



Case Studies in practical terminology management

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TermTrain

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Overview

- Case Studies in practical terminology activities
 - eGovernment – Administrative Nomenclatures for improving government services
 - Environment, Risk Management - Federated terminologies, dictionaries, thesauri

CEN/ISSS WS-ADNOM

Towards a European Network for
Administrative Nomenclature

CEN Workshop Agreement (CWA)

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Goal: Implementing a framework for **Semantic Interoperability** across domains and languages in Europe

- Without high quality and standards-based **terminologies** it is impossible to reach **precision, efficiency, and transparency** within and across eBusiness, eGovernment, eHealth, eLearning, eCulture, eScience, etc. processes and systems
- **Problem situation:** lack of accessibility to high quality resources in many domains and languages, diversity of coding schemes and data organization -> **lack of interoperability** (syntactic, semantic, pragmatic) across existing data bases
- **Cultural differences** across language communities and domain cultures are sometimes so strong that citizens as well as experts are lost in dynamic communication situations → administrative and legal language is the best example

Goal: Implementing a framework for **Semantic Interoperability** across domains and languages in Europe

- Such terminologies are organized and used for multiple purposes in the form of **dictionaries, data bases, thesauri, classification systems, nomenclatures, taxonomies, ontologies, indexes, term lists**, etc.
- ADNOM provides a coherent methodology for modeling, mapping, presenting, and accessing such resources in the context of the emerging **European Interoperability Framework** and in line with – and contributing to new – European and international **standards** (ISO/TC 37, JTC 1/SC 32, etc.).
- Approach: **federated registries** based on **ebXML** and **Topic Maps** implementations, **meta-data standards, terminology mark-up framework** -> **Semantic richness/complexity is managed and visualized** and not eliminated.

Achievements – Results - Deliverables

- **Survey** on existing administrative nomenclatures and similar terminological resources in Europe as well as on the organizations managing these resources
- Procedural **methodology** described in the CWA (with principles and recommendations)
- **Demonstrator** showing the implementation of the ADNOM approach (ebXML + Topic Maps (XTM) + ISO 16642 + ISO 11179 + other standards) (will be operational online in April), showing the “ADNOM Seamless Knowledge Core model” with federated registries, navigation services, etc.
- Emerging **organizational network** of relevant institutions (stake holders), integrating existing networks; dissemination efforts (conference on 1st of December 2005 in Brussels on the Communicative Government organized by NL-Term together with CEN/ISSS WS-ADNOM)

A concrete example of mapping multilingual administrative nomenclatures

- Simplified example on names of government ministries and agencies in Austria, France, and Germany linked to the different scopes and responsibilities of these administrative units as far as *pension schemes* are concerned
- The asymmetries are presented by a visualization of the conceptual map as implemented in a Topic Map linking the data described above
- It includes the meta-data level using the COFOG classification (incl. the terms in 16 languages for “economic affairs”)
- In the framework of the “ADNOM Seamless Knowledge Core model” for organizing conceptual hierarchies

ADNOM

SKC-Model

Languages

4000 Economic affairs

41FA Economics

- 41FB economic policy
- 41FC economic growth
- 41FD regions and regional policy
- 41FE economic structure
- 41FF national accounts
- 41FG economic analysis

Trade

- 41GB trade policy
- 41GC tariff policy
- 41GD trade
- 41GE international trade
- 41GF consumption
- 41GG marketing
- 41GH distributive trades

Business And Competition

- 41MB business organization
- 41MC business classification
- 41MD legal form of organizations
- 41ME management
- 41MF accounting
- 41MG competition

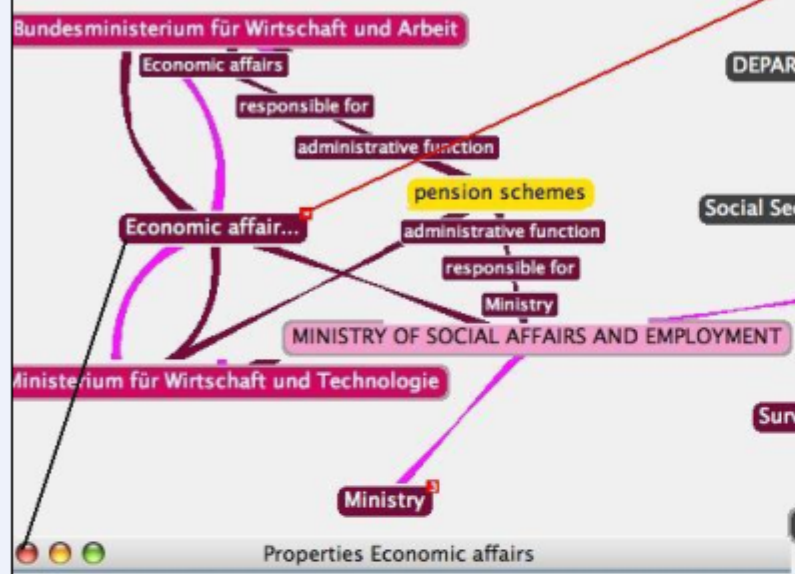
Employment And Working Conditions

- 41NB employment
- 41NC labour market
- 41ND organization of work and working conditions
- 41NE personnel management and staff remuneration
- 41NF labour law and labour relations

4200 Agriculture, forestry, fishing and hunting [Land Industries]

42RA Agriculture, Forestry And Fisheries

- 42RB agricultural policy
- 42RC agricultural structures and production



Properties Economic affairs

Base Names

- Οικονομικές υποθέσεις - Greek
- Næringsøkonomiske formål - Norwegian (Bokmål)
- Ýmsar opinberar þjónustustofnanir - Icelandic
- Ekonomická oblasť - Slovak
- Economische zaken - Dutch
- Wirtschaftliche Angelegenheiten - German
- Næringsøkonomiske føremål - Norwegian (Nynorsk)
- Asuntos económicos - Spanish
- Assumptes econòmics - Catalan
- Näringslivsfrågor - Swedish
- Økonomiske anliggender - Danish
- Affaires économiques - French
- Ekonomski poslovi - Croatian
- Economic affairs - English
- Ekonomске dejavnosti - Slovene
- Elinkeinoelämään liittyvät asiat - Finland

Subject Indicators:

<http://psi.adnom.org/code/a4000>

**Concepts of Risk –
A Cross-disciplinary and
Cross-lingual Analysis of
Risk Concepts and their
Terminological Documentation**

Gerhard Budin

Toward understanding multiple dimensions of “risk“

- “risk“ as a “phenomenon”
- people increasingly conceptualizing it from different perspectives, with different interests, for different purposes, in different ways, in different socio-cultural situations
- -> we are perceiving different “phenomena” that we happen to call “risk”
- -> the social foundation interacting with the cognitive dimension of the language of risk
- Scientific research is investigating such phenomena from their disciplinary perspectives -> developing theories of risk, methods of assessing risk, building databases, writing books, discussing political measures to reduce risk in daily life, etc.

Analyzing the diversity of risk terminologies

- Adopting a comparative approach toward different conceptualizations of “risk” in different disciplines and different languages / cultures
- Conceptual analysis, explicitating the semantic dimension, i.e. the meaning of terms
- -> documenting terminological usage in domain discourse (within and across disciplines, within and across languages)
- -> fulfilling the function of terminology work: disambiguate polysemous terms, clarifying the meanings of terms by making them explicit
- Descriptive terminography as a pre-requisite for prescriptive terminology standardization and harmonization
- Corpus analysis as a basis for term identification and extraction

Deliverables of WIN WP 2200 “Human Language Interoperability”

- Multilingual corpus collection (glossaries, texts) and analysis, terminology identification and extraction
- Conceptual and combinatorial architecture: definitional harmonization in cooperation with terminologists and specialists of different domains
- Hypertext design for web-based teaching, training and professional use of specified terms
- Positioning the terminology in text-production and text-translation: to aid comprehension and efficiency
- Verifying the adequacy of terms in different discourse situations, in cooperation with the users
- Database for didactical applications

Functions and Benefits of Terminology Management for Risk Communication

- Increasing the transparency of terms
- Help negotiate a common understanding of terms in transdisciplinary and transcultural discourse
- Help increase the consistency of risk discourse (written and spoken) and increase understanding in target audiences
- Reduce unnecessary synonyms, disambiguate polysems, help separate homonyms
- Help create risk terminologies in many languages
- Support knowledge sharing and knowledge transfer in cooperative work environments
- Support cross-cultural discourse (e.g. translation and parallel texts)

Terminology Standardization in ISO for Risk Management

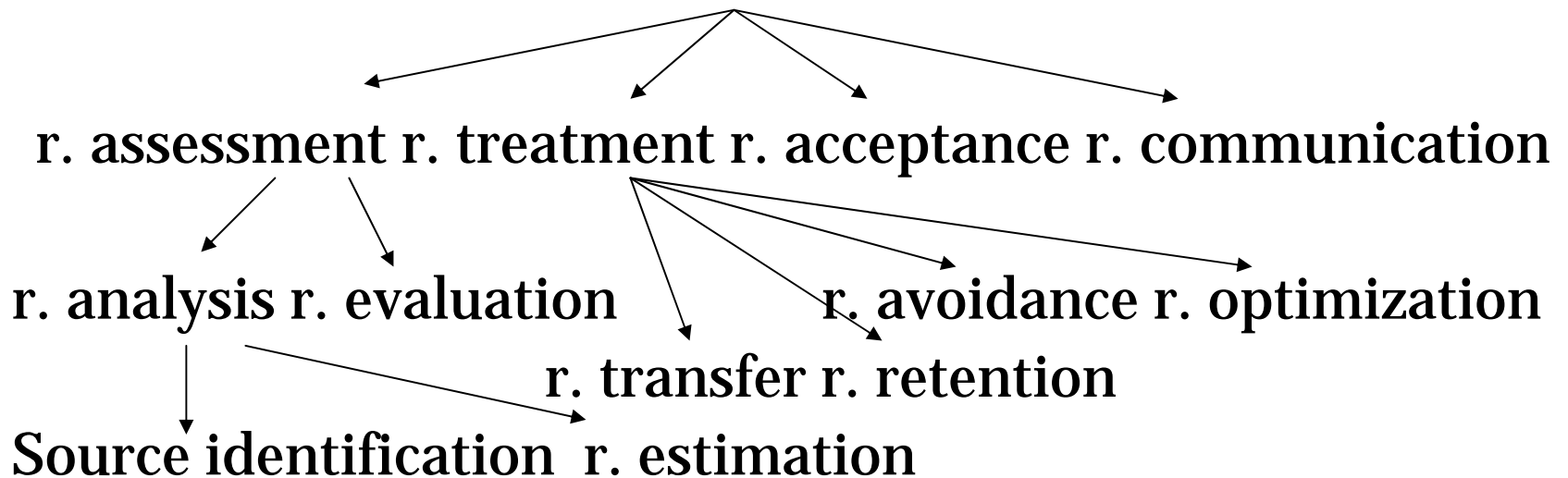
- ISO/IEC Guide 51:1999 Safety Aspects – Guidelines for their inclusion in standards
- Draft ISO Guide 73 – Risk Management – Vocabulary (both in English and French)
- Generic, definitions of risk, risk analysis, etc. differ:
Guide 73: risk = combination of the *probability* of an *event* and its *consequences*;;
Guide 51: combination of the probability of occurrence of *harm* and the severity of that *harm* + safety = freedom from unacceptable *risk* + harm = physical injury or damage to the health of people, or damage to property or the environment

Comparative Analysis of risk terminologies

+ hazard = potential source of *harm*

ISO Guide 73: knowledge organization:

Risk management



The WHO initiative

- Consensus building project across organizations, domains and approaches
- 50 key terms – survey on conceptual characteristics and definition components
- Documenting expert opinion diversity
- Basis for harmonization effort
- Establishing best practice in quality terminology work

Types of concepts/terms

- Data-oriented terms
 - Hazard vs. risk
 - Dose vs. concentration
 - Effect vs. response
 - Safety and uncertainty
- Action-oriented terms
 - Risk assessment, hazard assessment
 - Risk management, risk analysis

Methods of terminological analysis

- Focusing on collocations (collocates representing conceptual relations such as *analyze, assess, characterize, communicate, estimate, evaluate, identify, manage, monitor, etc.*)
- Focusing on conceptual and term relations
- Organized in dynamic conceptual fields
- Extended comments on each term, with indications on the acceptability of definitions among the expert group involved in the survey
- Applying semantic componential analysis

Examples

- Hazard = inherent property of an agent or situation capable of having adverse effects on something. Hence the substance, agent, source of energy or situation having that property
- Risk = the probability of adverse effects caused under specified circumstances by an agent in an organism, a population or an ecological system
- Both very productive nodes in the terminology
- Result of componential analysis for 'hazard' in the acceptability survey: *{inherent property} of {entity to be specified} with {potential} of {adverse effects}*

Examples

- Risk assessment = a process intended to calculate or estimate the risk for a given target system following exposure to a particular substance, taking into account the inherent characteristics of a substance of concern as well as the characteristics of the specific target system. The process includes four steps: hazard identification, dose-response assessment, exposure assessment, risk characterization. It is also the first step in risk analysis

Corpus identification and analysis

- The following slides show examples from various initiatives:
 - Screenshot from an entry in a termbase, built in the Multiterm software by Trados, screenshot from a risk dictionary
 - extract from a glossary on management of natural hazards
 - Extracts from a trilingual information sheet on the problems encountered with the fundamental concepts and terms of risk management as defined in EN 292 and ISO Guide 51 on a multilingual level
 - Extracts from a glossary by the German Bundesinstitut für gesundheitlichen Verbraucherschutz und Veterinärmedizin, 2001, an example of a terminological analysis based on different source documents, comparing the different definitions of the same terms in different contexts
 - Extract from a publication by Pierre Lewalle, 1999, on the WHO initiative on risk terminology harmonization

Source Target

restoration

risk

risk acceptance

Entry Number **41**
 Management Cycle 1.1 risk assessment
 main Risk governance

English
 k

Definition probability and extent of damage due to a particular [hazard](#) (Loat/Meier 2003)

Phrases to improve risk management applications

CrossRef see also [risk assessment](#), [risk analysis](#) *Grammar* *noun*

Source ISDR 2004

Definition the estimated probability that damage will occur to life, property, or the environment if a specified dangerous event occurs ([TESEC-EUR-OPA 2001](#))

Note the two definitions from [ISDR 2004](#) and [TESEC-EUR-OPA 2001](#) differ to a limited extent

Comment the two definitions from [ISDR 2004](#) and [TESEC-EUR-OPA 2001](#) differ to a limited extent

conventionally risk is expressed by the notation

Risk = Hazards x Vulnerability

some disciplines also include the concept of exposure to refer particularly to the physical aspects of [vulnerability](#)

Beyond expressing a possibility of physical harm, it is crucial to recognize that risks are inherent or can be created or exist within social systems. It is important to consider the social contexts in which risks occur and that people therefore do not necessarily share the same perceptions or risk and their underlying causes

Definition the probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human-induced [hazards](#) and vulnerable conditions

French
 que

Phrases améliorer les applications de la gestion du risque *Grammar* *noun*

German

Risiko

Phrases die Risikomanagementanwendungen verbessern

otation

1.1

Italian

rischio

From the risk termbase towards a risk dictionary

MULTH-WIN-UMB Risk Assessment and Technology Term Glossary conceptually ordered

1. PRE-EVENT

A. RISK ASSESSMENT and TECHNOLOGY

Entry Number	A1
Management Cycle	A. risk assessment and technology, B. public awareness and planning, C. forecasting and warning, D1. events and response, E. damage assessment, F. recovery
English	risk
Graminfo	<noun, sg, pl>
French	risque
Graminfo	<nom, m, sg, pl>
German	Risiko
Graminfo	<Nomen, N, Sg, Pl -en>

Definition En

probability and extent of damage due to a particular *cf.* hazard (Loat/Meier 2003)

the estimated probability that damage will occur to life, property, or the environment if a specified dangerous event occurs (TESEC-EUR-OPA 2001)

the probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human-induced *cf.* hazards and vulnerable conditions (ISDR 2004)

Comment

1.the two definitions from ISDR 2004 and TESEC-EUR-OPA 2001 differ to a limited extent

2. conventionally risk is expressed by the notation $\text{Risk} = \text{Hazards} \times \text{Vulnerability}$ of people, property, and the surrounding area ; some disciplines also include the concept of exposure to refer particularly to the physical aspects of *cf.* vulnerability

Beyond expressing a possibility of physical harm, it is crucial to recognize that risks are inherent or can be created or exist within social systems. It is important to consider the social contexts in which risks occur and that people therefore do not necessarily share the same perceptions of risk and their underlying causes

Definition Fr

au sens large: Possibilité de survenance d'un dommage. Au sens restreint: Grandeur et probabilité d'occurrence d'un dommage possible.

EXP : exprimé comme le produit de l'aléa et de la vulnérabilité; prend parfois la signification de "danger" dans certain termes complexes ou dans le langage courant. (Loat/Meier 2003)

Risque = aléa x vulnérabilité des personnes, des biens et de l'environnement

un risque est un péril mesurable dans son occurrence, menaçant des personnes, des biens, des activités ou l'environnement. Il survient généralement de façon inopinée. (PF)

le risque est une mesure de l'occurrence d'un événement indésirable et/ou la mesure associée à ses effets et conséquences. (ASR)

Definition Ge Risiko = Gefahr x Schadensanfälligkeit von Personen, Gütern und der Umgebung.
Im weiteren Sinn: Möglichkeit, dass aus einem Zustand, Umstand oder Vorgang ein Schaden entstehen kann. Im engeren Sinn: Grösse und Wahrscheinlichkeit eines möglichen Schadens. (Loat/Meier2003)

Seminfo risk (R)

BE [DANGER [DAMAGE [SOURCE=], DEGREE=], TARGET=], COSTS=]]]

Related terms and expressions En / Fr / Ge

<nouns, noun phrases>

- Disaster<sg,pl> cf Hazard<sg, pl> / cf catastrophe<f,sg,pl> / cf Katastrophe<F, Sg, Pl-n>
- cf risk awareness<sg> / cf perception<f, sg>, conscience<f, sg>du risque / cf Risikobewusstsein<N, Sg>

<verb phrases>

- to enhance risk awareness / accroître la conscience du risque / Risikobewusstsein schärfen
- to monitor, announce and protect oneself from a risk / surveiller annoncer et se protéger d'un risque / ein Risiko überwachen, ein Risiko voraussagen, sich vor einem Risiko schützen
- to take a risk into consideration / prendre un risque en considération / dem Risiko Rechnung tragen
- to run a risk / encourir un risk / ein Risiko eingehen

Risikoterminologie in der Sicherheitstechnik¹ /

Risk terminology in safety technology¹ /

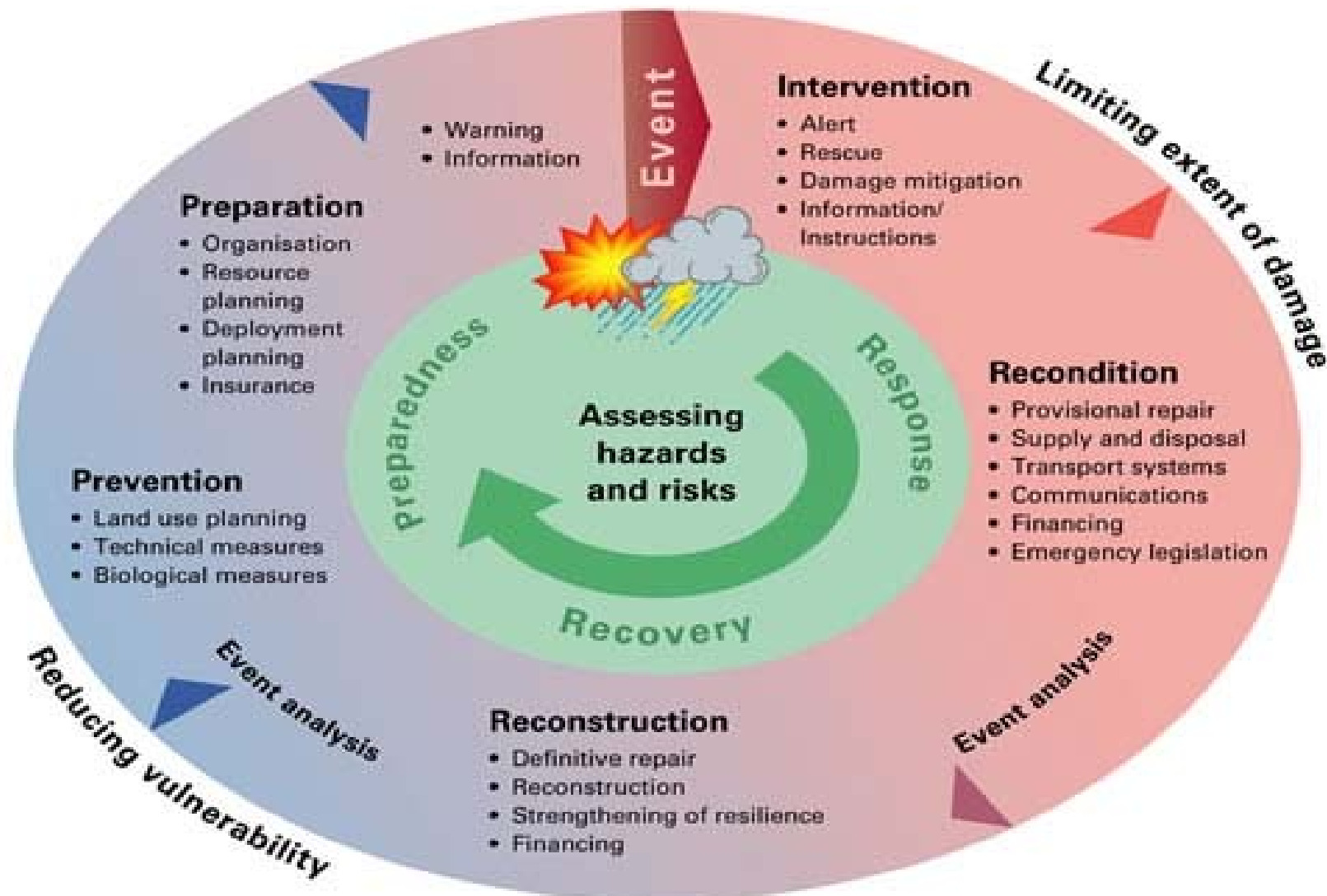
La terminologie du risque dans la technique de la sécurité¹

Deutsch / German / Allemand	Englisch / English / Anglais	Französisch / French / Français
Gefährdung	hazard	phénomène dangereux
<i>Eine potenzielle Quelle eines Schadens</i>	<i>a potential source of harm</i>	<i>source potentielle de dommage</i>
Risiko	risk	risque
<i>Kombination der Wahrscheinlichkeit eines Schadenseintritts und des Schadensausmaßes</i>	<i>combination of the probability of occurrence of harm and the severity of that harm</i>	<i>combinaison de la probabilité de survenue d'un dommage et de la gravité de ce dommage</i>
Gefährdungssituation	hazardous situation	situation dangereuse
Gefährdungsereignis	hazardous event	événement dangereux
Identifizierung der Gefährdungen	hazard identification	identification des phénomènes dangereux
Risikoeinschätzung	risk estimation	estimation du risque
Risikobewertung	risk evaluation	évaluation du risque
<i>Auf einer Risikoanalyse beruhende Beurteilung, ob ein vertretbares Risiko erreicht wurde</i>	<i>judgement, on the basis of risk analysis, of whether tolerable risk has been achieved</i>	<i>jugement porté, à partir de l'analyse du risque sur le caractère tolérable ou non du risque auquel on est parvenu</i>

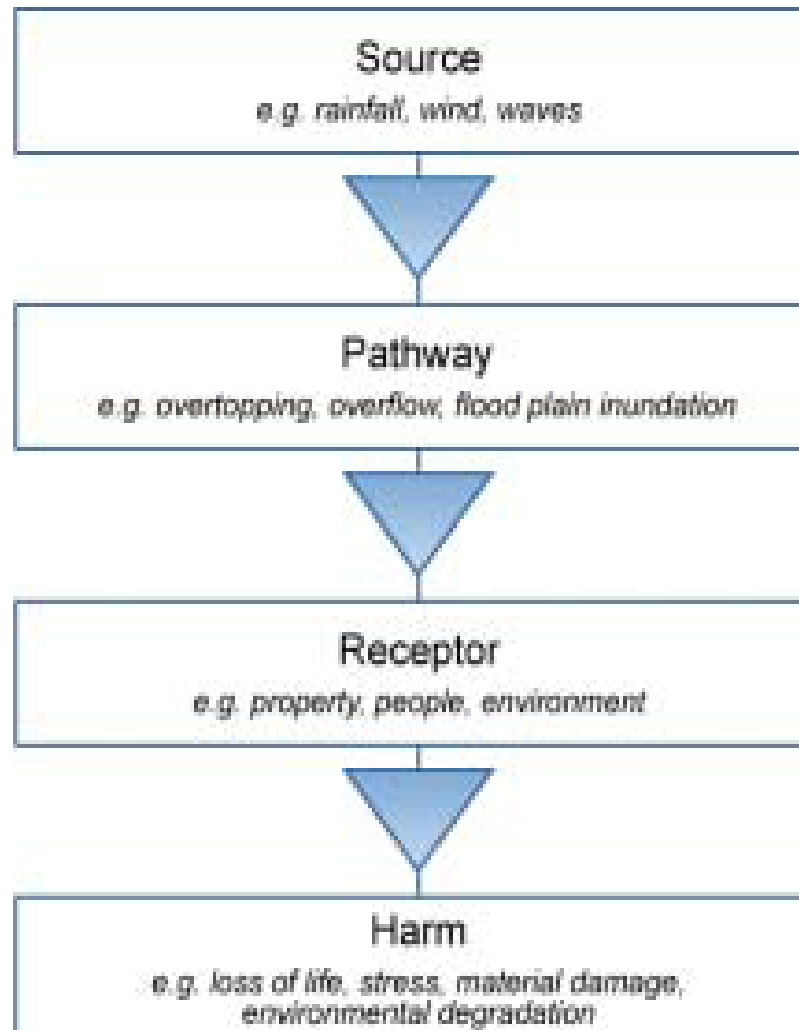
Hazard (Schädigungspotential) (gesundheitsgefährliche Stoff-, Erreger-eigenschaften)	The potential of a risk source to cause an adverse effect(s) / event(s). [Inherent property of an agent or situation capable of having adverse effects on something. Hence, the substance, agent, source of energy or situation having that property]	EU_risk
Gefahr	A biological, chemical, or physical agent in, or condition of, food with the potential to cause an adverse health effect. Ein in einem Lebensmittel vorhandenes biologisches, chemisches oder physikalisches Agens oder ein Zustand dieses Lebensmittels, der sich schädlich auf die Gesundheit auswirken kann. (Anm. "Zustand" bedeutet Fehlen von essentiellen Komponenten, z.B. von Spurenelementen, im Lebensmittel.)	CAC ProcM CCFH 31 HACCP CAC VerfH HACCP_d
Gefahr	Ein Agens oder ein Faktor von biologischer, chemischer oder physikalischer Natur mit der Eigenschaft, eine Gesundheitsschädigung hervorrufen zu können.	BgVV
Gefahrenquelle	Ein biologisches, chemisches oder physikalisches Agens in einem Lebensmittel oder ein Zustand eines Lebensmittels mit einem Potential, gesundheitsschädlich zu wirken.	SCOOP
	Set of inherent properties of a substance, mixture of substances or a process involving substances that, under production, usage or disposal conditions, make it capable of causing adverse effects to organisms or the environment, depending on the degree of exposure; in other words, it is a source of danger.	IUPAC
	Hazard indicates the potential (i.e., the possibility) of inducing adverse health effects under appropriate conditions. It is a qualitative expression. Appropriate conditions could occur during everyday life with one substance, or may be reached only at extreme exposure scenarios with another agent. Hazard gives information neither on the probability of the induction of an effect under defined conditions of exposure nor on the likelihood that it occurs at all in humans.	TOX
Risiko	... analyzing the potential food hazards in a food business operation ...	93/43 EEC
Gefahr	... Analyse der potentiellen Risiken für Lebensmittel in den Prozessen eines Lebensmittelunternehmens ... hier falsche Übersetzung lt. UNTERMANN	93/43 EWG
Gefahr	... Analyse dieser Gefahren in den Produktions- und Arbeitsabläufen beim Herstellen, Behandeln und Inverkehrbringen von Lebensmitteln ... hier korrekte Übersetzung lt. UNTERMANN	LMHVO
Gefährdung	... reviewing the analysis of food hazards, ...	93/43 EEC
Gefahr	... Überprüfung der Gefährdungsanalyse für Lebensmittel, ... hier falsche Übersetzung lt. UNTERMANN	93/43 EWG
Gefahr	... Überprüfung der Gefahrenanalyse ... hier korrekte Übersetzung lt. UNTERMANN	LMHVO

Risk	<p>The probability and severity of an adverse effect / event occurring to man or the environment following exposure, under defined conditions, to a risk source(s).</p> <p>[The probability of adverse effects caused under specified circumstances by an agent in an organism, a population or an ecological system]</p>	EU_risk
Risiko	<p>A function of the probability of an adverse health effect and the severity of that effect, consequential to a hazard(s) in food.</p> <p>Wahrscheinlichkeit des Auftretens einer durch das Vorhandensein einer oder mehrerer Gefahren in einem Lebensmittel bedingten gesundheitsschädlichen Wirkung und ihr Ausmaß.</p>	CAC ProcM CCFH 31 CAC VerfH
Risiko	<p>Eine Funktion der Wahrscheinlichkeit einer gesundheitsschädlichen Wirkung sowie des Schweregrads dieser Wirkung als Folge einer oder mehrerer Gefahrenquellen in Lebensmitteln.</p>	SCOOP
Risiko	<p>Risk means a function of the probability of an adverse health effect and the severity of that effect, consequential to a hazard.</p> <p>Risiko bedeutet eine Funktion der Wahrscheinlichkeit einer schädlichen Gesundheitswirkung und der Schwere dieser Wirkung als Folge eines Gefahrstoffs im Lebensmittel.</p>	EFA EFA_d

Modeling risk assessment cycles



Floodsite: Language of risk – a conceptual risk model



Environmental Thesauri

- Thesaurus in the sense of documentation thesaurus
- Purpose: providing an indexing and retrieval “language” -
> for environmental information systems -> mono- and multilingual thesauri, federation of thesauri due to federation of the information systems they belong to
- International/inter-regional co-operation – GEMET
General European Multilingual Environmental Thesaurus, EPA Thesaurus, etc.
- Terminology control -> normative approach -> input of standardized terminology
- Standard data model -> thesaurus structure

ematic | Alphabetic |

- Atmosphere
 - [-] Air pollution
 - [-] Atmospheric composition
 - [-] Atmospheric processes
 - [-] Climatic issues**
- Lithosphere
- Terrestrial ecosystems
- Freshwater
- Marine environments
- Human settlements
- Agriculture
 - [-] Agricultural practices
 - Afforestation
 - Agricultural equipment
 - Agricultural legislation
 - Agricultural management
 - Agricultural methods
 - Agricultural pests
 - Agricultural production
 - Agricultural storage
 - Agroforestry
 - Animal diseases
 - Animal nutrition
 - Animal products
 - Animal resources
 - Apiculture
 - [-] Aquaculture
 - Fish culture
 - Biological control of pests
 - Biological nitrogen fixation
 - Composts
 - Contour farming
 - Controlled burning
 - Crop protection
 - Crop waste
 - Deforestation
 - Desert locusts
 - Draught animals

- Top Term**
- [-] Atmosphere
- Broader Term**
- [-] Atmosphere
- Narrower Terms**
- [-] Aerosols
- [-] Agrometeorology
- [-] Climate
- [-] Climatic change
- [-] Climatic zones
- [-] Climatology
- [-] Cyclones
- [-] Drought
- [-] Evaporation
- [-] Floods
- [-] Fog
- [-] Global warming
- [-] Greenhouse effect
- [-] Greenhouse gases
- [-] Haze
- [-] Humidity
- [-] Hurricanes
- [-] Ice
- [-] Microclimate effects
- [-] Ocean temperature
- [-] Organohalogen compounds
- [-] Precipitation enhancement
- [-] Rainfall
- [-] Sea level
- [-] Sea level rise
- [-] Smog
- [-] Snow
- [-] Solar radiation
- [-] Storms

ematic | Alphabetic

- Non-ionizing radiation
- Persistence of pesticides
- Photochemical agents
- Photochemical effects
- Photosynthesis
- Physico-chemical processes
- Radioactivity
- Teratogens
- Toxicity
- Waste assimilation capacities

Inorganic substances

Organic substances

Pollution

Human health

Disasters

Monitoring

Environmental law

International environmental relations

— Access to the sea

— Antipollution incentives

— Bilateral conventions

— Biological weapons

— Chemical weapons

Environmental crimes

Environmental incentives

Environmental management

— Environmental economic issues

— Environmental planning

— Resources management

Environmental security

— Environmental subsidies

— Environmental vandalism

— Environmental warfare

— Export of hazardous wastes

— Global conventions

— Health legislation

— International river basins

— International standardization

Environmental management

Top Terms

Environmental law

Broader Terms

International environmental relations

National legislation

Narrower Terms

Environmental economic issues

Environmental planning

Resources management

Related Term

Environmental policy

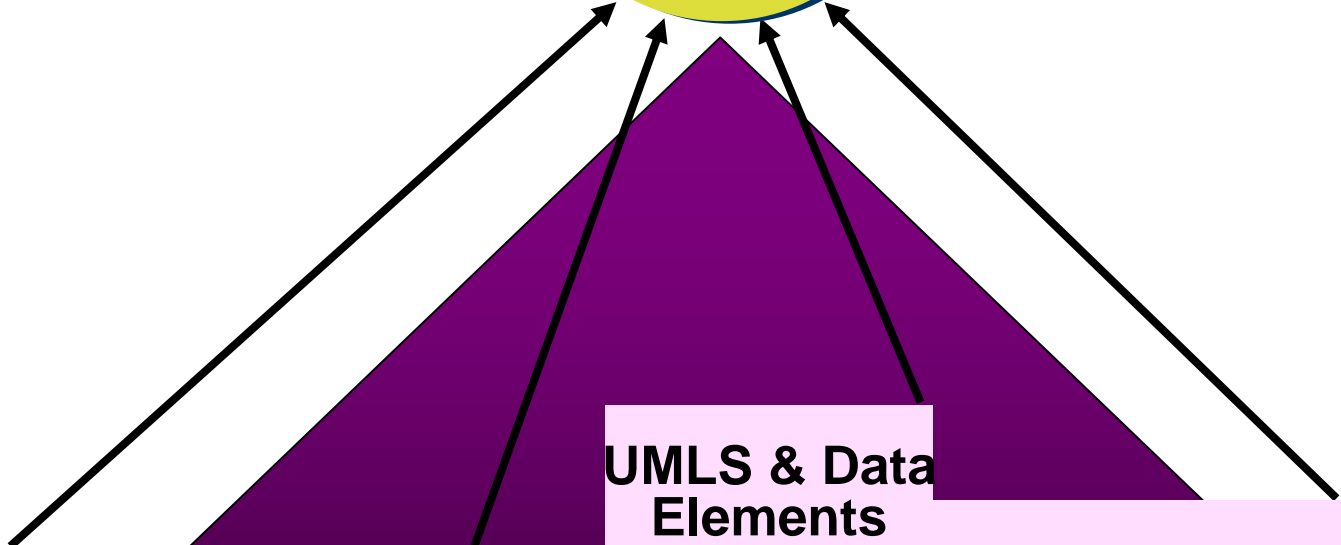
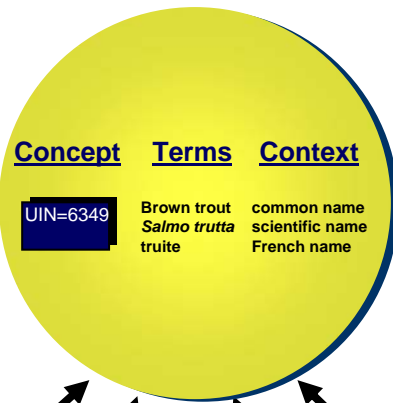
Synonyms

Environmental priorities

Programme analysis

Translation French

Gestion écologique



**General European
Multilingual
Environmental
Thesaurus
(GEMET)**

**UN FAO Thesaurus
and Ontology**

**Government
State/Local
Private Enterprise
Academe**

Terminology Sources