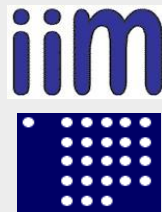


Terminology and Software Localization

**Terminology Summer School - Cologne
11 - 15 July 2011**



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Faculty 03

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Internationalization (I18N)

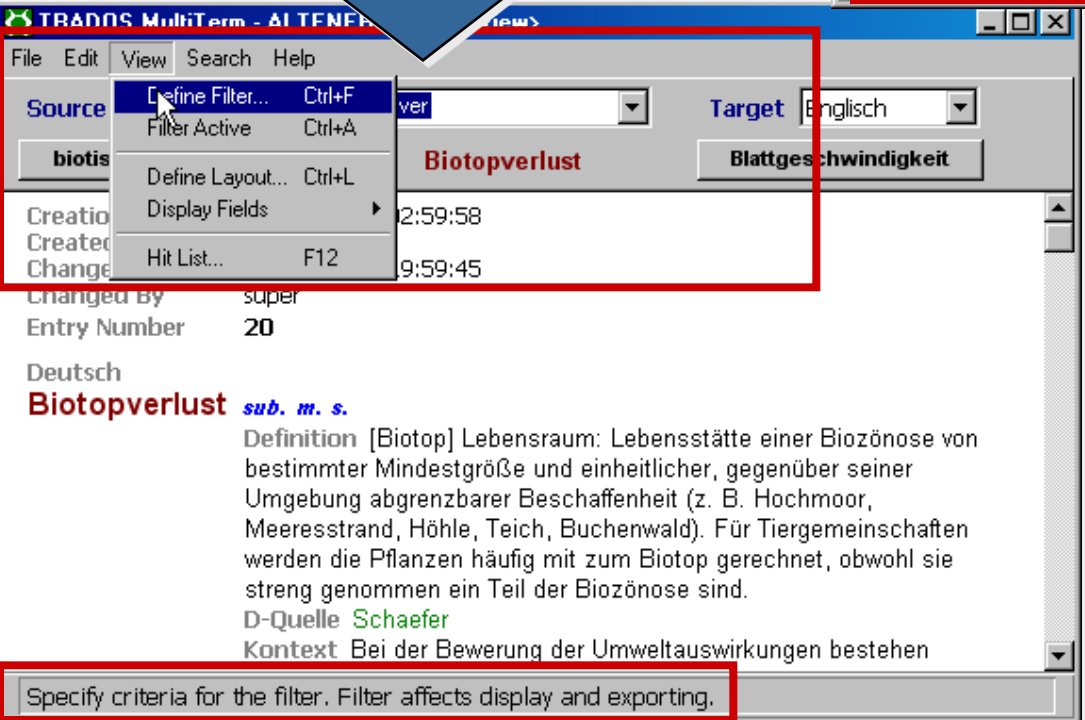
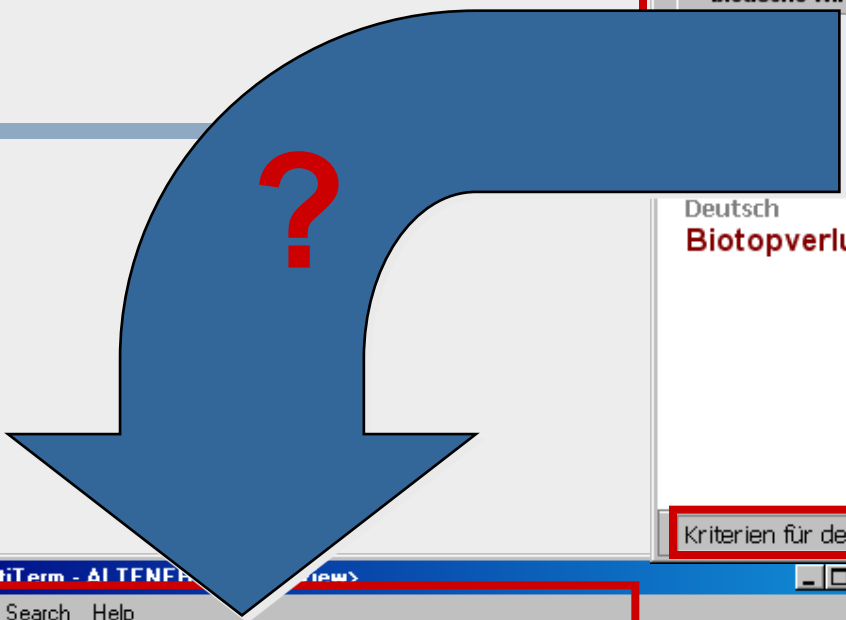
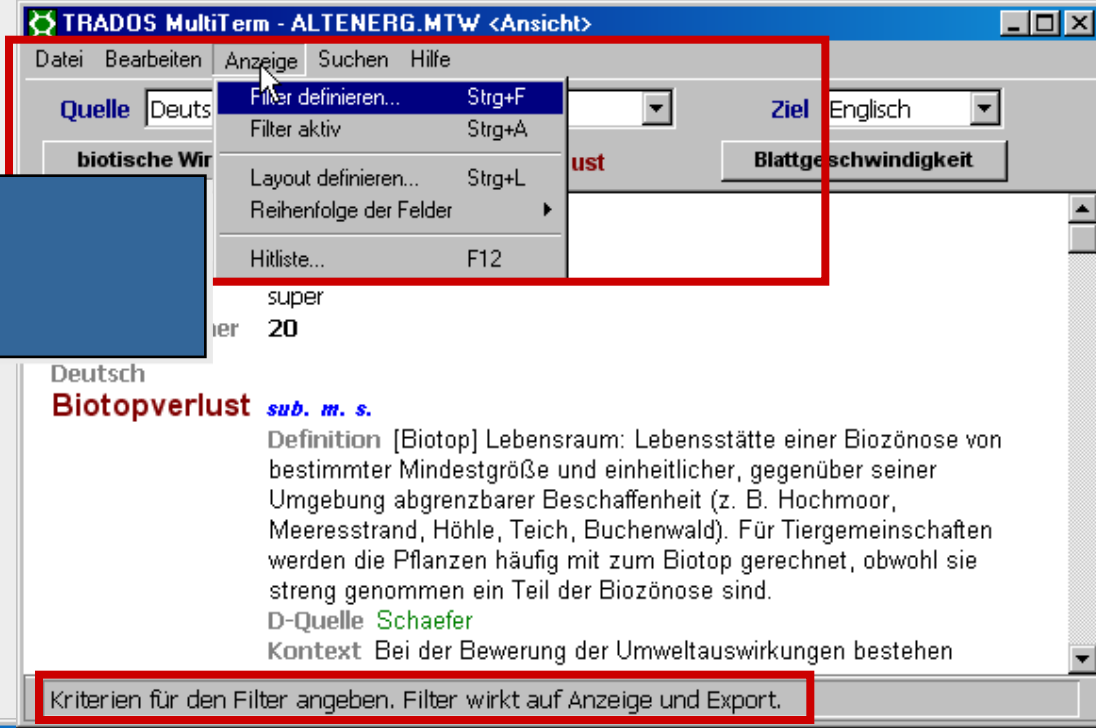
Developing a product or service in such a way that it will be easy to adapt it to other markets (languages and cultures)

- Goal: eliminate the need to redevelop, reprogram or recompile the original product / content
- Carried out by the development group in conjunction with the localization people

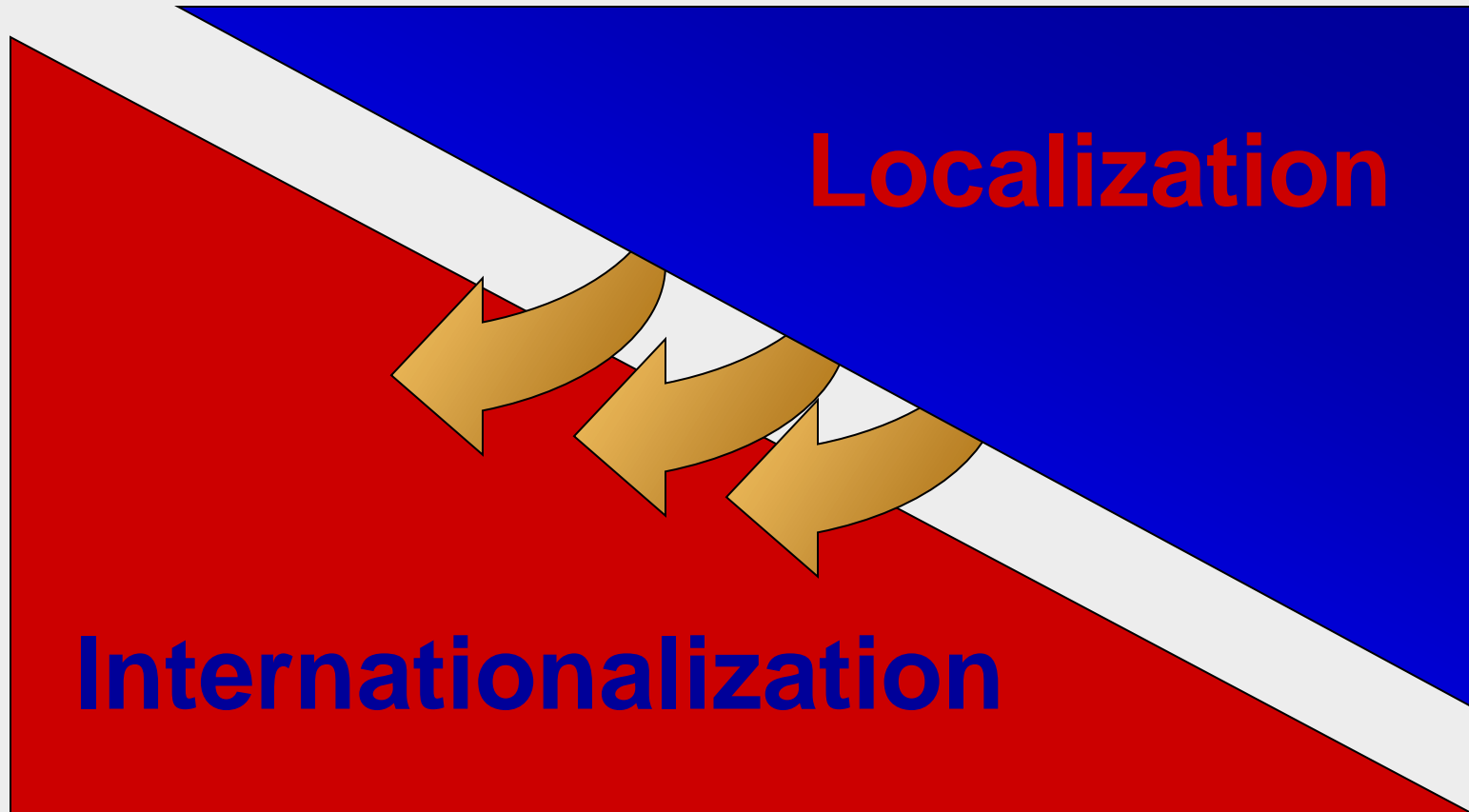
Localization (LION)

Adapting a product or service to a local or regional market

- Goal: Appropriate linguistic and cultural aspects
- Performed by translators, localizers, language engineers



I18N and L10N



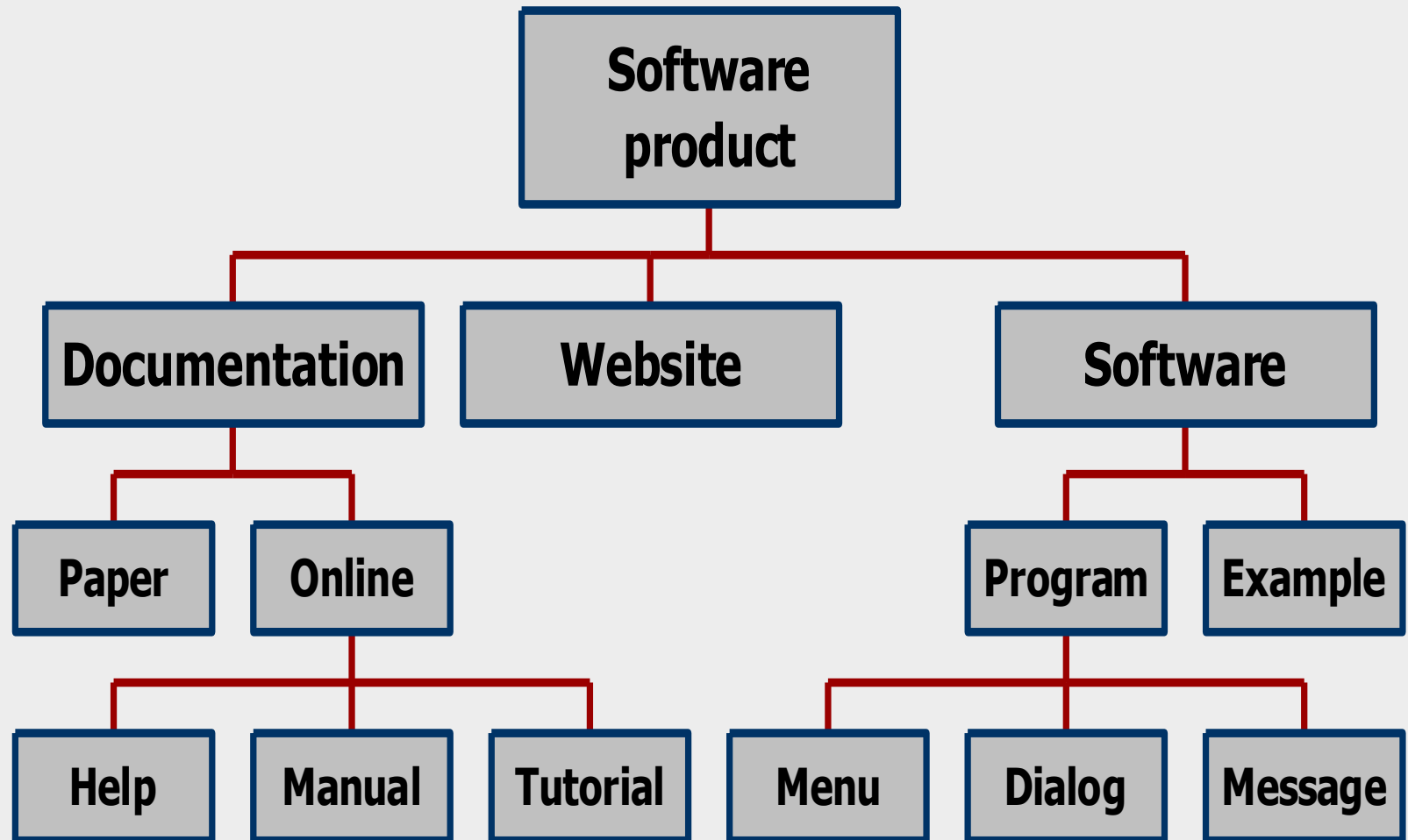
I18N and L10N: Goal

- I18N and L10N comprise the whole of the effort involved in enabling a product.
- I18N is “stuff” you have to do **once**.
- L10N is “stuff” you have to do **over and over** again.
- The more stuff you push into I18N out of L10N, the less complicated & expensive the process becomes.

Locale

- Geographically a region of a particular market (e.g. the Italian speaking area of Switzerland)
- In IT a set of information and codes associated with a specific region
 - character set, writing system, keyboard layout
 - format for date, time, currency, units of measurement
 - format of addresses
 - etc.

Software localization: what + how



Localizing documentation

- Localizing printed documentation (handbook, manual, installation guide, packaging material etc.) is similar to “traditional” translation of LSP texts.
- Tools:
 - editor
 - word processor
 - DTP software
 - translation memory
 - **terminology system**

1 Installation und Aufruf

1.1 Systemvoraussetzungen

Zur Verwendung von TermISys benötigen Sie einen Computer, der folgende Kriterien erfüllen sollte:

- IBM-kompatibler 286er oder höher (empfohlen ab 386er)
- MS-Windows 3.0 oder höher. Bei Windows 3.0 ist der Standardmodus oder der erweiterte Modus für 386er PCs notwendig. MS-Windows muß bereits auf Ihrem Rechner installiert sein
- Mindestens 2 MByte Arbeitsspeicher (empfohlen 4 MByte)
- Grafikkarte mit mindestens 640 x 480 Bildpunkten, z.B. VGA
- Eine Festplatte mit mindestens 10 MByte freier Speicherkapazität
- Ein Diskettenlaufwerk
- Eine Microsoft-Maus oder kompatible
- MS-DOS ab Version 3.3 oder kompatibles Betriebssystem.

1.2 Hinweise zur Installation

Das Terminologieverwaltungssystem TermISys erhalten Sie auf einer Diskette im Format 3,5 Zoll oder im Format 5,25 Zoll.

TRADOS Translator's Workbench - deueng

Datei Einstellungen Ansicht Optionen Extras Hilfe

Angelegt am: Die folgenden Hotels liegen verkehrsgünstig (wenige Autominuten oder direkte Busverbindung) zur Universität.

Angelegt von:

Geändert am:

Geändert von:

liegen
locate

Kein Match!

Germany → UK

TRADOS TagEditor - [test3.RTF *]

Datei Bearbeiten Ansicht Workbench Extras Fenster Hilfe

100%

(← →)

@Z_STYLE70

@title) Hotel-Liste

@Spalte1

Die folgenden Hotels liegen verkehrsgünstig (wenige Autominuten oder direkte Busverbindung) zur Universität.

The following hotels are located only a few minutes from the university.

Von den beiden Hotels in Dudweiler kann man die Universität auch zu Fuß in etwa 15 bis 20 Minuten erreichen.

Geben Sie bei der Zimmerbestellung an, daß Sie an einem Seminar der Universität teilnehmen. Dies verschafft Ihnen bei einigen Hotels Sonderkonditionen. Preisangaben sind ohne Gewähr.

@Spalte1

@Spalte1

@Spalte1 City-Hotel, Richard-Wagner-Str. 67, 66111 Saarbrücken, Tel.: 0681 / 34088

@Unterpunkt) (EZ: DM 125,-; DZ: DM 170,-)

@Spalte1

@Spalte1 Domizil Leidinger, Mainzer Str. 10 - 12, 66111 Saarbrücken, Tel.: 0681 / 38011

@Unterpunkt) (EZ: DM 145,- - 175,-; DZ: DM 180,- - DM 200,-)

@Spalte1

@Spalte1 Hotel Schloßkrug, Schmollerstr. 14, 66111 Saarbrücken, Tel.: 0681 / 36735

@Unterpunkt) (EZ: DM 50,- - DM 65,-; DZ: DM 90,- - 120,-)

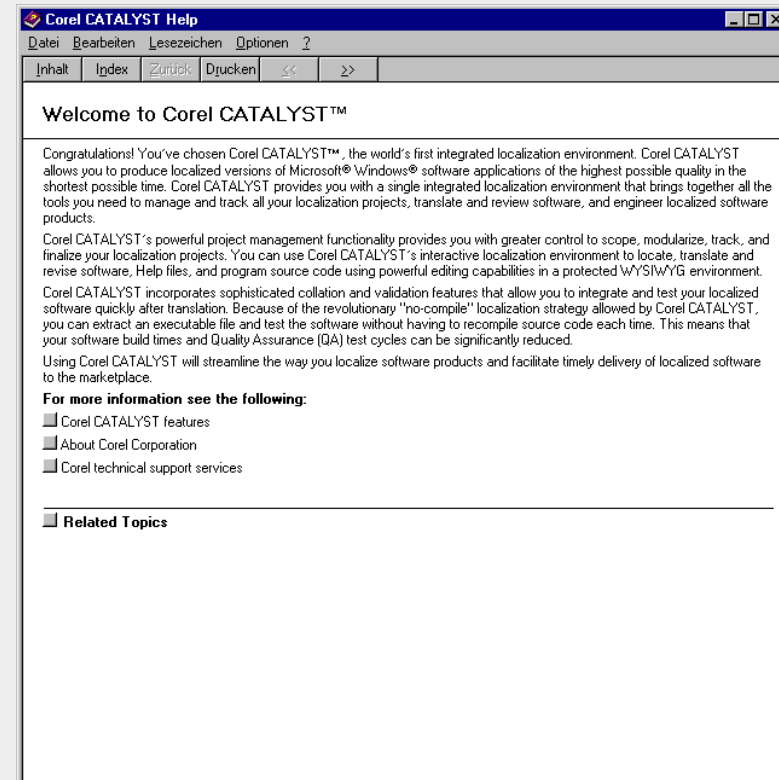
Bearbeiten Ausgangssprache Zielsprache Text Vorschau

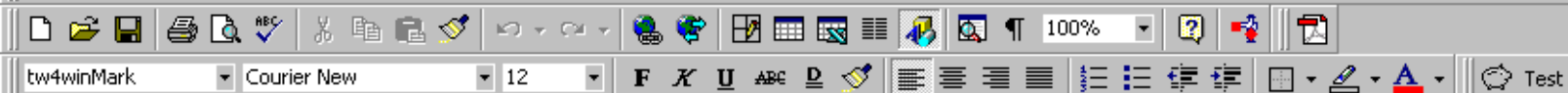
Drücken Sie F1, um die Hilfefunktion aufzurufen.

NUM

Localizing online help

- When localizing online help, you have to care about formatting information (HLP, CHM, ...), document structure and links.
- Tools:
 - editor (HTML)
 - word processor (RTF)
 - translation memory
 - **terminology system**
 - localization software





* * K A Einführung in Corel CATALYST™

Glückwunsch zur Wahl von Corel CATALYST™, der ersten integrierten Lokalisierungs-umgebung der Welt. Corel CATALYST gibt Ihnen die Möglichkeit, lokalisierte Versionen höchstmöglicher Qualität von Windows-Software-Anwendungen in der kürzestmöglichen Zeit anzufertigen. Corel CATALYST bietet eine integrierte Lokalisierungs-umgebung, die in sich all die Werkzeuge vereint, die Sie zur Verwaltung und Bearbeitung Ihrer Lokalisierungsprojekte benötigen; Sie können mit Corel Catalyst Software übersetzen und überprüfen und lokalisierte Softwareprodukte funktionsfähig machen.

Die leistungsfähige Projektmanagementkomponente von Corel CATALYST bietet Ihnen mehr Kontrolle bei der Festlegung des Umfangs, der Modularisierung, der Bearbeitung und der Fertigstellung Ihrer Lokalisierungsprojekte. Mit der interaktiven Lokalisierungs-umgebung von Corel Catalyst können Sie Software unter Verwendung leistungsfähiger Editierfunktionen in einer geschützten WYSIWYG-Umgebung zur Bearbeitung bereitstellen, übersetzen und überprüfen.

Corel CATALYST umfasst hochentwickelte Funktionen zur raschen Integration und Validierung Ihrer lokalisierten Software nach der Übersetzung. Because of the revolutionary "no-compile" localization strategy allowed by Corel CATALYST, you can extract an executable file and test the software without having to recompile source code each time. This means that your software build times and Quality Assurance (QA) test cycles are significantly reduced.

Using Corel CATALYST will streamline the way you localize software products and facilitate timely delivery of localized software products to the marketplace.

For more information see the following:

{Button „JumpID('catalyst.hlp','Corel CATALYST features')} [Corel CATALYST features](#)

{Button „JumpID('catalyst.hlp','About Corel Corporation')} [About Corel Corporation](#)

{Button „JumpID('catalyst.hlp','Corel technical support services')} [Corel technical support services](#)

{Button „ALink(OVR Welcome to Corel CATALYST;0,"Defaultoverview",)} [Related Topics](#)

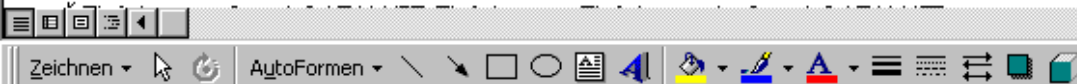
Fußnoten Alle Fußnoten

Schließen

Welcome to Corel CATALYST

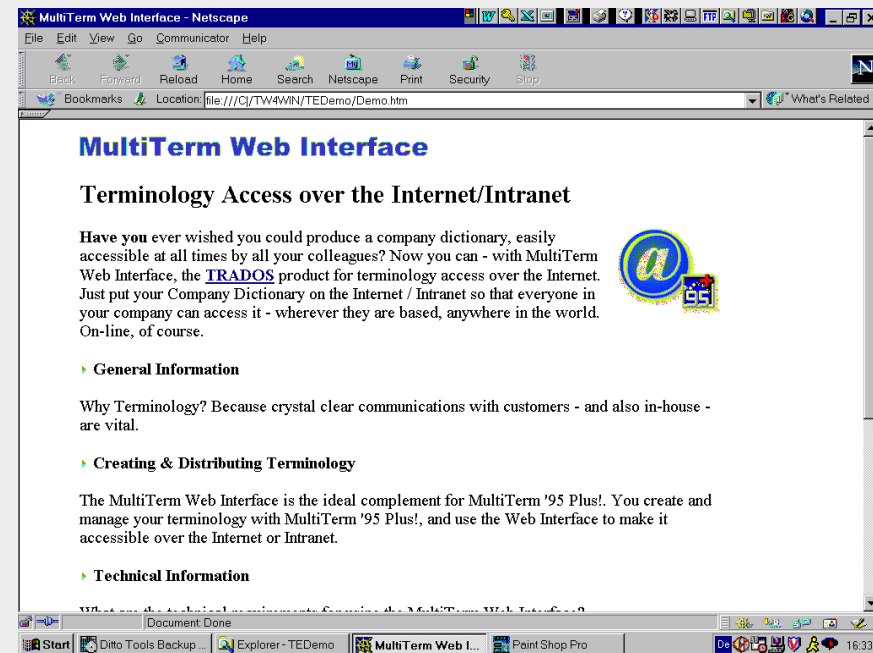
* Welcome_to_Corel_CATALYST: 001

† Übersicht: Einführung in Corel CATALYST



Localizing websites

- When localizing websites (and HTML help), you have to care about formatting information (HTMP), document structure, links and multimedia elements.
- Tools:
 - editor (HTML, tag)
 - translation memory
 - **terminology system**



```
<HTML>
```

```
<HEAD><TITLE>MultiTerm Web Interface</TITLE></HEAD>
```

```
<BODY bgcolor=white link="navy" vlink="gray" leftmargin=0 topmargin=0><FONT  
face="verdana, arial"><TABLE width=85% cellpadding=5 cellspacing=5><TR>
```

```
<TD valign=top><IMG SRC="images/muwigray.gif" WIDTH="34" HEIGHT="603"  
ALT=""></TD>
```

```
<TD valign=top><IMG SRC="images/webint.gif" WIDTH="413" HEIGHT="23" BORDER="0"  
ALT="MultiTerm Web Interface">
```

```
<P><H2>Terminology Access over the Internet/Intranet
```

```
<P><IMG src="images/webint.gif" alt="MultiTerm Web Interface" style="float:right; width:413px; height:23px; border:0px;"/>  
<B>Have you
```

```
</B> ever wished you could produce a company dictionary, easily accessible at all times by all your colleagues?
```

```
Now you can - with MultiTerm Web Interface, the
```

```
<A href="http://www.trados.com/Products/Products.htm">TRADOS
```

```
</A> product for terminology access over the Internet. Just put your  
Company Dictionary on the Internet / Intranet so that everyone in your company can access it - wherever they are based, anywhere in  
the world. On-line, of course.
```

```
<H3>General Information
```

```
Why Terminology? Because crystal clear communications with customers - and also in-house - are vital.
```

```
<H3>Creating & Distributing Terminology
```

```
The MultiTerm Web Interface is the ideal complement for MultiTerm '95 Plus!. You create and manage your terminology with  
MultiTerm '95 Plus!, and use the Web Interface to make it accessible over the Internet or Intranet.
```

```
<H3>Technical Information
```

```
What are the technical requirements for using the MultiTerm Web Interface?
```

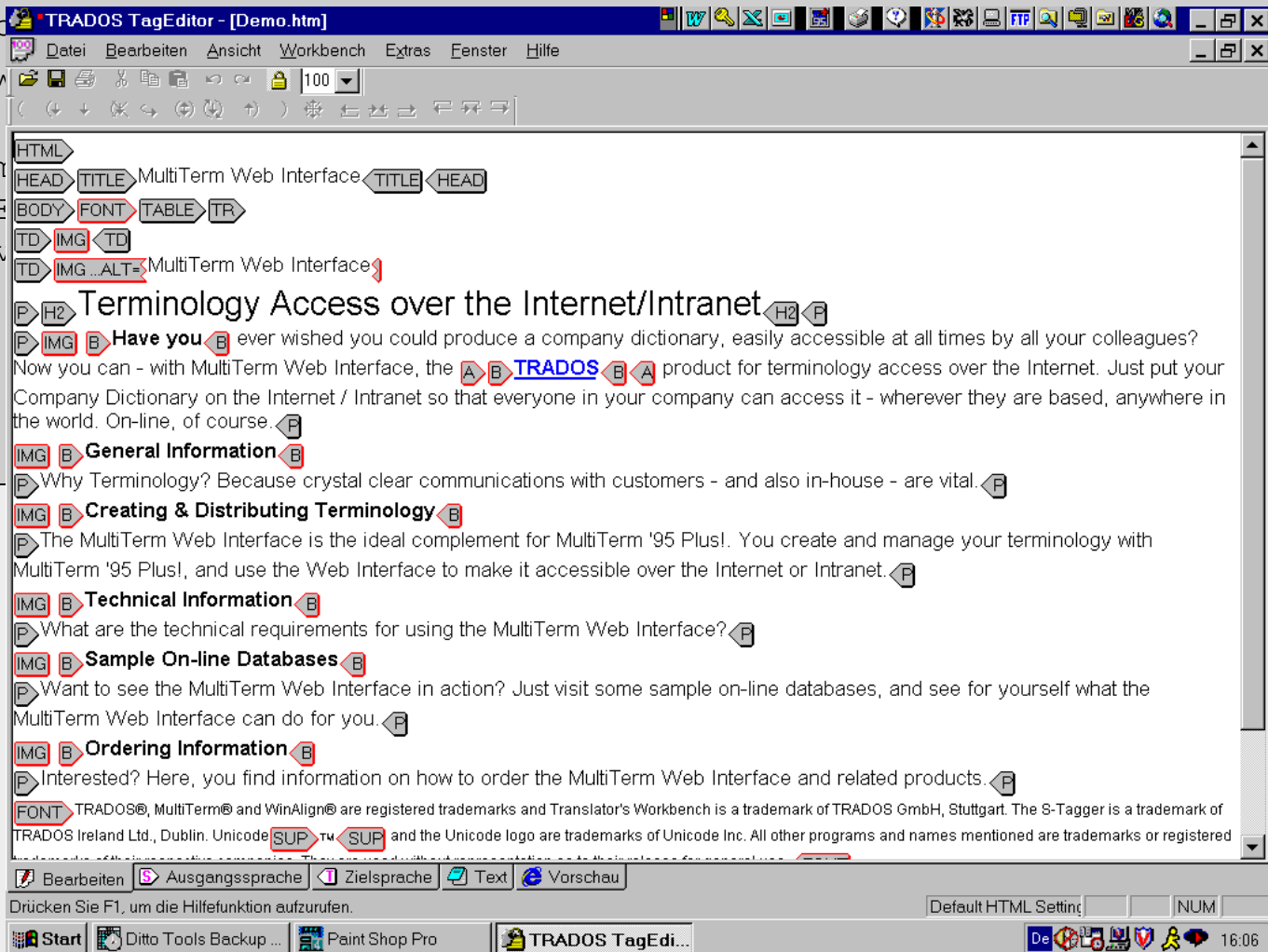
```
<H3>Sample On-line Databases
```

```
Want to see the MultiTerm Web Interface in action? Just visit some sample on-line databases, and see for yourself what the  
MultiTerm Web Interface can do for you.
```

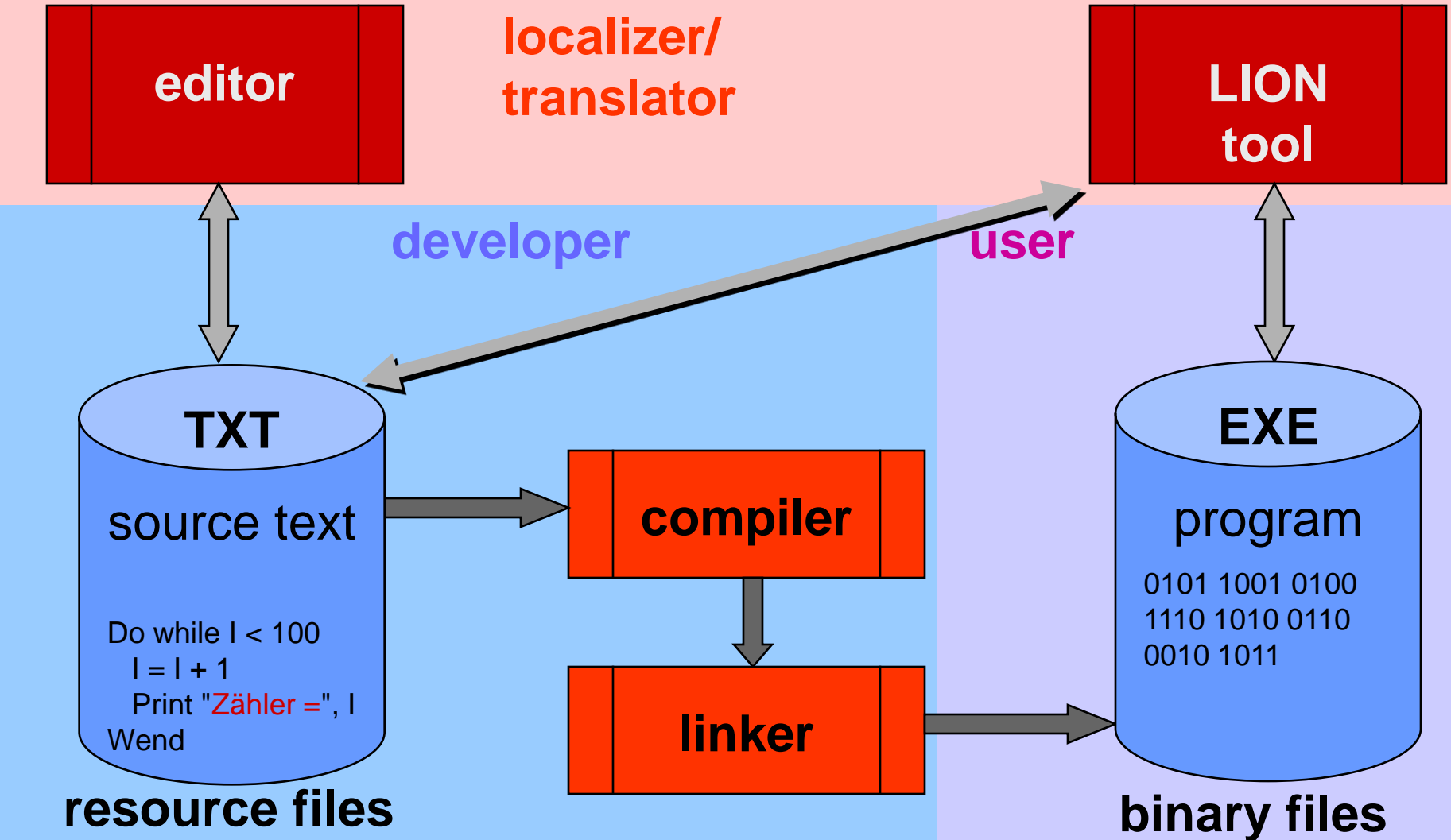
```
<H3>Ordering Information
```

```
Interested? Here, you find information on how to order the MultiTerm Web Interface and related products.
```

```
TRADOS®, MultiTerm® and WinAlign® are registered trademarks and Translator's Workbench is a trademark of TRADOS GmbH, Stuttgart. The S-Tagger is a trademark of  
TRADOS Ireland Ltd., Dublin. UnicodeSM and the Unicode logo are trademarks of Unicode Inc. All other programs and names mentioned are trademarks or registered  
trademarks of their respective owners.
```



Localizing software



Localizing software

- When localizing software, you have to differentiate between the localization of resource files (RC) and the localization of executable files (EXE, DLL, ...). Different treatment of menus, dialog boxes, tool tips, (error) messages etc.
- Tools:
 - editor (RC, tag)
 - localization software
 - (translation memory)
 - **terminology system**



MENU : TERMISYS

```

{
POPUP "Wörterbuch"
{
MENUITEM "Neu...", 4000
MENUITEM "Umbenennen...", 4001, GRAYED
MENUITEM "Löschen...", 4002, GRAYED
MENUITEM SEPARATOR
MENUITEM "Drucken...", 4022
MENUITEM SEPARATOR
MENUITEM "Import...", 4003
MENUITEM "Export...", 4004, GRAYED
MENUITEM SEPARATOR
MENUITEM "Beenden", 4005
}
}

POPUP "Sachgebiet"
{
MENUITEM "Neu...", 4006, GRAYED
MENUITEM "Umbenennen...", 4007, GRAYED
MENUITEM "Löschen...", 4008, GRAYED
}
}

POPUP "Sprache"
{
MENUITEM "Neu...", 4009
MENUITEM "Umbenennen...", 4010, GRAYED
MENUITEM "Löschen...", 4011, GRAYED
}
}

POPUP "Maske"
{
MENUITEM "Neu...", 4012, GRAYED
MENUITEM "Umbenennen...", 4013, GRAYED
MENUITEM "Löschen...", 4014, GRAYED
MENUITEM SEPARATOR
MENUITEM "Öffnen...\tCtrl+F", 4015
MENUITEM "Schließen", 4016, GRAYED
}
}

```

Ready

PASSOLO - [Dialog Editor - Dialog 14]

Datei Bearbeiten Ansicht Layout Übersetzung Extras Fenster Hilfe



Page Setup

Papier:

Size:

Source:

Orientation:

 Portrait Landscape

Margins:

Left:

Right:

Top:

Bottom:

Header:

Footer:

Preview

Übersetzungstext 55 - Groupbox 34 in Dialog 14

 Lesezeichen Übersetzt Zu prüfen

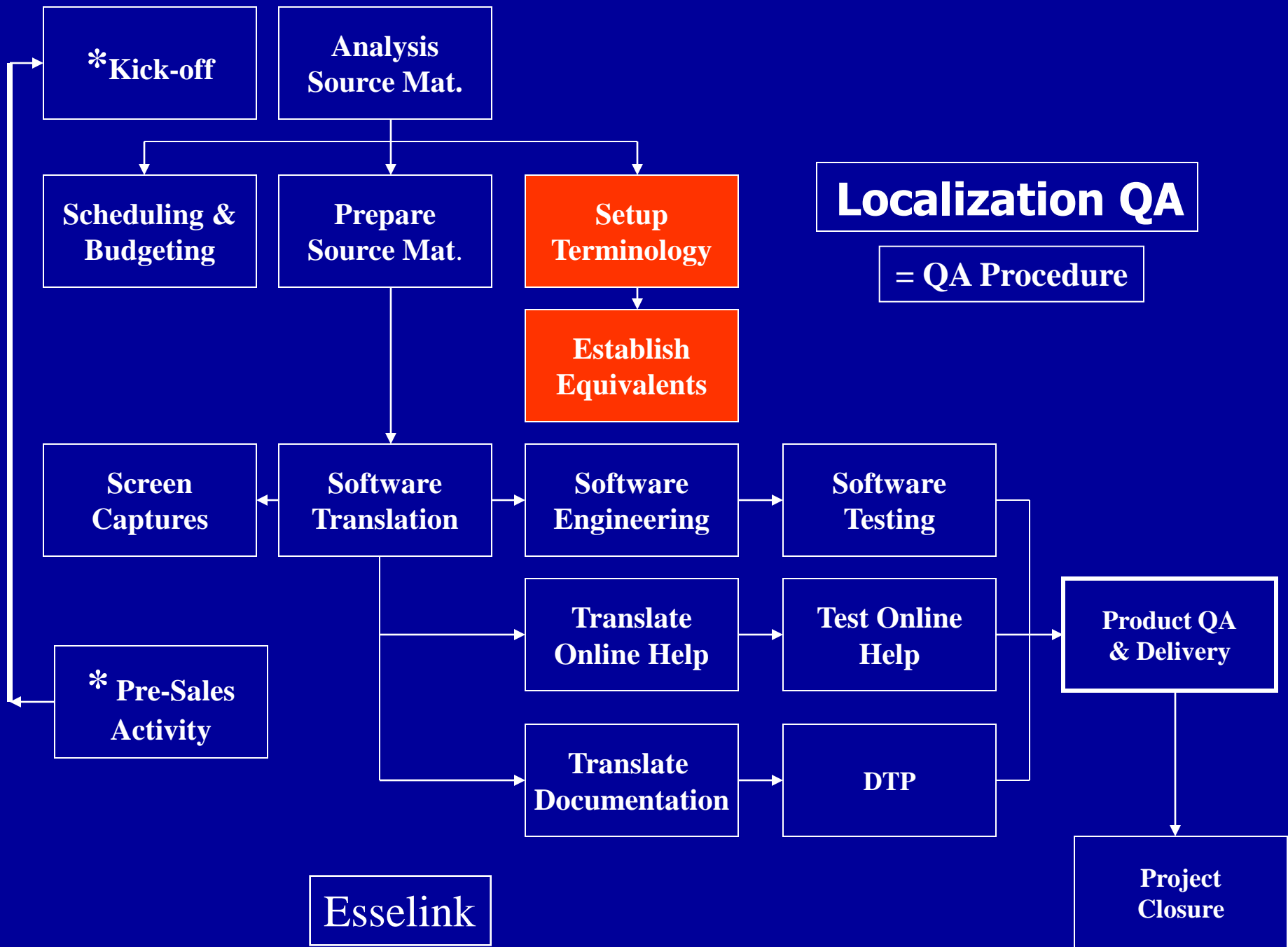
Preview

Vorschau

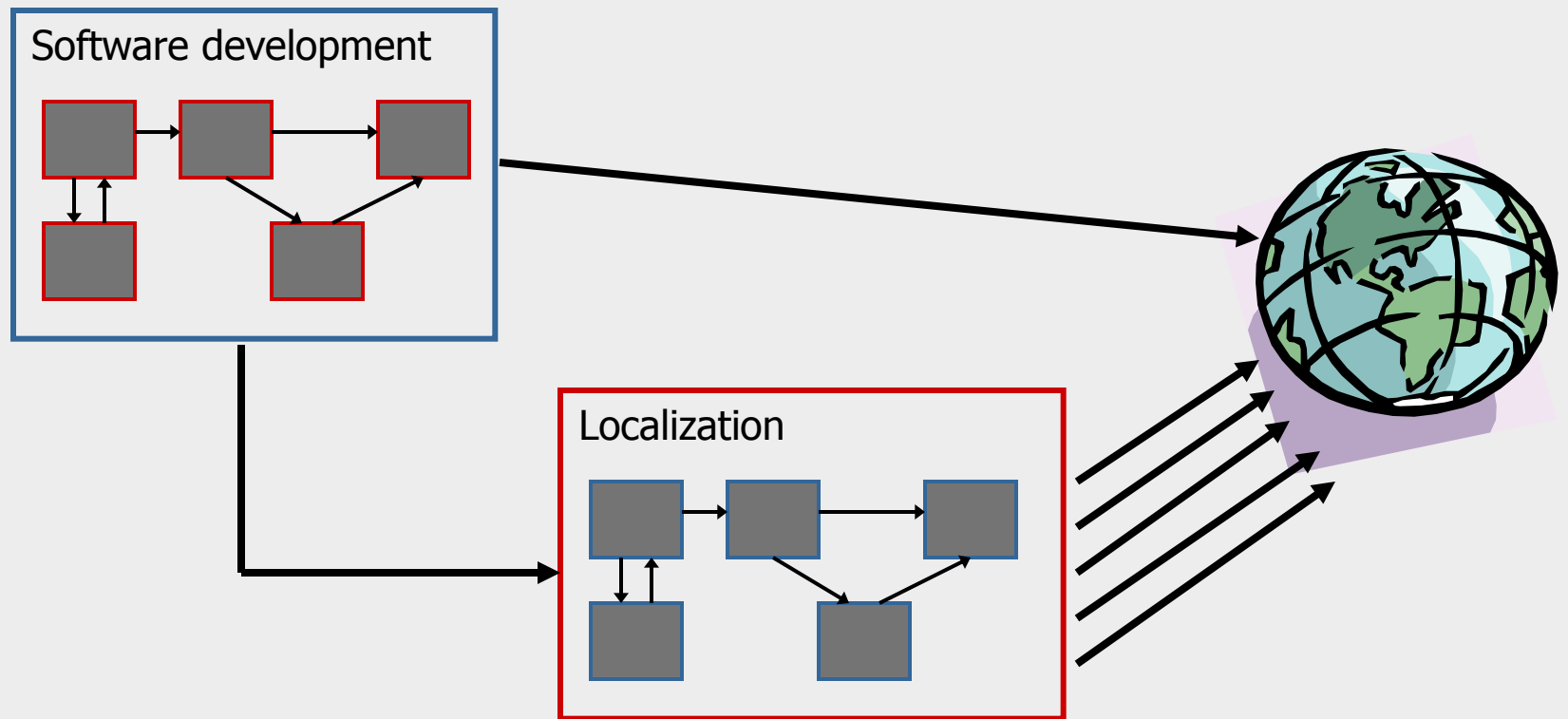
Drücken Sie F1, um Hilfe zu erhalten

Terminology for software localization

- The selection of appropriate terminology with well defined concepts as well as the correct and consistent usage of terms are pre-conditions for successful software development and software localization:
 - very often innovative domains and topics
 - large projects with many persons involved
 - consistent terminology through all parts of the software product
 - pre-defined terminology (operating system, related software, laws and regulation, corporate language)

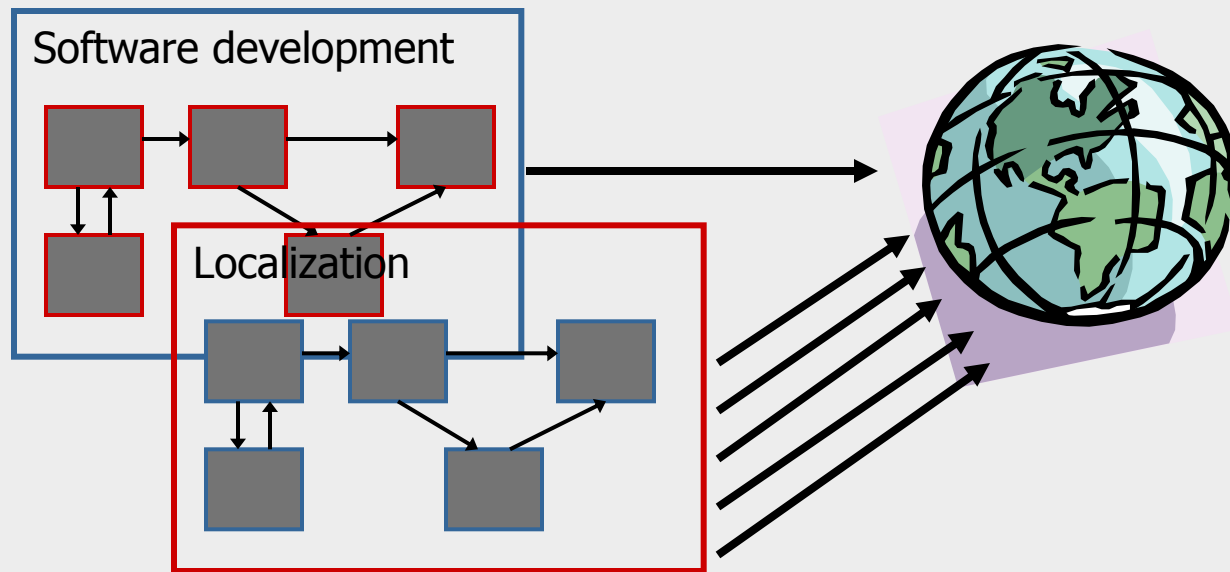


Software development and localization workflow



workflow „simple“, no Δ , but late on the int. market

Software development and localization workflow



workflow complex, huge Δ , very early LION, „simship“

→ Terminology needed very early !

Internationalization and localization aspects in content development

- Content development taking into consideration the process of internationalization and localization has to take care about e.g.:
 - **terminology, symbols**
 - (illustrations, character sets, fonts, colors, typography, style, formats etc.)
- More aspects are discussed in:
 - Schmitz/Wahle (2000): Softwarelokalisierung
 - Reineke/Schmitz (2005): Einführung in die Softwarelokalisierung

Terminology for content development

- Terminology must be defined accurately and used consistently at least within:
 - one document
 - one product
 - one company or organization
- **Only one term for each concept**
(avoid synonyms !)
- **Only one concept for each term**
(avoid homonyms !)

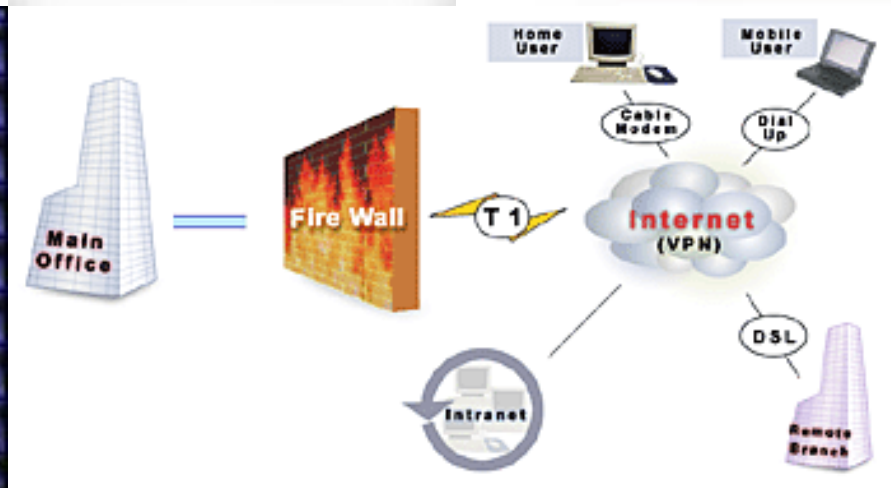
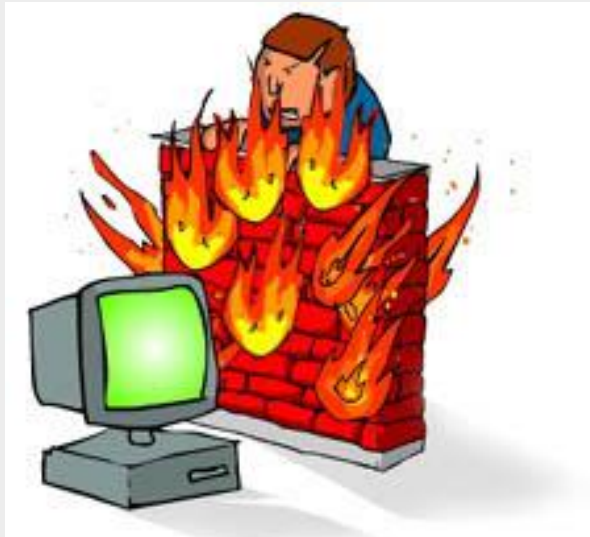
Terminology for software users

- Selection and creation of terms:
 - **transparency**
 - **consistency**
 - **appropriateness**
 - **linguistic economy**
 - **derivability**
 - **linguistic correctness**
 - **preference for native language**

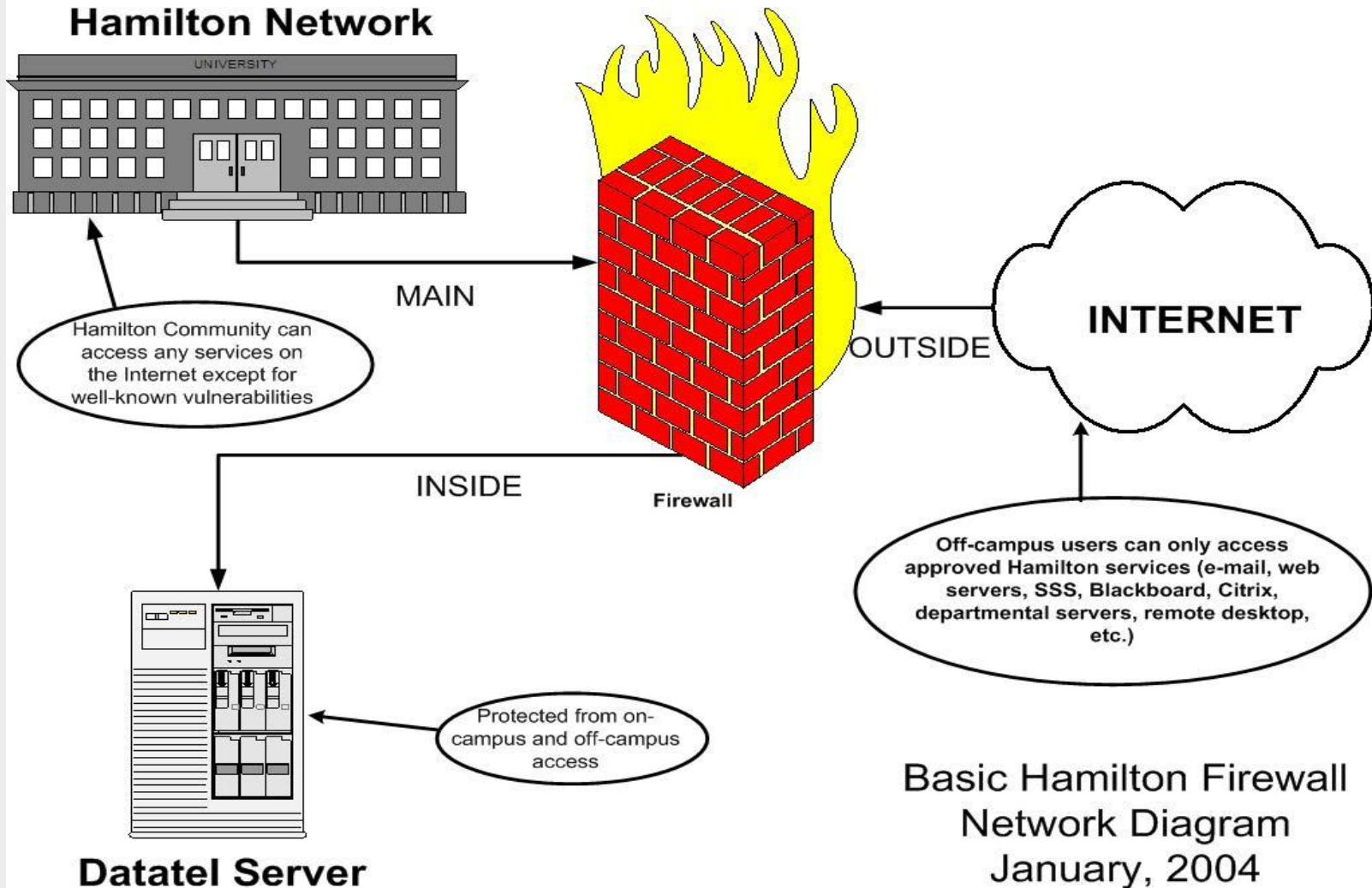
Transparency

- The concept designated by the term can be inferred without a definition
- The meaning of the term is visible by:
 - **morphological motivation**
page setup, error message
*data network identification code**
*network printing device setup**
 - **semantic motivation**
mouse, worm, virus, infected file, vulnerability
*firewall**

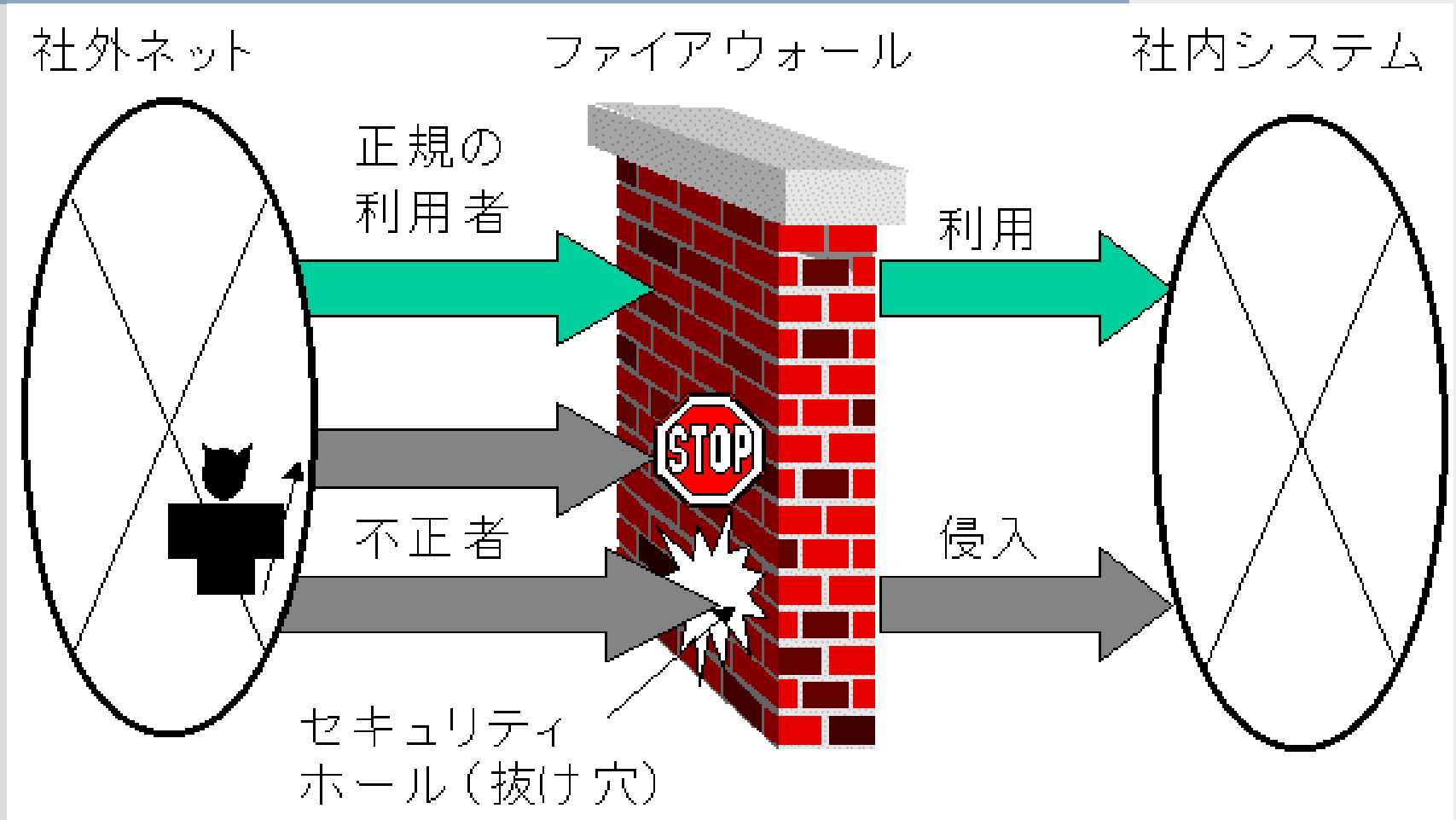
Transparency: fire wall



Transparency: fire wall



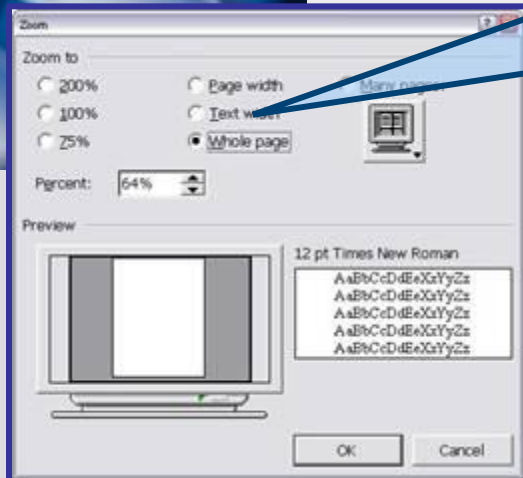
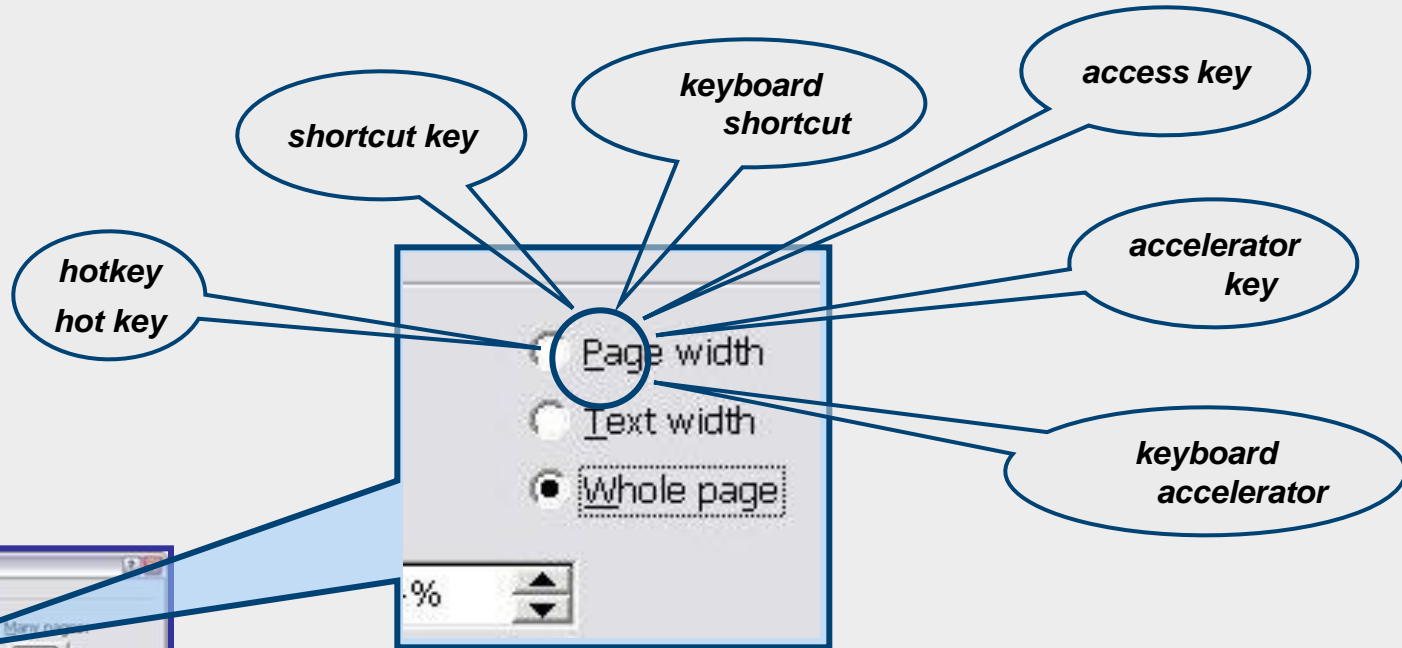
Transparency: fire wall



Consistency

- The term is used consistently in all parts of the product (e.g. software products):
 - menus, dialog boxes, error messages
 - online help, tutorial
 - documentation, packaging material, website
 - *return key, input key, enter key, line feed, carriage return, acknowledge key etc.*
 - *update, hotfix, update rollup, security pack, private fix etc.*

Consistency: terms



Matthias Heyn, SDL,
tekom-Jahrestagung 2005

Appropriateness

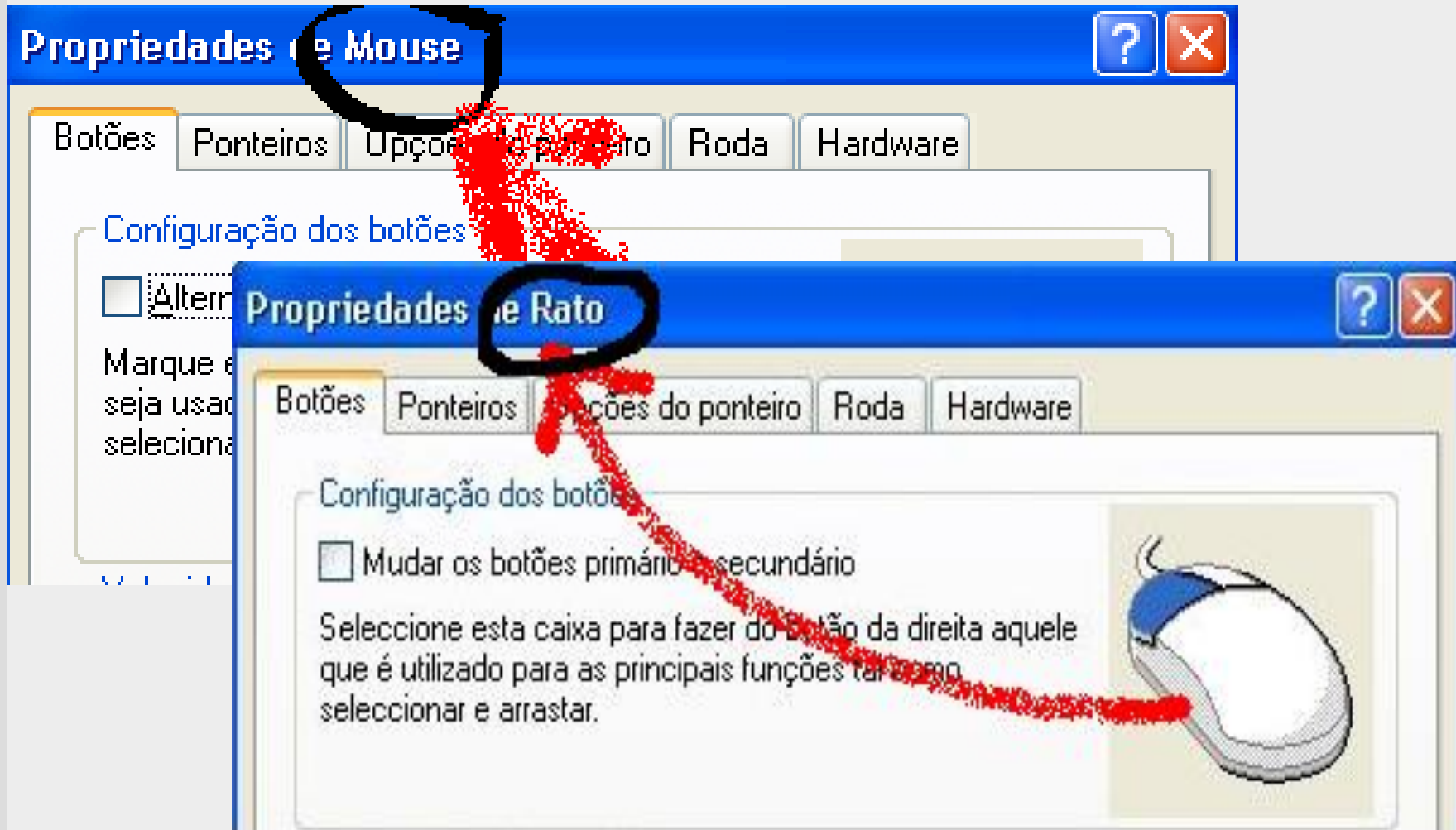
- Appropriateness means that terms:
 - have to be familiar to the user (localization!)
 - don't cause confusion or insecurity
 - have no negative connotations (neutral, politically correct)
 - *express installation (only components needed)*
network installation (all components)
 - *system error, severe error, fatal error, user error etc.*
 - *master/slave, web designers' bible, knowledge nugget etc.*

Appropriateness



Can you imagine that both user(goup)s will use and understand the same term for a given concept?

Appropriateness





Other features

- Linguistic economy
 - *Ultrakurzwellenüberreichweitenfernsehrichtfunkverbindung*
- Derivability
 - *medicinal plant vs. herb --> herbal, herbalist, ...*
- Linguistic correctness
 - *aktualisieren vs. updaten, geupdated, upgedatet, ...*
- Preference for native language
 - *Startseite vs. Homepage*

Symbols & icons

- Symbols and icons are very often used to optimize communication with the user as well as to optimize localization efforts
- Although symbols are “language-free”, they are very much dependant on the “cultural environment” of the user
- Symbols are very often taken from common sphere of life and use allusions (concrete vs. abstract), homonymy or even homophony

Symbols & icons (e.g. software)



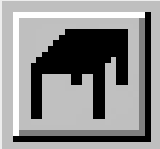
EN: trash
DE: Papierkorb



EN: clipboard
DE: Zwischenablage



EN: home
DE: Anfang / Startseite

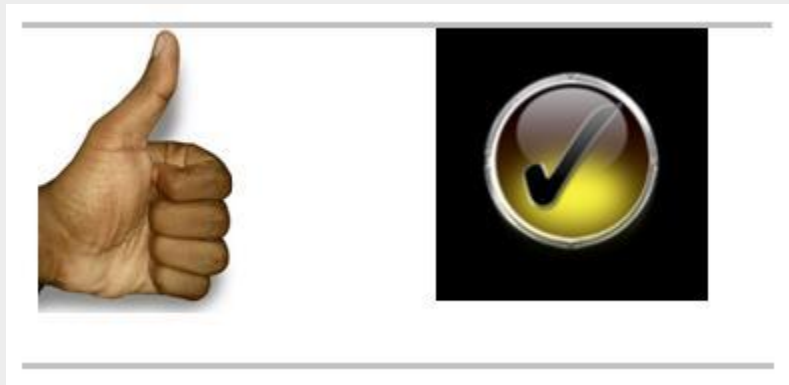
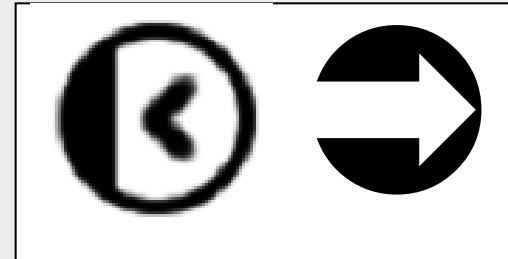


EN: table (spreadsheet)
DE: Tabelle



EN: paws = pause (in a game)
DE: Tatzen ≠ Pause

Symbols & icons (e.g. software)



Tools for software localization

- Consistent terminology needed across all components of a software product, therefore **terminology management systems**
- (internally + externally) repetitive texts allow for **translation memory systems**
- localization of the program itself requires specific **localization software**
- complexity and tight schedules require **project management tools**

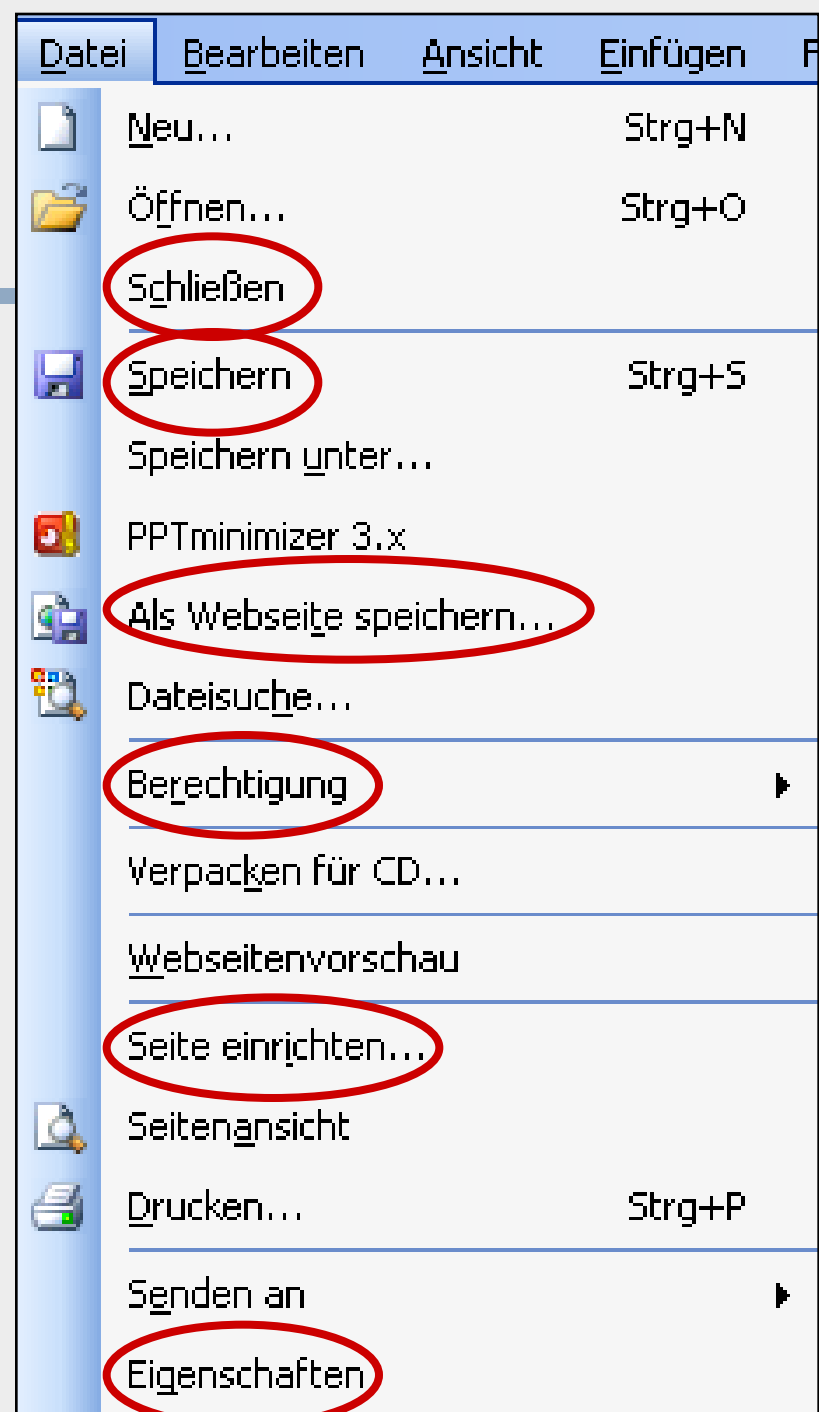
Tools for software localization

- Established interaction between terminology management and translation memory software
- Cooperation between terminology management and localization tools still not ideal
- Established principles of terminological data modeling are not always adequate for software localization terminology solutions
⇒ **Specific solution needed**

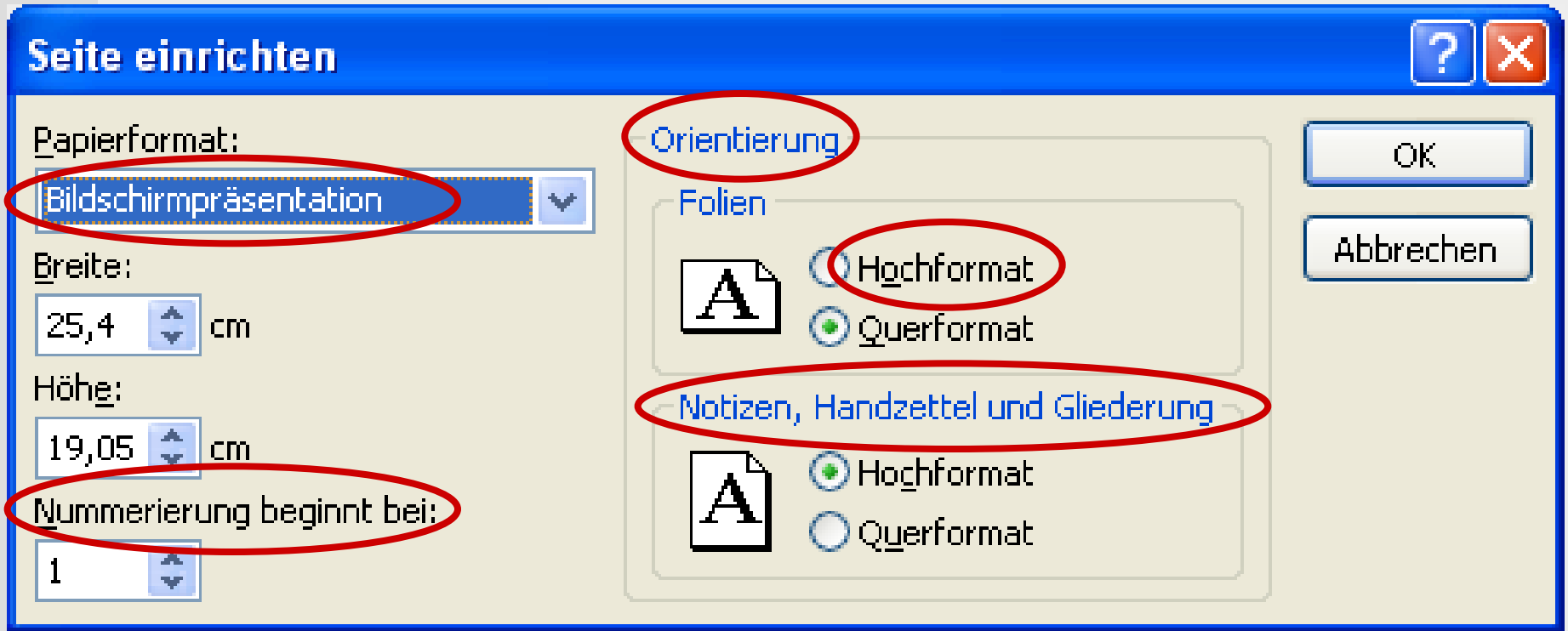
Specific terminology solution needed!

- Which additional data categories are needed for software localization terminology management?
 - Is it helpful to know, if the term appears in a menu, in a dialog box, in an error message, in an online help file or in the manual?
 - Is it helpful to know, if e.g. the term within a dialog box refers to a *check button*, *push button* or *radio button*?
 - *Activate Task List = Aktiviert die Aufgabenliste
Aufgabenliste aktivieren
Aktivieren Sie die Aufgabenliste*
(status line / dialog box / user request)

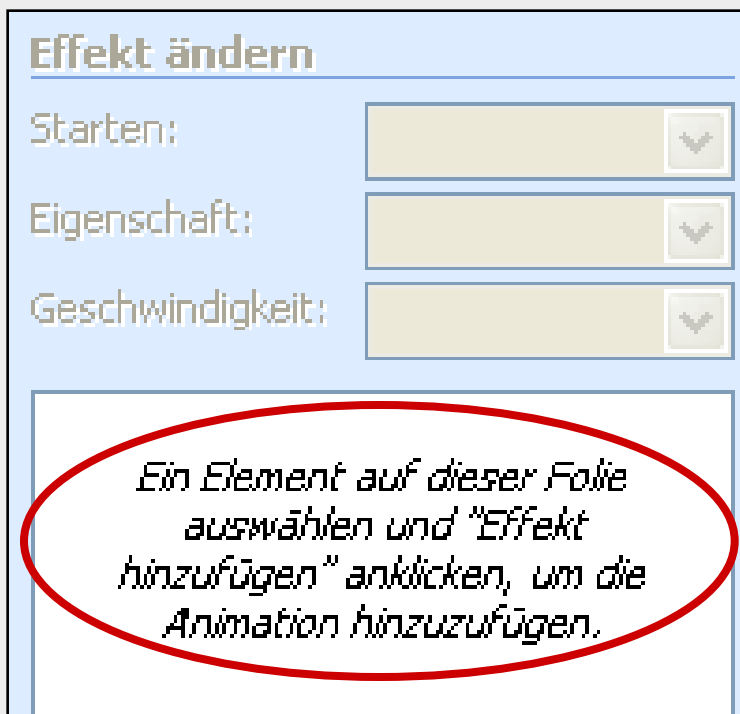
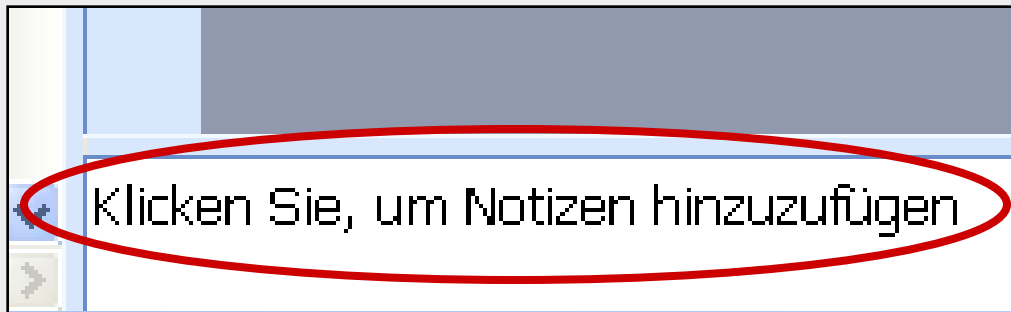
GUI terms



GUI terms



GUI terms



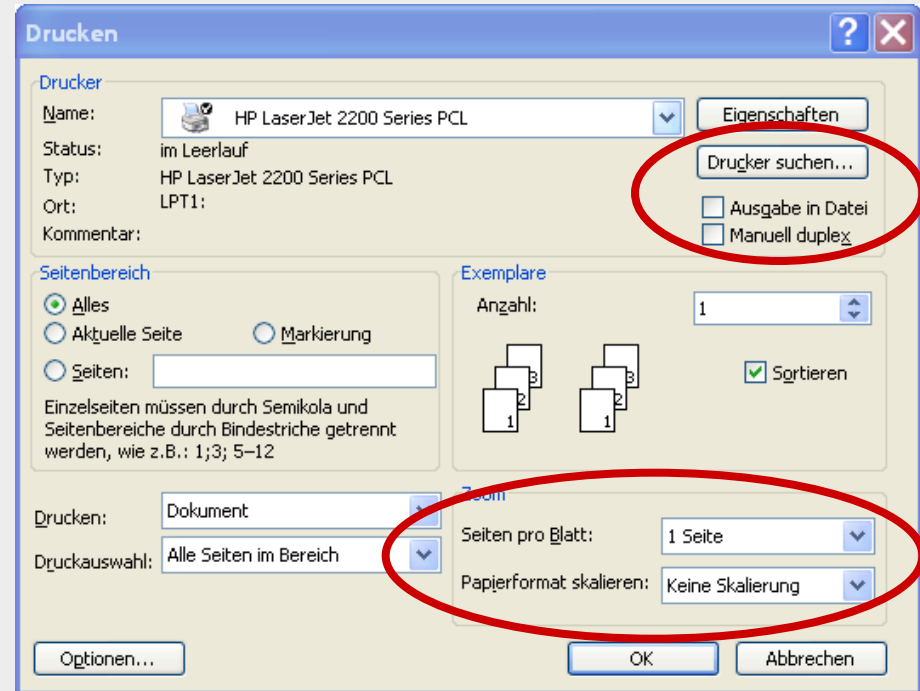
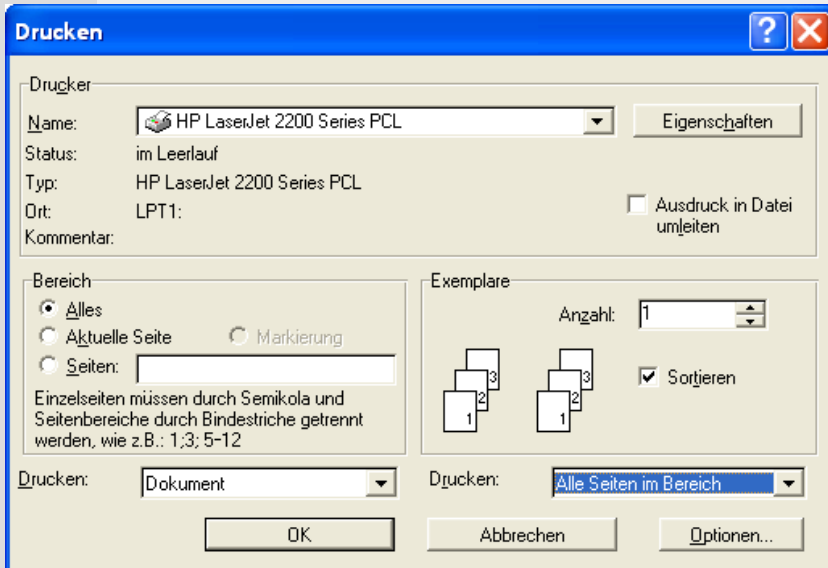
Research needed!

- What is a terminological unit ?
What is a concept ?
 - *Format*
 - *Print*
 - *Save as ...*
 - *Copy file*
 - *Date and Time*
 - *Convert into Adobe PDF and send via e-mail*
 - *Unexpected error in application program*
 - *File %f could not be opened*
 - *etc.*

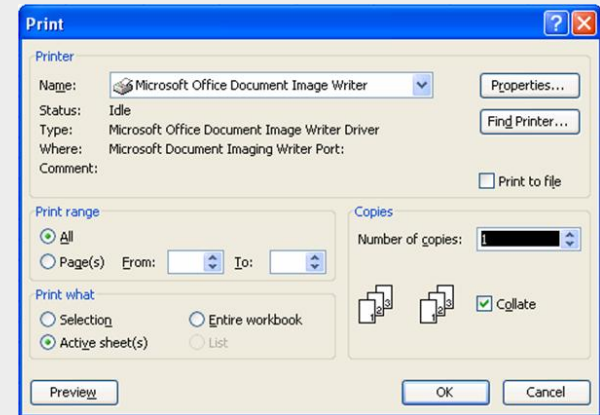
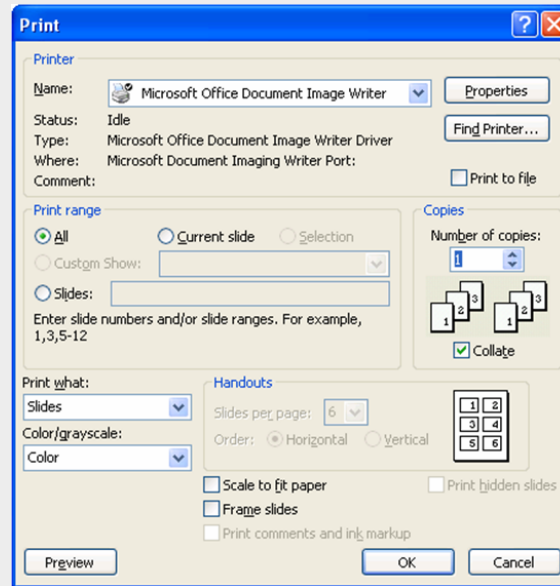
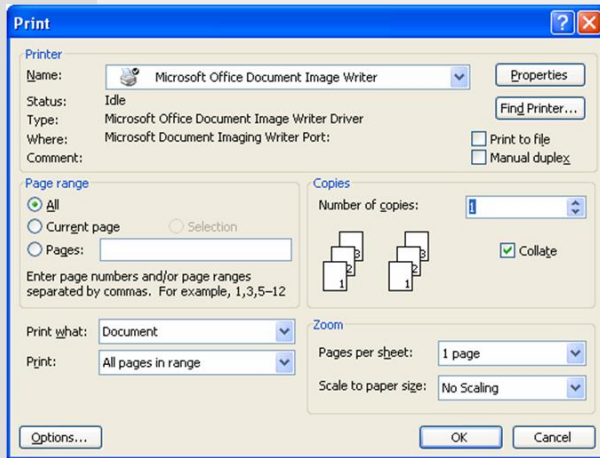
GUI concepts

- Concept orientation:
one concept = one terminological entry
- The GUI terms shown are managed within the software (and the localization tool) as one unique unit (with an unique ID)
→ one entry → one concept ?!
- When is it necessary to identify different concepts?
 - *Print...* in my and your Word 2007 ?
 - *Print...* in Word 97 and in Word 2007 !?
 - *Print...* in Word and in Excel !

Drucken in Word95 and Word 2003!



Print in Word, PowerPoint, Excel!

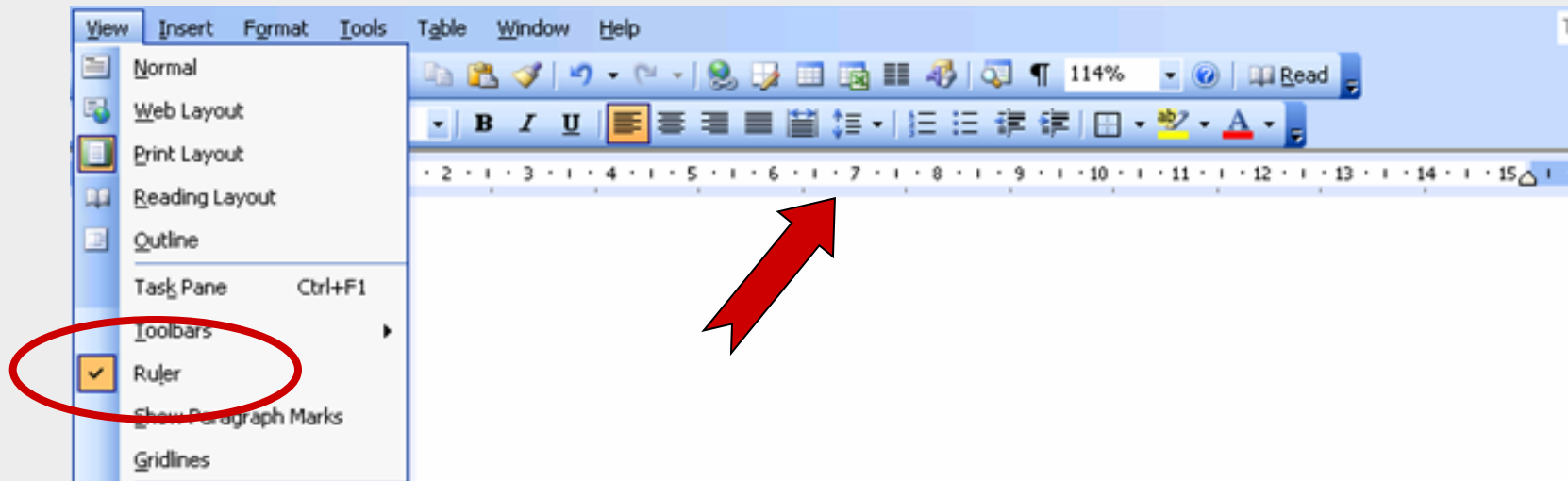


Definition of GUI concepts

- Definition: representation of a concept by a descriptive statement which serves to differentiate it from related concepts (ISO 1087-1)
- Intensional definition: definition which describes the intension of a concept by stating the superordinate concept and the delimiting characteristics ("ideal" def.)
- Is it possible / necessary / desirable to (intensionally) define GUI concepts ?
- Is there a difference between such a definition and a traditional one ? (File vs. File)

Example: ruler

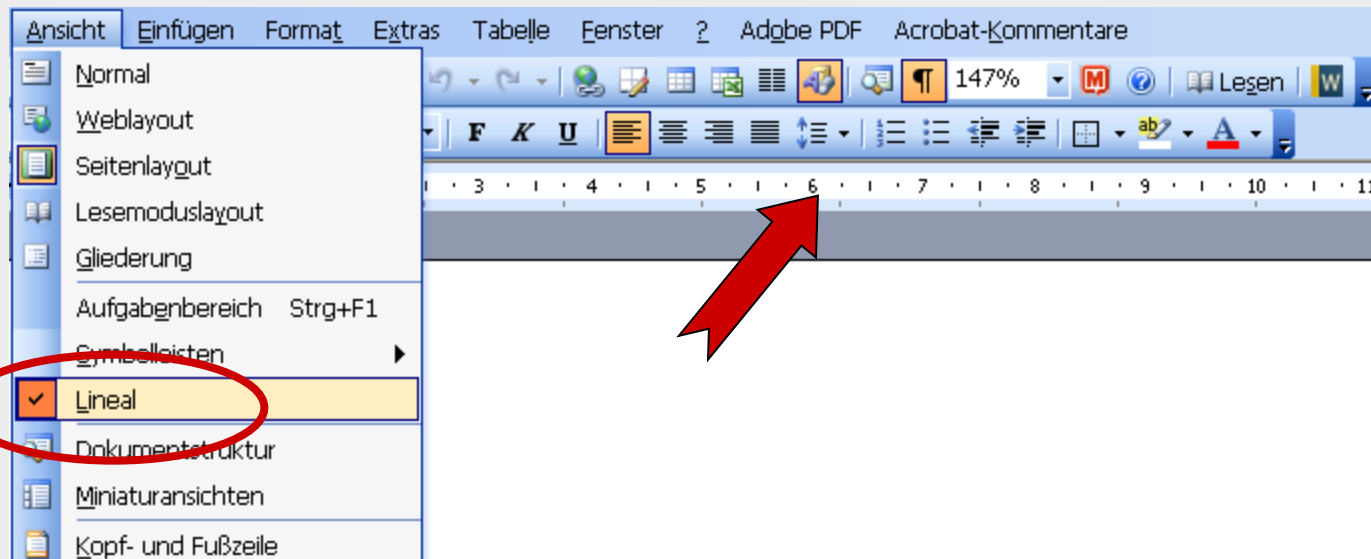
- A **ruler** is an **instrument** used in geometry, technical drawing and engineering/building to *measure distances and/or to rule straight lines*. (Wikipedia 17.11.09)



- **material or immaterial? definition still valid?**

Beispiel: Lineal

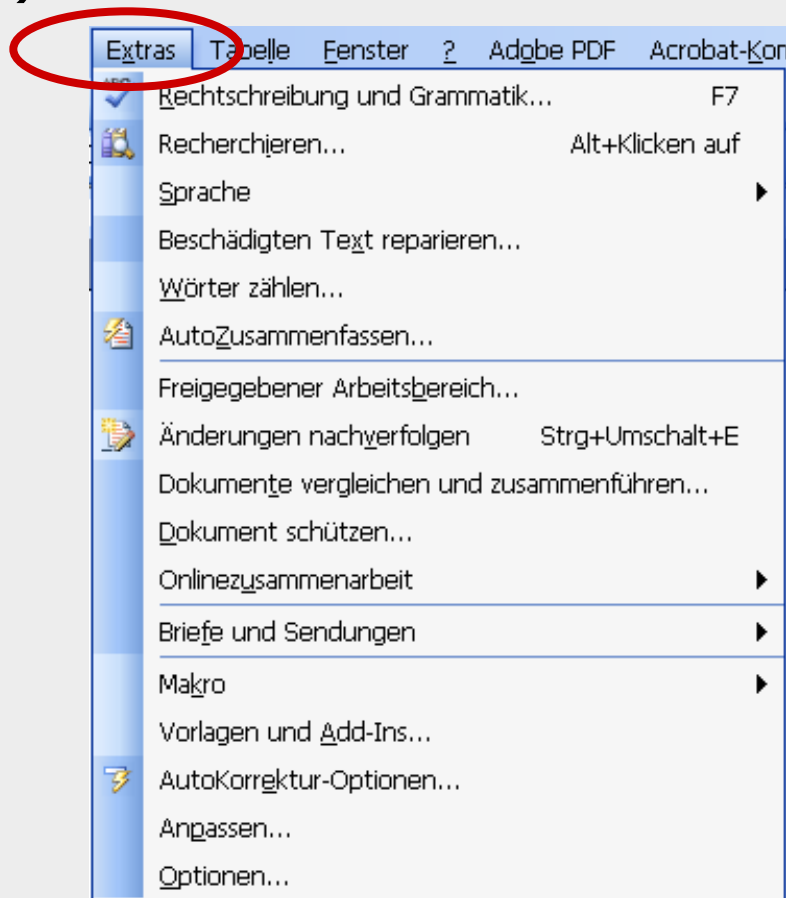
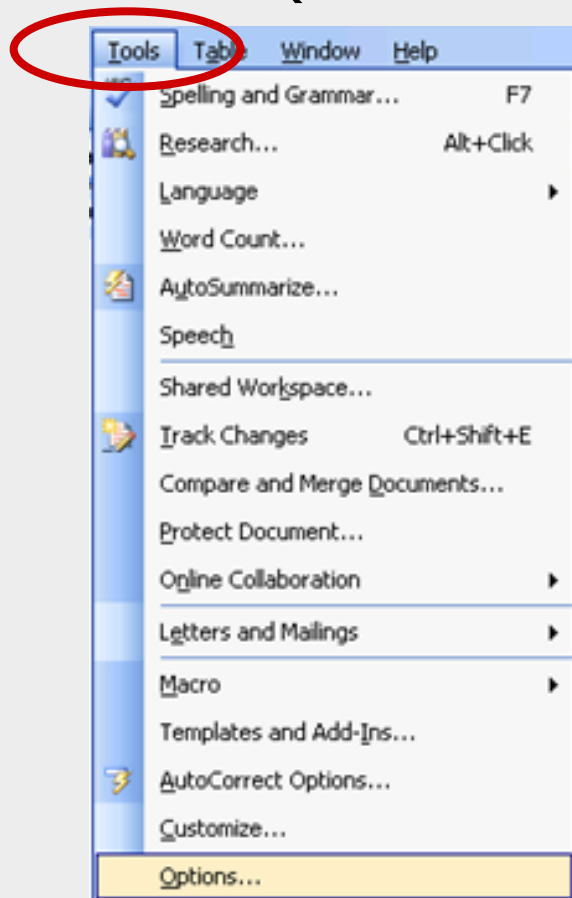
- Ein **Lineal** ist ein Hilfsmittel zum **Zeichnen von Linien**, insbesondere gerader Linien (Strecken). (Wikipedia 17.11.09)



- Wo ist das Merkmal "Messen von Distanzen"?

Example: Tools

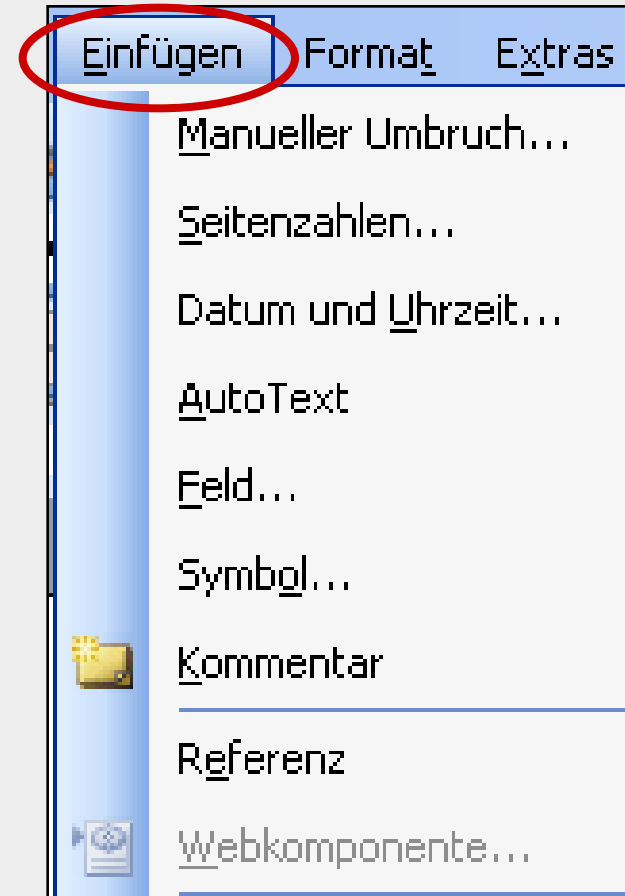
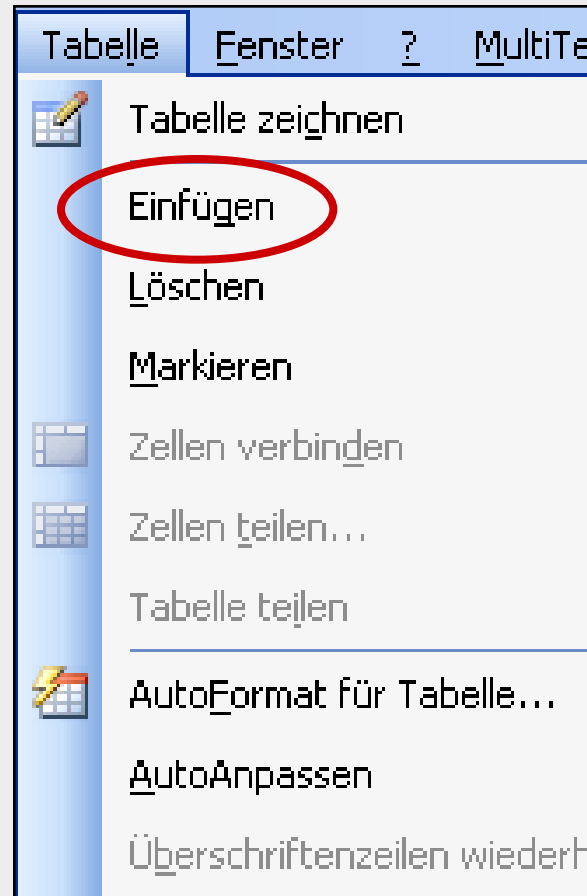
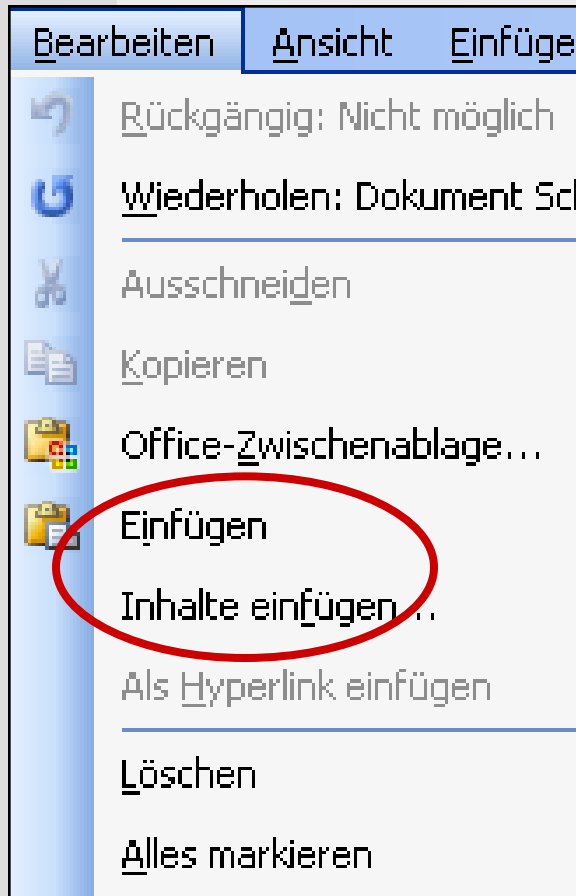
- **Tool** - A mechanical *device* intended to make a task easier. (Wiktionary)



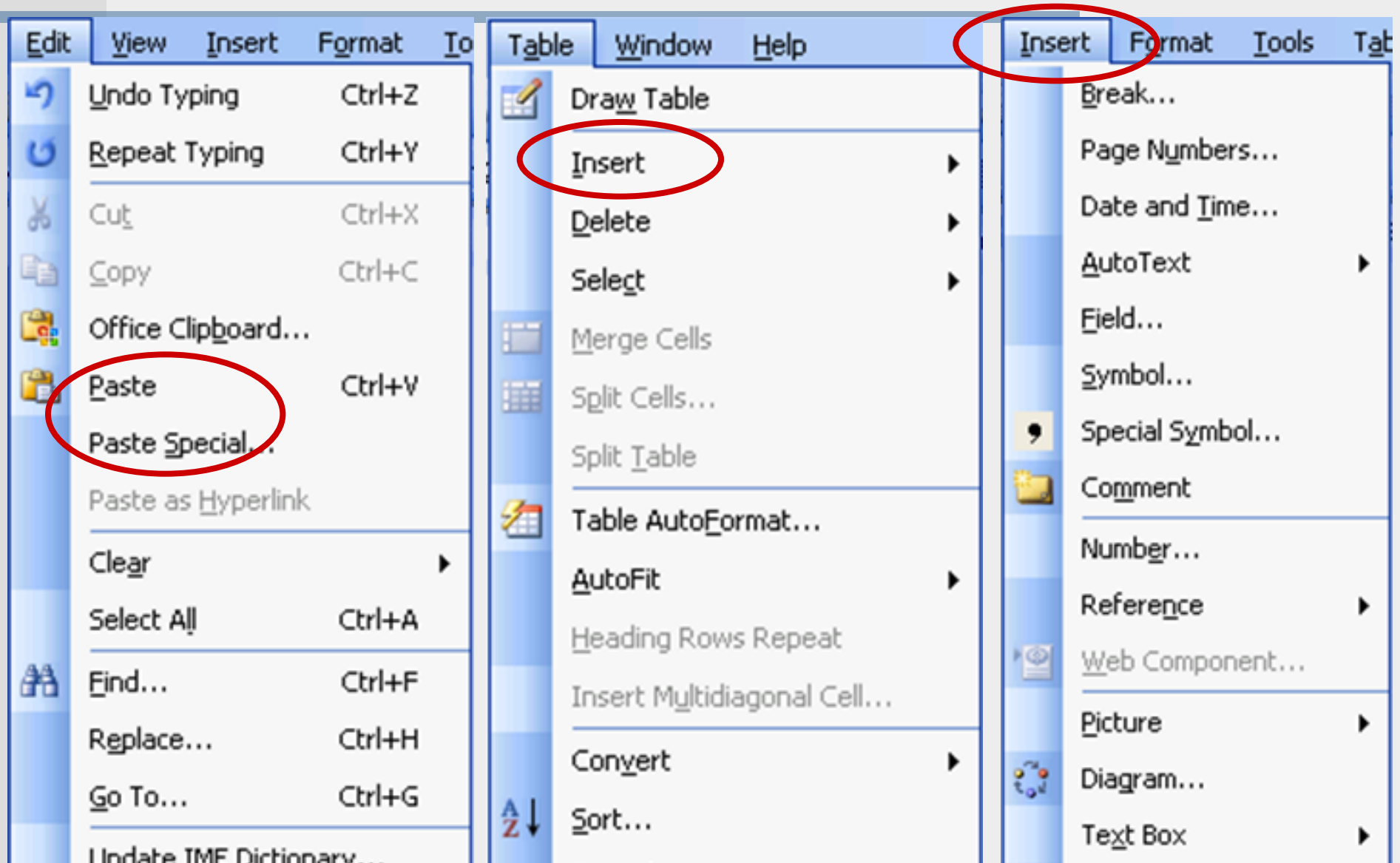
Context of GUI terms

- Context: text which illustrates a concept or the use of a designation (ISO 1087-1)
- In „traditional“ terminology management, the context (example) shows the linguistic usage of a term.
- GUI terms don't have a linguistic context !
- But the “situational” or “functional” context is important !

Context of GUI terms



Context of GUI terms



Context of GUI terms

The image shows three overlapping menu panels from a Microsoft Office application. The leftmost panel is the 'Edition' menu, the middle is the 'Tableau' menu, and the rightmost is the 'Insertion' menu. Two red circles highlight specific items: 'Coller' in the 'Edition' menu and 'Insérer' in the 'Tableau' menu.

Menu	Item	Shortcut
Edition	Annuler Saut Colonne	Ctrl+Z
	Répéter Saut Colonne	Ctrl+Y
	Couper	Ctrl+X
	Copier	Ctrl+C
	Presse-papiers Office...	
	Coller	Ctrl+V
	Collage spécial...	
	Coller comme lien hypertexte	
	Effacer	
	Sélectionner tout	Ctrl+A
	Rechercher...	Ctrl+F
	Remplacer...	Ctrl+H
	Atteindre...	Ctrl+B
	Mettre à jour le dictionnaire IME	
Reconvertir		
Liaisons...		
Objet		
Tableau	Dessiner un tableau	
	Insérer	
	Supprimer	
	Sélectionner	
	Fusionner les cellules	
	Fractionner les cellules...	
	Fractionner le tableau	
	Tableau : Format automatique...	
	Ajustement automatique	
	Titres	
	Insérer une cellule multidigonale...	
Convertir		
Trier...		
Formule...		
Masquer le quadrillage		
Propriétés du tableau...		
Insertion	Saut...	
	Numéros de page...	
	Date et heure...	
	Insertion automatique	
	Champ...	
	Caractères spéciaux...	
	Special Symbol...	
	Commentaire	
	Nombre...	
	Référence	
	Composant Web...	
	Image	
	Diagramme...	
	Zone de texte	
Fichier...		
Objet...		
Signet...		

Data modeling for GUI terminology

■ **Dandelion Project**

Data Modeling and Data Exchange
for Software Localization (DandDEL10N)

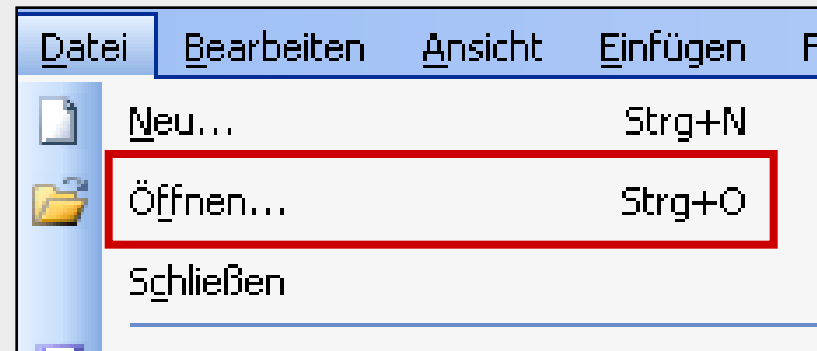
- Cologne University of Applied Sciences (IIM)
- June 2005 – May 2007

■ Objective:

- Optimizing the tools used for software localization (mainly terminology management systems)
- Proposal for LION-specific ISO 12620 data categories
- Proposal for adjusting TBX (and XLIFF) to LION needs

Data categories for LION

- LION-Type
- Development environment
- Project
- String ID
- LION-Context
- Source
- Term (e.g. Öffnen)
- Full form (e.g. Öffnen... *tab* Strg+O)
- Linguistic type
- Part of speech
- Parameter
- Hotkey
- Shortcut



Specific datCats for localization

- **LION-type** (for Windows XP):
 - **Menu type:** Menu item (MI)
 - **Dialog box type:** Dialog box (DB), Group box (GB), Text box (TB), Combo box (CB), Combo box element (CBE), Check box (CHB), Tab (T), Push button (PB), Radio button (RB), Spin box (SB), Progress bar (PRB), Slider (SL)
 - **Message type:** Informative message (IM), Interactive message (IAM), ToolTip (TT)
 - **Table:** Table text (TAT)
 - **User defined type** (UDT)

Extension of ISO 12620: new datCats for TBX

Name	ISO 12620	Representation	dataType	Mandatory?	Level	Comment
Localization type	n/a	<descrip type="lionType">picklist box</descrip>	picklist: Menu item Dialog box Group box Text box Combo box Combo box element Check box Tab Push button Radio button Spin box Progress bar Slider Informative Message Interactive message ToolTip Table text User defined type	N	T	This data category needs to be added to TBX. The picklist values are from the Dandelion EU project. (Institute for Information Management, University of Applied Sciences Cologne).

Data modeling for GUI terminology

Termbase Wizard - Step 1 of 5



Termbase Definition

Specify whether you wish to create a termbase definition using one of the predefined termbase templates, load an existing termbase definition or create a new termbase definition from scratch.

Create a new termbase definition from scratch

Use a predefined termbase template

Bilingual glossary

Bilingual glossary

Multilingual termbase

Software: Graphical User Interface

Term Lifecycle Management (TLM)

Browse ...

Use an existing termbase as a template

Browse ...

Copy catalog objects to the new termbase



SDL MultiTerm
2009

< Back

Next >

Cancel

Help

Data modeling for GUI terminology

Termbase Wizard - Step 4 of 5

Descriptive Fields

Create descriptive fields for your termbase entries. Use the Properties dialog box to specify the type of data each field may contain. The default data type for all fields is text.

Field label:

Description:

Available descriptive fields:

- LION-Type
- Part of Speech
- Linguistic Type
- Hotkey
- Special Features
- Context
- Source
- Shortcut
- Development Environment
- Parameter
- Project

Properties - LION-Type

Data type: Keep history

Picklist:

- Button description
- Check box
- Combo box
- Combo box content
- Dialog box
- Dialog text
- Error message
- Group box
- Menu item
- Progress bar
- Pushbutton

Conclusion I

- The creation of transparent, motivated, appropriate and consistent terminology is a pre-condition for the ease-of-use of software products and the empowerment of end-users
- Therefore, terminology theory, working methods and applications are important for software development and localization
- Diligent terminology (management) does not only help end-users but also documentation and localization experts

Conclusion II

- Only a **proactive** and **multi-disciplinary** terminology approach will really help.
- **proactive:**
when concepts are created and named
- **multi-disciplinary:**
programmers, interface designers, technical writers, web designers, marketing experts, hotline people, localizers etc.

Conclusion III

- Specific terminology data modelling (incl. datCats) is required for software localization.
- Interfaces and data interchange features are needed between software development platforms, localization tools and terminology management systems.
(Adaptation of TBX and XLIFF)
- Research in the field of general terminology theory is necessary: what are objects and concepts in software user interfaces?



Thank you for your attention

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