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THE IMPORTANCE OF THE PUBLICATION OF THE FIRST EDITION OF THE PORTUGUESE-BRAZILIAN VIM 2012

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ABSTRACT

The development of a common language in the field of metrology arose in the mid-twentieth century, gradually eliminating the large "tower of Babel" in existing metrological communication. Since metrology is moving from a classical to a fully probabilistic (uncertainty) approach, it is especially important to have an international vocabulary that can allow to clearly communicating about the measurement approach. In this sense, beyond the original translations from English and French, it is essential that there also versions in the native language we are accustomed to using in everyday life, and these specific versions should include the current use that is made of specific terminology and common use, but correct them on those who fall short when it is taken into account concepts and principles for worldwide use. In this sense the first edition of the Portuguese-Brazilian VIM is a state of the art regarding the pursuit of efficiency and uniformity in communicating in Portuguese under metrological scope.

Keywords: VIM, metrology, metrological vocabulary, metrological terminology

INTRODUCTION

In 1997 the Joint Committee for Guides in Metrology (JCGM), chaired by the Director of the *Bureau International des Poids et Mesures* (BIPM), was formed by the seven International Organizations that had prepared the original versions of the Guide to the expression of uncertainty in measurement (GUM) and the International vocabulary of basic and general terms in metrology (VIM, from the French title ‘‘*Vocabulaire International de Métrologie*’’).

The third edition of the VIM was developed in Working Group 2 (WG 2) of the JCGM, that consists of the following:

- BIPM, International Bureau for Weights and Measures
- IEC, International Electrotechnical Committee
- IFCC, International Federation for Clinical Chemistry and Laboratory Medicine
- ILAC, International Laboratory Accreditation Cooperation
- ISO, International Organization for Standardization
- IUPAC, International Union for Pure and Applied Chemistry
- IUPAP, International Union for Pure and Applied Physics
- OIML, International Organization for Legal Metrology

The VIM is the most global attempt to standardize terminology across different fields of science, legislature, commerce and trade. The Vocabulary is based on the principles laid down in the various parts of ISO 31, Quantities and units, currently being replaced by ISO 80000 and IEC 80000 series Quantities and units, and in the SI Brochure (BIPM, 2006).

Since 1985 in Portugal (IPQ, 2008) and since 1993 in Brazil (INMETRO, 2008), we now have an edition of the international vocabulary of metrology in Portuguese. Nevertheless regardless of language, the VIM will continue suffering enhancements contributing to a more effective metrological communication, and consequently a better spread of metrological culture.

The publication of the first edition of the Portuguese-Brazilian VIM 2012 (INMETRO and IPQ, 2012) corresponds to the third international edition of the VIM (International vocabulary of metrology, hereinafter VIM 2012- Basic and general concepts and associated terms JCGM 200:2012), in English and French, published in 2012 by JCGM (Joint Committee for Guides in Metrology) and the committee for metrological guides of BIPM (Bureau International des Poids et Mesures) (JCGM and BIPM, 2012); it is a milestone in the history of metrology for Portuguese speaking world, because through the tremendous work of about 15 months, researchers from both countries have addressed about the purpose of preparing a VIM standard that could be used regardless of whether in Brazil or Portugal, and respecting the spelling agreement 1990.

Given the existence of some differences enshrined in the agreement terms and spelling rooted in tradition, in some situations there is this VIM terms with some slight difference between the two countries, but these are side by side in the document and can be chosen to suit the circumstances and location. The adoption of this document along with the ISO GUM (IPQ, 1998) and ISO / IEC 17025 (ISO, 2005) contribute to the development and acceleration of the globalization process, integrating markets, reducing costs and expanding opportunities, which is especially welcome in times of crisis like ours.

CONTEXT

The metrology as applied science is of vital and growing importance in today's world. Related official institutions come not only standardizing the terminology but also calculations, estimates, procedures and management through document generation and robust standards. In this sense we now have three major compendia: The International Vocabulary of Metrology, the subject of this paper, currently in its third edition, VIM 2012, the GUM: "Evaluation of measurement data - Guide to the expression of uncertainty in measurement", the translation of the 1st edition's (2008) of the publication "JCGM 100:2008 Evaluation of measurement data - Guide to the expression of uncertainty in measurement." or GUM 2008 and ISO / IEC 17025, General Requirements for the Competence of Calibration and testing Laboratories (2000).

The adoption and acceptance of these documents have contributed greatly to the synergy of the globalization process and consequently to greater market integration. The results of quality in products and processes, concurrently reducing costs is evident, as countries-signatories support and spread these documents. The experience of these countries is the vivid portrayal of these advantages that culminate into greater participation in regional and global market, thus contributing to the development of the whole society.

Thus the quality institutes of the Portuguese-speaking countries, INMETRO and IPQ, backed by the power of the state law that established as the applicability of VIM 2012, (in Brazil through Decree n. 232, of May 8, 2012) play a vital role in achieving these purposes as well as for the dissemination of these documents.

With regard to VIM 2012, the technicians and researchers spend about 15 months, as expressed in the preface of this document, in order to reach a level of terminology equal to the original translations from English and French editions.

REDACTION

The *VIM 2012*, in Portuguese, the result of a joint effort between INMETRO and IPQ, followed the recommendations of the Spelling Agreement of 1990 which came into force in early 2009 in Brazil and on May 13, 2009 in Portugal. Nevertheless, the search for greater equivalence between the current versions of VIM in both countries, it was decided to keep some terms that are rooted in the traditions of each country, in cases that violate the Orthographic Agreement of 1990.

It should be noted that some of these incompatibilities appear in the Orthographic Agreement itself, such as differently as both countries make use of accents. There are also some differences and lexical peculiarities widely known. Several footnotes deal with these differences and lexical accent. For example on page 2:

1. Note of the translators: use in Portugal "*protão*", in Brazil "*próton*".
2. Note of the translators: use in Portugal "*resistência*", in Brazil "*resistor*".
3. Note of the translators: use in Portugal "*quantidade de matéria*", in Brazil "*quantidade de substância*".
4. Note of the translators: use in Portugal "*ião*", in Brazil "*íon*".

Most terms have common translation, however due to entrenched linguistic differences already mentioned; there are some different terms in Portuguese of Brazil and Portugal. For example, in item 2.38, "*fator de abrangência"; "fator de expansão"*. In these cases the differentiated terms between both countries, the order changes see:

- In the Brazilian version, 2.14: "*veracidade de medição; justeza de medição*";
- In the Portuguese version, 2.14: "*justeza de medição; veracidade de medição*".

Once the letters ***k***, ***w*** and ***y*** were reintroduced by the Orthographic Agreement, it has to meet certain requirements, such as the SI prefix ***k*** (lowercase) of kilo, SI prefix ***Y*** for multiple yotta and Rockwell hardness scale , HRC.

With the consent of the BIPM, were included, the terms below in Portuguese, the equivalent terms in the original English and French as well as Spanish. Such translations are designed to facilitate interaction and understanding of these terms among those world wide use languages. The terms in these languages in bold refer to the most used.

It is noticed that there was a great concern to convey the idea more accurately as possible what each term means and is expressed in the languages of greater use.

CONCLUSIONS

A project as important as already defined in this paper and which required many resources should be properly valued. We are immensely grateful to everyone involved in this project and presented us with the most accurate and reliable edition of the VIM held today. However there is unfortunate that there is still evidence of the "Tower of Babel" to the extent that some in Portuguese have not submitted themselves fully to this document that have the power of a law.

Maybe this takes place by relying on own experience. The result of this is that we still find inconsistencies in publications. For example it is still relatively common to come across books that relate the concept of measurement accuracy to systematic error. The VIM 2012 and even earlier versions make it clear that measurement accuracy *("exatidão de medição")* is the degree of agreement between a measured value and a true value of a measurand, which means that the accuracy of measurement is related to a small error, whether this is a systematic source or random.

Also there are those who still use archaic terms as *"aferição"* while we must use caution in nonexistent terms in the VIM 2012 as *"fundo de escala"*. Also those who were used to the previous version of VIM should reread the VIM 2012 carefully because some terms suffered slight change. For example, the term "*repetitividade de medição*" came to be called "*repetibilidade de medição"*.

No doubt the extent that we submit ourselves to VIM 2012 and future versions, we will be contributing to a unique language that contributes simultaneously with high quality and low cost.

The VIM 2012 is freely available on the websites of Inmetro (www.inmetro.gov.br) and IPQ (www.ipq.pt).

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