Introduction
The data represents one selected trial from a large motion capture experiment with clarinet and viola players. The participants (subjects) were asked to play an excerpt of the Brahms Sonata for Clarinet Op. 120 No. 1. The duration is about 120 s.

Subject
The subject is an advanced clarinet student. Gender: male.

Data acquisition
Motion capturing
Full body motion capture data is performed using the Plugin-gait marker set. More information about the markers and their placement can be found in the document "Plug-in-Gait Marker Placement.pdf." Two markers were attached to the clarinet on the mouthpiece and the bell (marker labels are "Reed" and "Bell," respectively).

Other technical details:
- System: Vicon 460, 6 cameras (type M2)
- Frame rate: 100 Hz
- Coordinate system:
    o Origin: close to the feet of the subject
    o X: pointing to the right, seen from subject
    o Y: pointing forward, seen from subject
    o Z: pointing to the ceiling

Post-processing
The data was post-processed in Vicon iQ (version 2.5). The main operations to be performed are:
- Labeling of marker trajectories
- Gap filling using different interpolation methods

Data files
Raw capture data (.tvd) and analog data (.vad)
Vicon file formats for storing raw capture data and analog data (not exchangeable).

Intermediate trial files (.trial)
This is a file format used to store a post-processed trial in Vicon iQ (not exchangeable).

C3D
The C3D files were exported using Vicon iQ (version 2.5). After that plugin-gait was ran in Vicon Workstation (version 4.6) to calculate additional biomechanical information (segment positions and angles, centre-of-mass, etc.). The C3D files contain the labeled marker trajectories as well as the data calculated by plugin-gait. The C3D files do not include the analog data (sound). This format is supposed to be exchangeable, independently of the motion capture system used.

ASCII (.txt)

The ASCII data files contain the X, Y and Z coordinates of the marker trajectories (column-wise). The column header show the marker and the coordinate (e.g., LFHD:X). The ASCII files can be quite large, as the trials were quite long and a part of the information calculated by Plugin-gait is included (segment positions, angles, etc.). A convenient read function for these data files is provided for Matlab (read_vicon_data.m) enabling to read a selection of markers into the Matlab workspace. The sample rate is 100 Hz.

Video (.avi)
Video was captured starting and stopping synchronously with the motion capture trials. The synchronization is quite good, but there might be a delay of a couple of milliseconds. The video data was recorded at a frame rate of 29.97 Hz (DV/DVCPRO – NTSC format).

Sound (.wav)
Sound was recorded with a microphone in front of the subject (distance about 1 m) via the Vicon analogue acquisition card. The sample rate was 40 kHz (non-standard: the choice was restricted by the data collection software). The analog data was converted to a .wav file (40 kHz).

Other files
The biometric data of the subject are stored in the Subject.mp file (text). This information is used (and partly generated) by plugin-gait. It can also be used as model parameters in Vicon Body Builder software. For more info, see: "Required Subject Measurements for Plug-in-Gait.pdf."

The plugin-gait-instrument2.mrk file is also included. This file is used by the Vicon software (Workstation and Body Builder) for labeling and visualization of imported C3D files.

Matlab functions (matlab-vicon.zip)
Some Matlab scripts/functions are provided for parsing the data and basic visualization. The main script "visualization_script.m" shows the use of the other functions. The script shows how to:
- Read a selection of markers from the ASCII files
- Calculate some extra points for visualization
- Prepare data for movie display
- Create a Quicktime movie, visualizing the selected points and sticks (stick figures). The parameter structure can be used to influence the display.

For using the Matlab functions the directory containing them should be added to the Matlab path. For running the visualization script it is recommended to set the current Matlab directory to the directory containing the data.

Contact
For further questions, please contact Erwin Schoonderwaldt: schoondw@music.mcgill.ca