

## Aeronautical Meteorology Glossary: a discussion on term definition in the ANACpedia termbase

*Glossário de Meteorologia Aeronáutica: uma discussão sobre definição de termos na base terminológica da ANACpédia*

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### ABSTRACT

In this paper, the study of terminological definitions in specialized fields, particularly the aviation field, is proposed. During the development of a glossary for the Aeronautical Meteorology subfield, in English and in Portuguese, for the ANACpedia database, there was a need to delineate specificities with the purpose to meet the expectations of a varied audience. Based on Finatto (2001) regarding types of definition and standardization guidelines prescribed by ISO 704/1987, this paper (1) analyzes procedures for the extraction of definitions and the organization of ANACpedia structural classes, and (2) discusses the termbase macro-organization and definitional categories used. In this way, nuances of terminological definition choices for the Aeronautical Meteorology subfield were discussed, with the purpose of contributing to improve the elaboration of entries for specialized glossaries.

**Keywords:** Aviation, Aeronautical Meteorology, Specialized Translation, Terminology, ANACpedia.

### RESUMO

*Neste artigo, é proposto o estudo de definições terminológicas no campo técnico-científico, particularmente na área de aviação. Durante o desenvolvimento de um glossário da subárea de meteorologia aeronáutica, em inglês e em português, para a base de termos ANACpédia, verificou-se a necessidade de delinear especificidades com o intuito de atender a expectativas de diversos públicos. Com base no proposto por Finatto (2001) acerca dos tipos de definições e nas diretrizes de elaboração de definições normatizada pela ISO 704/1987, foram realizadas (1) a análise dos procedimentos para extração de definições e a organização de classes estruturais da base ANACpédia, e (2) a discussão da macro-organização da base e das categorias definitórias utilizadas. Nesse sentido, as nuances das escolhas de definições terminológicas para a subárea de Meteorologia Aeronáutica foram discutidas, com o intuito de contribuir para a elaboração, com maior clareza, de verbetes para glossários especializados.*

**Palavras-chave:** Aviação, Meteorologia Aeronáutica, Tradução Especializada, Terminologia, ANACpédia.

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## 1. Introduction

The terminological work may raise many discussions on how to best address the demand for a good definition, especially in specialized fields. As a researcher affiliated to the “Aeronautical English Research Group” (GEIA) in Brazil since 2014, in the line “language description and analysis within the scope of Aeronautical English”, the discussion in this paper was motivated by a thrilling investigation interest on how to classify a definition as good, not necessarily based on a traditional panorama of Aristotelian definitions, as shown by Couto (2003). Although much has been said and discussed about it in the literature, the perspective of the intensional type as a so-called “more accurate definition” still remains in technical-scientific fields, as prescribed by some technical normatives, such as ISO 704 and ISO 1087, among others. In the case of Aeronautical Meteorology, the fact there are less specialized sources makes this task more difficult at first sight, especially because some informal definitions are used in our daily lives, sometimes very differently from how some terms are used in a specialized context.

In this way, this paper aims at discussing theories on definition and analyzing how terms are defined in practice, to try to shed light on possible improvements and trigger terminological considerations. For that, this work was outlined in the following way: presenting a panorama of specialized translation and terminology studies (sections 2.1 and 2.2); discussing issues in the validation process (section 2.3); analyzing the ANACpedia database from a general perspective, concerning the general organization and the structural classes (section 3.1); and discussing the Aeronautical Meteorology database and definitional categories used (section 3.2). Through this analysis, some possible improvements to the definition of aeronautical meteorology terms were addressed, taking into consideration intended audience, which may vary in terms of specialization, and support of contextualization (CABRÉ, 1999; FELBER; PICHT, 1984).

The next topic will approach some developments of specialized translation and terminology studies in the field of aviation in order to discuss some of the main theoretical concerns to elaborate definitions in specialized fields.

## 2. Theoretical foundation

### 2.1. Specialized translation in the field of Aviation

At first, the *lingua franca* in the field of Aviation was French, then English took this place after the post-World War II economic expansion of the United States, yet, in some way, French still poses some influence to terms in English.

From 1860 to 1918, greatly due to the cultural influence of major powers at the time, French was considered the *lingua franca* of aviation, a field so-called air navigation (*navigation aérienne*). The first work in this field was “*La navigation aérienne – théoriquement et pratiquement démontrée – la direction de aerostats*” (1855), by Arthur Mangin; and the first dictionary in English was the “*Dictionary of Aviation*” (1911), by Pierce (Cf. BOCORNY, 2011). After this first period, the English language started to be consolidated as the *lingua franca* of aviation, as explained in the following excerpt:

Regarding works published in the interwar period, however, the balance between the great powers starts to fade. It is already possible to notice that English emerges as the aviation language. From 39 dictionaries, glossaries, manuals, encyclopedias and other works in this field, 10 are written in English; four, in German; two, in Italian; two, in French; one, in Spanish; one, in Dutch; and one, in Japanese. Other seven works are bilingual, and English is always present. From those, four are in English/French; two, in English/Spanish; and one, in English/Japanese. At last, eight publications are multilingual, comprising some of the above-mentioned languages, and all of them sharing the English language (BOCORNY, 2011, p. 967).<sup>2</sup>

Between 1944 and 1977, English was consolidated as the *lingua franca*, mostly due to the increase in the flow of passengers in commercial airlines, with major peak between the decades of 1940 and 1950: from two million passengers to 17 million passengers. As a result, ICAO, when prescribing recommendations to standardize terminology, has indicated English, in 1951, to be the *lingua franca*. With that, the demand for scientific translation in the field of aviation, from English to other languages, started to increase and, as a result, the issue of terminological definitions started gaining more attention, arising much debate, as it will be discussed in the following topic.

## 2.2. Terminological definitions

Defining characteristics of a good terminological definition is not an easy task. It depends on several factors and, despite ISO standardization processes, following a more conceptual approach, authors actually have different perspectives nowadays on how a good definition should be.

Finatto (2001) agrees the classification of a “good definition” has porous edges. Oftentimes the difficulty to elaborate a more concise definition is due to the fact it is not so easy to differentiate what

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<sup>2</sup> “Em relação às obras publicadas no entre guerras, entretanto, o equilíbrio entre potências começa a se desfazer. Já é possível notar o destaque do inglês como língua da aviação. De 39 dicionários, glossários, manuais, enciclopédias e demais obras sobre o tema, 10 são escritas em inglês, quatro em alemão, duas em italiano, duas em francês, uma em espanhol, uma em holandês e uma em japonês. Outras sete obras são bilíngues, estando o inglês sempre presente. Destas, quatro são inglês/francês, duas inglês/espanhol e uma inglês/japonês. Por fim, oito publicações são multilíngues, envolvendo algumas das línguas citadas acima e todas elas tendo como língua comum o inglês”. All translations by the author of this paper, unless otherwise noted.

the essential characteristics and the more general characteristics would be, since it sometimes implies a subjective evaluation, guided by the intended purpose for that definition.

The traditional “formula” originated from the Aristotelian proposition *genus + differentia*, still largely used as the terminological basis for technical-scientific fields, as some sort of “more accurate definition”. *Genus* corresponds to a hypergroup, containing the essential characteristics; and *differentia* are, precisely, the specific characteristics that would “ultimately” define the concept. Although more contextual approaches have been proposed, as in the case of Cabré (1999), stricter formats of definition are still relevant, mainly for mathematical and computational applications (Cf. SAGER; L’HOMME, 1994).

Within this context, Finatto (2001) describes two basic types of terminological approach tendencies: (1) a traditional one, which is prescriptive and conceptual; and a (2) linguistic one, which is descriptive and focuses on meaning. In the first approach, the definition content is contrasted in terms of concept versus meaning. It is generally based on the perspective of specialists of the field, according to the observation practice, but it is not based on the meaning of the word. In the second approach, there is no uniform point of view but the convergence of several linguistic perspectives instead. The terminological work used to be aligned with the attribution of nomenclatures but nowadays it is also regarded as the concept of a term<sup>3</sup>, a word which has a specific meaning in a specialized context.

Some authors make distinctions in the types of definition, as in the case of Larivière (1996 apud KAMIKAWACHI, 2009, p. 20), who proposes lexicographical, encyclopedical and terminological categories. However, other authors (Cf. DE BESSÉ, 1988) believe there is no major differentiation among a terminological definition and a lexicographical or encyclopedical definition. Hausmann (1988) adds to this discussion, stating that some elements, which could initially be considered just secondary, highly contribute for a really productive definition for users of a given glossary. Finatto (2001, p. 25-26) illustrates Hausmann’s understanding by stating that:

the definition, according to common dictionaries’ standards, would fundamentally be a useless cultural tradition, since what is identified as being *a strictly definitional information* is generally empty or extremely irrelevant. Elements regarded as really definitional, according to his opinion, when compared to some collateral, circumstantial or even iconographic information added to dictionary definitions, reveal that some ‘encyclopedical’ information ends up being more valuable and functional for the reader than the definition portion *stricto sensu* (FINATTO, 2001, p. 25-26, emphasis in original).<sup>4</sup>

<sup>3</sup> Finatto (2001) refers to that as a ‘term word’ (‘palavra-termo’, in Portuguese).

<sup>4</sup> “a definição, nos moldes dos dicionários comuns, seria fundamentalmente uma tradição cultural inútil, pois aquilo o que identifica como sendo a sua *informação estritamente definicional* geralmente é vazio ou extremamente irrelevante. Elementos tidos como realmente definicionais, segundo sua opinião, quando comparados a algumas informações colaterais, circunstanciais e até iconográficas acrescentadas às definições de dicionários, revelam que algumas informações

Regarding Aeronautical Meteorology terms in ANACpedia database, some additional notes, not regarded as the “core” definition, somewhat aligns with this discussion, as shown below:

### (1) pressure altimeter

#### Additional Note 1

[P]Altimeters use standard atmosphere pressure–height relations in converting pressure into altitude. Therefore, the altimeter shows indicated altitude, which may, and frequently does, differ from the actual altitude. An altimeter may be set to measure altitude from an arbitrarily chosen level.[P] [X]It is common practice to use mean sea level; the level of the constant-pressure surface of 29.92 in. of mercury is also used; and, less frequently, the constant-pressure surface of the pressure at airport height.[X]

When taking into consideration a more specialized audience, some details which might seem encyclopedical could be considered important in order to give a more comprehensive understanding of how a given term is actually used or functions within a context. However, as explained before, and aligning with a functionalist approach, the development of definitions for a specialized dictionary implies making choices in order to best address the interest of the whole audience. In other words, it has to be good enough for a less informed user as well as for a more specialized one.

In the case of ANACpedia, the approach regarding terms of the Aeronautical Meteorology subfield mostly focused on conceptual definitions, supported by procedural or explanatory excerpts when more directly related to the conceptual definition. Broader procedural definitions and remarks were included in the ‘Context’ and ‘Additional Notes’ items. For the item ‘Context’, there was careful corpora screening for more ‘hands-on’ situations, which would potentially help the more specialized user of the ANACpedia database. In this way, the main definition(s) would share a common scope for most users.

In a more detailed classification of definitions, Sager 1996 [1990] and Pavel and Nolet (2001) enumerate some possible procedural categories of definitions. While Sager 1996 [1990] is somehow concerned with transposition of meanings in the axis genus versus difference, Pavel and Nolet (2001) have a broader perspective, also considering a definition to be outside the most traditional format.

Sager (1996 [1990], p. 42-43, emphasis in original) proposes the following set of definitions:

1. *Definition by analysis* (genus et differentia):  
 pneumonia = an inflammation of lung tissue  
 stomatitis = an inflammation of the mouth  
 gingivitis = an inflammation of the gums  
 oblique plane = (Bot.) any plane of a flower other than the medium and lateral planes.

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‘enciclopédicas’ acabam sendo muito mais valiosas e funcionais para o leitor do que a sua porção definitória em sentido estrito” (FINATTO, 2001, p.25-26, emphasis in original).

2. *Definition by synonyms:*

software = logiciel

daisy = bellis perennis

3. *Definition by paraphrase:*

whiteness = the state of being white

flotation = the action of making something float

lengthen = the process of making something longer

4. *Definition by synthesis* (by identifying relations, by description):

metatarsalgia = a painful neuralgic condition of the foot, felt in the ball of the foot and often spreading thence up the leg.

5. *Definition by implication* (by using the word in an explicative context):

dial = a clock or watch has a dial divided into segments for hours and minutes over which the hands move.

diagnosis = we make a diagnosis when we identify certain symptoms as characteristic of specific conditions.

6. *Definition by denotation* (by listing examples, by extension):

dog = dogs are spaniels, poodles, pekinese, alsatians and similar animals.

ocean = oceans are the Atlantic, the Pacific and the Indian Ocean.

7. *Definition by demonstration* (ostensive definition):

e.g. drawings, photographs, pointing to an object ('This is a fly-over'), situational reference ('This diagram here...') (SAGER, 1996 [1990], p. 42-43, emphasis in original)

And Pavel and Nolet (2001, p. 25-26, emphasis in original) mention the following categorizations:

1-definition by genus and difference

**computer peripheral:** In a data processing system, any equipment, distinct from the central processing unit, which may provide the system with outside communication or additional facilities.

**printer:** A computer peripheral that outputs data to hard copy.

nonimpact printer: A printer in which printing is the result of means other than mechanical impact.

**laser printer:** A nonimpact printer that uses a low-power laser to produce image-forming charges on the photoconductive surface of a drum.

2- definition by function

**printer:** A computer peripheral that produces a durable record of data in the form of a sequence of discrete graphic characters belonging to a predetermined character set.

3- operational definition

**laser printer:** A nonimpact printer that operates at well over 10,000 lines per minute, using a low-power laser to produce image-forming charges a line at a time on the photoconductive surface of a drum; dry powder that adheres only to charged areas is applied to the drum, transferred to plain paper, and fused by heat.

4- synonymous definition, using a paraphrase

**oblong:** elliptical, blunt at each end, having nearly parallel sides, and two to four times as long as broad.

In terms of general characteristics of definitions, Alves (1996), Felber (1984) and Cabré (1993) advocate conciseness is a paramount characteristic of a good terminological definition. Cabré (1993) and Desmet (2002), for example, defend the terminological definition must have just one sentence and the remaining information should be included in the terminological record as additional notes.

Cabré (1993) also points out the terminological definition entry must belong to the same part of speech as the original term; and circularity, negative definition, unnecessary paraphrasis and metalinguistic formula must be avoided.

Likewise definition writing, the translation of terms itself also requires attention. When concerned about the conciseness of definitions, in the case of the English language, which is more synthetic compared to other Latin-derived languages, some ambiguity may arise, especially when there are more than two modifiers. As explained by Montero (1996), the ambiguity can be: (a) real, in a way a given term may have more than one possible meaning, as in the case of ‘English teacher’, where ‘English’ may refer to the origin of the person (born in England) or the subject taught (the English language); or (b) implicated<sup>5</sup>, by the use of more than one modifier, in cases where it becomes not clear which modifier is more directly related to the noun in the syntagma.

The implicated ambiguity is actually the most common type of ambiguity, since there is a broad range of possible relations to the noun, which may indicate possession, purpose, source or origin, in most cases. As an example, the syntagma ‘special flight inspection group’ may be interpreted as ‘special group of flight inspection’ or ‘group of special flight inspection’; or even the short syntagma ‘system software’ might refer to a ‘software which is in the system (place)’; or a ‘software for the system (purpose)’. Because of this, in official institutional terms, for example, it is recommended to separate the indication of the specialization in order to avoid this kind of ambiguity, as in the example ‘Ministry of Defense’ (and not ‘Defense Ministry’) or ‘Department of Airspace Control’ (and not ‘Airspace Control Department’).

As a support on how to best write definitions, and also translate terminology, the issue of validation has to be considered, as discussed in the following section.

### **2.3. The issue of validation**

The issue of validation has always been of major importance, especially when considering official translations, as done by governmental organizations. One might argue that, when it is published by such an organization, the language used would be validated by the speech community (Cf. PAVEL; NOLET, 2001). However, sometimes there might be gray areas in this so-called validation, and it is debatable to what extent it should be considered in terms of translation. For example, ‘facility’ (EN), although not formally accurate, was validated in Portuguese as ‘facilidades’ instead of ‘instalações’, but, as a comparison, it would be more problematic to simply validate the English term ‘traffic’ as ‘tráfico’ in Portuguese, and not ‘tráfego’. On this issue, words with crystallized meanings are defined by Finatto

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<sup>5</sup> This definition was given by the author of this paper, as Montero (1996) does not formally classify this type of definition.

(2001) as a(n) “old term/normalized term” (in Portuguese, “termo antigo/termo normatizado”), when a broadly disseminated concept becomes crystallized and the term starts to be used as a regular word.

In order to try to solve this issue, especially for small-sized specialized corpora, a good suggestion seems to be creating a corpus database managed by an algorithm, to try to weigh the importance of documents used in the research, besides comparing occurrences to evaluate if some documents have exactly the same text, as an evidence it was literally copied and should be used as one sole source. In this way, the “margin of bias” for analysis of the occurrences of words would probably be reduced. This sort of weighted evaluation is generally done “manually” / “visually” and might pose some impact to the validation process of how often a given term is used in the corpora.

In this way, a possible relation would be as follows:

**Table 1:** Suggestion of weighted contribution of sources.

Type of publication	Weight <sup>1</sup>	Frequency <sup>2</sup>
More specialized [e.g. Aeronautical Meteorology] Glossaries and Dictionaries	3	n
General Aviation Glossaries and Dictionaries	2,5	n
More specialized [e.g. Aeronautical Meteorology] Official Documents, from specialized institutions	2	n
General Aviation Official Documents, from specialized institutions	1,5	n
Other technical documents (circulars, etc)	1	n
Scientific Documents (dissertations, thesis, etc)	1	n
Documents (standardization boards, etc) from other institutional organizations	1	n

<sup>1</sup> The weight attributed to documents used as sources would depend on each analyzed term. In the case of the Aeronautical Meteorology subfield, a more specialized source would be considered more relevant in terms of standardization because other publications would most likely use this as the main source as well. For example, in the Department of Airspace Control, Aeronautical Meteorology terms are mostly based on WMO publications.

<sup>2</sup> The algorithm would have to consider the frequency of those terms in each weighted source. As mentioned before, it would have to compare texts and, in case it is deemed identical, the publications would be considered as just one source.

In addition to that, publications with duplicate excerpts, i.e. with similar excerpts copied in other publications, are to be considered as just one source, in order not to mask the real frequency of words. That would apply to the case of technical documents because regulations are often based on other previous prescriptive documents, differently from publications of general scope.

Within this context, it must be emphasized that definitions, mainly in specialized fields, should be validated by renowned institutions, which have an “argument from authority”, as defended in the following excerpt:

scientific and technical subject fields, basic terminologies are validated through the use of definitions cited from authoritative sources, whereas new terminologies in such fields often require the formulation of definitions based on bits and pieces of textual information found during research. [...] presentation of the definition must closely follow existing patterns; stylistic variation is quite limited (PAVEL; NOLET, 2001, p. 23, emphasis in original).



However, Pavel and Nolet (2001) do not seem to apply the same approach when it comes to “more subjective” fields, since a ‘strict’ definition would not exactly be applied, and other elements would sort of guide how the definition would be elaborated. The authors explain this idea by quoting Rey (2000) as follows: “on the other hand, in social, economic and legal subject fields, the definitions for a given concept vary greatly, depending on the historical, cultural, and legal context of the institution or country in which the concept is recognized” (REY 2000, p. 131 apud PAVEL; NOLET, 2001, p. 23).

On this, Finatto (2001) agrees there is a more proficuous multiplicity of senses regarding terms in humanities (in her dissertation, she analyzed Political Science terms) than in STEM fields (in her research, from the Chemistry field) but this would not, *per se*, be a hermetic characteristic of those broader areas. In Finatto’s words:

**The scientific terminological definition is a text which conveys the meaning of the term-word regarding the science collective *continuum*, which is historically and socially built, characterized by receiving a formulation which, in its functionality, goes beyond the strict definitional delimitation and reveals the integration between the science collective subject and the scientist individual subject.**

[...]

Well, in the two types of science, as we have seen, there is the recurrent inclusion of non-strictly categorial elements which are usually called ‘encyclopedical’ and there is also a tendency, by the subject / enunciator, to recognize the multiplicity of senses which is, as we have shown, significantly higher in the Political Science field, compared to the Chemistry field. However, we cannot say the presence of this information, regarded as “encyclopedical” or “unnecessary conditions”, is homogeneous or balanced in definitions of both types.

On the contrary, we verified both the multiplicity of meaning senses and inclusion of historical information, and also comments, tend to be biased and differ, from dictionary to dictionary, in the two fields, also depending on the sort of term-topic which is being defined. Regarding this particular aspect, while a lexicographer may recognize many possibilities of conflict or plurality of senses for a given term, another lexicographer, from the same field, may resort to very little diversity, almost zero. Nevertheless, regardless of the types and concentrations, it is relevant to state that what may be identified as “encyclopedical subjectivity” is confirmed as something highly common to the definition of sciences regardless of fields classified as of “humanities” or “STEM” nature (FINATTO, 2001, p. 339; 360-361, emphasis in original).<sup>6</sup>

<sup>6</sup> **DT científica é um texto que expressa o significado da palavra-termo em relação ao *continuum* coletivo, histórica e socialmente construído da ciência, caracterizando-se por receber uma formulação que, em sua funcionalidade, ultrapassa uma delimitação definicional estrita e revela a integração entre o sujeito enunciativo coletivo da ciência e o sujeito individual do cientista.**

[...]

Ora, nos dois tipos de ciências, como vimos, há uma recorrente inclusão de elementos não estritamente categoriais que se costumam chamar de ‘enciclopédicos’ e também há uma tendência, por parte do sujeito enunciativo, para o reconhecimento da multiplicidade de sentidos que é, como demonstramos, significativamente maior em Ciência Política do que em Química. Todavia, não podemos dizer que a presença dessas informações ditas “enciclopédicas” ou “condições desnecessárias” se dê de um modo homogêneo ou equilibrado nas definições de ambos tipos.

Ao contrário, verificamos que tanto a multiplicidade de acepções de significado quanto a inclusão de informações históricas, e até de comentários, tendem a se apresentar bem polarizadas e diferenciadas, de dicionário para dicionário, nas duas áreas, também em função do tipo de tópico-termo que está sendo definido. E, neste particular, enquanto um dicionarista pode reconhecer muitas das possibilidades de conflito ou de pluralidade de sentido de um termo, um outro, na mesma área, apresentará a diversidade reduzida a zero ou a um mínimo. Mas, independente de tipos e de concentração, importa dizer que

Concerning the efforts to standardize definitions worldwide, the terminological standardization service for the Canadian government started this management on request, in 1974. Even with this centralization effort, there has been major dissemination of glossaries/vocabularies from other departments, which prompted the Bureau to continue publicizing and standardizing the terminology used in the public service in a more flexible way, as this excerpt shows:

Moreover, this phenomenon is even found within the Bureau where the contents of its own linguistic data bank, TERMIUM®, are augmented by collections developed by the translation units themselves which store each client's in-house terminology. Responding proactively to this situation, the Bureau has put mechanisms in place to transfer these data to TERMIUM®, thus changing a potential disadvantage into a plus for language management (PAVEL; NOLET, 2001, p. 96).

As implied, it used to be easier to manage terminological databases, since there was not much dissemination of terminological databases from a broad range of other non-official sources. Nowadays, the Bureau has adopted the policy to include these sources in their database as well, to enable faster tracking, even if this does not necessarily mean an effort for standardization. As Pavel and Nolet (2001) explain:

Because the traditional concept of terminology has evolved, it is no longer sufficient to provide users with the equivalent of a term in a particular language, along with the context supporting that choice. Clients now expect information on how to use terms and their proposed equivalents in context. Consequently, TERMIUM®'s content is gradually being augmented by tools relating to grammar, syntax, usage and typography as well as writing and editing guides that are designed to promote effective communication. This is yet another example of the language management resources that are being offered to our clients. (PAVEL; NOLET, 2001, p. 97)

Taking into consideration what was discussed in this section, the following topic will approach a general perspective on the organization of ANACpedia database and detail the procedures to define Aeronautical Meteorology terms.

### 3. ANACpedia database

The ANACpedia terminological database started to be developed at the former Civil Aviation Department (DAC), an institution which ceased to exist, and civil servants previously working there started to work at the National Civil Aviation Agency (ANAC), then continued this project by revising and expanding the database. As of 2014, there were contributions from DECEA civil servants with

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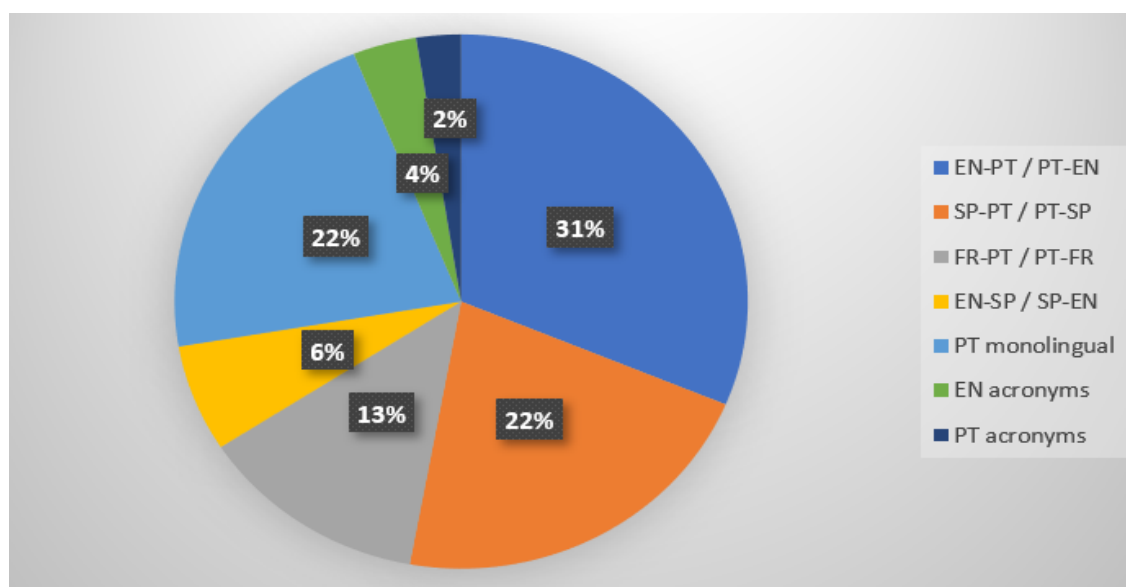
aquilo que pode ser identificado como uma 'subjetividade enciclopédica' confirma-se como algo absolutamente comum à definição das ciências independente de serem classificadas como 'humanas' ou 'exatas'."(FINATTO, 2001, p.339; 360-361, emphasis in original)

translation and terminology expertise, and the project started to count on their formal collaboration under a technical cooperation agreement between the Department of Airspace Control (DECEA) and ANAC, signed on 12 December 2016, and revalidated on 12 December 2019, as published in the Official Federal Gazette in Brazil (Cf. PEIXOTO; RIECHE, 2019; ALVES E SILVA; RIECHE; NORÕES, 2015; NORÕES; RIECHE; ALVES E SILVA, 2017). Under this agreement, DECEA representatives continued to collaborate with the ANAC Linguistic Production Team, led by the civil servant Fernanda Alves e Silva, to include and revise terms of the ANACpedia database. My participation started in January 2019, particularly with the Aeronautical Meteorology Database, and also with discussions for the revising processes, during the presentation of dossiers (Cf. PEIXOTO, 2020).

As English is the *lingua franca* of aviation, the English-Portuguese/Portuguese-English dictionary is the matrix for the other teams working with the other language pairs, as the consolidated information is replicated in the other languages (Spanish and French).

The ANACpedia database currently has 13.900 of terms in total, as follows: 4.350 terms in the English-Portuguese/Portuguese-English dictionary; 3.000 in the Spanish-Portuguese/Portuguese-Spanish dictionary; 1.800 in the French-Portuguese/Portuguese-French dictionary; 900 in the English-Spanish/Spanish-English dictionary; 3.000 in the Portuguese monolingual dictionary; 500 terms in the English acronyms list; and 350 in the Portuguese acronyms list (Cf. ALVES E SILVA; RUIZ; AZEVEDO, 2019). These numbers are illustrated in the following graph:

**Figure 1.** Total number of ANACpedia terms



**Source:** Based on data provided in Alves e Silva, Ruiz and Azevedo (2019).

As there is no specific formula for a terminological database, the format of dictionaries is sometimes under discussion for continuous improvement. In this way, the most important would be taking into consideration the audience and trying to adapt to what the expectations would be. Some glossaries in the terminological database of the Canadian government Termium, for example, might use the context, only, as the “definition” of a term, or even only the equivalent term in the other language.

### 3.1. Organization of ANACpedia database: general organization and structural classes

The ANACpedia database is organized as independent dictionaries, for several language pairs, as mentioned before, and also for English acronyms and Portuguese acronyms. In these dictionaries, terms are organized by symbols, such as parenthesis, and alphabet letters, which might differ a little depending on the language. For example, for the Portuguese-English dictionary, letter A is distributed in the three letters A, Â and Ã.

The terminological work starts with the identification of relevant terms within a given specialized field and labeling them as candidate terms. Then more information is gathered in a sort of broad ‘definitional database’ (Cf. KAMIKAWACHI, 2009; ALMEIDA; SOUZA; PINO, 2007) and discussed in meetings to standardize definition and complementary information. As a suggestion for this research and standardization, Pavel and Nolet (2001), for example, state that:

All information required to understand the concept and to use the related terminology properly (preferred terms, synonyms, spelling variants, syntactic variants, abbreviations) is organized in the form of a terminology standardization file, which includes excerpts called textual supports. (PAVEL; NOLET, 2001, p. xix, emphasis in original)

In the case of ANACpedia, the general format of the terminological entries follow the approach described in the chart below:

**Chart 1.** General format of the terminological entries.

1. Entry. It is shown in lowercase letters.
2. Synonym(s).
3. Definition and Source. In case there is more than one definition, this “pair” (definition + source) will be shown as many times, e.g. Definition 1 and Source 1; Definition 2 and Source 2, etc.
4. Context and Source. In case there are more than one context, this “pair” (context + source) will be shown as many times, e.g. Context 1 and Source 1; Context 2 and Source 2, etc.
5. Additional notes. There might be up to four notes; the source is not necessarily mentioned. Some enumerative or explanatory definitions might be included in this section.
6. Subfield.
7. Related Term(s).
8. Variant(s).
9. Term in Portuguese.<sup>1</sup>
10. Image. It is not compulsory.

<sup>1</sup> In this case, the English-Portuguese dictionary was analyzed, but the language might be different, depending on the dictionary being consulted.

Regarding the structural classes of ANACpedia terms, the nouns and verbs are more common in the database, and the translation processes may vary, being more literal or contextualized, according to what is mostly used in the field, as shown in corpora documents. Entries are preferably inserted in the singular but they may sometimes also be included in the plural or with indication of singular/plural, as in ‘aerodrome routine meteorological report’ and ‘aerodrome special meteorological reports’ (translated to Portuguese as ‘informe meteorológico aeronáutico regular’ and ‘informação meteorológica aeronáutica especial selecionada’, respectively), and ‘position light(s)’ and ‘runway threshold light(s)’.

The broader scope of ANACpedia structural classes is described and discussed as follows:

#### **a) Longer nominal syntagmas (5+ words)**

Longer nominal syntagmas, with over five units, are present in the ANACpedia database in English and may require a more contextualized approach to paraphrase or adapt to the meaning in Portuguese. In the case of ‘medium intensity approach light system with runway alignment indicator lights’, the translation to Portuguese was more regular: ‘sistema de luzes de aproximação de média intensidade com luzes indicadoras do alinhamento com a pista’. However, for the term in English ‘all-purpose structured eurocontrol surveillance data information exchange’ (ASTERIX), the translation was adapted to ‘protocolo estruturado para o intercâmbio de informações do sistema de vigilância de tráfego aéreo’.

On this type of structure, Montero (1996) explains it generates ambiguity, as described previously in this paper, but this synthesized use would also be a sort of evolution of the technical language, complying with linguistic economy principles, and is becoming more and more common. The author explains this evolution would be carried out in the following way:

First an embedded kernel sentence of the kind [NP is A] is transformed into a relative restrictive clause; next, a deletion transformational rule is applied to this output and adjectives are produced in postnominal position; finally, an adjective-shift transformation is applied to this latter output, and the result is a prenominal adjective (COHEN, 1978, p. 17 *apud* MONTERO, 1996, p. 63).

As an example, the expression ‘this automaton which is four-and-one-half-foottall and which is controlled by a computer’ would evolve to ‘this automaton [which is] four-and-one-half-foot’, then ‘tall and [which is] controlled [by a] computer’, and finally ‘this four-and-one-half-foot-tall computer-controlled automaton’ (Cf. MONTERO, 1996).

Even though this sort of shortened version may be an improvement in terms of conciseness, it may generate different types of interpretation, as also mentioned before. A four-word term such as ‘data link control protocol’ may be understood in at least three ways: (1) the data protocol of control link:

[(data ((link control (protocol))); (2) the control protocol of a data link: [(data link (control protocol)], or (3) the protocol of a data link control: [(data (link control)) protocol] (MONTERO, 1996, p. 66).

### **b) Syntagmas with collocations or observations**

In the English-Portuguese dictionary, expressions such as ‘absorption of the company by another’, ‘accept a bill of exchange’, ‘certify as airworthy (to)’, and ‘acceptor (of a draft)’ are displayed with the use of collocations, and ‘brake (aircraft landing gear component)’ and ‘acceptor atom (transistors)’ are shown with observations in parentheses.

### **c) Terms with the same syntagmatic scope**

The terms in English ‘windmill’ and ‘windmill, to’ are shown as different entries, for different parts of speech (noun and verb).

### **d) Foreignization or calque (loan translation)**

Following foreignization strategies, some terms such as ‘blizzard’, ‘pushback’ and ‘slot’ are used in the same form in English and Portuguese; and the term ‘hub-and-spoke system’ in English is translated as ‘hub-and-spoke’ in Portuguese. In the case of calque strategies, the term in English ‘starter-generator’ is translated to Portuguese as ‘starter-gerador’.

The influence of the *lingua franca* is so strong in the aviation field that the term ‘briefing’ is used both in English and Portuguese as the main linguistic variation, and ‘brifim’ (the loan translation to Portuguese) appears as a variant form. The same applies to ‘debriefing’: it is the main term in both English and Portuguese, and ‘debrifim’, in Portuguese, is considered as a variant form.

### **e) Supported explanation or indication of collocations**

Some terms in English are supported by an explanation in Portuguese, such as: ‘advisory airspace’ as ‘espaço aéreo com serviço de assessoramento’; ‘aerodrome special meteorological’ as ‘informação meteorológica aeronáutica especial selecionada’; ‘advisory airspace’ as ‘espaço aéreo com serviço de assessoramento’; ‘advisory area’ as ‘área com serviço de assessoramento’; ‘advisory route’ as ‘rota com serviço de assessoramento’; ‘advisory service’ as ‘serviço de assessoramento’; and ‘a display’ as ‘indicador de radar tipo “a”’. And other terms in English are used indicating collocations, such as ‘accept a bill of exchange’, ‘absorption of the company by another’, and ‘actuating by deadman type’.

### **f) Simplifications in Portuguese**

The term in English ‘pitot-static system’ is translated to Portuguese as the main entry ‘sistema do pitot’, and has ‘sistema pitot estático’ as a synonym.

### **g) Different translations in the same paradigmatic axis**

The same noun ‘hidroavião’ in Portuguese has different equivalent forms in English, depending on the syntagma it is part of: the English term ‘float seaplane’ is ‘hidroavião com flutuadores’ in

Portuguese; and the English term ‘flying boat’ is ‘hidroavião com casco’ in Portuguese. In a similar way, the same noun ‘paraquedista’, in Portuguese, may have the equivalent ‘parachutist’ or, when combined with the adjective ‘militar’ in Portuguese (‘paraquedista militar’) it has the English form ‘paratrooper’.

In the next topic, the Aeronautical Meteorology database will be discussed, and the proposed definitional categories will be presented.

### **3.2. The Aeronautical Meteorology database: discussion and definitional categories**

The Aeronautical Meteorology terms currently listed in the ANACpedia database are very few, and the new terms to be analyzed and inserted into that database were originally published in the DECEA and CPTEC websites, in Portuguese. From those definitions, only the terms in Portuguese are considered as a primary source for consultation, and expansion, and the literal translation into English was disregarded.

At ANAC, the new terms for the Aeronautical Meteorology glossary<sup>7</sup> started to be revised by me, in the English-Portuguese dictionary, as a matrix, then other databases started to be processed as well: French-Portuguese and English-Spanish, by the ANAC Civil Servant Erica Chulvis; and the French-English, by the ANAC Civil Servant Camila Mello. All term definitions are discussed in meetings with the ANAC Linguistic Production Team and the DECEA representatives as well.

In this way, regarding the criteria to select the Aeronautical Meteorology terms, the focus was on the relevance to this subfield and the accepted use in the speech community, as verified in the specialized documentation compiled in the corpora<sup>8</sup>. Therefore some works were considered of more relevance to this specific field, such as publications by the World Meteorological Organization (WMO), as the International Meteorological Vocabulary (WMO, 1992) and the volumes of the Manual on Codes (WMO, 2011 and 2015).

In terms of nomenclature for message identification regarding weather phenomena, the Table 4677 and 4678, as shown below, are used as the main source for nomenclature classification. In English, it is published by the World Meteorological Organization (WMO, 2011); and, in Portuguese, it is published by the Department of Airspace Control (BRAZIL, 2017), in ICA 105-16, the corresponding document which shows this nomenclature classification in Brazil.

The following images show Table 4677 (from code 80 to 99) and Table 4678, in the WMO and in the DECEA publications:

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<sup>7</sup> In this paper, the term ‘glossary’ refers to a specialized subfield, as part of a ‘dictionary’ for a given language pair within the scope of Aviation English as a broader area.

<sup>8</sup> In this sense, working with corpora is even more relevant when dealing with oral communication in the aviation field, especially between pilots and controllers, as shown by Prado (2015) and Tosqui-Lucks (2018).

**Table 2.** Table 4677 – codes for weather phenomena (WMO).

ww = 80–99		Showery precipitation, or precipitation with current or recent thunderstorm	
80	Rain shower(s), slight		
81	Rain shower(s), moderate or heavy		
82	Rain shower(s), violent		
83	Shower(s) of rain and snow mixed, slight		
84	Shower(s) of rain and snow mixed, moderate or heavy		
85	Snow shower(s), slight		
86	Snow shower(s), moderate or heavy		
87	Shower(s) of snow pellets or small hail, with or without rain or rain and snow mixed	-	slight
88		-	moderate or heavy
89	Shower(s) of hail*, with or without rain or rain and snow mixed, not associated with thunder	-	slight
90		-	moderate or heavy

\* French: grêle.

Code figure		
91	Slight rain at time of observation	Thunderstorm during the preceding hour but not at time of observation
92	Moderate or heavy rain at time of observation	
93	Slight snow, or rain and snow mixed or hail* at time of observation	
94	Moderate or heavy snow, or rain and snow mixed or hail* at time of observation	Thunderstorm at time of observation
95	Thunderstorm, slight or moderate, without hail*, but with rain and/or snow at time of observation	
96	Thunderstorm, slight or moderate, with hail* at time of observation	
97	Thunderstorm, heavy, without hail*, but with rain and/or snow at time of observation	
98	Thunderstorm combined with duststorm or sandstorm at time of observation	
99	Thunderstorm, heavy, with hail* at time of observation	

Source: World Meteorological Organization (2011).



**Table 3.** Table 4678 – codes for weather phenomena (WMO).**w'w'** Significant present and forecast weather

QUALIFIER		WEATHER PHENOMENA							
INTENSITY OR PROXIMITY	DESCRIPTOR	PRECIPITATION		OBSCURATION		OTHER			
1	2	3		4		5			
–	Light	MI	Shallow	DZ	Drizzle	BR	Mist	PO	Dust/sand whirls (dust devils)
	Moderate (no qualifier)	BC	Patches	RA	Rain	FG	Fog		
	+	Heavy (well developed in the case of dust/sand whirls (dust devils) and funnel clouds)	PR	Partial (covering part of the aerodrome)	SN	Snow	FU		
SG			Snow grains	VA	Volcanic ash	FC	Funnel cloud(s) (tornado or waterspout)		
DR			Low drifting	PL	Ice pellets	DU	Widespread dust	SS	Sandstorm
BL			Blowing	GR	Hail	SA	Sand		
VC	In the vicinity	SH	Shower(s)	GS	Small hail and/or snow pellets	HZ	Haze	DS	Duststorm
		TS	Thunderstorm	UP	Unknown precipitation				
		FZ	Freezing (supercooled)						

The w'w' groups shall be constructed by considering columns 1 to 5 in the table above in sequence, that is, intensity, followed by description, followed by weather phenomena. An example could be: +SHRA (heavy shower(s) of rain).

Source: World Meteorological Organization (2011).

**Table 4.** Table 4677 – codes for weather phenomena (DECEA).

**Tabela 4677**

**ww – Tempo presente informado por uma estação meteorológica dotada de pessoal  
(continuação)**

**ww = 80 a 99**

**Precipitação em pancadas, precipitação com trovoada na hora da observação ou precipitação com trovoada recente**

<b>80</b>	Pancada(s) de chuva, leve(s)
<b>81</b>	Pancada(s) de chuva, moderada(s) ou forte(s)
<b>82</b>	Pancada(s) de chuva, muito forte(s)
<b>83</b>	Pancada(s) de chuva e neve misturadas, leve(s)
<b>84</b>	Pancada(s) de chuva e neve misturadas, moderada(s) ou forte(s)
<b>85</b>	Pancada(s) de neve, leve(s)
<b>86</b>	Pancada(s) de neve, moderada(s) ou forte(s)
<b>87</b>	Pancada(s) de grãos de neve ou granizo pequeno, com ou sem chuva ou chuva e neve misturadas, leve(s)
<b>88</b>	Pancada(s) de grãos de neve ou granizo pequeno, com ou sem chuva ou chuva e neve misturadas, moderada(s) ou forte(s)
<b>89</b>	Pancada(s) de granizo*, com ou sem chuva ou chuva e neve misturadas, não associada(s) com trovão, leve(s)
<b>90</b>	Pancada(s) de granizo*, com ou sem chuva ou chuva e neve misturadas, não associada(s) com trovão, moderada(s) ou forte(s)
<b>91</b>	Chuva leve na hora da observação, com ocorrência de Trovoada na hora recente, mas não na hora da observação
<b>92</b>	Chuva moderada ou forte na hora da observação, com ocorrência de Trovoada na hora recente, mas não na hora da observação
<b>93</b>	Queda leve de neve, ou chuva e neve misturadas ou granizo*, na hora da observação, com ocorrência de Trovoada na hora recente, mas não na hora da observação
<b>94</b>	Queda moderada ou forte de neve, ou chuva e neve misturadas ou granizo*, na hora da observação, com ocorrência de Trovoada na hora recente, mas não na hora da observação
<b>95</b>	Trovoada, leve ou moderada, sem granizo*, mas com chuva e/ou neve na hora da observação
<b>96</b>	Trovoada, leve ou moderada, com granizo*, na hora da observação
<b>97</b>	Trovoada, forte, sem granizo*, mas com chuva e/ou neve na hora da observação
<b>98</b>	Trovoada combinada com tempestade de poeira ou de areia, na hora da observação
<b>99</b>	Trovoada, forte, com granizo*, na hora da observação

\* Granizo, granizo pequeno ou grãos de neve

NOTA : No item 3.1.2.6.4.15, constam as especificações quanto à codificação do caráter da precipitação.

Source: BRAZIL (2017).

**Table 5.** Table 4678 – codes for weather phenomena (DECEA).

**Tabela 4678**  
**w'w' – Tempo significativo presente e previsto**

QUALIFICADOR		FENÔMENO DE TEMPO			
Intensidade ou Proximidade	Descritor	Precipitação	Obscurecedor	Outros	
1	2	3	4	5	
- Leve	<b>MI</b> Baixo	<b>DZ</b> Chuvisco	<b>BR</b> Névoa úmida	<b>PO</b> Poeira/areia em redemoinhos	
Moderada (sem sinal)	<b>BC</b> Bancos	<b>RA</b> Chuva	<b>FG</b> Nevoeiro	<b>SQ</b> Tempestades	
Forte (bem desenvolvido para redemoinhos de poeira/areia e nuvens funil)	<b>PR</b> Parcial (cobrindo parte do aeródromo)	<b>SN</b> Neve	<b>FU</b> Fumaça	<b>FC</b> Nuvem(ns) funil (tornado ou tromba d'água)	
<b>VC</b> Na vizinhança	<b>DR</b> Flutuante baixo	<b>SG</b> Grãos de neve	<b>VA</b> Cinzas vulcânicas	<b>SS</b> Tempestade de areia	
	<b>BL</b> Soprada		<b>DU</b> Poeira em área extensa	<b>DS</b> Tempestade de poeira	
	<b>SH</b> Pancada(s)	<b>PL</b> Pelotas de gelo	<b>SA</b> Areia		
	<b>TS</b> Trovoada	<b>GR</b> Granizo	<b>HZ</b> Névoa seca		
	<b>FZ</b> Congelante	<b>GS</b> Granizo pequeno e/ou pelotas de neve			

Os grupos w'w' devem ser construídos considerando-se as colunas de 1 a 5 da tabela acima em sequência, que contém a intensidade, seguida da descrição e pelo fenômeno de tempo. Como exemplo temos: **+SHRA** (pancada(s) de chuva forte).

**Source:** BRAZIL (2017).

It is important to highlight that the Aeronautical Meteorology language (definitions and terms) in Portuguese is mostly based on publications by the World Meteorological Organization (WMO) while procedures are generally based on ICAO guidelines in their Annexes<sup>9</sup> and manuals. For the Brazilian context, the Department of Airspace Control is the Brazilian organization in charge of designing guidelines for the Aeronautical Meteorology field.

By taking those sources into account, the entry 'rain gauge' (1) was changed to 'rain gauge' (2), as the main form, as registered in the International Meteorology Vocabulary and other WMO publications. The form (1) was considered to be a variation of (2), in spite of the fact (2) is also broadly shown in more general aviation dictionaries and glossaries, such as Kumar (2005) and Antas (1979).

The publications used as main reference for the Aeronautical Meteorology subfield were the American Meteorology Society (AMS) online glossary, the International Meteorology Vocabulary (WMO, 1992), and the World Meteorological Organization (WMO) publications, in English; and

<sup>9</sup> In the case of Annex 3, it is almost a full reproduction of Doc nr. 49 by WMO.

REDEMET online glossary, CPTEC online glossary, Nery and Carfan (2013), and Antas (1979), in Portuguese.

In the specialized dictionaries for the aeronautical meteorology field used in this research, explanations are generally more broadly presented, including encyclopedical excerpts, even though it is a STEM field science. In this way, the scope of terminological definitions seem to be more aligned with Finatto's (2001) proposal, as mentioned previously in this paper, i.e. there is no defined pattern for a more concise (so-called 'strict definition') or a broader definition for humanities or STEM, since the "encyclopedical information" might be considered relevant in any field, depending on the audience.

Along with the idea that definitions should not follow a strict format, but be considered in terms of target audience, in this paper, we propose the definitional categories conceptual, procedural, enumerative, explanatory, illustrative and remarks, to classify the definitions used in the database. The categories proposed here are described in the examples of entries included in the ANACpedia database, as follows:

a) conceptual (C) – direct indication of nature or purpose, or description of the term (mostly in case it refers to a concrete object); also regarded in the literature as intensional definition. For example:

**(2) instrument shelter**

**Definition 1**

**A boxlike structure designed to protect certain meteorological instruments from exposure to direct sunshine, precipitation, and condensation, while at the same time providing adequate ventilation.**

**Source:** AMERICAN METEOROLOGICAL SOCIETY. **Glossary of meteorology.** [S.l., última modificação 05 oct. 2015]. [emphasis added]

b) procedural (P) – technical procedures and additional information regarding procedures. For example:

**(3) altimeter setting**

**Definition 2**

The station pressure corrected for the height of the station above sea level. **When this pressure (QNH) is set in the altimeter window (also known as a Kollsman window), the altimeter indicates the height above mean sea level.** The setting may be in inches, millibars, or hectopascals.

**Source:** KUMAR, Bharat (ed.). **An illustrated dictionary of aviation.** New York: McGraw-Hill, c2005. [emphasis added]

c) enumerative (N) – subdivisions of the term definition or classification. For example:

**(4) altimeter setting**

**Definition 2**

The station pressure corrected for the height of the station above sea level. When this pressure (QNH) is set in the altimeter window (also known as a Kollsman window), the altimeter indicates the height above mean sea level. **The setting may be in inches, millibars, or hectopascals.**

**Source:** KUMAR, Bharat (ed.). **An illustrated dictionary of aviation.** New York: McGraw-Hill, c2005. [emphasis added]

d) explanatory (X) – indication of use situations, additional functions or examples. For example:

**(5) altocumulus**

**Definition 2**

White or grey, or both white and grey, patch, sheet or layer of cloud, generally with shading, composed of laminae, rounded masses, rolls, etc., which are sometimes partly fibrous or diffuse and which may or may not be merged; **most of the regularly arranged small elements usually have an apparent width of between one and five degrees.**

**Source:** WORLD METEOROLOGICAL ORGANIZATION. **International meteorological vocabulary.** 2nd ed. Geneva, 1992. (WMO, n.182). [emphasis added]

e) illustrative (I) – use of illustrations, such as didactic drawings, photos and other visual resources.

**(6) wind shear**



Strong wind shear in the high troposphere forms the anvil-shaped top of this mature cumulonimbus cloud, or thunderstorm.

**Source:** <http://en.wikipedia.org/wiki/File:Thunderhead.anvil.jpg>

f) remarks (B) – general remarks, mostly encyclopedical information. When this category is shown in the Additional Notes, it commonly indicates acronyms of the term.

**(7) accumulation**

**Definition 1**

Quantity of snow or any other form of water in the solid state which is added to a glacier or snow-field by alimantation; **the opposite of ablation.**

**Source:** WORLD METEOROLOGICAL ORGANIZATION. **International meteorological vocabulary.** 2nd ed. Geneva, 1992. (WMO, n.182). [emphasis added]

All categories are relevant for the definition of the term. An example of an Aeronautical Meteorology term which shows most categories were used is ‘absolute’, as follows:

**(8) absolute**

**Definition 1**

[C]In climatology, the highest or lowest recorded value of a meteorological element[C], [X]whether at a single station or over an area[X], [C]during a given period[C]. [P]It is most frequently applied to extremes of temperature[P]: [N]absolute maximum is the highest recorded shade temperature; absolute minimum is the lowest recorded[N].

**Source:** AMERICAN METEOROLOGICAL SOCIETY. **Glossary of meteorology.** [S.l., última modificação 05 oct. 2015]. [emphasis added]

The term category was chosen as a way not to limit definition writing to just one format. In this way, a category would comprise a freer format, as long as the definition functions with the purpose of the given category. In other words, the proposal is trying to be functional rather than prescriptive or normative. In the case of the illustrative category, for example, they may be considered an intrinsic part of a definition, especially in the case of concrete objects and instruments, or meteorological phenomena in the AER MET subfield, as they enable a proper description; but not in the case of abstract concepts (Cf. COUTO, 2003). In the ANACpedia database, illustrative definitions are added as a complementary information field, although it is regarded as an important element for the full comprehension of some terms.

For this paper, 88 terms of the Aeronautical Meteorology field<sup>10</sup> were analyzed and classified in the proposed categories. The results are described in the following tables.

**Table 6.** Number of terms with definitions.

Nr. Terms with formal definitions	88
Nr. Terms with definitions in other fields (contexts or additional note)	14
Nr. Terms without definitions (only translation into Portuguese)	29
<b>Total of terms</b>	<b>131</b>

**Table 7.** Definitional category (text of the formal definitions).

<b>Definition category</b>	<b>Nr. of terms</b>	<b>% in the Aer Met subfield<sup>1</sup></b>
conceptual	88	100
procedural	30	34
enumerative	8	9
explanatory	26	30
remarks	10	11

<sup>10</sup> Some of the terms were classified only as Meteorology subfield since they were considered to be applied more broadly, to other air navigation uses such as in naval contexts.

<sup>1</sup> This percentage was calculated taking into consideration only the terms which show formal definitions. It is important to highlight that the categories shown here do not compete in this showcase, i.e. the percentage of all categories does not comprise 100%, since each term may, and probably will, use more than one category in a given definition.

As complementary information, specifically in fields of additional notes and contexts, those categories were also shown in the following percentage:

**Table 8.** Definitional category (text of the complementary information).

Definition category	Nr. of terms	% in the Aer Met subfield <sup>1</sup>
conceptual	8	9
procedural	34	39
enumerative	8	9
illustrative	13	15
remarks	34	39

<sup>1</sup> This percentage was calculated taking into consideration only the terms which show formal definitions. It is important to highlight that the categories shown here do not compete in this showcase, i.e. the percentage of all categories does not comprise 100%, since each term may, and probably will, use more than one category in a given definition.

### Final Considerations

After discussing standards and new approaches to what makes a good definition, the fact there is not a set standard for that was pointed out. Based on this, the most important would be precisely delimitating the audience and how the definition could meet its expectation.

Within this context, although the Aristotelian definition is still considered to be the standard, mainly for specialized terminology, it is not unanimously considered to be ideal (Cf. FINATTO, 2001), once there is some consensus in Terminology studies regarding the consideration of other aspects when proposing a format to describe definitions. In this way, Finatto (2001) defends that a terminological definition should follow a descriptivist approach, not a prescriptivist one. In this sense, illustrations and context should also be considered as definitions.

Along with this idea, the definitional categories proposed in this paper focus on functions of the description, which may be hybrid and does not prescribe a specific format. In order to enhance this descriptive approach, a possible way to improve the validation process was also discussed, to rely more precisely on technical documents provided as sources, abiding by needs of a given speech community and what has already been validated by it. As previously stated, using a weighted average of occurrences found in corpora documents during the research was suggested, in terms of type of document and duplicate parts, perhaps by using a specific algorithm for that.

All in all, as shown in the discussions and analyses of this paper, the most important for a terminological work is elaborating definitions which will be considered relevant for the audience who will make use of the dictionary or glossary. If the audience varies largely, it is wise to build a

terminological database which will address the expectations of the most educated as well as the less informed users regarding a certain specialized field. In the case of research for terms in the Aeronautical Meteorology subfield, this differentiation has also been a concern when collecting the definitions, mostly because resources in this field are fewer.

As this research is still ongoing, more feedback on terms inserted in the ANACpedia database is expected, in order to continuously improve the process and best address the audience's needs.

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