



AXIS STUDIO & NAWOLIVE USER GUIDE

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Nawo Live & Axis Studio software

Specific requirements

Nawo Live is a risk assessment tool for physical activity allowing to identify the risk factors of musculoskeletal disorders (MSD).

Thanks to Nawo Live, it's possible to code the tasks by analyzing the biomechanical constraints thanks to ergonomic methods and reference standards.

1.Your computer's requirements

System	Microsoft Windows 10 or 11
RAM	8 GB and more
Other requirements	Min 3 USB ports (Check with us for the USB hub)

2.Installation of the software

- 1.Install now NawoLive_2022.05.02.9404_setup.exe
- 2.Follow the instructions of the configuration wizard.
- 3.Follow the instructions for a license request and send the .info file to Install
- 4.Install Axis_Studio and follow the instructions in the Axis Studio User's Guide

Presentation of the Perception Neuron 3 & Axis Studio equipment

Perception Neuron 3 is completely wireless and can be used in any conditions, indoors or outdoors, without occlusion, camera or line of sight restrictions.

The box includes:

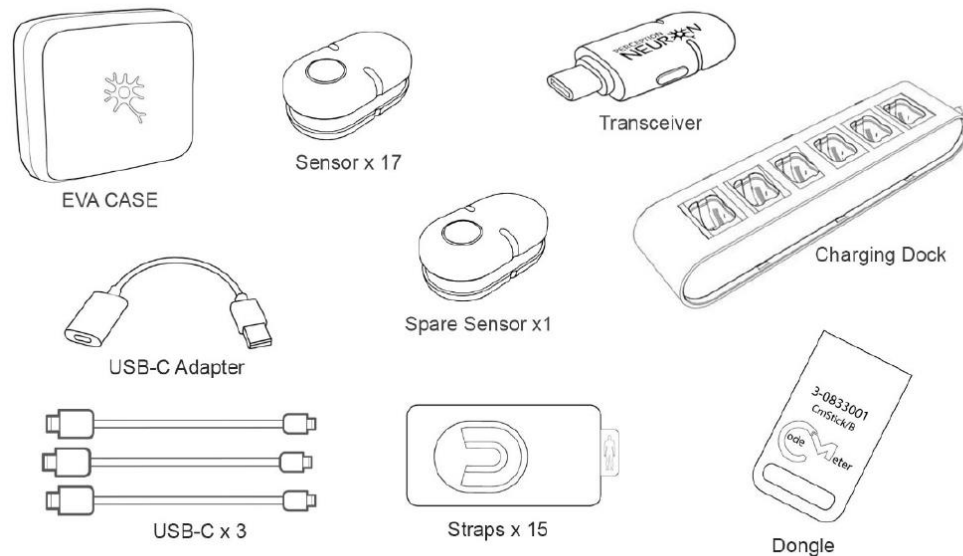
- 1.A measurement system composed of 17 IMU sensors to capture the movement of the entire body in space, guaranteeing a scientifically validated reliability of measurement.
- 2.A Perception Neuron 3 transceiver that allows you to communicate via USB. This small transceiver connects directly to your computer.
- 3.PN3 charging stations store, charge and calibrate the sensors when placed indoors.
4. 15 straps to position all 17 sensors on different body segments

5.A software dongle to activate the software

6.3 Type-C charging cable

7.EVA case

8.Type-C/ USB return cable



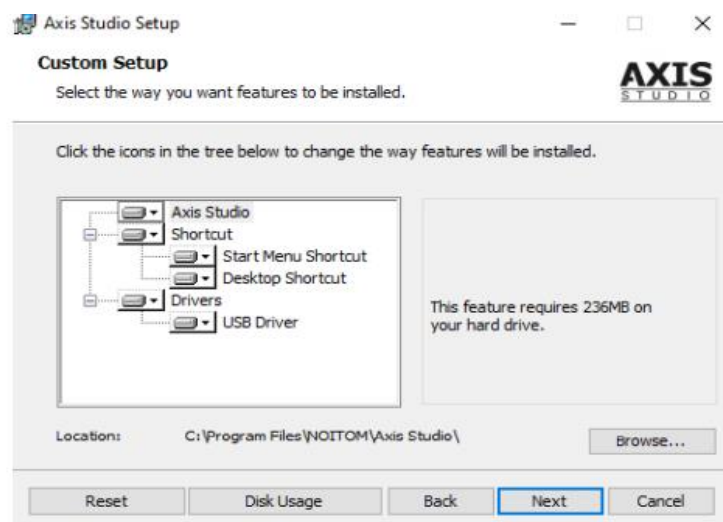
Installation and Activation of Axis Studio software

To begin, you need to download the Axis Studio software from the website :
<https://neuronmocap.com/downloads>

Important : During the installation, make sure to give the application firewall permission to ensure the software is installed correctly.

1.Installation

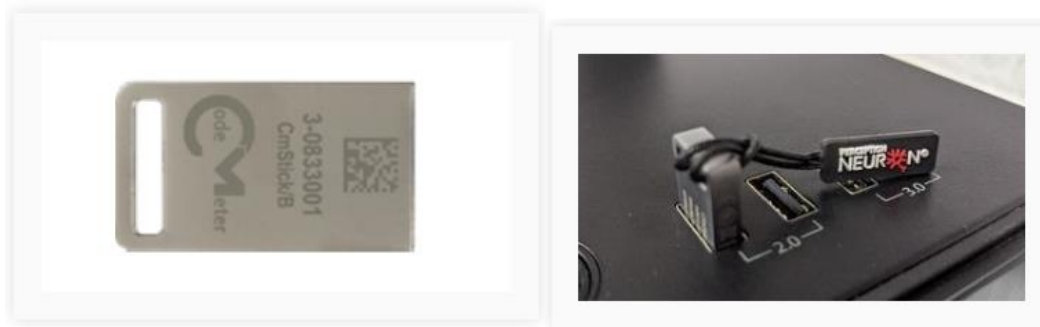
Run the installer to start the installation process. Follow the installation prompts and install Axis Studio. We recommend installing the software in the default directory.



2. Activation

- a. Connect the Axis Studio software dongle to your computer. This step will serve as a license key to be executed.

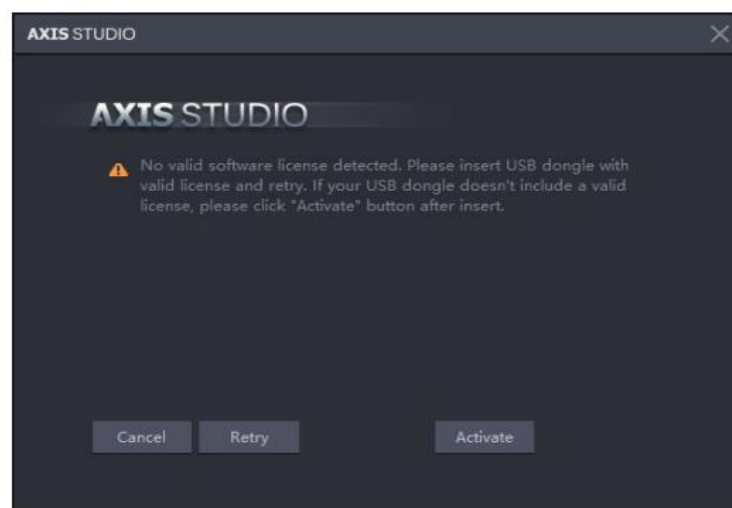
Connect your AXIS STUDIO USB DONGLE to one of the USB ports on your computer.



A window appears immediately

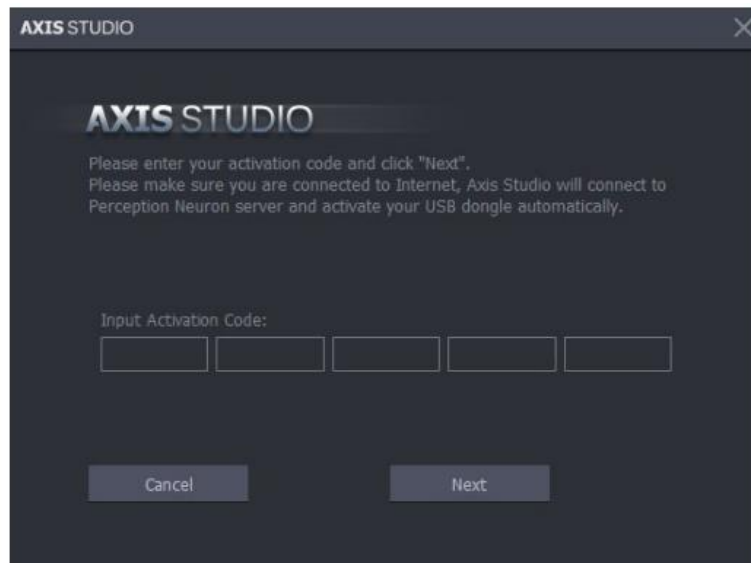


- b. Click on Activate

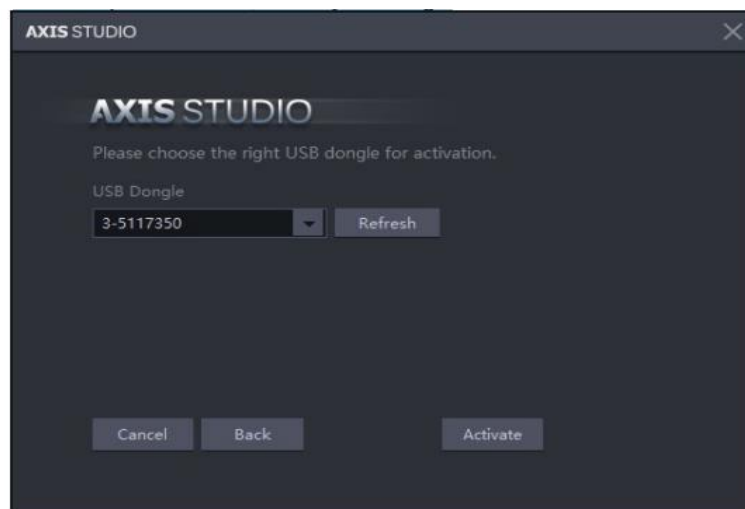


c. Enter the Wibu activation code. Enter your 25-DIGIT WIBU ACTIVATION CODE

This code is provided when the product is delivered

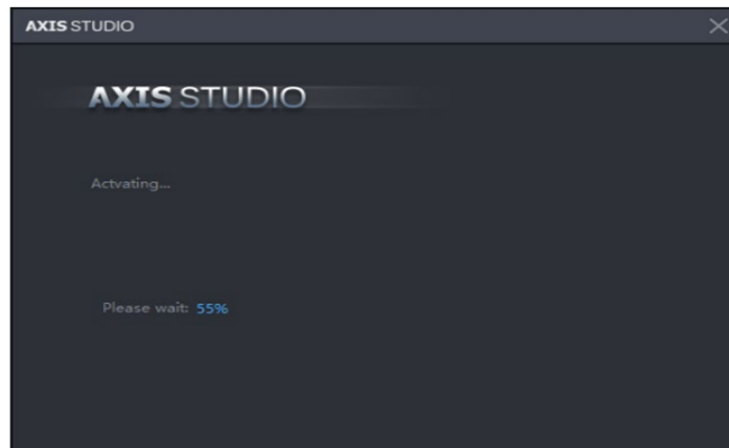


d. From the drop-down menu, select the number of your corresponding dongle.



e. Click on Activate

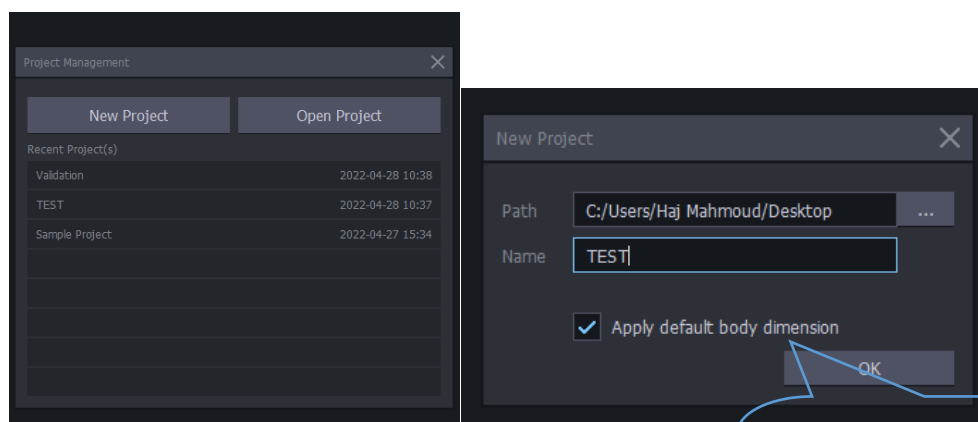
Wait a few seconds while the activation process completes.



Configuration of the Axis Studio software

1. Project Configuration

1. Open Axis Studio
2. Create/open a Studio project
 - a. Click on New Project
 - b. Enter the project name and choose the project location
 - c. Selecting Apply default body size will include the body size preset in your project.

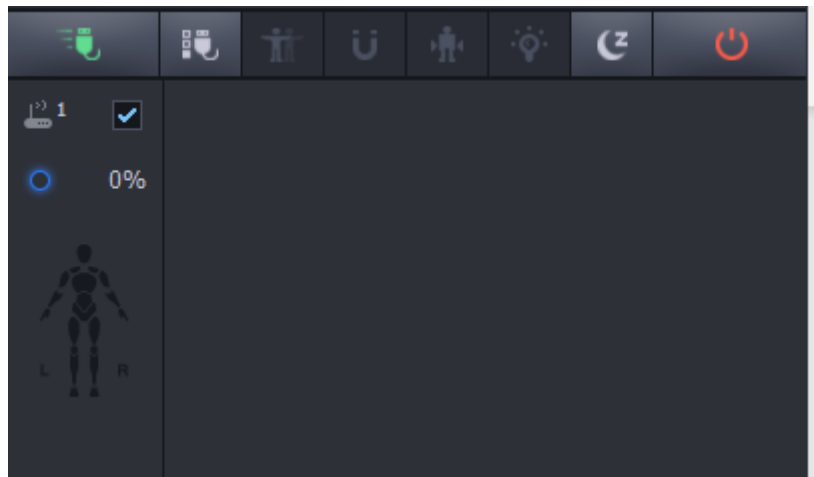


Consider enabling this feature if you want to use the predefined body dimensions in your project

3. Transceiver Configuration

- a. Connect the transceiver to your computer. When you connect the transceiver for the first time, the following interface is displayed after opening a project, click Yes. This step automatically identifies your transceiver and assigns it a static IP address.

If the transceiver is successfully deployed, the display should look like this



4. sensor configuration

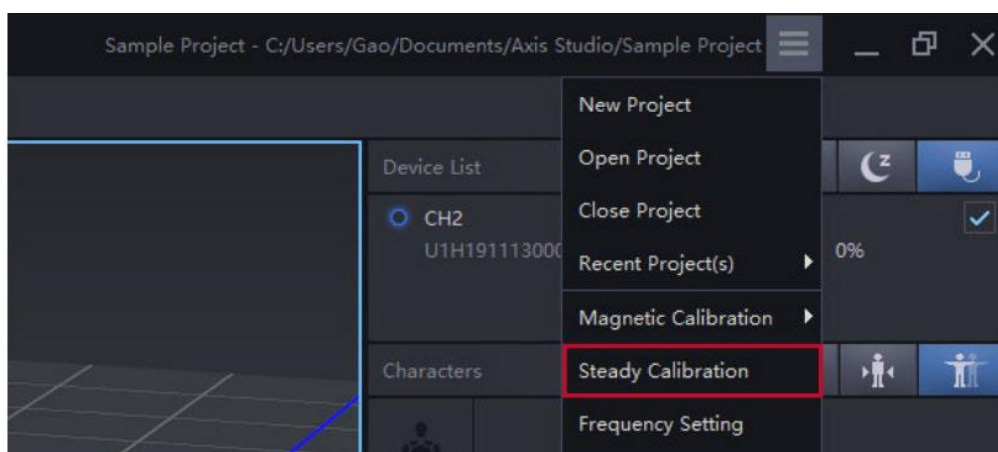
It is recommended to perform this step before each motion capture session.

Remember to fully charge the Perception Neuron 'PN3' sensors before proceeding

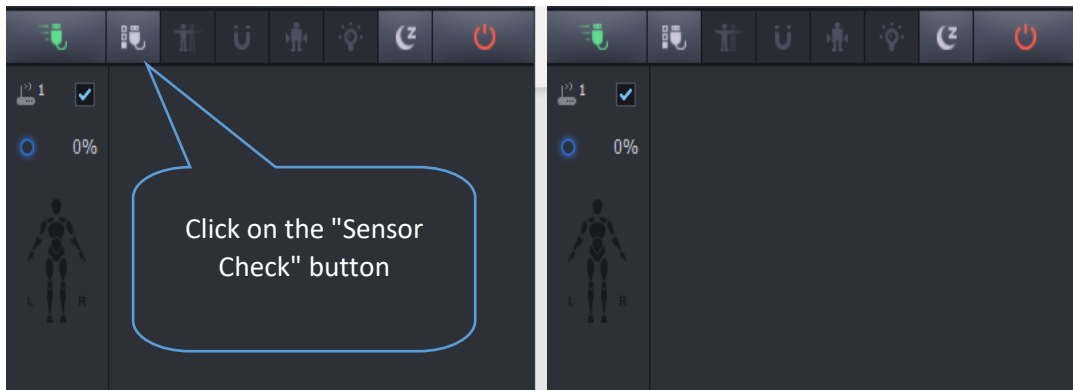
Note : Do not perform the sensor initialization immediately after a full charge, allow the sensors to cool down. This is an important step to allow any magnetic field built up during charging to dissipate

a.This function calibrates the sensor's gyroscope, please follow the steps below:

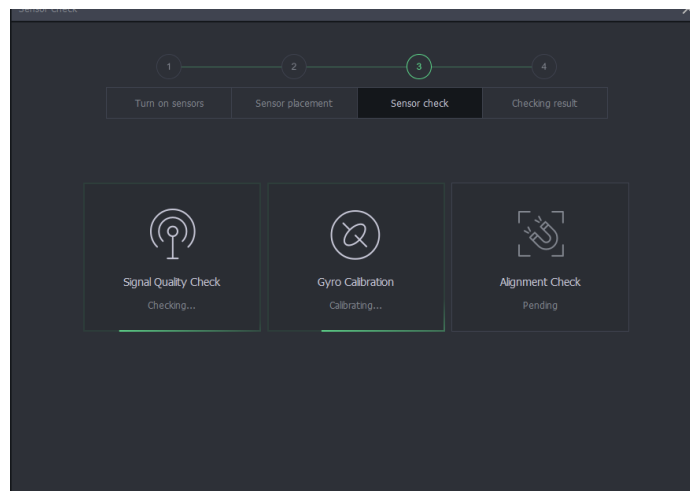
1. Turn on all sensors in the charging station and connect the sensor, do not remove the sensors from the charging station.
2. Put the sensors in standby mode by clicking the button.
3. Always place the charging station on the table or on the floor.
4. Click on Continuous Calibration.
5. Click the "Connect" button first, then click the "Start" button after the sensors turn on.



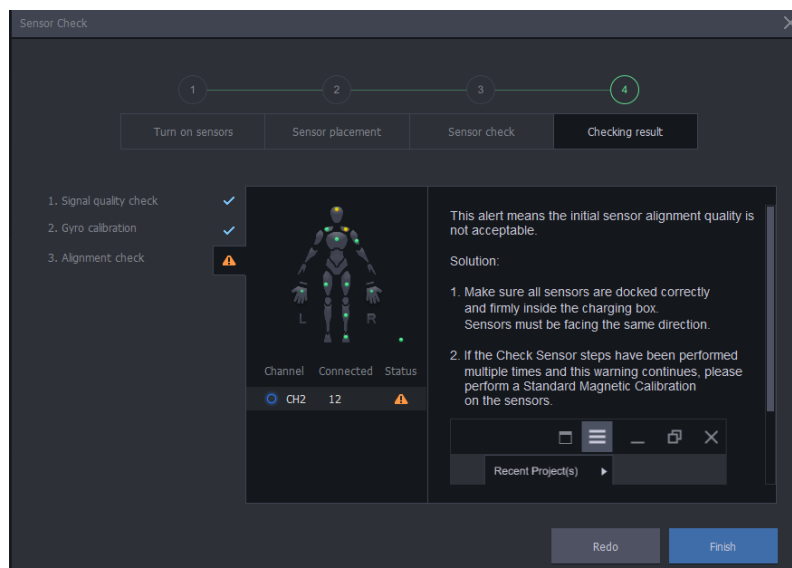
b.The "Sensor Check" button is used to switch on the sensors



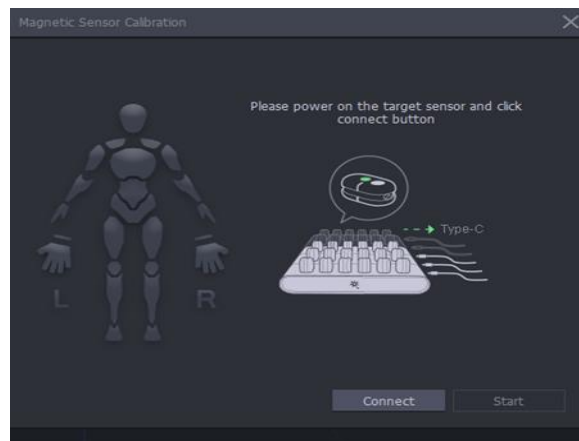
c. Place the sensors on top of the PN3 soft case. The location of the case during this process should be in the middle of the motion capture space.



d. If the "Alignment Check" step is not valid, remember to perform the "Standard Magnetic Calibration" step.

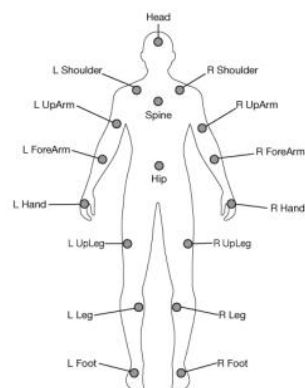


If the orange exclamation mark appears, click on the exclamation mark to display the cause of the error. Please check the device according to the solution shown in the image. If all the sensors are in the charge box then it is important to proceed to the "Magnetic Sensor Calibration" step, which is accessible from the main menu.



2.Installation de l'équipement sur le sujet

The PN3 suit has 17 sensors, identified one by one, which will be placed on all body segments according to the following mapping :



Straps are identified by labels in the corresponding pocket indicating the corresponding placement for the subject

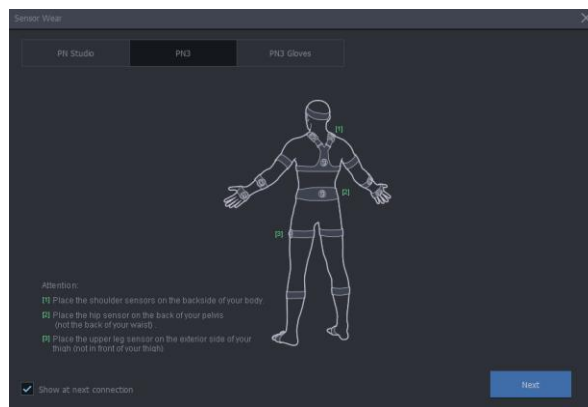
It is important that the sensors do not move during capture. Make sure they are securely attached to your subject and not placed on loose clothing.





3.Connection of PN3 sensors

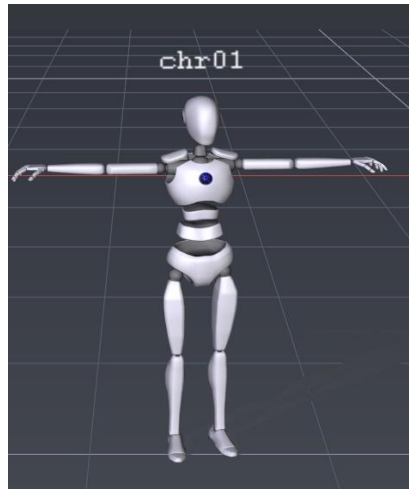
a.Once the subject is equipped, click on the "Connect" button, selecting PN3 by default as shown in the following diagram



b.After pressing the "Next" button, the sensors are initialized by asking the person to stand in the posture shown in the figure



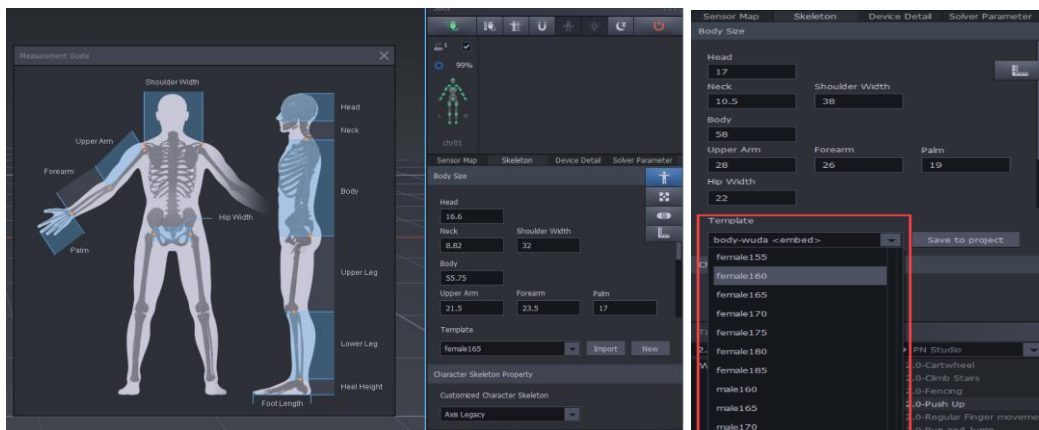
c.Once this step is completed, your digital twin will appear on the screen



4. Posture calibration

a. Select a preset that best matches the size of your subject. A preset or custom profile must be selected before performing the posture calibration.

You can customize your subject's anthropometry by following the guidelines in "Body Size".



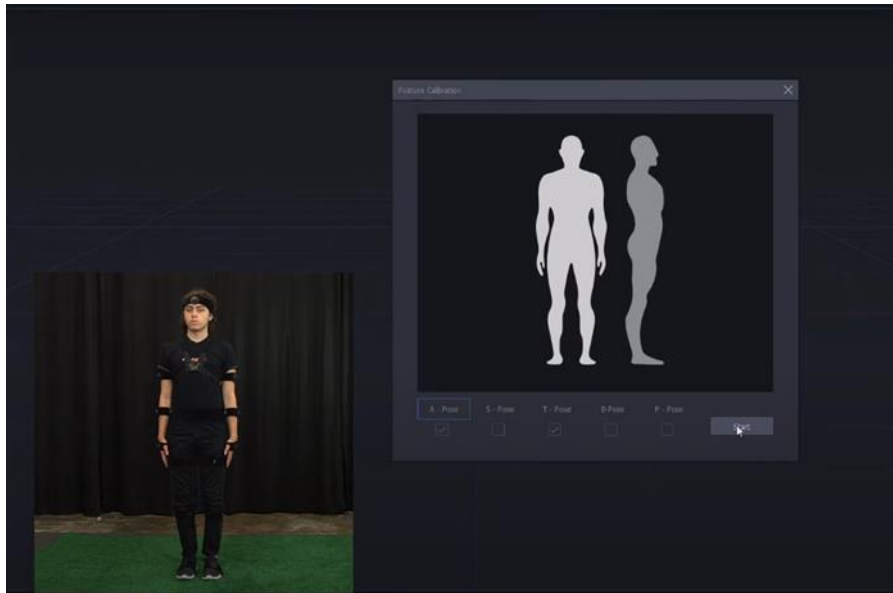
b. Once the setting has been made, the calibration phase can begin by clicking on the button

The posture calibration phase can be divided into A, S, T, B and P poses.

The different working modes correspond to different calibration poses.

Axis Studio automatically identifies the different working modes and automatically checks the corresponding calibration selection.

The choice of calibration poses is made automatically by Axis Studio and cannot be changed manually.




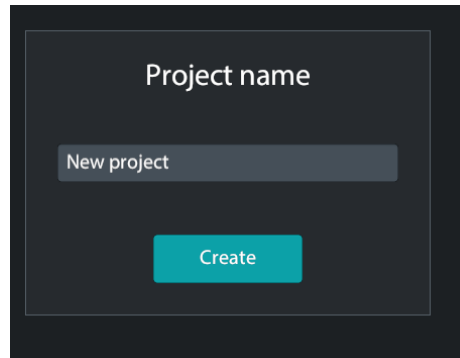
Some Points of Vigilance

- 1.The Neuron PN3 Perception sensors can change frequency by double-clicking the red power button on the sensor.
- 2.Introduction of the "Connect" button, located in the combination panel. The subject must hold an A-POSE to connect the sensors to the Axis Studio.
- 3.Introduction of W-POSE in the posture calibration sequence. W-POSE is used to improve the overall anti-magnetics of the motion capture.
- 4.Ensure that the Upper Leg sensor placement is on the outer side of your thigh.
- 5.Make sure the Hip sensor placement is on the back of your Pelvis, not on the back of your Waist.
- 6.Users should operate the sensors in an environment with as little magnetic interference as possible, especially during the calibration phase. You can use a magnetometer application to measure the magnetic interference in the environment, with the goal of being between 40 and 50 microteslas.
- 7.Insert the PN3 sensor into the charging box to charge it. The light will be red during charging and will turn off when charging is complete.
- 8.Insert the PN3 sensor into the base of the strap to ensure that it will not fall out if moved.
- 9.Under "Customized character Skeleton", make sure to select "Axis Legacy".

Nawo Live software user manual

Launching the application

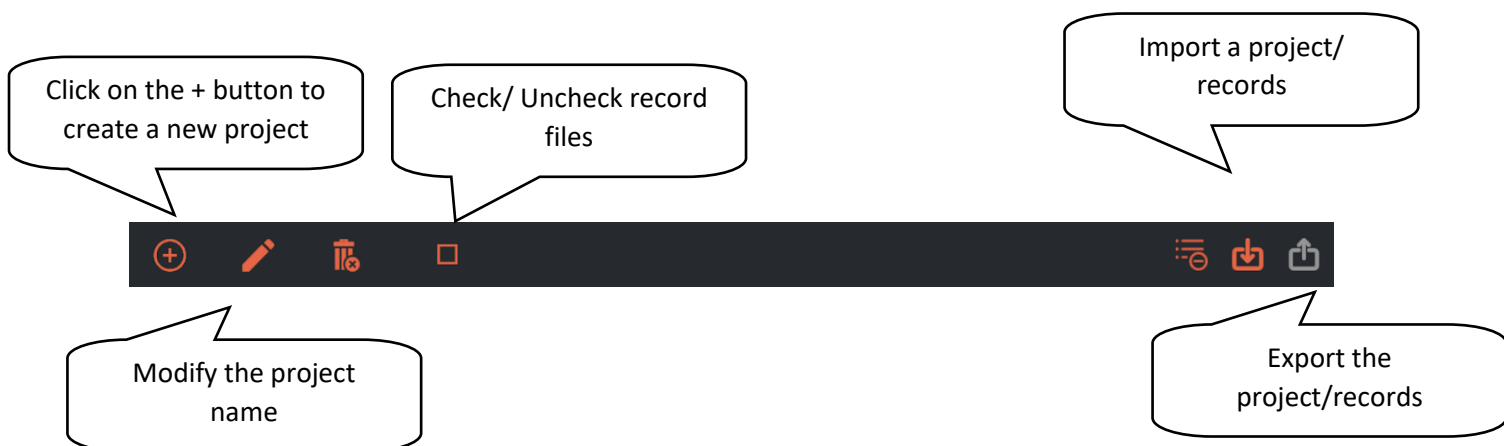
- Open Nawo Live from the desktop shortcut 



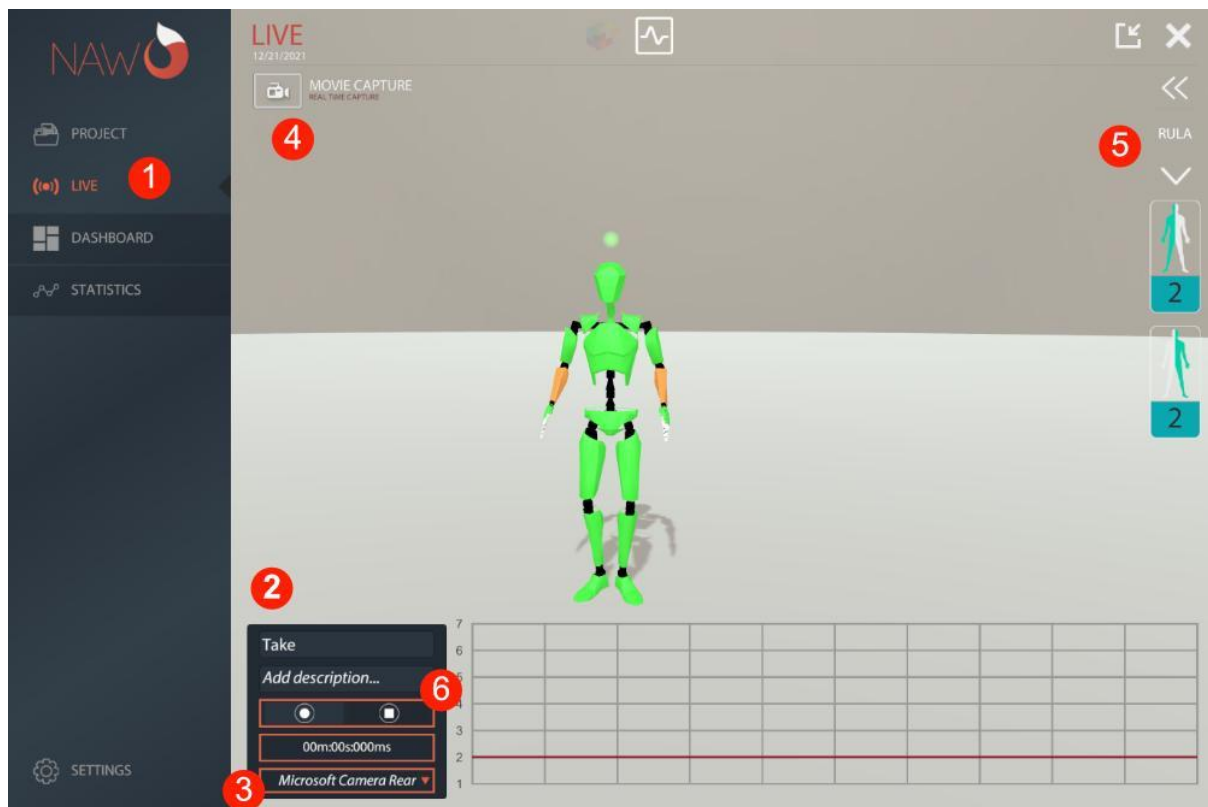
Create a projet

- Select the projet tab
- Add a new project
- Choose the name of your project

Note : Once you have selected a project, the analyses will be saved in this folder one after the other



Record your first analysis



1. Select the Live tab
2. Name your analysis
3. Choose your camera
4. Open the camera
5. Choose your ergonomic rule
6. Record and stop the recording

Check/ View your first registration

- a. In the Project tab, load the record you want to view

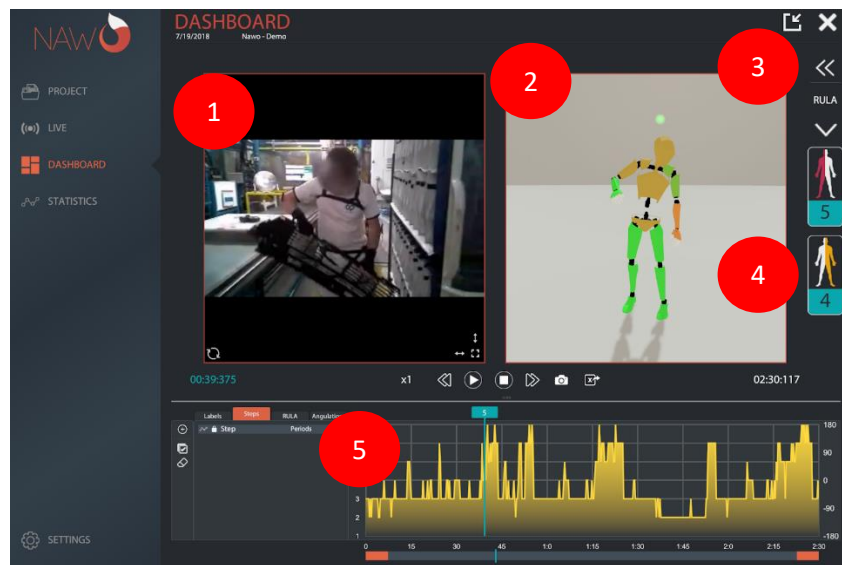


You are now ready to use all the features of the Nawo Live software, you are in the Dashboard tab.

- b. Dashboard Tab

In the dashboard, you can use all the features related to the ergonomic evaluation.

You can review your assessment in video format or the virtual twin of the operator with color indicators of risk levels on different body segments according to the RULA or REBA postural risk assessment method.



1. Vidéo recording
 2. Virtual twin of the operator with colored indicators to visualize the level of postural risk
 3. The choice of the method to visualize the results corresponding to the evaluation with this method
 4. The local postural score for each side of the body
 5. Diagram showing the evolution of the postural score during the performance of the task
- c. The chronology

On this graph you will find the ergonomic evaluation associated with the ergonomic rule. Here the standard is RULA with a score from 1 to 7



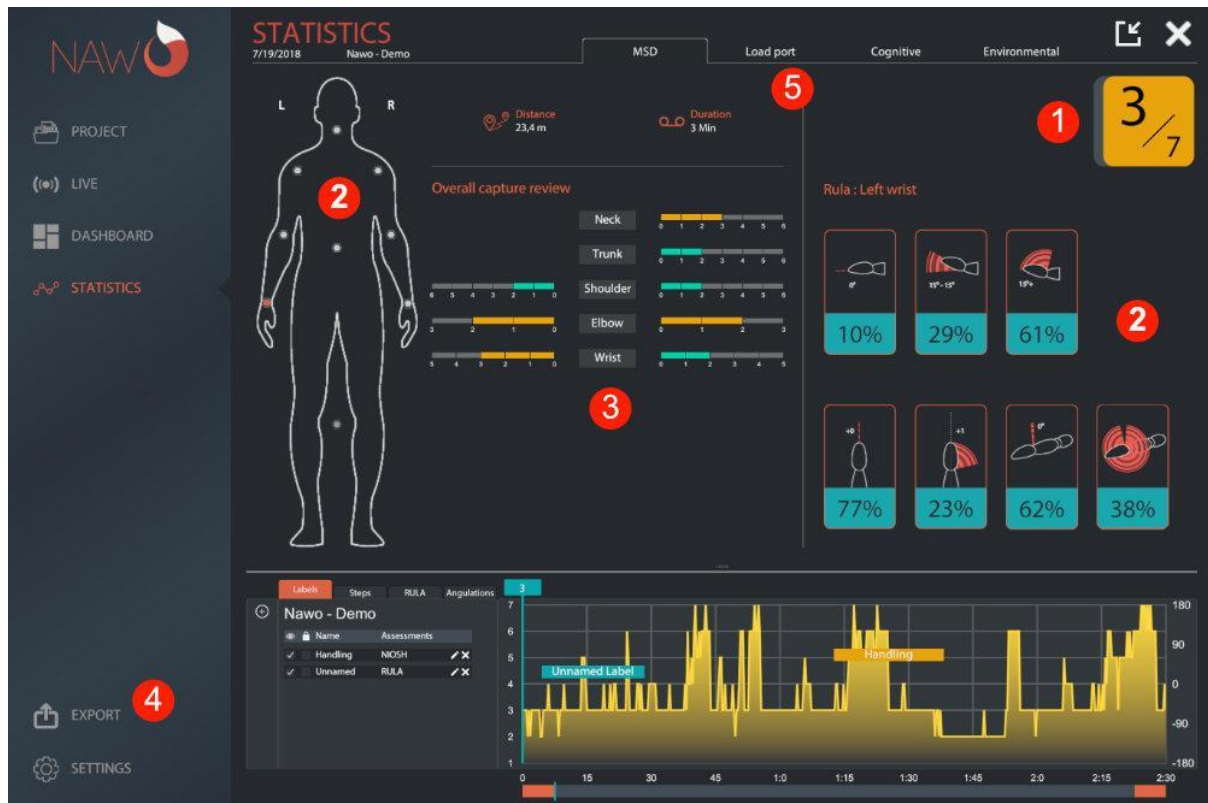
d. Features

1. video
2. Screenshots & Excel export
3. Zoom bar

4. Creation of steps & labels (load bearing)

e. Results of interprétations

The statistics tab allows you to view the results of the analysis by presenting various parameters such as the postural score averaged over all the tasks analyzed, the % of time spent at each level of postural risk RULA



1. Overall risk level
2. By selecting the body segments you can visualize the percentage of solicitation per movement according to the reference method
3. Risk level for each body part
4. Export Data
5. Distance walked and cycle time recorded