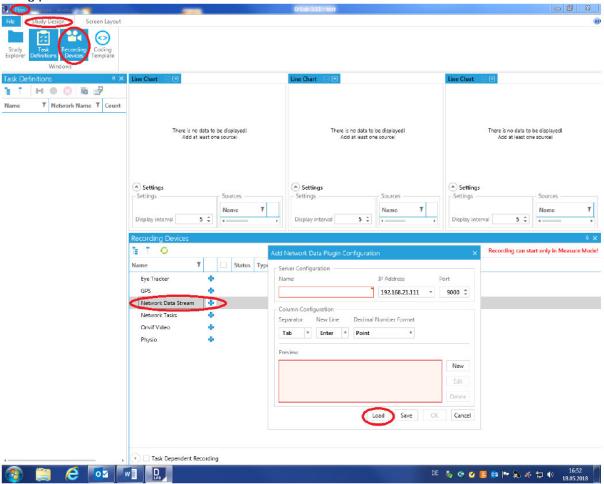# Operating instructions: BI-DLAB-Connector 2

The following describes how a TCP/IP connection from Biograph Infinity (BI) to D-Lab is realised using the software "BioGraph-DLAB-Connector 2". The following steps are necessary for this:

1. Set up D-Lab

After D-Lab has been opened, a new network data stream must be set up under the "Plan" tab in the "Study Design" area under "Recording Devices". Click on the blue cross next to the corresponding entry to open a configuration window. In this window, click on the "Load" button and select and confirm one of the supplied files "Physio8.xml", "Physio20.xml", "Physio32.xml" or "Thought Technologies config point.xml".

The IP address of the server and the port number must be noted. The configuration can then be completed with the "Ok" button. A new network data stream with the name "Physio" has been inserted. The properties of this stream can be subsequently edited by double-clicking on its name.
The channels of the new stream can now be linked to any diagrams for visualisation purposes. New diagrams can be inserted under the "Screen Layout" tab, which can then be linked to the receiving channels via drag and drop.

The D-Lab application can be on the same system on which BI is used, or on another computer that is on the local network.
D-Lab now waits for a connection request and incoming signals.

2. Set up BI

BI uses port number 1000 by default and should keep this for the connection. The desired screen should be brought up and the Connection Instrument should be yellow to indicate that it is waiting for a connection.

3 Setting up the BI-DLAB Connector

3.1 Setting up Channels

To ensure transmission, the number of receiving channels in D-Lab must match the number of transmitting channels in the BI-DLAB Connector. To do this, either the number of channels in the connector must be adapted to that of D-Lab (this is done using the slider on the left above the channel table) or the number of channels in D-Lab must be adapted to each of the connectors (to do this, the corresponding network data stream must be edited).

The channels in the connector can also be oriented to the channels currently selected in BI, which is possible with the button on the right above the channel table. There, select the *.xml that is currently assigned to the called BI screen (e.g. "DLab-Connector.xml").

Please note that it is not the number of channels but the number of transmitting channels in the connector that is decisive. The checkboxes in the channel table can be used to set which channels should transmit and which should not.

3.2 Connections to BI

The programme must be started on the same system on which BI is running. For test purposes, it can also be on another computer, but then the IP number on the left side of the interface under "Connection to BI" must be adjusted accordingly, otherwise the local address (127.0.0.1) must be kept. Now press the button "Connection attempt" on the left side. The connection instrument of BI should now turn green to indicate an active connection. The channel table now shows the most recent raw data from BI.

This step can be automated by activating the checkbox next to "Connection attempt". Now the connection attempt is performed automatically when the connector is started.

3.3 Connections to D-Lab

On the right side of the interface, the connection to D-Lab is established. The IP and port number from step 1 must be entered here.

After clicking on the right button "Connection attempt", the connection set up in D-Lab should jump from "Waiting" (blue) to "Connected" (yellow).

This step can be automated by activating the checkbox next to "Connection attempt". Now the connection attempt is automatically carried out when the connector is started.

For test purposes, a test signal can be sent to D-Lab with the button "Send test".

4. Data transmission

When the connections to BI and D-Lab are established, a transmission can be started. With the button "Start data transmission" the values from the channel table are sent to D-Lab.

This step can be automated by activating the checkbox under "Start data transmission". Now the data transmission is carried out automatically when the connector is started.

The data can now be collected in D-Lab, recorded, analysed and exported as a CSV file under "File->Export->Data".