THE MEASURABLE DIFFERENCE.

DEWETRON

OXYGEN TRAINING
> ETHERNET SENDER

GENERAL

If the system has been configured by the DEWETRON factory, the Ethernet sender plugin is already configured

If the Ethernet sender plugin was delivered separately from the measurement system (or in combi-nation with a TRIONet), the Ethernet sender plugin needs to be added manually to the OXYGEN pro-gram directory after the installation is finished.

To do so, copy the file ethernet_sender.plugin to the program directory
(typically C:\Program Files\DEWETRON\Oxygen\bin; Admin rights required).

Please note that the Ethernet sender plugin is **compatible with OXYGEN R5.0 and above** and **incompatible with OXYGEN R3.7 and below.**

```xml
<?xml version="1.0"?>
<Receiver>
<DataStream name="TestStream">
<UDPSource address="0.0.0.0" port="50000" />
<Channels>
<Channel name="Acceleration X" short_name="Acceleration X" unit="m/s²" description="Acceleration in X-Direction" type="double">
<Sample>
<NumericValue byte_offset="0" bit_offset="0" bit_length="32" byte_order="msb_first" type="float" />
</Sample>
</Channel>
<Channel name="Acceleration Y" short_name="Acceleration Y" unit="m/s²" description="Acceleration in Y-Direction" type="double">
<Sample>
<NumericValue byte_offset="4" bit_offset="0" bit_length="32" byte_order="msb_first" type="float" />
</Sample>
</Channel>
<Channel name="Acceleration Z" short_name="Acceleration Z" unit="m/s²" description="Acceleration in Z-Direction" type="double">
<Sample>
<NumericValue byte_offset="8" bit_offset="0" bit_length="32" byte_order="msb_first" type="float" />
</Sample>
</Channel>
<Channel name="Gravity X" short_name="Gravity X" unit="g" description="Gravity in X-Direction" type="double">
<Sample>
<NumericValue byte_offset="12" bit_offset="0" bit_length="32" byte_order="msb_first" type="float" />
</Sample>
</Channel>
<Channel name="Gravity Y" short_name="Gravity Y" unit="g" description="Gravity in Y-Direction" type="double">
<Sample>
<NumericValue byte_offset="16" bit_offset="0" bit_length="32" byte_order="msb_first" type="float" />
</Sample>
</Channel>
<Channel name="Gravity Z" short_name="Gravity Z" unit="g" description="Gravity in Z-Direction" type="double">
<Sample>
<NumericValue byte_offset="20" bit_offset="0" bit_length="32" byte_order="msb_first" type="float" />
</Sample>
</Channel>
<Channel name="Rotation Rate X" short_name="Rotation X" unit="rad/s" description="Rotation in X-Direction" type="double">
<Sample>
```

OXYGENs Ethernet sender plugin allows to send measurement data via UDP cyclically to another OXYGEN instance or other 3rd party application providing the following benefits:

➢ Automatic creation of xml-file for Oxygen Ethernet Receiver configuration on the client side
➢ Send actual (not averaged) data in intervals from 1 to 100 Hz
➢ Synchronized data transmission with timestamps

CONFIGURATION

①	Start OXYGEN and Open the Channel List
②	Select the channels that shall be transferred via UDP by marking their respective check box on the left hand side
③	Click on the + button
④	Click on Ethernet Sender in the Data Transfer group
⑤	Click on the Add button
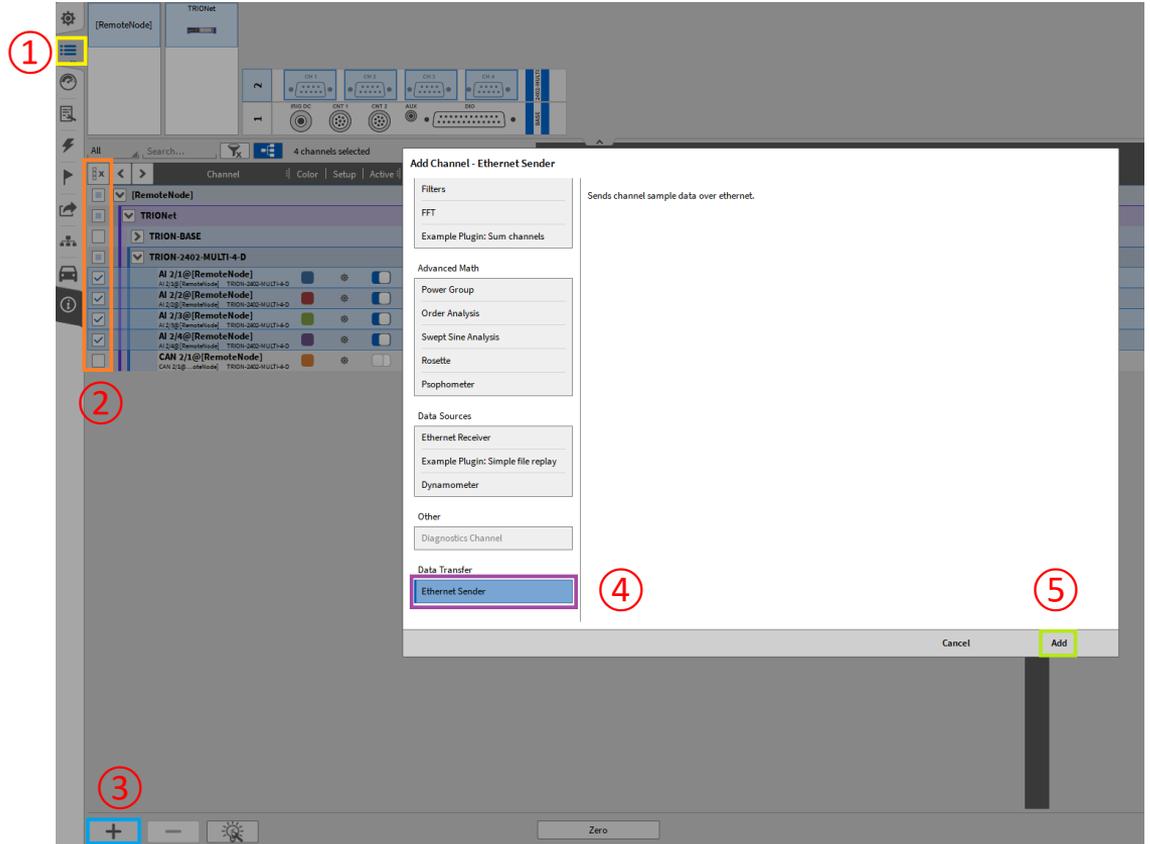
CONFIGURATION

① An ETHERNET_SENDER Channels section including the just created Ethernet Sender will be added to the Channel List

② A click on the Setup button will open the Ethernet Sender settings
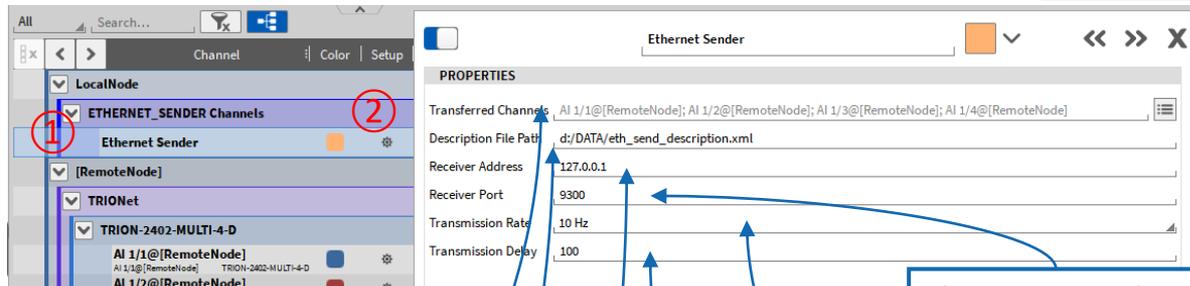
The channels to be transferred can be changed by clicking to the button right-hand to the transferred channels line. After clicking, a popup will open a list containing all channels that can be transferred.

The UDP port can be specified in the Receiver Port section

The transmission rate (data output rate) can be set from 1 to 100 Hz

The location the xml-file is stored to is defined in the Description File Path section. The file path and file name can be freely defined

The IP port of the ethernet data receiver (device on which the data is decoded), must be specified in the Receiver Address section

The data Transmission Delay (data output delay) can be set up to 2000 msec

DATA SYNCHRONIZATION
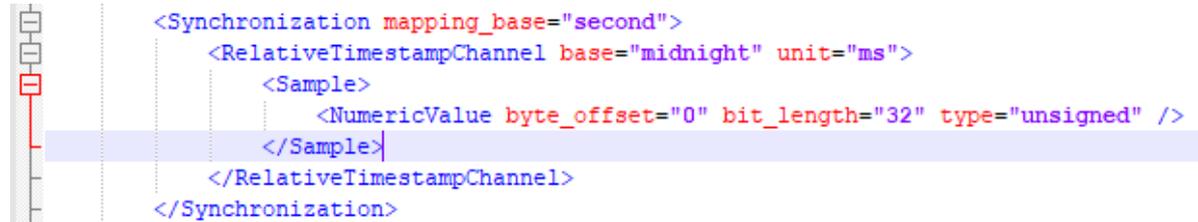
Data transferred by the Ethernet Sender is timestamped

The timestamp is a relative one and includes the milliseconds passed since midnight

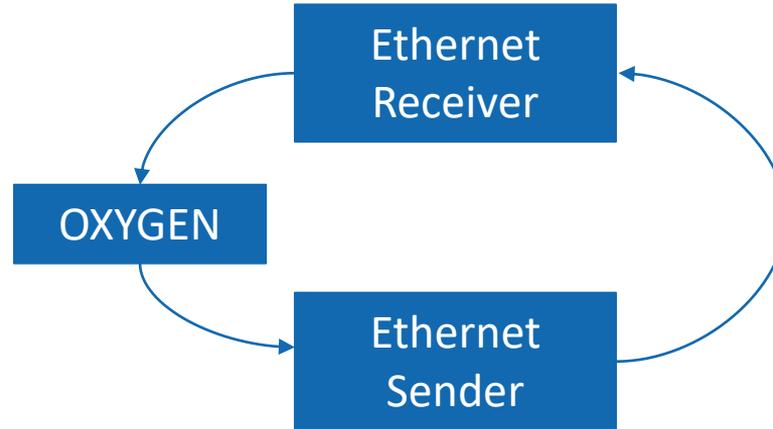The synchronization mapping base on the receiver side is the full second

```xml
<Synchronization mapping_base="second">
    <RelativeTimestampChannel base="midnight" unit="ms">
        <Sample>
            <NumericValue byte_offset="0" bit_length="32" type="unsigned" />
        </Sample>
    </RelativeTimestampChannel>
</Synchronization>
```

DEWETRON

EXERCISE

Output data over Ethernet Sender and feed back via Ethernet Receiver

Option 1 (1 PC):

Option 2 (2 PCs):