

1. I have been working in the Cornish Language Office at Cornwall Council on the data for the new version of the Cornish dictionary website that launched at the end of June 2019
2. This presentation describes the work I have been doing working in creating a new version of the Standard Written Form of Cornish dictionary website published by Akademi Kernewek, the Cornish language academy
3. I also discuss our collaboration with Dewi Bryn Jones and Delyth Prys of the Language Technology Centre at Bangor University and ways in which we have used Wikimedia resources to enrich the dictionary website

1. This was the previous website up to June 2019
2. Different search boxes for English-Cornish and Cornish-English

1. The previous website could be cumbersome on mobile platforms. Maes T, the backend software written in Bangor University, uses Google Web Toolkit allowing a responsive web-based interface. Maes T separates the backend data from the frontend, for Welsh this allows use on different websites and mobile apps using an API. The Language Technologies Unit in Bangor created a Wordpress plugin *Porthydd* to assist its deployment. **[prys2012distributing]**
2. Note difference between Middle and Late forms.  
needs of beginning learners, advanced learners, fluent speakers, Akademi members doing language development work.
3. Personal forms were done for prepositions, which combine with personal pronouns in Cornish to form inflected forms.  
hasn't been done for verbs, since this is a larger set of words, several tenses for each verb. perhaps show the most common paradigms and the auxiliary verbs?
4. Having sound samples is probably better than using IPA  
beginners may not understand these symbols. some of the pronunciations aren't really agreed on, it is a Standard *Written* Form and may not be prescriptive for pronunciation.
5. e.g. [www.cornishdictionary.org.uk/#understanding](http://www.cornishdictionary.org.uk/#understanding) can mean an agreement, or knowledge. note dictionary also matches verb form understand, this is a feature of Maes T (lemmatisation).

1. Previous version had been done in a software called TshwaneLex.
2. Some review updates had already been done in the previous software, but not all.
3. Terms standardised by the Terminology Panel and recommended for use.
4. Akademi has a process for proposing a term, and wanted to be able to place it online but marked as a 'proposed term' so that the community would be able to comment on it before it became an established word in the language. There is a similar process in Maes T for Welsh, but this is within the group of domain experts prior to online publication.

1. XML is eXtensible Markup Language, which works along a similar principle to Hyper Text Markup Language, which web pages are written in, but being extensible, any text can be used as tag names.

1. In the previous dictionary data, some words or phrases were in `<partofspeechgroup>` and `<subentry>` tags within `<lemma>`s. this could lead to duplication where one phrase could exist as subentries of more than one `<lemma>`
2. Check if there are any `<lemma>`s where no part of speech is defined etc.
3. Count occurrences of descendant tags of `<lemma>`.
4. Count how many `<lemma>` have each part of speech.

1. One of the major data processes undertaken by DT was to combine each word into a single <lemma> and define the M and L variants where they exist within this.
2. Previously they lived in independent <lemma> and if you searched the M version it relied on references tags having been added to refer to the L version.
3. The previous data was not always systematic about how M / L distinction was marked. The M and L forms were independent of each other.

1. On the website you can click through to the L version and vice versa, and to the English glosses.



1. In this case there is only one spelling which is used by both Middle and Late Cornish.

There is however a <homonymnumber> tag because a-ugh can also be a preposition, which is listed as a separate <lemma>.

1. The preposition homonym has personal forms listed.
2. There is also a <lemma.late.personal.forms> tag group which was edited out on the slide for brevity containing the Late personal forms.

1. Maes T was guided by ISO standard formats and practices for terminology and lexicography. The ISO standard 15188 recommends a working group of 5-8 subject specialists and a terminologist. Provides an interface designed to be user-friendly to non-terminologists, bilingual English-Welsh.
2. There is a four stage process
  1. Collecting Terms - record candidate terms for the source language term.
  2. Defining the concept - define in the source and target languages, add a disambiguator where needed.
  3. Standardizing Terms - record normative status of candidate terms.
  4. Linguistic Information - record part of speech, gender, plural forms etc.
3. Data can be served via an API, features such as showing related entries, popups to explain part of speech tags, matching images from Wikidata, Wikimedia Commons, linking to Wikipedia.
4. Potential benefits of ISO standard based approach of Maes T for Cornish, such as software localis[ations].

1. Filament (in the atmosphere of the Sun): [termau.cymru/#filament](https://termau.cymru/#filament).  
In this case, the image was contributed by an expert, along with a definition.

1. Ladybirds: [termau.cymru/#ladybird](https://termau.cymru/#ladybird). In this case, Wikimedia commons images were used (manually chosen during a project with *Cymdeithas Edward Llwyd* [www.cymdeithasedwardllwyd.cymru](http://www.cymdeithasedwardllwyd.cymru)).

1. This was added as part of *Adar Y Byd*, a dictionary of bird names from [Cymdeithas Edward Llwyd](#). This had 9500 entries, so an automated method was used.
2. Sound samples are available for some entries, this feature could also be used for pronunciations.
3. There is a species of moth called 'Silurian' and the automated match found a Wikimedia image of a Doctor Who character, as noted in [**Crossing2018**].  
[xkcd.com/2140](https://xkcd.com/2140) Reinvent the Wheel  
Also beware of possible API changes.

1. The original purpose of Maes T was to support terminology dictionaries which aimed at a one to one mapping between source language and target language terms [**andrews2011maes**]. Although it had been used since for more general dictionaries such as [geiriadur.bangor.ac.uk](http://geiriadur.bangor.ac.uk).
2. For example, Welsh grammars tend to treat the singulative / collective nouns as a normal singular / plural distinction e.g. coeden - coed, plentyn - plant, where the noun loses an ending to become plural.
3. The plural of the singulative is a feature of (at least some forms) of Cornish, for a number of individual items, rather than en masse, for at least some n.coll. E.g. gwydh, gwedhen, gwydhennow. Not currently shown in dictionary.

1. In production, the data would be edited by a number of different people who may be non-programmers.
2. Maes T can provide a platform for this in a similar way as to the Welsh terminology development.



1. Briefly outline process by which Akademi intends to do this, and terminology areas in development.
2. [Akademi terminology policy](#) outlining process of creating a term.
3. [Akademi dictionary policy](#) according to which a terminology item is recommended and after a period of review becomes considered part of the main dictionary

1. Explain a bit about linking to Wikimedia Commons images of plants, and to Wikipedia.
2. This is done by matching to Wikidata items, using SPARQL queries: [query.wikidata.org](http://query.wikidata.org).
3. See [**Crossing2018**] for more information on [Porth Termau Cenedlaethol Cymru](#) [termau.cymru](http://termau.cymru) linking to Wikimedia images. This included automatically finding them using English and Latin names.

1. New version is now at the main URL.
2. Responsive design - e.g. [cornishdictionary.org.uk/#moon](https://cornishdictionary.org.uk/#moon) automatically switches to two-column layout where there are matches in both languages, and if the screen width is low, these are stacked vertically rather than side-by-side.

1. Other features that would be nice?
2. Make plurals / singulatives searchable e.g. mergh, gwedhen  
search aware of mutation such that 'gath' finds 'kath',  
awareness of 'traditional' spellings that some users prefer such that  
searching 'cath' finds 'kath'  
spellings from other forms of Cornish e.g. gwydhenn (Kemmyn) -  
gwedhen (SWF)  
could M / L, and/or the 'traditional' forms be offered as a user  
selection at the front-end?  
and a choice between a strict and 'fuzzy' search?
3. Maes T does this for Welsh, using lemmatisers, spelling and  
grammar checkers. e.g. [geiriadur.bangor.ac.uk/#plant](http://geiriadur.bangor.ac.uk/#plant) lemmatizes  
'plant' to the singular 'plenty' "child". It will also present the  
English entries for 'plant'. [geiriadur.bangor.ac.uk/#mor](http://geiriadur.bangor.ac.uk/#mor) gives the  
conjunction/adverb mor and the noun môr, as well as bôr (an  
alternate spelling for bore, b could have nasal mutated to m).  
Maes T customizes results using different API keys including  
different terminology resources and search settings.
4. Possibilities of wider linking to Wikimedia items?
5. Linkage with place-name map?

1. **andrews2016terminology** - Tegau Andrews and Gruffudd Prys. "Terminology Standardization in Education and the Construction of Resources: The Welsh Experience". In: Education Sciences 6.1 (2016), p. 2.
2. **andrews2011maes** - Tegau Andrews, Gruffudd Prys, and Dewi Bryn Jones. "The Maes T System and its use in the Welsh-Medium Higher Education Terminology Project". In: Creation, Harmonization and Application of Terminology Resources (2011), p. 49.
3. **Crossing2018** - Gruffudd Prys et al. "Crossing between environments: the relationship between terminological dictionaries and Wikipedia". In: Terminologie(s) et traduction. Peter Lang, 2018. ISBN: 9783631746431.
4. **prys2012distributing** - Gruffudd Prys et al. "Distributing Terminology Resources Online: Multiple Outlet and Centralized Outlet Distribution Models in Wales". In: The 2nd Workshop on the Creation; Harmonization and Application of Terminology Resources. 72. Linköping University Electronic Press. 2012, pp. 37–40.