Quality Assurance The Key to Integration and ROI

Presentation at the workshop "Results-driven terminology management" hosted by Interverbum Technologies, Stockholm

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Agenda

- 1. A few words about ROI
- 2. QA what it means
- 3. Results-driven terminology, what does that mean?
- 4. What is a term? Optimizing term selection
- 5. Some findings from my research
- 6. Good practices

What's at stake?

Time to market and the scale and quality of local brand awareness are key success factors in maximizing market share.

The global market for outsourced language services and technology exceeded US\$33 billion in 2012 and is expected to grow to US\$37 billion by 2018.

The language industry grows at 12% annually even during economic downturns.

Terminology work is necessary for between 4% and 6% of all words in a text

This means...every year...

21 million words for IBM

2.2 million words for the WTO

1.2 million words for the World Bank

400,000 words for typical medium-sized global company

Basic ROI arguments for terminology management

- Get more value out of computer-assisted authoring and translation, future NLP applications
- Improve content quality in all languages
- Increase productivity of writers, translators, thus reducing costs
- Reduce costs/time by reducing duplication of work in terminology enquiries and record-keeping
- Manage key concepts: brands, product names, search keywords, ontologies for CMS, etc.

Sample ROI figure – estimating the waste of distributed glossaries

- One NGO has 1,500 glossaries dispersed across the organization comprising about 2.5 million bilingual entries.
 - 20% of this content is duplication = 500,000. (This 20% figure is also an industry-wide benchmark)
 - The total value of this wasted duplication is about 1M USD, the annual value is about 100K USD

Effective ROI strategy – compare "with" and "without" centralized terminology management

- Costs to carry out/answer terminology queries
- Costs to correct terminology errors
- Costs of creating duplicate glossary entries / storage of individual files
- Costs for writers/translators to develop own terminology reference
- Don't forget to factor in the costs of implementing new process and termbase

Sample results for an organization that translates 30 million words annually

	With terminology management	Without terminology management
Costs of terminology enquiries	50,000	200,000
Costs of terminology corrections	127,000	1,020,000
Costs of duplicate glossary entries	0	100,000
Costs to develop terminology reference materials	53,000	133,000
Operating costs of new terminology program	160,000	n/a
Total annual cost	390,000	1,453,000

The above are sample figures for demonstration purposes only and are not meant to represent any organization that translates 30M words annually. The table is a simplification. Each figure requires additional sub-calculations. Figures are also intentionally over-conservative to minimize challenges to the business case. Figures are in USD.

Sample business case for a company that spends significant \$\$ on SME review

Cost factor	With terminology management	Without terminology management
Time for translation coordinators	5% x .5	15% x .5
Cost for translation coordinators	\$2,500x9=\$22,500 \$7,500x9=\$67,500	
Time spent by SMEs	5%	15%
Cost for SMEs ²	\$105,000	\$315,000
Time spent by content writers	1%	3%
Cost for content writers	\$1,000x10=\$10,000	\$3,000x10=\$30,000
Total costs in the course of content production	\$137,500	\$412,500
Total costs avoided	\$275,000	

ROI reference material

- Champagne, Guy. *The Economic Value of Terminology an Exploratory Study*. 2004.
- Champagne, Guy. *Portrait of Terminology in Canada*. 2004.
- Creating Global Content: Results of the 2007 LISA Creating Global Content Survey. Localization Industry Standards Association, 2007.
- Kelly, Nataly and Donald DePalma. *The Case for Terminology Management Why Organizing Meaning Makes Good Business Sense*. Common Sense Advisory, 2009.
- LISA Terminology Management Survey: Terminology Management Practices and Trends. Localization Industry Standards Association, 2005.
- *Terminology Management –A comparative study of costs, data categories, tools and organizational structure.* The Localization Industry Standards Association, 2003.
- Terminology Management in the Localization Industry. Results of the LISA Terminology Survey. The Localization Industry Standards Association, 2001.
- Schmitz, Klaus-Dirk and Daniela Straub. *Successful terminology management in companies. Practical tips and guidelines: Basic principles, implementation, cost-benefit analysis and system overview.* TC and more GmbH, 2010.
- Schiaffino, Riccardo and Franco Zearo. *Translation quality measurement in practice*.
 2005.
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What is QA?



- Two principles included in QA are:
 - Fit for purpose the product should be suitable for the intended purpose
 - Right first time: mistakes should be eliminated.
- Adherence to standards
- Meeting the organization's objectives
- Continuous quality improvement
- Eliminating data shadow systems and centralizing data in a warehouse to ensure data consistency.

High-quality data

- Is fit for intended purposes
- Accurately reflects real-world constructs
- Is complete, standards based, consistent, accurate
- Conforms to business requirements and acceptability criteria
- Accuracy, correctness, currency, completeness and relevance

Data integrity

- Maintaining and assuring the accuracy and consistency of data over its entire life-cycle
- Ensures stability, performance, re-usability, maintainability
- Implemented at the TMS through:
 - input controls such as through picklists
 - relations between data
 - system checks and correction of invalid data
- Examples of data-integrity mechanisms:
 - bidirectional relationships between related records
 - unambiguous references to instances of homographs

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Data best practices

- Avoid data redundancy
 - Avoid/eliminate duplicates and near-duplicates
 - Place information at the concept level that applies to all terms
- Optimize repurposing
 - Enter the term in its most highly-repurposable form
 - Incorporate data categories that will be needed for different purposes
- Maximize filtering and search capabilities
 - Use picklists wherever possible
- Consider machine-readability

Results-driven: getting the greatest value out of the termbase

- All terminology work has to be justified from a cost/benefit perspective, for example:
 - language coverage is proportional to market penetration
 - term selection criteria is different compared to public termbases
- Focus on the terms that bring the greatest benefit to the organization's content development processes, the "low hanging fruit"
- Design a data model and adopt data entry procedures that lead to the development of a strategic enterprise asset.

Shifting perceptions of terminology

- No longer just for translation purposes
- No longer just an "add-on" to CAT technologies
- No longer only "terminology"
- It is increasingly perceived as an asset that is strategic to the company's global marketing objectives... and as an asset that extends:
 - To any application requiring NLP
 - To lexical resources of various kinds

How is a termbase used in a company?

- Web lookup
- CAT dictionaries
- Controlled authoring
- Publication of glossaries
- Control of named entities: names of products, features, branding
- Search engine dictionaries and management of search keywords
- Spell-checking dictionaries
- Typeahead functions
- Ontologies and controlled vocabularies for CMS, GMS, etc.

• Various NLP and text mining applications (e.g. exclusion lists) 22/03/2013 © Termologic www.termologic.com

Meeting those requirements

- Metadata to ensure adequate retrieval, filtering, and tools integration (machine readable), for instance:
 - morphology for spell checking
 - term status for controlled authoring
 - part-of-speech for controlling product names
 - special subset for keywords
 - hierarchical structures for subject fields and ontologies
- Powerful subsetting capabilities
- Broader term inclusion criteria
- Various export formats 22/03/2013 © Termologic www.termologic.com



term autonomy

derivative products

datagranularin data integrity concept orientation data elementarity SVINSEIS



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A "term" is...

one or more words that form a linguistic unit that:

- occurs frequently (and is not totally obvious to translators)
- corresponds to a concept (i.e. nouns, verbs, not function words)
- is difficult to translate
- could be written differently (synonyms in the SL)
- could be translated differently (synonyms in the TL, polysemes in the SL)
- is highly visible (user interfaces, packaging, etc.
- has a "special" purpose in the organization (search keywords, product names, taxonomy values, etc.)

The termbase is a reflection of an actual corpus and of an idealized corpus

- The terms in the termbase should correspond to the terms used in the organization. It is a "snapshot" of the organization's content and language.
- It needs to be constantly updated with new terms.
- We need to avoid documenting terms that are NOT used in the organization
- As a knowledge base, it describes "what we say" definitions, translations, related concepts, etc.
- As a language authority, it describes "what we should say" preferred terms, terms to avoid, in what context a term is acceptable, etc.

A significant gap between the termbase and the corpus is a sign of a problem

Concordance results

Frequency of termbase terms in corpus by percentage of termbase terms



Multi-word terms are frequent in termbases

Distribution of terms in termbase by term length

As percent of total termbase



The longer the term, the less frequent in the corpus

Frequency of termbase terms in corpus







- We may get more repurposing value by reducing long terms to their core components
- Single-word terms present high degrees of polysemy
- Term selection needs to be more corpus-based
- Raises the question: Why are some terms not found in the corpus? Are we picking the wrong ones?

Examples of termbase terms with "plot" and their various frequencies in the corpus

plot	11,804
probability plot	1,628
normal probability plot	712
normal probability plot of the residuals	166
normal probability plot of the effects	9
scatterplot	781
3D scatterplot	100
contour plot	656
overlaid contour plot	191
response surface contour plot	5
binomial capability plot	0
capability plot	69
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Termbase terms with "plot" that do not occur at all in the corpus

- diagnostic plot
- half normal plot of the standardized effects
- high-low-close plot
- partial least squares coefficient plot
- partial least squares loading plot
- partial least squares response plot
- partial least squares score plot
- pseudo-3D plot
- whole-plot error
- whole-plot generators
- whole-plot replicate

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"partial least squares" occurs 117 times and is already in the termbase

The case of "matrix"

- "matrix" alone and in compounds: 2,518 occurrences in the corpus
- 21 compound terms with "matrix" in the termbase
 - 4 do not occur at all
 - 7 occur 1-10 times
- "matrix" is *NOT* in the termbase
- Most frequent collocates: plot, covariance, design
 - covariance matrix
 - design matrix
 - matrix plot

The case of "moving average"

- "moving average" occurs 506 times in the corpus in various term combinations
- The termbase contains "moving average" plus 5 other longer terms.
- The only useful term is "moving average"
- One good term out of 6 is NOT good odds!

The case of "factorial"

- "factorial" occurs 4,191 times in the corpus in various term combinations
- The termbase contains "factorial" plus 11 other longer terms.
- 4 do not occur in the corpus, and 1 few times
- Thus only 6 terms are "useful". Less than 50%.

The case of "smoothing"

- "smoothing" occurs 576 times in the corpus but is NOT in the termbase
- Most frequent compound, "exponential smoothing" (415) is also NOT in the termbase. Another frequent collocate, "smoothing parameter" is NOT in the termbase.
- Instead, the termbase contains "double exponential smoothing" and "single exponential smoothing", plus 7 other compound terms, 6 of which occur 0-2 times.
- Virtually ALL of the termbase terms are NOT useful, and the important terms are missing.



- Use a good term extraction tool
- Identify frequent domain-specific single-word terms (singletons) and then their most frequent collocates
- Avoid excessively long or over-specified terms
- Remove common pre-modifiers and non-essential postmodifiers

Example of frequent singletons and collocates in an IT company

- data protection, recovery, storage, security, encryption, critical...
- network card, traffic, server, remote/local, wireless, firewall, drive...
- support technical, customer, partner, platinum, policy, agreement, gold...
- restore wizard, job, image, queue, operation
- key product, license, encryption, registry, public/private, certificate, activation, invalid

Why not include anything? What's the harm in having a few extra things in the termbase?

- Putting the wrong terms in the termbase isn't harmless... With useless terms, the whole termbase decreases in value due to redundancy and inconsistency and is more difficult and costly to maintain. Even worse, it incurrs unnecessary translation costs. For example:
 - including segments that are already in the TM
 - including terms in a form that cannot be retrieved in a normal search
 - including terms that do not meet the aforementioned criteria (previous slide)

Termium – an example of concept orientation and term autonomy



Violation of concept orientation

enantiomers encryption endcapped end-capped end-capping endocrine disrupter end plate e-Newsletter engineered antibodies enhanced mode Enhanced Quantitation

English

Ξ

endcapped Context Strong Base (amitriptyline) at pH 7. Amitriptyline is t products minimize this tailing. Origin 5989-7979

Italian con endcapping Chinese 封端 Japanese エンドキャップ処理された Portuguese lacrado na extremidade

add: end-capped

Without concept orientation, things go wrong. Example from Microsoft.

	and the second statements		
	English	Translation	Definition
	API	API	A set of routines that an application uses to request and carry out lower-level services performed by a computer's operating system. These routines usually carry out maintenance tasks such as managing files and displaying information.
English		Translation	Definition
applicat	tion program interface	应用程序接口	A set of routines that an application uses to request and carry out lower-level services performed by a computer's operating system. These routines usually carry out maintenance tasks such as managing files and displaying information.
English		Translation	Definition
applicat	ion programming interface	应用程序编程接口	A set of routines that an application uses to request and carry out lower-level services performed by a computer's operating system. These routines usually carry out maintenance tasks such as managing files and displaying information.

Data elementarity – common mistakes

- Two terms in one term field
- Other things in term field
- Content and source of content in one field
- Comments appended to other text



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Dictionary Packaging Dictionary Demo Section Packaging Dictionary III Demo

English overland transport-(ation)

English inland transport-(ation) Swedish landtransport French transport routier French transport par route German Landtransport Norwegian landtransport Danish landtransport Finnish maakuljetus

overland transport overland transportation

Dictionary Packaging Dictionary Demo Section Packaging Dictionary III Demo

> English intermediate bulk container (IBC)

Swedish IBC-behållare French conteneur en vrac intermédiaire French contenant souple pour vrac German IBC intermediate bulk container Norwegian IBC-container Danish IBC-container Finnish IBC-säiliö Finnish IBC-kontti

intermediate bulk container term type: full form IBC term type: acronym





Other things in term field

Domaine(s) :	- industrie d	u cuir	anglais	I	NTERM
anglais rabbit (fur)				Language English	disabled
Définition : The dressed and	d dyed rabbit fur:	skin.		French	nandicape [n. et adj]
			français		
français peau de lapi	- industrie d	u cuir		Entry number: 4171 Entry dass: Trilingual Gle Collection: GATT Glossar	ossary ry
				English raise a plea	(to)
	🔍 U	TERM		Spanish oponer una o impugnar	excepción
La En	nguage glish	euroization		French soulever une	e exception
Fre	ench	euroisation [neol.]	-		

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Content and source of content



Benefits Analyst

nom

1. Définition : Person responsible for planning benefits, improvements and new benefit programs. (cr. Rita De Ruysscher, traductrice)

- A term is documented in the entry of another term:
 - as a "synonym" or "variant" instead of as a "term"
 - in the definition or any other text field

graphic board Syn.: graphic card

显示卡

graphic card --> graphic board

hard drive

Syn.: hard disk

Syn.: hard disk drive

drive 硬盘驱动器

Entry 243139

Creation Date 2004-07-10715:20:59 (000231931) Modification Date 2004-08-12715:54:42 (000095904)

English

free trade

Term Type full form part of speech noun

French

libre-échange

Type full form

Spanish

libre comercio

Term Type full form synonym libre intercambio

French

entrepôt en douane

Term Type full form synonym entrepôt de douane; entrepôt douanier; entrepôt sous contrôle douanier

Term: 显示卡

Created by: Tutorial User Created on: August 27, 2001 1:22 AM Last change by: Tutorial User Created or changed by: Tutorial User Created or changed on: February 27, 2002 6:22 AM Context: Context source: Part of speech: Gender: Grammatical info: Status: Datasource: Attributes: Remark: Subject: Phonetical info: Cross-reference: Definition: Definition source: User1: User2: User3: User4: Abbr.: Grammatical info: Status: Alt.: Grammatical info: Status: Irreg.: Grammatical info: Status: Syn.: Grammatical info Status: User: Status:

in produced the			
root certi noun	ificate author	ity	
1. The hold Sou Abb	certificate aut ler can be verif rce: D B2 Gloss reviation: root	thority at the top of the hierarchy of authorities by which the identity of a ce fied. <i>ary</i> CA	rtificate
	Note	SYNANT: Mad cow disease;XREF: Similar to scrapie in sheep and Creutzfeldt-Jakob Disease in man, although there has been no link established between BSE and CJD. P.S. Yes there has! (June 1996)	
	Term	bovine spongiform encephalopathy	
	Reliability	3 (Reliable)	
	Term Ref.	Financial Times 27/01/90	
	Date	04/12/1989	
	Abbreviation	BSE	
	Reliability	3 (Reliable)	
	Term Ref.	Financial Times 27/01/90	47
22/03/	Date	04/12/1989	47

en	
Definition	The Disaster Prevention and Preparedness Agency (also known as Commission), an Ethiopian government agency, formerly the Relief and Rehabilitation Commission (RRC), was first established in Addis Ababa in 1974 in the aftermath of the 1973 drought and famine in the two northern provinces of Ethiopia (Wollo and Tigray). It played a central role in bringing the 1984-1985 famine in Ethiopia to the public's attention, and helped to distribute international aid to the areas in need of help.
Definition Ref.	DPPA website: http://www.dppc.gov.et/pages (as at 16/6/2009)

D . C . M	
Definition	Approche globale de gestion rationnelle et modérée des ressources naturelles, humaines et économiques, qui assure le maintien indéfini de la productivité biologique dans l'intérêt des générations actuelles et futures
Definition Ref.	Grand dictionnaire terminologique, Office québécois de la langue française, 2004
Term	développement durable
Reliability	3 (Reliable)
Term Ref.	Grand dictionnaire terminologique, Office québécois de la langue française, 2004
Language Usage	SYN: développement viable à long terme (NB: ces termes se trouvent la plupart du temps dan des textes anciens, on leur préfère désormais "développement durable").
Term	concentrating solar power
Reliability	3 (Reliable)
Term Ref.	Concentrating Solar Power, Solar Energy Technologies Program, US Department of Energy, Energy Efficiency and Renewable Energy, <u>http://www1.eere.energy.gov/</u> (13.7.2009)
Language Usage	also sometimes called "solar thermal" power
D . (.	12/07/0000

I	NTERM	
Language	Term	Acronym
English	sustainable development	
French	développement durable; développement viable	
Spanish	desarrollo sostenible	
Russian	устойчивое развитие	
Chinese	可持续发展	
Arabic	التنمية المستدامة	
Cross-Ref	environmentally sustainable development; unsustainable development; sustainable growth	
Note Eng	The management and conservation of the natural base, and the orientation of technological and institutional the needs of the present are met without compromising the ability to meet the needs of future generations. It conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically socially acceptable.	change, in such a manr appropriate, economical
Note Ern	Dévelopmement qui rénond aux besoins du présent sans compromettre la canacité des générations futures	à rénondre aux leurs
Note i fil	Variantes à éviter : (1) développement tenable; (2) développement soutenable	a repondre aux redio.



Common field mis-use

- Content in wrong field.
- Multiple instances of content in one field.
- Different things in a field.

Content in wrong field

Domain	Earth sciences, Electronics and electrical engineering	
en Definition	either the microphone will be worn by the announcer or it will be on aHe will trustthe operator who positions the mike above his head.	
Term	boom	
Reliability	3 (Reliable)	
Date	24/09/2003	
search and rep nom 1. Définition	blace (IBMot - base canadienne archivée) : Search and replace works very much like a simple search, except that the user must specify bring and its replacement. (cont.)	oth the
Marque d 001.7 s57	e : search/replace (OfficeVision/400 - Nylda Aktouf - terminologue) usage : Sikonowiz, W., The Complete Book of Word Processing and Business Graphics, 1981, p. 1 9c	100,
2/03/2013	© Termologic www.termologic.com	,

Multiple instances in one field

Domaine(s) : - botanique anglais Rabbit brush	
Définition : 1. Any of various plants of the genus Chrysothamnus, esp. : a common shrub (c. graveolens) of western North America that covers vast areas affording a retreat for jackrabbits. 2. Rabbitweed.	
Sous-entrée(s) : synonyme(s) Rabbit bush	



Different things in a field

Note Eng	Payment of <u>interest</u> on a loan. Might be paid in currency, goods or services; often paid on a specified date. Related term: interest payment date
Note Frn	Montant des intérêts payés en devise étrangère ou sous forme de biens ou de services au cours de l'année considérée. Variante: versement d'intérêts

Note(s) : Voir aussi : logiciel espion. L'emprunt **cookie** est largement utilisé en français. Article tiré du *Dictionnaire de la comptabilité et de la gestion financière*, version 1.2, reproduit sous licence.

Form of term

- Base form: singular nouns, infinitive verbs
- Proper case
- Avoid gerunds as nouns:
 - > blogging:
 - noun
 - The act of creating entries in a weblog
 - ✓ blog:
 - verb
 - To create entries in a weblog.

Importing – structuring unstructured data

agrobiodiversity = agricultural biodiversity

biodiversité du/des paysage(s) agricole(s), valorisation agricole de la biodiversité, diversité des espèces élevées/cultivées, biodiversité agricole, biodiversité des cultures, agrobiodiversité agrobiodiversidad, biodiversidad agrícola One of the program priorities (q.v.) established by the Conference of the Parties to the

Convention on Biological Diversity. Also an operational program (q.v.).

```
<termEntry id="q1">
  <descrip type="subjectField" id="q1d1">Environment and Natural Resources</descrip>
  <descripGrp>
     <descrip type="subjectField" id="q1d2">Biodiversity</descrip>
     <ref type="parent" target="g1d1" />
  </descripGrp>
  <descrip type="definition">One of the program priorities established by the Conference
  of the Parties to the Convention on Biological Diversity. Also an operational program. </descrip>
  <langSet xml:lang="en">
     <tiq>
          <term>agricultural biodiversity</term>
          <termNote type="partOfSpeech">noun</termNote>
     </tiq>
     <tig>
         <term>agrobiodiversity</term>
          <termNote type="partOfSpeech">noun</termNote>
     </tiq>
  </langSet>
  <langSet xml:lang="fr">
     <tiq>
         <term>biodiversité du paysage agricole</term>
          <termNote type="partOfSpeech">noun</termNote>
     </tiq>
     <tiq>
         <term>valorisation agricole de la biodiversité</term>
          <termNote type="partOfSpeech">noun</termNote>
     </tiq>
     <tig>
          <term>diversité des espèces élevées</term>
          <termNote type="partOfSpeech">noun</termNote>
```

22/03/2073

<tig>

<term>diversité des espèces cultivées</term>

<termNote type="partOfSpeech">noun</termNote> </tiq>

<tiq>

<term>biodiversité agricole</term>

<termNote type="partOfSpeech">noun</termNote> </tig>

<tig>

<term>biodiversité des cultures</term>

<termNote type="partOfSpeech">noun</termNote></tig>

<tig>

<term>agrobiodiversité</term>

<termNote type="partOfSpeech">noun</termNote>

</tig>

</langSet>

```
<langSet xml:lang="es">
```

<tig>

<term>agrobiodiversidad</term>

<termNote type="partOfSpeech">noun</termNote>

</tig>

<tig>

<term>biodiversidad agrícola</term>

<termNote type="partOfSpeech">noun</termNote>

</tig>

</langSet>

</termEntry>

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Deciding on the term – maximizing leverage in CAT tools and productivity

- configuration
- dynamic memory
- memory
- memory configuration
- memory management
- memory map
- memory map location
- memory monitor
- static memory

- impact plan
- template impact plan
- reference impact plan
- working impact plan
- add:
- template



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Definitions

- ISO 704
- Never translate a definition



Creation Date 2004-07-10T15:20:59 (000231931)

English

free trade zone

Term Type full form part of speech noun Definition See bonded area.

Entry 241070

Creation Date 2004-07-10T15:12:03 (000231931) Modification Date 2004-11-19T03:46:40 (Ifaili)

Status proposed

English

bonded area

Term Type full form Pos noun Definition See free trade zone.

Context sentences

Term	tail boom
Reliability	3 (Reliable)
Term Ref.	(PH)ADS95 Tech Man IAI Draft 2
Context	The booms(L/R)are the mechanical interface between the center wing and the empennage. The booms are two oval rods, connected on one side to the central wing section and on the other side to the vertical stabilizers, which connect to the horizonta
Date	24/09/2003

tag attribute

noun

 Source: Translation Services Center Product identifier (for translation): Tivoli, ILOG Development Tools Context: Tag attribute attributesTag Tag attribute

tag definition

noun

 Subject area: Software \ Application Infrastructure Services \ Web Servers Source: Translation Services Center, Terminology Extraction Process Product identifier (for translation): WebSphere Context: Tag definitions

22/03

Redundant information

CONCEPT Subject area: Software Term: data pool (English) - Translation Services Center - Terminology Extraction Process Word Usage noun Status: preferred Usage note: Write as shown -- two words. Term: datapool (English) 🛇 Terminology Extraction Process Word Usage noun Status: non standard

Usage note: Write as two words--"data pool."

Redundancy leads to inconsistencies and errors



English

 dispersive SPE kits

 Definition
 The second type of Agilent SampliQ QuECHERS kits, which co

 Context
 The dispersive SPE kits vary based on the type of food you are

French Kits d'extraction SPE German Dispersions-SPE-Kits Spanish Kit SPE dispersiva Japanese SPEキット



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LCMS Triple Quad System LCMS Triple Quad System Adv Functionality LCMS Triple Quad System Enhanced Features Microarray Scanner System Particle Analyzer System Particle Analyzer System Adv Funct Particle Analyzer System Enh Features Perkin Elmer GC System Perkin Elmer GC System Enh Perkin Elmer HPLC System Perkin Elmer HPLC System Enh Perkin Elmer UV System Shimadzu HPLC System Shimadzu HPLC System Adv Shimadzu HPLC System Enh Shimadzu HPLC System Enh Shimadzu Prep LC System Shimadzu Prep LC System Adv Shimadzu UV System UV-Vis System UV-Vis System Enh Features Waters Acquity System Waters Acquity System Enh Waters Alliance System Waters Alliance System Adv Waters DeltaPrep / PrepLC System - Base Waters DeltaPrep / PrepLC System - E Waters DeltaPrep / PrepLC System - X Waters HPLC System Waters HPLC System Adv Waters HPLC System Enh

valid terms:

triple quad system particle analyzer system microarray scanner system GC system HPLC system UV system acquity system alliance system

even if these are product names, the list can be significantly reduced

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Acquisition Method Acquisition Method Browser Acquisition Method Browser Acquisition Method File Acquisition Method File Name Acquisition Method Name Acquisition Method Name Acquisition Method Path Name Acquisition Method Report Acquisition Method report settings Acquisition Method Version

acquisition method acq. method

browser

path

-		-		
12	Dich	loro	proi	nane
÷,-	Dire.		P1 91	Punc

- 1,2,4-Trimethylbenzene
- 1,2-Dichlorobenzene
- 1,2-Propanediol
- 1,3 Butadiene
- 1,3-Butanediol
- 1,3-Dichlorobenzene
- 1,3-Propanediol
- 1,4- Diisopropylbenzene
- 1,4-Butanediol
- 1,4-Dichlorobenzene
- 1,5-Pentanediol
- 1,6-Hexanediol
- 1,7-Heptanediol
- 1,8-Cineol
- 1,8-Octanediol
- 1,9-Nonanediol
- 1.00 ml/minute
- 1/16" stainless steel low dead volume
- 1/4-inch
- 1/4-inch nut driver
- 1/4-inch wrench
- 1/8-inch
- 1100 Series
- 110V relay DISABLED
 - 25
 - none are searchable

- dichloropropane trimethylbenzene dichlorobenzine propanediol butadiene butanediol disopropylbenzene pentanediol hexanediol heptanediol cineol octanediol nonanediol stainless steel low dead volume nut driver wrench
 - 18 all are searchable

relay

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Conclusion

- QA is key to protecting your investment
- QA ensures that your data is optimized for satisfying a variety of business needs
- QA involves adopting sound practices for data management in general as well as for terminology management in particular