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## **1. New Portuguese spelling recognized and generated**

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Changes introduced by the Portuguese Language Orthographic Agreement of 1990 are due to start on 1 January, 2009.

The changes will affect about 0.5 percent of all words used in Brazilian Portuguese and up to 1.6 percent of the words in other Portuguese-speaking countries grouping Portugal, Cape Verde Islands, Sao Tome and Principe, Angola, Mozambique, Guinea-Bissau, and East Timor. There will be a transition period when both the new and the old orthography will be accepted. In Brazil, this period begins 1 January 2009 and ends 31 December 2012. Portugal will implement the changes over the next six years.

The changes are meant to unify spellings across all Portuguese-speaking countries and they vary from country to country.

In Brazil, most changes are related to the use of hyphens and accent marks. For example, the new rules for hyphenated expressions will change "contra-regra" into "contrarregra", "pára-quedas" into "paraquedas", and "microondas" into "micro-ondas". The umlaut diacritic will no longer be used except for proper names and foreign words ("seqüestro" becomes "sequestro"). Changes to accent marks also affect diphthongs ("colméia" becomes "colmeia" and "paranóico" becomes "paranoico") and the circumflex accent ("lêem" becomes "leem"). In Portugal, most changes are related to removing silent consonants like "h", "c", and "p". For example, "húmido" becomes "úmido", "acção" becomes "ação", and "óptimo" becomes "ótimo".

Version 4.4 of PAHOMTS accepts both old and new spellings when translating documents from Portuguese into English and from Portuguese into Spanish. For example: *assembleia* and *assembléia* will both be recognized by the system and will share the same translations. Translations into Portuguese using the English-Portuguese and Spanish-Portuguese engines will use the new spelling. Examples of the new spelling include: *ideia* (instead of *idéia*), *sequência* (instead of *seqüência*), *voo* (instead of *vôo*), and *infraestrutura* (instead of *infra-estrutura*).

The agreement (in Portuguese) can be found at:  
[http://www.gri.pt/documentos/acordo\\_ortografico.pdf](http://www.gri.pt/documentos/acordo_ortografico.pdf)

The Guia Michaelis da Reforma Ortográfica provides an excellent summary of the changes introduced by the new spelling. It can be downloaded from:  
[http://sistemas.rei.unicamp.br/ggbs/pdf/Guia\\_Reforma\\_Ortografica\\_CP.pdf](http://sistemas.rei.unicamp.br/ggbs/pdf/Guia_Reforma_Ortografica_CP.pdf)

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## 2. Dictionaries

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A total of 5,136 NEW dictionary entries have been added to the PAHOMTS® dictionaries since version 4.3. The new word counts stand as follows for each language pair:

English-Spanish	262,244	entries (135,429 source entries; 126,815 target entries)
Spanish-English	244,040	entries (128,941 source entries; 115,099 target entries)
English-Portuguese	226,842	entries (115,276 source entries; 111,566 target entries)
Portuguese-English	206,372	entries (108,609 source entries; 97,763 target entries)
Spanish-Portuguese	213,369	entries (109,611 source entries; 103,718 target entries)
Portuguese-Spanish	184,644	entries (87,643 source entries; 97,001 target entries)

The following improvements have been incorporated in the PAHOMTS dictionary interface:

- In the AU Wizard for Noun-Noun compounds, the field "Allow for a wild-card adjective after the first noun" is automatically marked as the default option.
- New options in the English target dictionary entries for adjectives. In addition to having the option to code English target adjectives for semantic features, inflectional features can now be coded as well (e.g., adjectives that form the comparative form with –ER or “more” or the superlative form with –EST or “most”).
- Tooltips are more specific depending on the context and the type of entry being displayed.

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## 3. Format handlers

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The following improvements have been incorporated in version 4.4:

- **Rich Text Format**
  - Improved handling of optional hyphens
  - Improved handling of documents based on external templates
  - Improved handling of embedded codes
  - Improved handling of shapes and picture objects inside a document
  - Minor bug fixes

- **MHT**

- Improved handling of blank spaces at the beginning of sentences
- Improved handling of hidden notes in PowerPoint presentation

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#### **4. English-Spanish translation engine**

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- Improved insertion of definite articles with plural subjects
- Improved parsing and translation of questions that start with an adverbial phrase (e.g. *If so, what changes are required?*)
- Upside-down question mark is now added after the comma if the question is introduced by an adverbial phrase (*En ese caso, ¿qué cambios se requieren?*).
- Improved lookup of entries with mixed capitalization
- Correct capitalization for determiner "A" when sentence-initial
- Improved handling of all uppercase expressions in parentheses followed by years (*IHR 2005*). These were erroneously taken for bibliographic references.
- Various changes to improve adjective placement in expressions that contain more than one adjective, more than one noun, nouns in coordination and adjectives in coordination
- Improved parsing and translation of purpose phrases that appear in correlative constructions (*They created this policy not only to minimize risk, but to support the principles of ...*).

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#### **5. Spanish-English translation engine**

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- Improved Prepositional Phrase attachment when there is more than one preposition
- Improved Prepositional Phrase attachment with Adverbial Phrases
- Adverbial Phrases are now accepted in isolation, even if they are not part of a list.
- Subordinate conjunctions are now accepted without the comma to improve the parse.
- Improved handling of Object TUs with conjoined nouns
- Improved handling of reversed TUs triggered by nouns that are objects of verb nominalizations
- Improved parsing and synthesis of conjoined verb nominalizations that share direct objects
- Improved handling of constructions with *por* that trigger alternate translations through an AU, which are now not mistaken by agentive constructions
- Improved lookup of entries with mixed capitalization
- Correct lookup of all long expressions triggered by the verb *ser*

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## 6. English-Portuguese translation engine

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- New rules for Portuguese hyphenation
- New rules for Portuguese accent marks
- Improved insertion of definite articles with plural subjects
- Improved parsing and translation of questions that start with an adverbial phrase (e.g. *If so, what changes are required?*)
- Improved lookup of entries with mixed capitalization
- Correct capitalization for determiner "A" when sentence-initial
- Improved handling of all uppercase expressions in parentheses followed by years (*IHR 2005*). These were erroneously taken for bibliographic references.
- Various changes to improve adjective placement in expressions that contain more than one adjective, more than one noun, nouns in coordination and adjectives in coordination
- Improved parsing and translation of constructions of the type: *It is* + past participle + *that ...*, which are now rendered as Passive with SE + *que* (e.g., *It is recommended that ...* => *Recomenda-se que ...*)
- Improved parsing and translation of purpose phrases that appear in correlative constructions (*They created this policy not only to minimize risk, but to support the principles of ...*).

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## 7. Portuguese-English translation engine

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- New rules for Portuguese hyphenation
- New rules for Portuguese accent marks
- Improved insertion of *to* in front of infinitives
- Improved handling of expressions that contain dates
- Improved translation of expressions containing *até* and months
- Improved lookup of entries with mixed capitalization
- Improved lookup of expressions containing hyphens. If a 3-word expression containing a hyphen is not found, the hyphen is removed and the entry is looked up again. Ex: if "recém-nascido" is not found in the dictionary, it will be matched with the existing entry "recém nascido".
- Improved subject insertion with infinitives
- Improved handling of constructions with *por* that trigger alternate translations through an AU, which are now not mistaken by agentive constructions
- Improved parsing and synthesis of conjoined verb nominalizations that share direct objects
- Improved handling of Object TUs with conjoined nouns
- Improved handling of reversed TUs triggered by nouns that are objects of verb nominalizations
- Improved handling of *como* in adverbial phrases

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- Adverbial Phrases are now accepted in isolation, even if they are not part of a list.
  - Subordinate conjunctions are now accepted without the comma to improve the parse.

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## 8. Spanish-Portuguese translation engine

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- New rules for Portuguese hyphenation
- New rules for Portuguese accent marks
- Improved Prepositional Phrase attachment when there is more than one preposition
- Improved Prepositional Phrase attachment with Adverbial Phrases
- Adverbial Phrases are now accepted in isolation, even if they are not part of a list.
- Subordinate conjunctions are now accepted without the comma to improve the parse.
- Improved lookup of entries with mixed capitalization
- Improved handling of expressions that contain dates
- Improved handling of verb past tenses in Dependent Clauses
- Improved synthesis of constructions with clitics with auxiliary verb and past participle forms
- Correct lookup of all long expressions triggered by the verb *ser*

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## 9. Portuguese-Spanish translation engine

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- New rules for Portuguese hyphenation
- New rules for Portuguese accent marks
- Upside-down question mark is now added after the comma if the question is introduced by an adverbial phrase (*En ese caso, ¿qué cambios se requieren?*).
- Improved handling of expressions that contain dates
- Improved handling of expressions that contain embedded numbers
- Improved lookup of entries with mixed capitalization
- Improved lookup of expressions containing hyphens. If a 3-word expression containing a hyphen is not found, the hyphen is removed and the entry is looked up again. Ex: if "recém-nascido" is not found in the dictionary, it will be matched with the existing entry "recém nascido".
- Improved parsing and synthesis of conjoined verb nominalizations that share direct objects
- Improved handling of Object TUs with conjoined nouns
- Improved handling of reversed TUs triggered by nouns that are objects of verb nominalizations
- Improved handling of *como* in adverbial phrases
- Adverbial Phrases are now accepted in isolation, even if they are not part of a list.
- Subordinate conjunctions are now accepted without the comma to improve the parse.