Use Case 5: Hausa speech data

In this tutorial we will align Hausa speech. The entire dataset can be downloaded from here: https://www.africanvoices.tech/language/ha. We will use the subset "hau_cmv_f" which is included in the UseCase5_dataset.zip. Create a folder for your corpus and unzip the dataset.

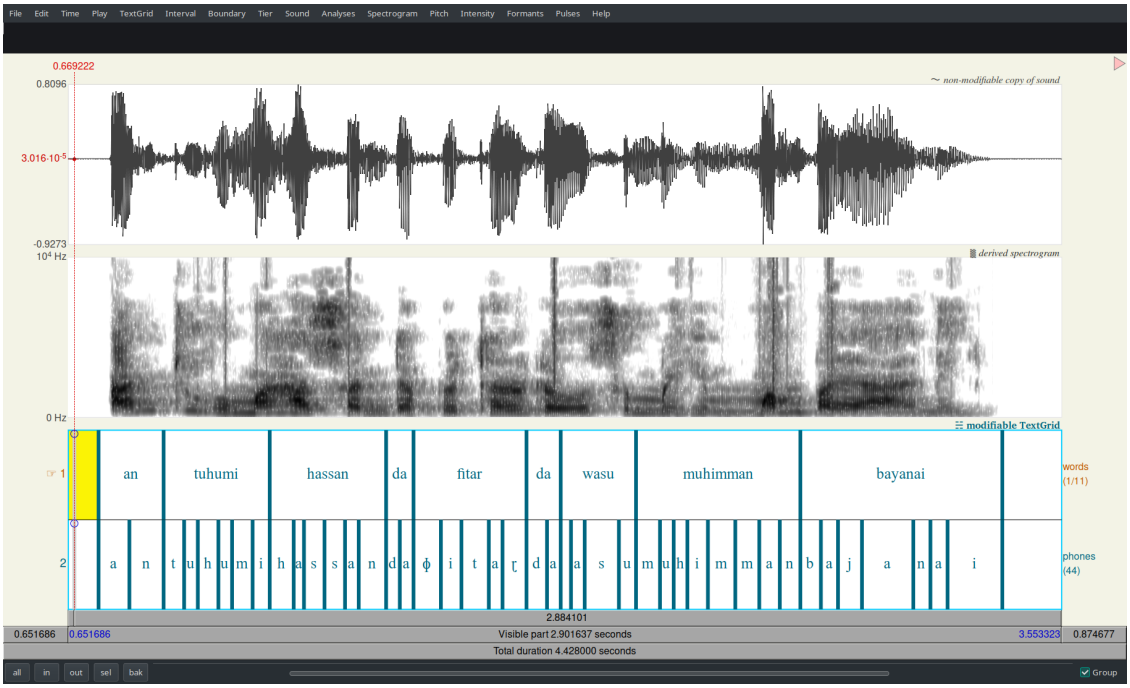
The approach is the same as in the previous use cases. First activate your MFA environment in your terminal/console/command line. Then download the acoustic model and dictionary. When you search for Hausa on the MFA webpage (https://mfa-models.readthedocs.io/en/latest/acoustic/index.html#acoustic), you will see that there are two acoustic models: Hausa CV and Hausa MFA. The Hausa CV is trained on a dataset with 1 hour of speech from the Mozila Common Voice initiative. We try this one at first:

[ ]:
```
mfa model download acoustic hausa_cv
```

You may observe that there is not dictionary on the MFA website. We use the one you can download here: https://osf.io/t957v/files/osfstorage, the filename is hausa_lexicon_cv.txt. Save the dictionary in your corpus folder. Now align the dataset by the mfa align command. Adapt the paths if necessary.

[ ]:
```
mfa align --clean ~/Documents/Hausa/rawdata/ ~/Documents/Hausa/hausa_lexicon_cv.
↪txt hausa_cv ~/Documents/Hausa/CV_alignments/
```

As you can see, even with a model that was trained on just 1 hour of speech we can get usable alignment results:



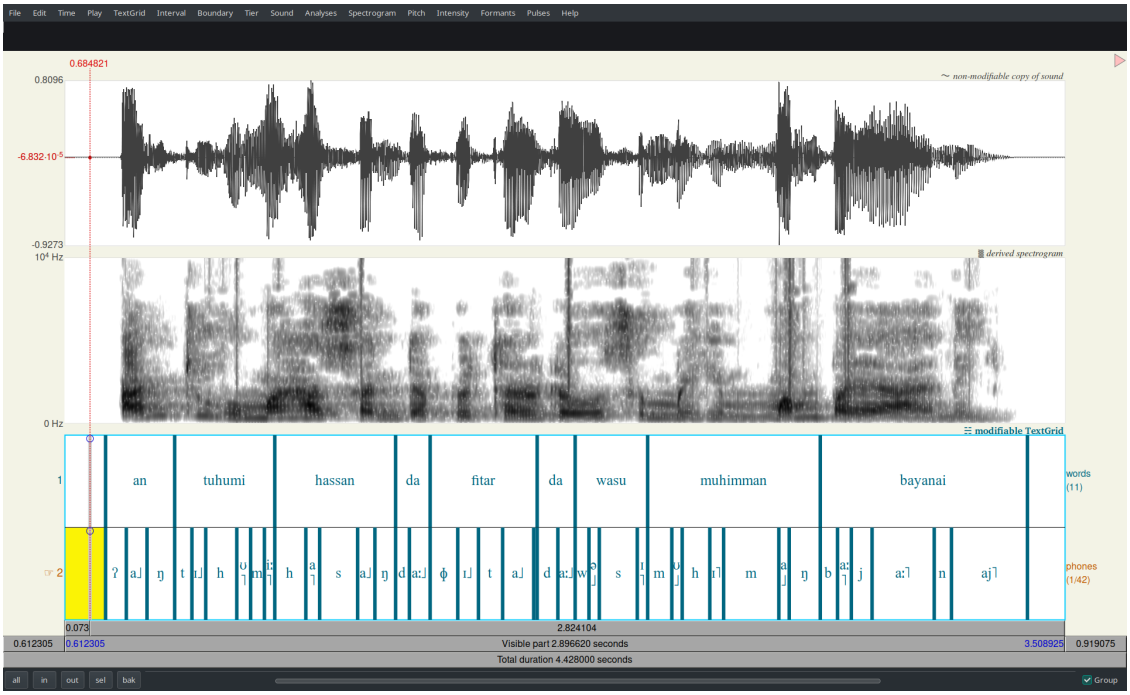
Now we align the data again, this time with the hausa_mfa model. For this acoustic model exists also a dictionary, so download both the acoustic model and dictionary via:

```
[ ]: mfa model download dictionary hausa_mfa
     mfa model download acoustic hausa_mfa
```

Use for the alignment the same command as above, but this time use the pretrained hausa_mfa model and dictionary:

```
[ ]: mfa align --clean ~/Documents/Hausa/rawdata/ hausa_mfa hausa_mfa ~/Documents/
     ↪Hausa/MFA_alignments/
```

You can open now the TextGrids and compare them with the alignments we did before using the hausa_cv acoustic model.



You will observe certain differences not only regarding the labels, but also the transcription in genereal, which will result in slightly different segmentations (compare e.g., the phone alignments for an in the hausa_cv and the hausa_mfa aligned TextGrids).