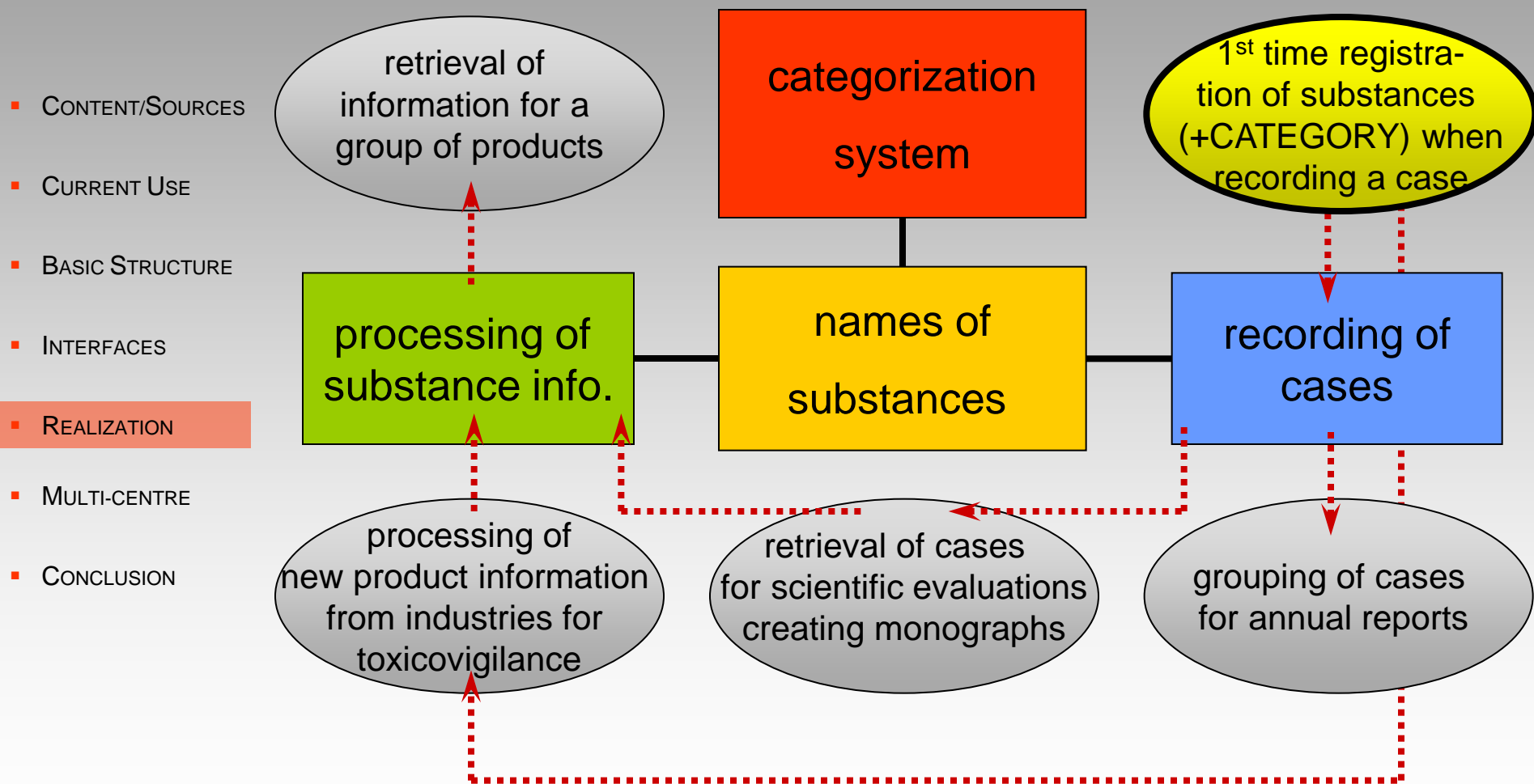
# CASE RECORDING SYSTEM ADAM<sup>©</sup>

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- CONTENT/SOURCES
  - CURRENT USE
  - BASIC STRUCTURE
  - INTERFACES
  - REALIZATION
  - MULTI-CENTRE
  - CONCLUSION
- Developed in Mainz PC 1993-1994
  - Daily running since
    - 1995 in Mainz PC
    - 1998 in Bonn PC
    - 2000 in Homburg PC( $\Sigma$  9100 PC-days without any break)
  - MS Access Frontend – ORACLE-Backend
  - Comprehensive integration of the CSS
  - Parallel use: local + harmonized CSS
  - 3 Modules:
    - ADM – administration of users, processing of selection lists
    - DOC – recording consultation + follow-up of cases
    - AUS – analysing / exporting of cases

# CASE RECORDING SYSTEM ADAM<sup>©</sup>

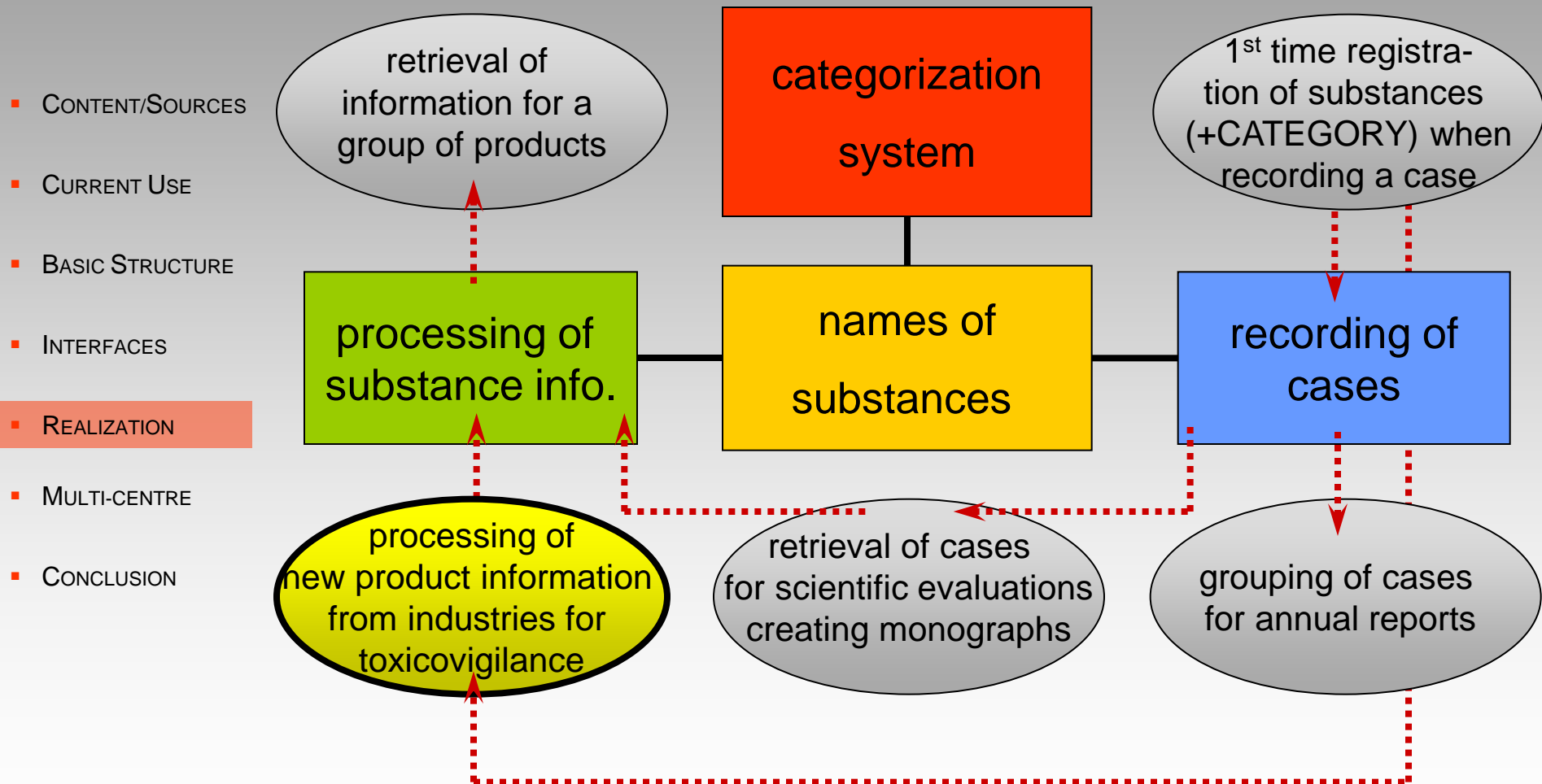
Examples of the system ADAM<sup>©</sup> are not linked in this presentation !





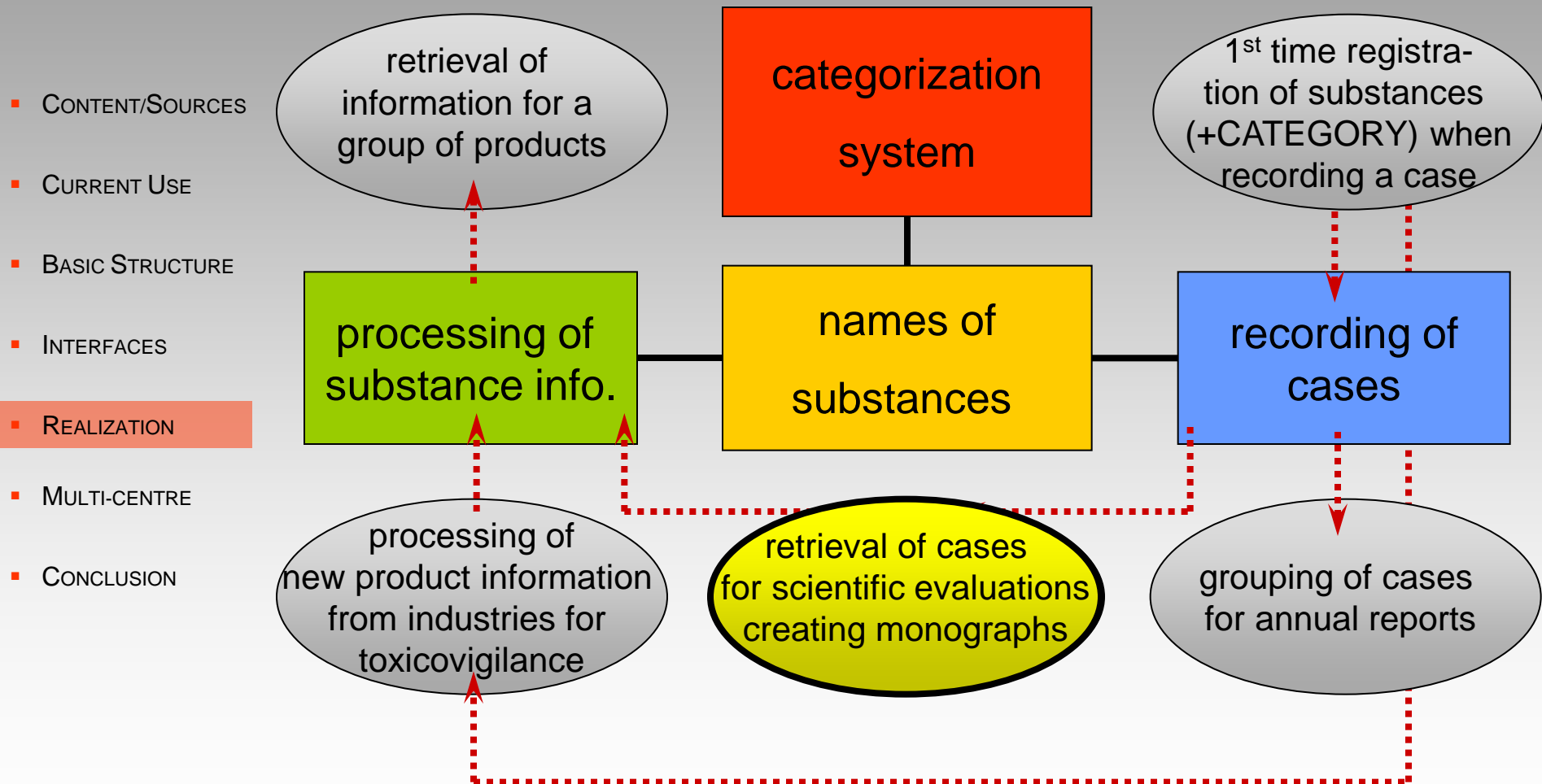
# CASE RECORDING SYSTEM ADAM<sup>©</sup>

Examples of the system ADAM<sup>©</sup> are not linked in this presentation !



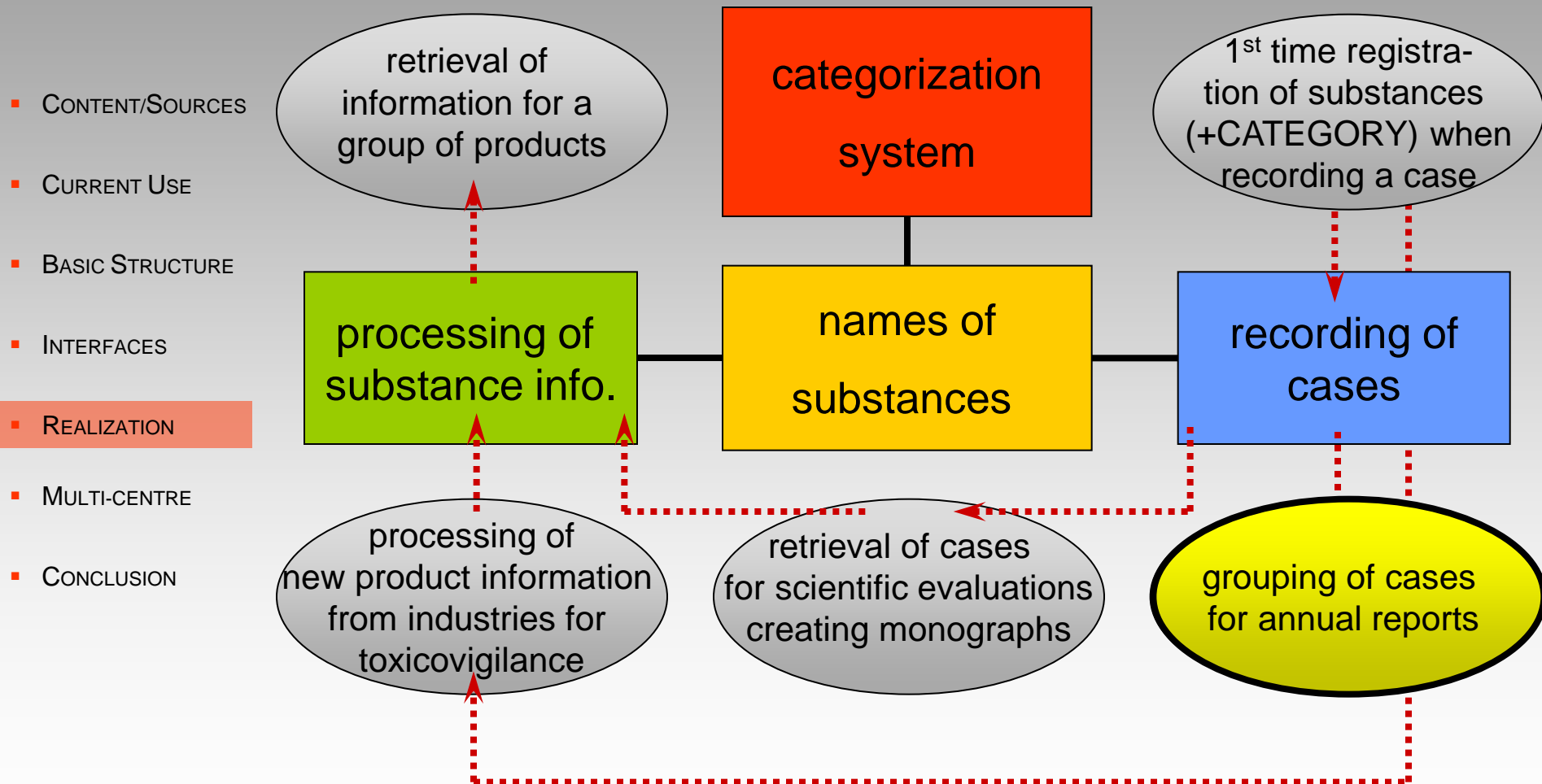
# CASE RECORDING SYSTEM ADAM<sup>©</sup>

Examples of the system ADAM<sup>©</sup> are not linked in this presentation !



# CASE RECORDING SYSTEM ADAM<sup>©</sup>

Examples of the system ADAM<sup>©</sup> are not linked in this presentation !



# MULTI CENTRE CSS - TDI-NETWORK

## Electronic Product Data Exchange in Europe – Start of An International Workgroup

### “Vision of a Borderless Rapid Information Network”

*H. Desel<sup>1)</sup>, G. Heinemeyer<sup>2)</sup>, M. Ganzert<sup>3)</sup>, A. Hahn<sup>2)</sup>, G. Hüller<sup>4)</sup>, A. Stürer<sup>5)</sup>, C. Schneider<sup>1)</sup>  
GIZ Göttingen<sup>1)</sup>, BfR Berlin<sup>2)</sup>, GIZ Munich<sup>3)</sup>, GIZ Erfurt<sup>4)</sup>, GIZ Mainz<sup>5)</sup>, Germany*

#### History and Objective:

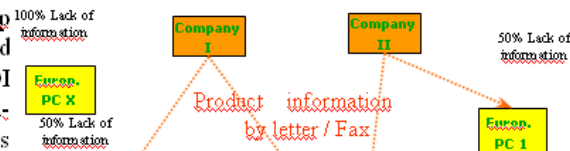
Access to information on industrial products quantitatively describing their ingredients and physico-chemical properties is an important requirement for high quality work in poison centres (PCs). Starting in the late 1980s, EAPCCT and several European industry organisations (AIS[E]:FIFE:FEA) agreed on a European exchange format for consumer product data on paper. It is used frequently. Today, European poison centres have to handle an increasing number of foreign products due to rising European markets. To handle calls concerning much more products than in the years before a rapid borderless information system would be very helpful.

#### Experiences within TDI research project

In 2002, an electronic version of the EAPCCT product information format was developed using Extended Markup Language (XML) syntax rules and named XML-ROSETTA (RML) within the TDI research project in Germany ([www.tdi-network.org](http://www.tdi-network.org)). The ROSETTA format is

#### Product data exchange in Europe today

Product information is sent by company to local PC's in the distributed area. Outside distributed areas PC's are not informed.



#### Recent progress

All presentations of the Rome symposium, a description of the XML-ROSETTA format, and a list of workgroup members are published on the TDI-Website. A XML-ROSETTA data package containing data on virtual products has been distributed to all

# SECTORS - RESPONSIBLE PCs

- CONTENT/SOURCES

- CURRENT USE

- BASIC STRUCTURE

- INTERFACES

- REALIZATION

- MULTI-CENTRE

- CONCLUSION

L1	L2	L3	CATEGORY	%_L1	%_L2	%_L3	STATE	RESPONSIBLE_PC
E			<b>Products</b>	<b>83,4</b>			ready	TDI-WG-III
E	B		<b>Products of daily Demand</b>		<b>8,6</b>		ready	TDI-WG-III
E	B	B	Objects of daily Demand (except Cleaning and Room Air Conditioning Agents)			0,8	ready	Erfurt (Hüller)
E	B	K	Cosmetics			4,0	ready	Mainz (Zeimentz)
E	B	L	Foods and Food-Additives			2,2	ready	Erfurt (Hüller)
E	B	T	Tobacco Products			1,6	ready	Erfurt (Hüller)
E	B	Z	Products of daily Demand – unclassified			0,0	ready	Erfurt (Hüller)
E	C		<b>Chemical / Physicochemical Products</b>		<b>18,3</b>		ready	TDI-WG-III
E	C	B	Construction Materials, Sealants and Adhesives			0,6	ready	Erfurt (Hüller)
E	C	F	Paints, Varnish and Dyers			1,9	ready	Erfurt (Hüller)
E	C	H	Illuminant Fuels, Inflammable Matters, Scents, Decorations and similar Agents			0,9	ready	Erfurt (Hüller)
E	C	R	Cleaning Agents, Detergents and Care Products			9,9	ready	Erfurt (Hüller)
E	C	T	Chemicals for Technical Tools, Processes and Products			0,9	ready	Erfurt (Hüller)
E	C	V	Products for Plants and Animals			1,0	ready	Erfurt (Hüller)
E	C	Z	Chemical / Physicochemical Articles - unclassified			3,1	ready	Erfurt (Hüller)
E	D		<b>Drugs of Abuse</b>		<b>1,1</b>		ready	Bonn (Seidel)
E	H		<b>Remedies</b>		<b>50,2</b>		ready	TDI-WG-III
E	H	A	Human Drugs			49,4	ready	Göttingen (Wagner)
E	H	M	Medical Products			0,5	ready	Göttingen (Wagner)
E	H	T	Veterinary Drugs			0,2	ready	Göttingen (Wagner)
E	H	Z	Remedies - unclassified			0,0	ready	Göttingen (Wagner)
E	S		<b>Preservatives and Pesticides against Microbes and Parasites</b>		<b>2,5</b>		ready	Erfurt (Hüller)
E	S	B	Biocide Material Protection, Hygiene Agents and Desinfectants				ready	Erfurt (Hüller)
E	S	P	Pesticides and Exterminator				ready	Erfurt (Hüller)
E	S	Z	Preservatives and Pesticides against Microbes and Parasites - unclassified				ready	Erfurt (Hüller)
E	W		<b>Weapons and pyrotechnic Products</b>		<b>0,1</b>		ready	Erfurt (Hüller)
E	Z		<b>Products - unclassified</b>		<b>1,9</b>		ready	TDI-WG-III
E	Z	G	Basic Materials			1,6	later	???
N			<b>Natural Environment</b>	<b>16,2</b>			partly ready	TDI-WG-III
N	F		<b>Fungi</b>		<b>1,9</b>		in progress	Mainz (Eckart)
N	M		<b>Microbes</b>		<b>0,1</b>		later	???
N	P		<b>Plants</b>		<b>13,0</b>		ready	Mainz (Weilemann)
N	T		<b>Animals</b>		<b>1,2</b>		in progress	Erfurt (Hüller) Göttingen (Desel)
N	Z		<b>Natural Environment - miscellaneous / unclassified</b>		<b>0,0</b>		ready	???
Z			<b>Civilisation Remnants, Inherited Waste</b>	<b>0,4</b>			ready	Erfurt (Hüller)

# MULTI CENTRE CSS

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- CONTENT/SOURCES
  - CURRENT USE
  - BASIC STRUCTURE
  - INTERFACES
  - REALIZATION
  - MULTI-CENTRE
  - CONCLUSION
- Responsible PCs develop and maintain sectors (collect problems and suggestions, prepare updates)
  - Annually meeting of the working group (discuss controversials, confirm a new version, identify internationally standardized sectors)
  - Complete CSS is shared with all participating PCs
  - TDI CSS version 1.0 contains 15'000 categories and covers more then 95% of the substances related to cases
  - In 2006 first annual reports with harmonized classification of cases from 2005 will be expected

# CONCLUSION

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- CONTENT/SOURCES
  - CURRENT USE
  - BASIC STRUCTURE
  - INTERFACES
  - REALIZATION
  - MULTI-CENTRE
  - CONCLUSION
- CSS plays a crucial role for the daily retrieval and data processing in PCs
  - CSS is linked to the management, several procedures and the databases of a PC at a central position
  - It is possible to integrate the complex hierarchical system in a user-friendly way in the daily routine of a PC (ADAM<sup>©</sup>)
  - Within the TDI-network a first step to a multi-centre CSS was achieved. SOP defines the common work. The first version is in use.
  - A parallel use of a local and the harmonized CSS is possible.
  - At present: no harmonization of the CSS in the EU PCs

# CONCLUSION

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## QUESTIONS

## ANSWERS

- CONTENT/SOURCES
- CURRENT USE
- BASIC STRUCTURE
- INTERFACES
- REALIZATION
- MULTI-CENTRE

- Shall we harmonize?
- Do we want to harmonize?
- Can we harmonize?

- yes
- ? => EAPCCT members
- => resources?

## FUTURE

- If the answer of question N°2 = yes
- We should start a working group in the EAPCCT
- Questionnaire to EAPCCT members (concerning existing systems and wishes)
- Provide funding for adequate resources

- CONCLUSION



# THANKS

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- PC Mainz Team
  - LS. Weilemann, HJ. Reinecke, G. Clesius
- TDI-Team
  - PC's
    - Bonn: C. Seidel
    - Erfurt: G. Hüller
    - Freiburg: U. Stedtler
    - Göttingen: H. Desel, R. Wagner
    - Mainz: I. Weilemann, H. Zeimentz
  - BfR
    - K. Begemann, A. Hahn, G. Heinemeyer
- PC Zurich Team
  - H. Kupferschmidt, C. Rauber-Lüthy, H. Reust