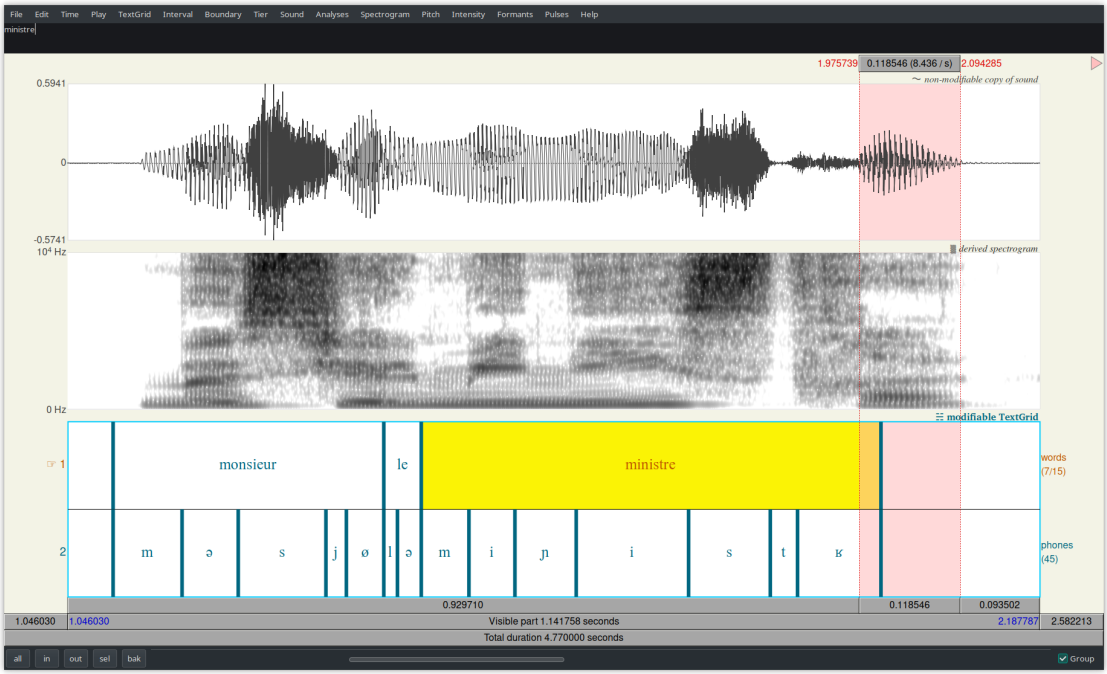
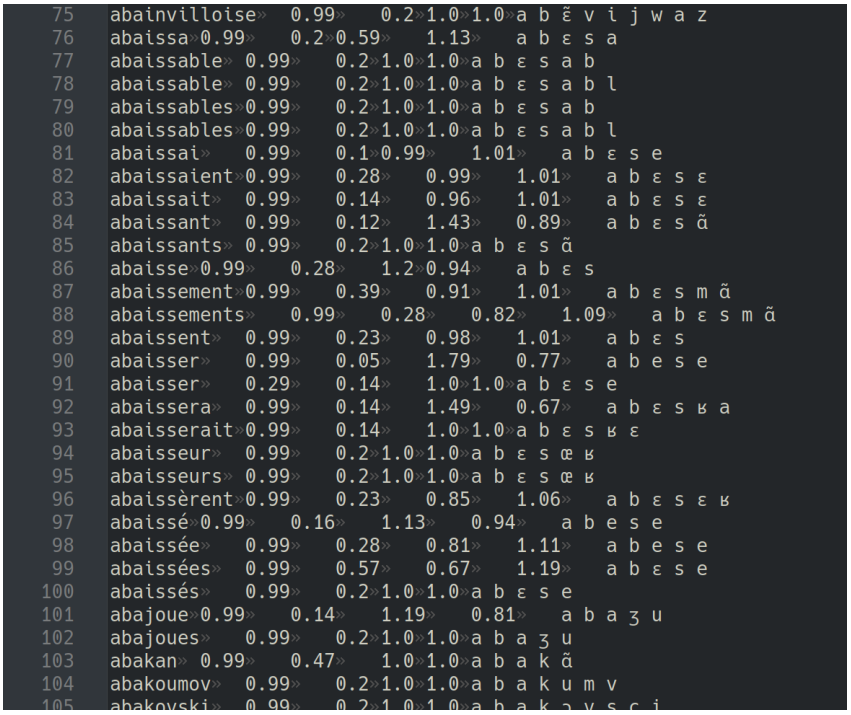
Use Case 1b: Modifying the dictionary

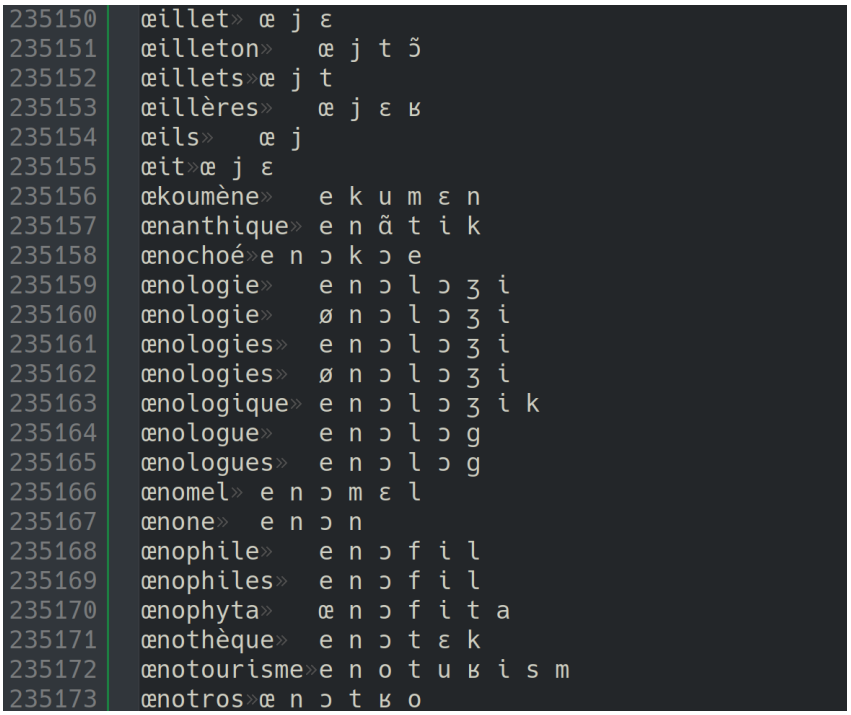
As you may have noticed, the alignments for the French speech data is overall good, but there may be room for improvement. One reason may be that there are pronunciation alternations that are not handled so far. We saw already an example where a final schwa is missing:



If we open the respective dictionary under /Documents/MFA/pretrained_models/dictionary/french_mfa.dict with a TextEditor, we can see the general structure of a dictionary: Every line contains a word in its orthographic transcription and a phone transcription. In the case of the downloaded pretrained model, the dictionary is enriched with probabilistic information, but this is not necessary for the MFA to run:



Here is a minimal example of a dictionary that is completely sufficient for the alignment procedure. Note that in each line the orthographic transcription and the phone transcription is seperated by a tab. The dictionaries themself are simple .txt files (Note: dictionaries from pretrained models have a .dict suffix, but for your custom dictionaries you can use .txt).



If we take a look now at the entry for “ministre”, we will see that there is no alternative with a

word-final schwa. Luckily, since we see that this alternation exists, we can simply add a line and add a schwa at the end. Ensure to use the respective transcription of the dictionary.

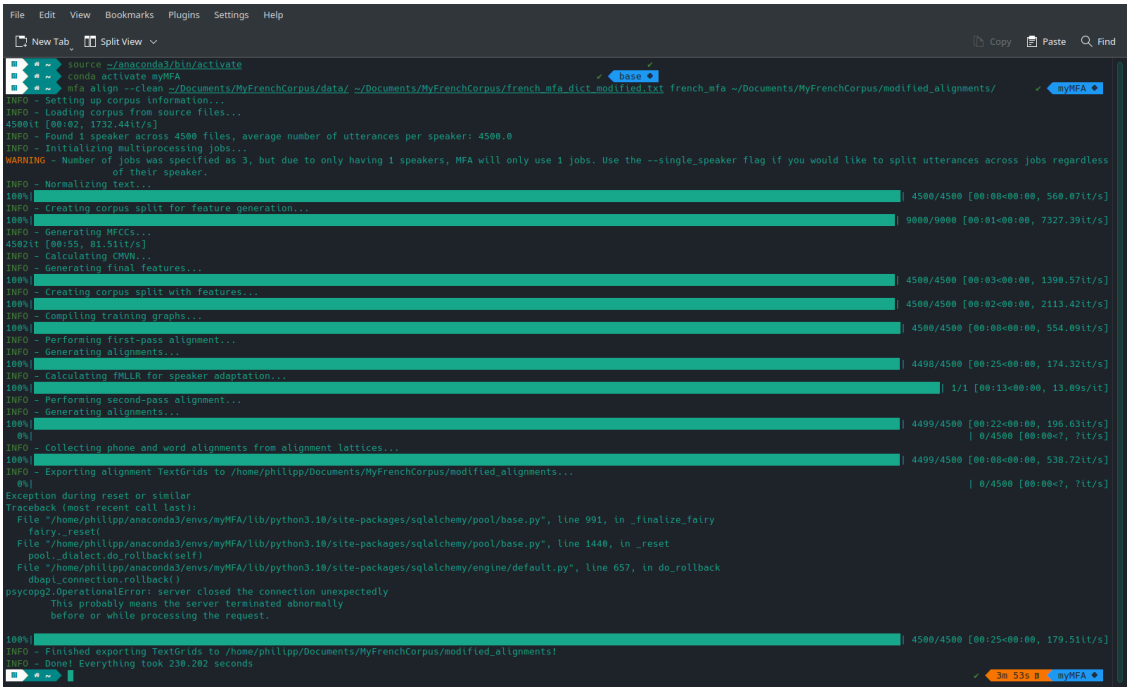
```
137452  minimoys»    m i ɲ i m w a
137453  minimum»m i ɲ i m ɔ m
137454  minimums»    m i ɲ i m ɔ m
137455  minine» m i ɲ i n
137456  minions»m i ɲ ɔ̃
137457  minirobe»    m i ɲ i ʁ ɔ b
137458  ministe»m i ɲ i s t
137459  ministre»    m i ɲ i s t ʁ
137460  ministre»    m i ɲ i s t ʁ ə
137461  ministres»   m i ɲ i s t ʁ
137462  ministry»    m i ɲ i s t ʁ i
137463  ministère»   m i ɲ i s t ɛ ʁ
137464  ministères»  m i ɲ i s t ɛ ʁ
137465  ministérialisme»m i ɲ i s t e ʁ j a ʎ i s m
137466  ministériel»m i ɲ i s t e ʁ j ɛ l
137467  ministérielle»   m i ɲ i s t e ʁ j ɛ l
137468  ministérielles»  m i ɲ i s t e ʁ j ɛ l
137469  ministériels»    m i ɲ i s t e ʁ j ɛ l
137470  minisérie»   m i ɲ i s e ʁ i
137471  miniséries»  m i ɲ i s e ʁ i
137472  minitel»m i ɲ i t ɛ l
137473  minitrack»   m i ɲ i t ʁ a k
137474  minitrix»    m i ɲ i t ʁ i
137475  minitéliste»m i ɲ i t e ʎ i s t
```

This modified dictionary is saved as french_mfa_dict.txt. You can place this new dictionary anywhere you want, but ensure not note the path, because it is used for the alignment.

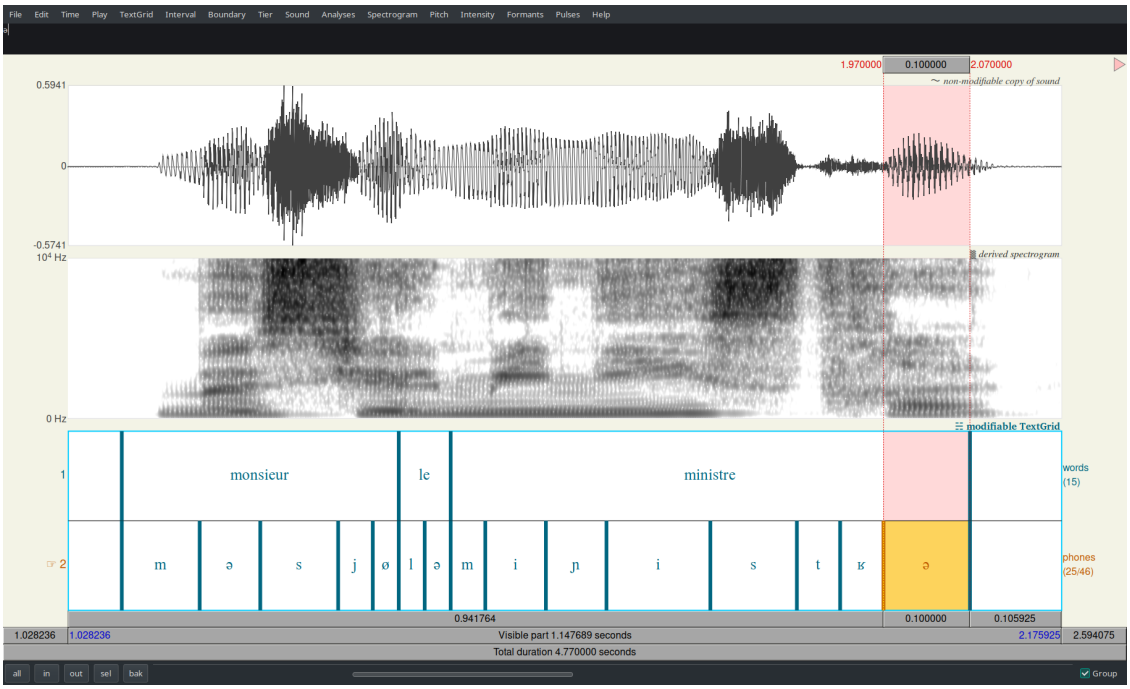
Start your terminal/console/command line and activate your MFA environment. In order to align the data again, run the following command but use this time the path to the modified dictionary:

The acoustic model for French was trained on more than 1950 hours of speech, so it will be hard to account for every single alternation in pronunciation

[ ]:
```
mfa align --clean ~/Documents/MyFrenchCorpus/data/ ~/Documents/MyFrenchCorpus/
↪french_mfa_dict_modified.txt french_mfa ~/Documents/MyFrenchCorpus/
↪modified_alignments/
```



If you open the respective TextGrid, this time with an alignment of the schwa, you will see that it was recognized and the alignments are more accurate for the word in general:



The acoustic model for French was trained on more than 1950 hours of speech, so it will be hard to account for every single alternation in pronunciation. So be aware that these alternations are not recognized, if you use the vanilla dictionary of the MFA. However, most people will probably use the MFA to align their experimental data, so one may be aware all the possible alternations in the

dataset and can modify the dictionary accordingly. Depending on the data, all alternations may not be recognized, but most of them, depending on your setup. For example, if you use a custom dictionary that contains only the words of your dataset, the recognition of these alternations will be better. But as it holds for forced alignment in general, it is necessary to insepct the TextGrids afterwards.