AutoActive Research Environment (ARE):

Synchronize multiple videos and IMU data with Matlab

If you have multiple video snippets from the same camera and streaming IMU data, you can now synchronize one video and IMU data in ARE, thereafter import the archive AAZ file to Matlab with Matlab toolbox and add the rest of the videos with the same offset found when synchronizing the first video with IMU data. For this to work you will have to install ffmpeg and the ffmpeg toolbox for matlab, please see description bellow.

You can find example scripts and the necessary functions in toolbox example folder video_sync. This functionality will also be added to ARE later on.

Note:

1. AAZ archives are immutable objects, which means that you will actually create a new AAZ file, but you can off course just delete the old one.
2. The function ffmpegVideoSync stems from ffmegpinfo which is found in the ffmpeg toolbox but there is also added functionality for handling struct keys with '-' and '.'

Assumptions:

1. The function getStartTimeAsEpoch assumes that creation time is found under metadata and that the time format is `'yyyy-MM-dd''T''HH:mm:ss.SSSSSS''Z'`. If it is not the case the function should be changed for your specific use case.

Install ffmpeg and the ffmpeg toolbox

1. Download ffmpeg from https://ffmpeg.zeranoe.com/builds/
2. Unzip the downloaded file and add it e.g. to 'C:\Program Files'
3. Add ffmpeg to path variables. The path would look something like 'C:\Program Files\ffmpeg'
4. Download and install the ffpegtoolbox for matlab
5. Run the command ffmegsetup in the command window in Matlab and find the exe file which is located in 'C:\Program Files\ffmpeg\bin'