Tech Tip: Data Transmission with OTT netDL and FTP Server

OTT HydroMet

Insights for Experts

FTP transmission with OTT netDL

This tech tipp explains how to set up an automatic data transmission from OTT netDL to an FTP server via a mobile Internet connection (GPRS). Please mind that encryption is not possible (sFTP or FTPs are not supported by OTT netDL).

We require an **OTT netDL 500 or 1000** with internal **modem** (variant B... or C...), inserted *SIM card* (contact surface downwards; **PIN** known or unlocked) and connected **GSM antenna**. In addition, you need the login information of an **FTP server** as well as the **APN** (Access Point Name) of your mobile network operator. Sensors are optional.

The 4 areas highlighted in colour define the datatransmission. On the following pages you'll see how the configuration is done **manually (pages 3-6) or via wizards (pages 7-13)**.
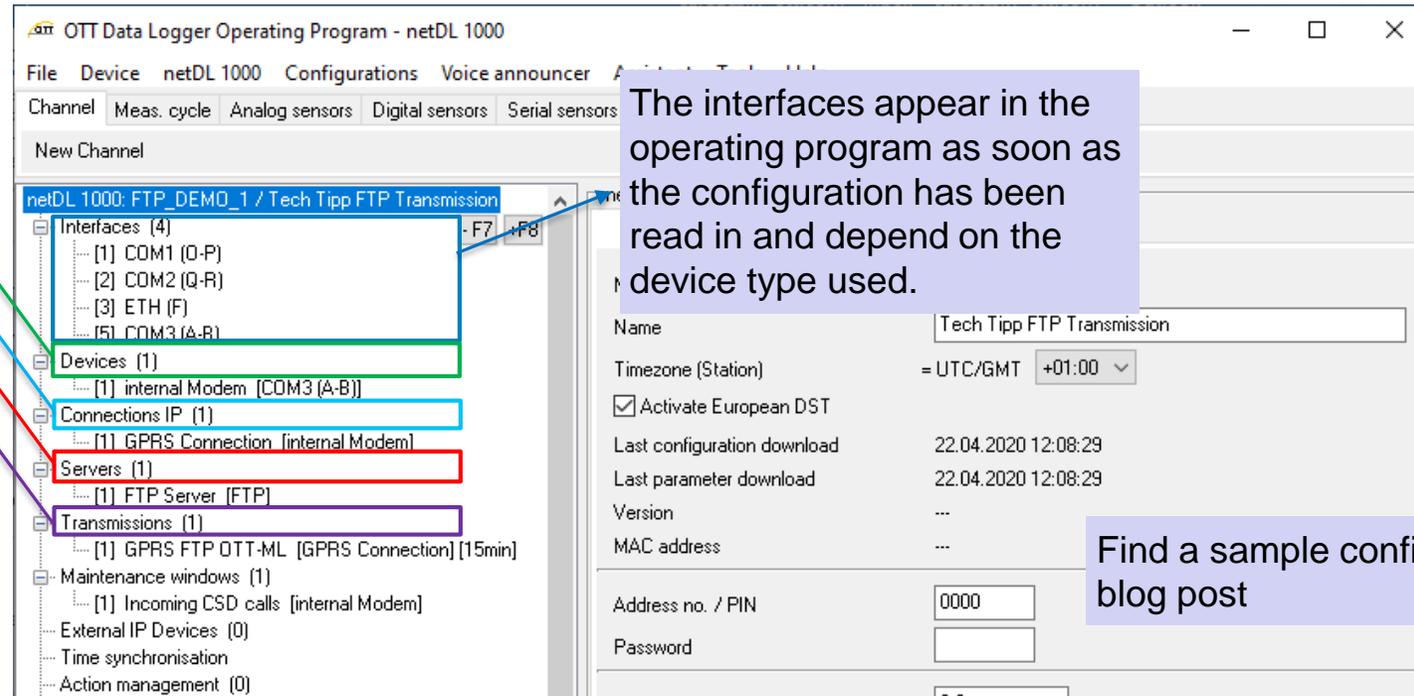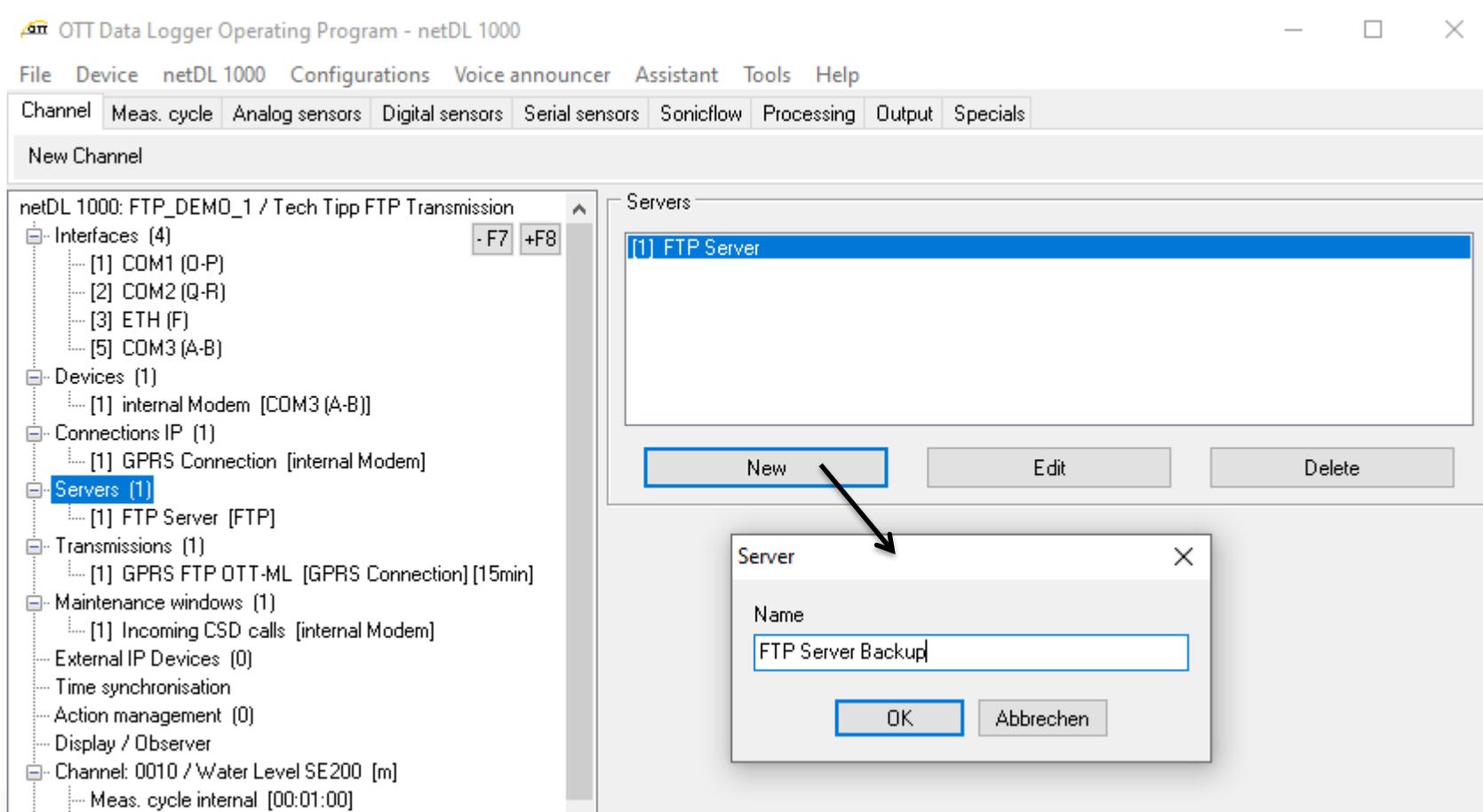
The interfaces appear in the operating program as soon as the configuration has been read in and depend on the device type used.

Find a sample configuration in the blog post

FTP transmission with OTT netDL

For manual configuration, select the desired section, click "New" and enter the required information
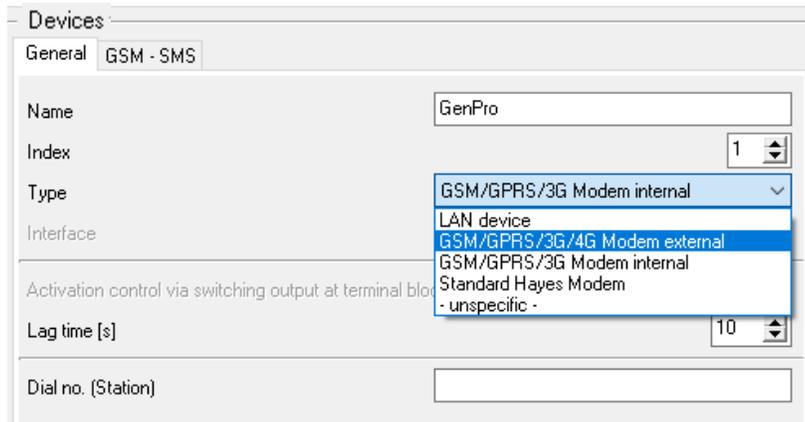(see following pages).

IP Communication – OTT netDL

Transmission to Server via connection with device connected to interface

Interfaces: up to 3x COM and 1x ETHernet, depending on datalogger

- COM3 is created (if not already displayed) by adding an internal modem (which needs to exist physically too ☺).
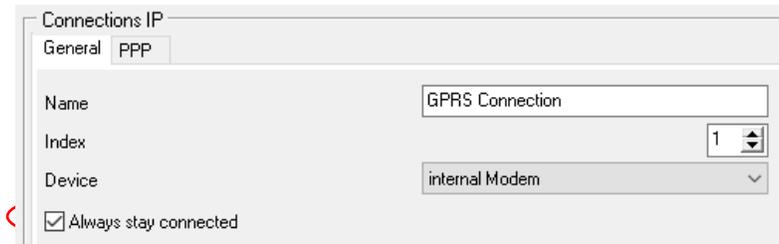
Devices:

Important: insert PIN of your SIM-card

Connection:

transmission intervals!

IP transmission and devices

Server:

If the path does not exist on the server or cannot be changed, the data is stored in the root directory of that FTP user.

IP transmission and server
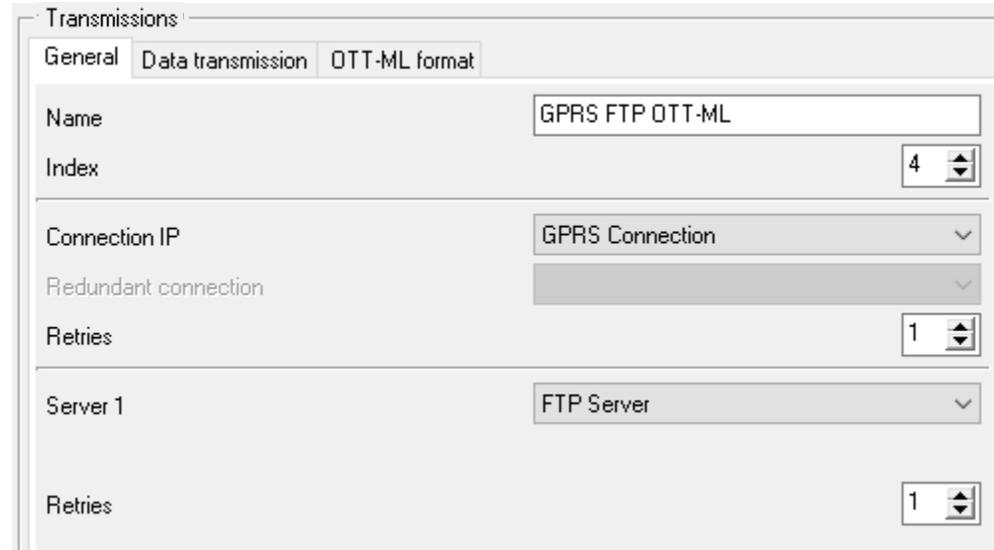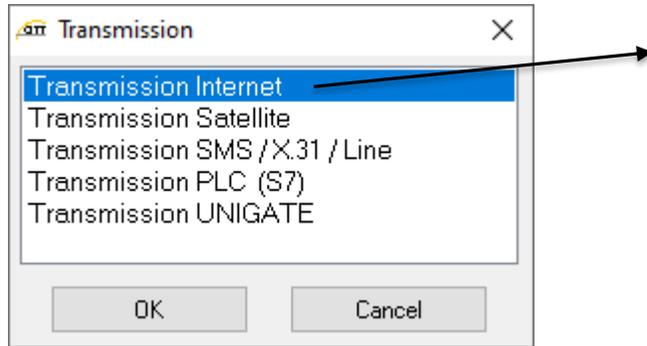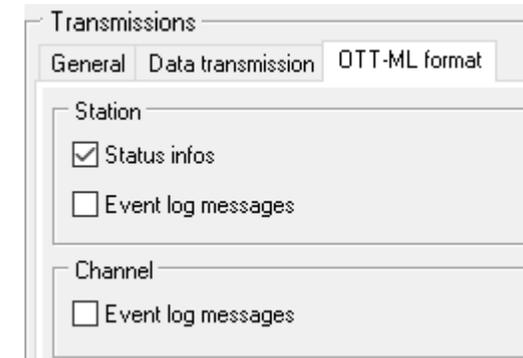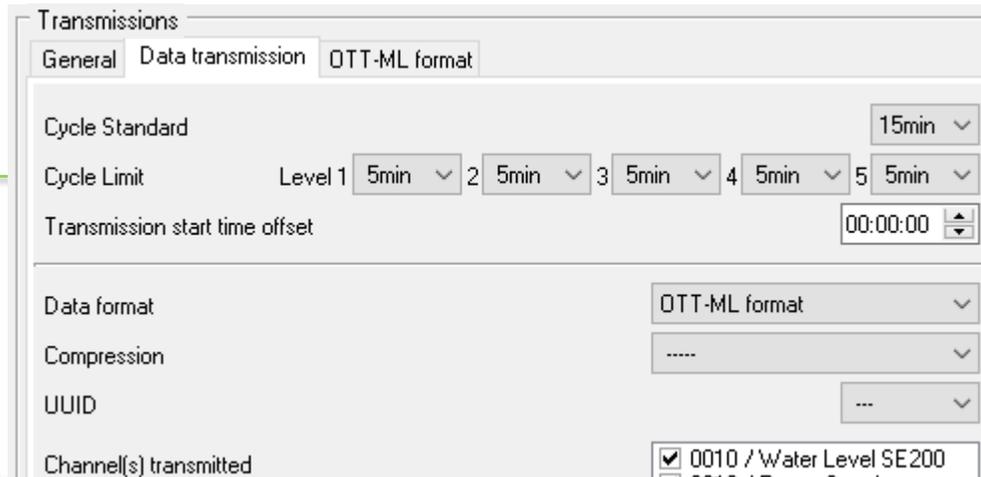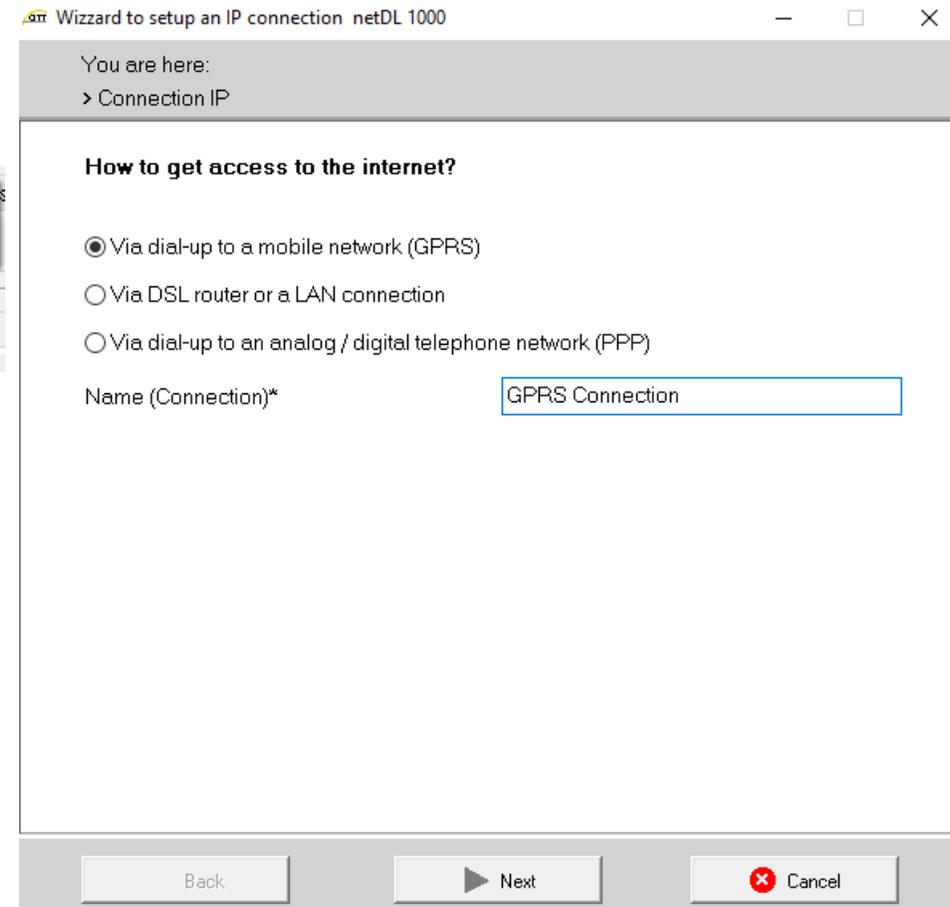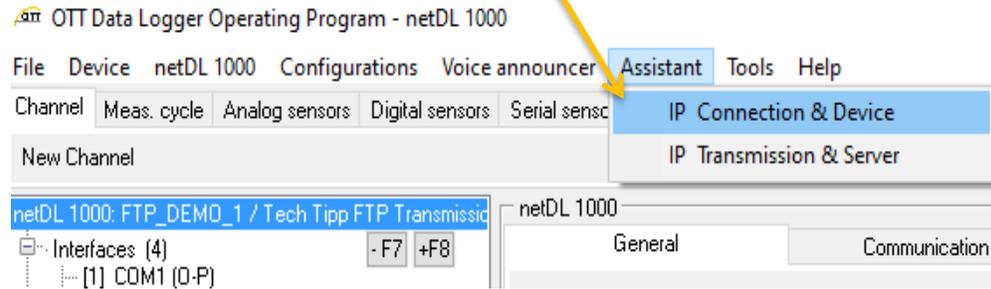

Transmission:

SeeTech-Tipp
about alerts
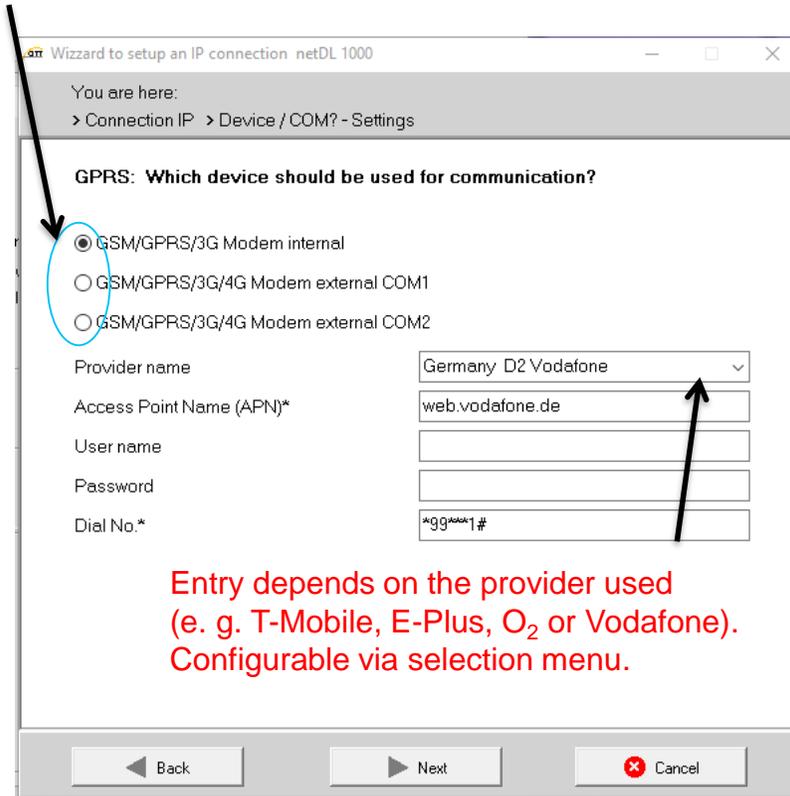
Setup IP connection and device in the OTT netDL wizard

Support by **Wizard 1**

Setup IP connection and device in the OTT netDL wizard

Setup IP connection and device via the Wizard 1

Select which modem shall be used; e. g. internal modem

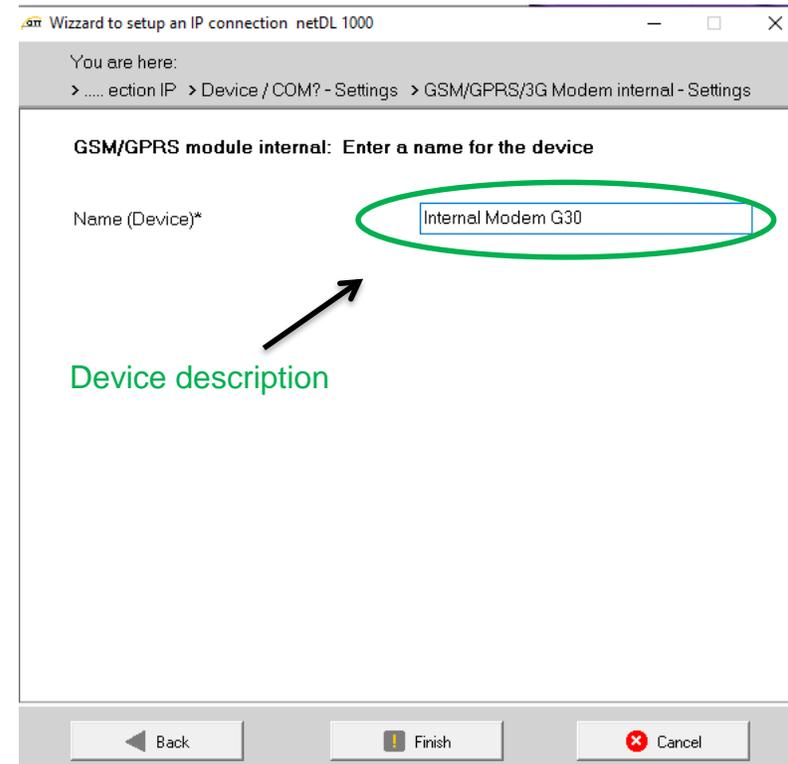Entry depends on the provider used
(e. g. T-Mobile, E-Plus, O$_2$ or Vodafone).
Configurable via selection menu.

Device description

Setup IP connection and device in the OTT netDL wizard

IP connection and device can also be set up in the configuration tree
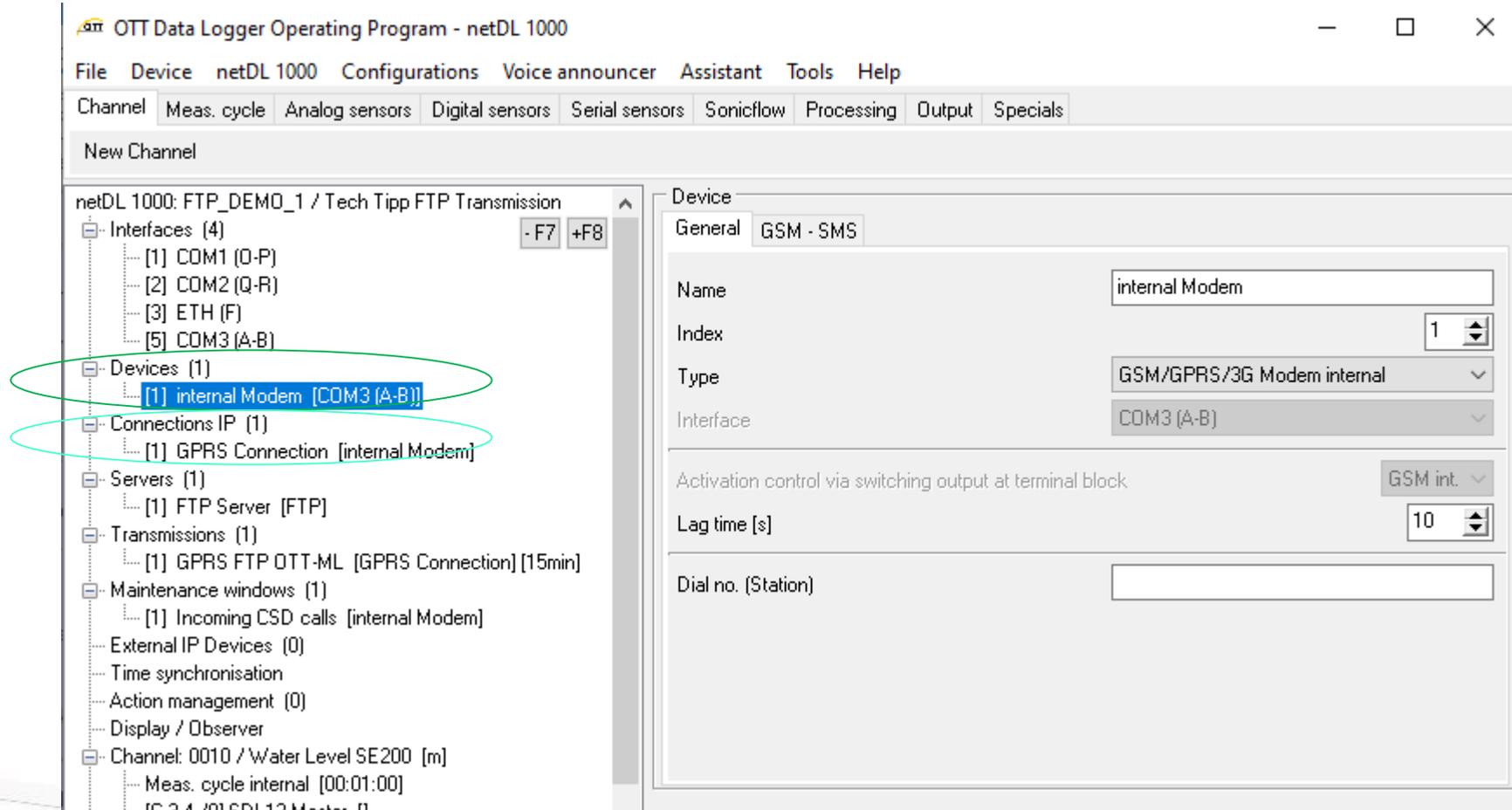
Setup IP connection and device in the OTT netDL wizard

Wizard 2 support for IP transmission and server
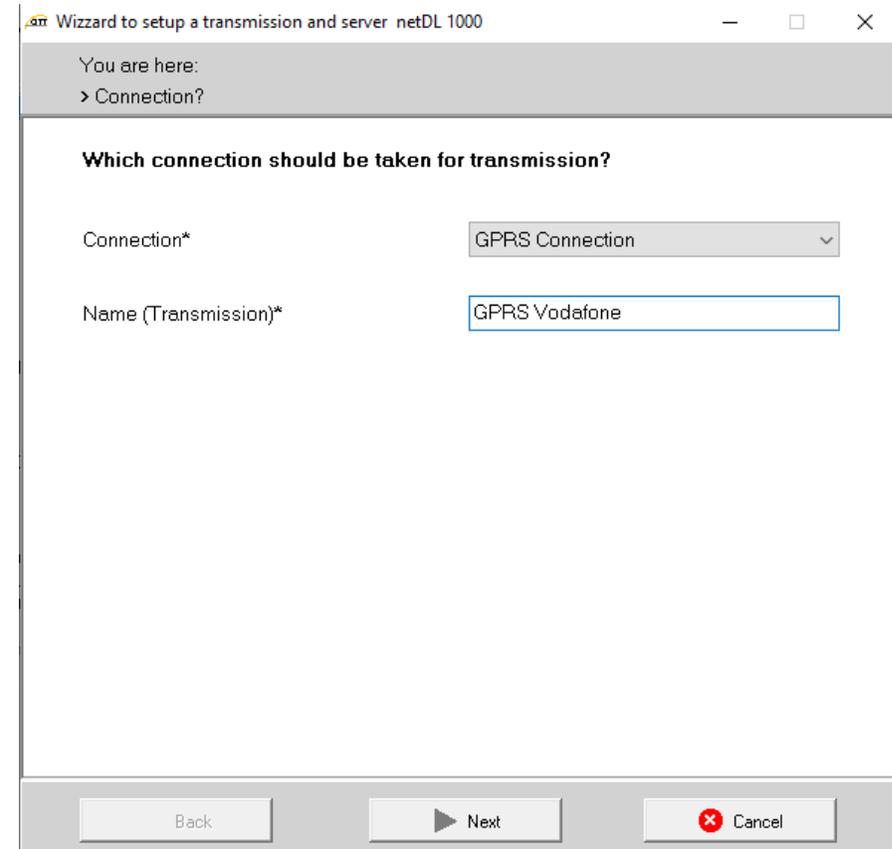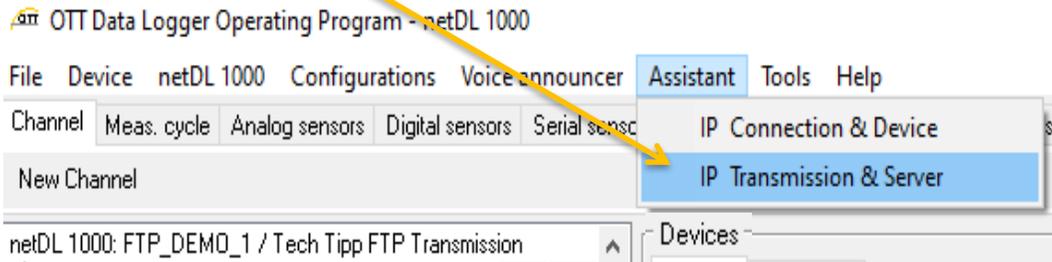
Attention: the Wizards are only used for IP communication - other transmission paths like Satellite, SMS, D-channel (based on ISDN, discontinued) and Line as well as industrial communication (PLC S7 or UNIGATE) are set up directly under "Transmissions" in the configuration tree.
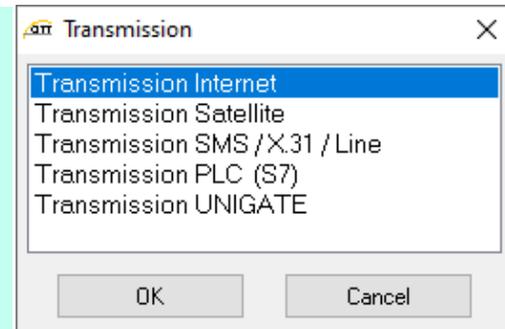
Setup IP connection and device in the OTT netDL wizard

Wizard 2: Name of server and server selection. Instead of the FTP Server for example you can select HTTP and HTTPs server alternatively (e. g. for Hydromet Cloud or View or OTT Hydras 3 net).
It is also possible to define additional servers for further transmissions.
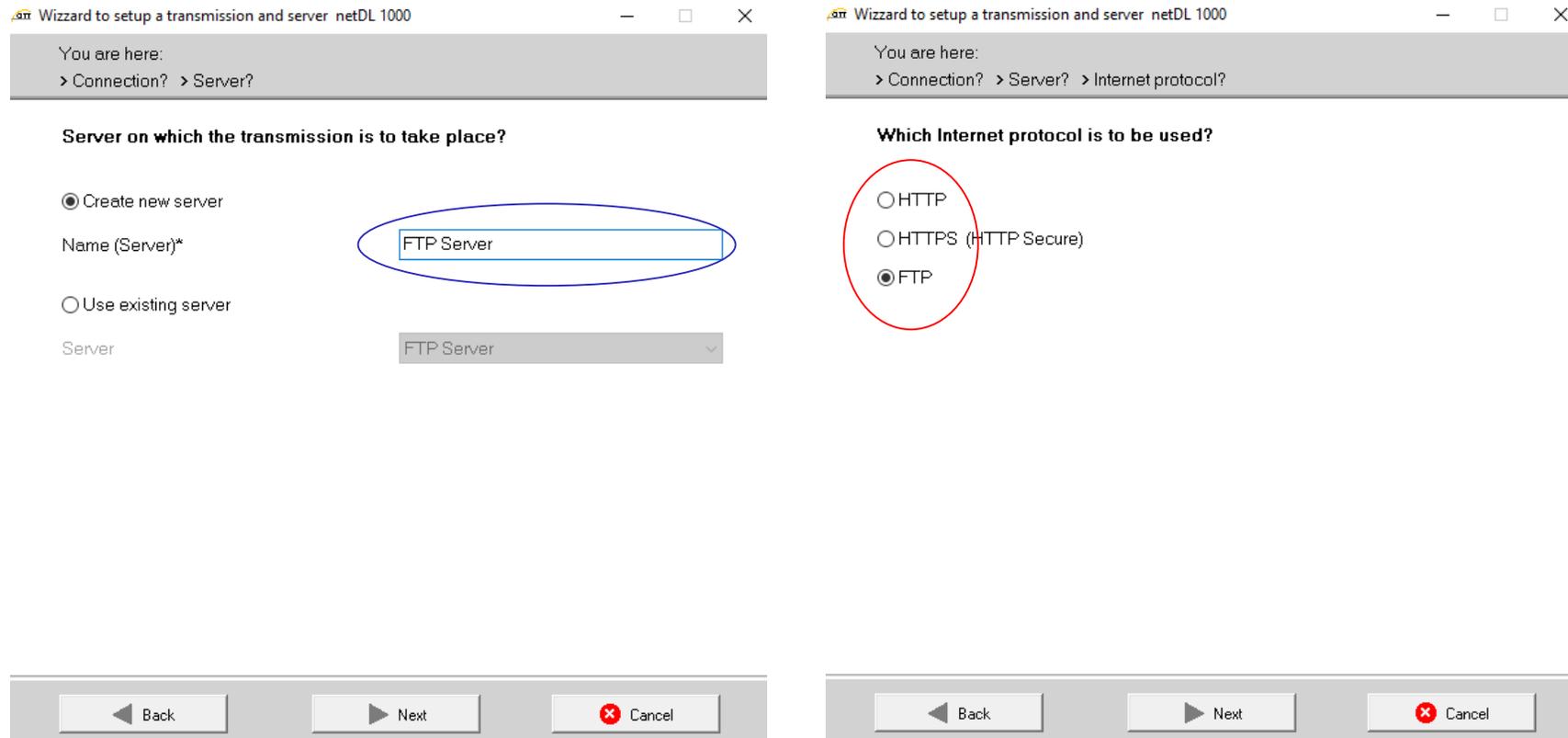
Setup IP connection and device in the OTT netDL wizard

Wizard 2: The address and login data for the FTP Server can usually be obtained from your IT department or the service provider (OTT is also happy to offer you an FTP server).

The transmission interval (standard cycle) specifies, how often the OTT netDL should send data to the FTP server: 15 min. to 1 h are typical intervals for surface water stations.

Having a big network consisting of many stations, the offset can be used to distribute the load on the server or (using a transmission interval of 24 h) to define the time of data transmission e. g. 7:00 AM.
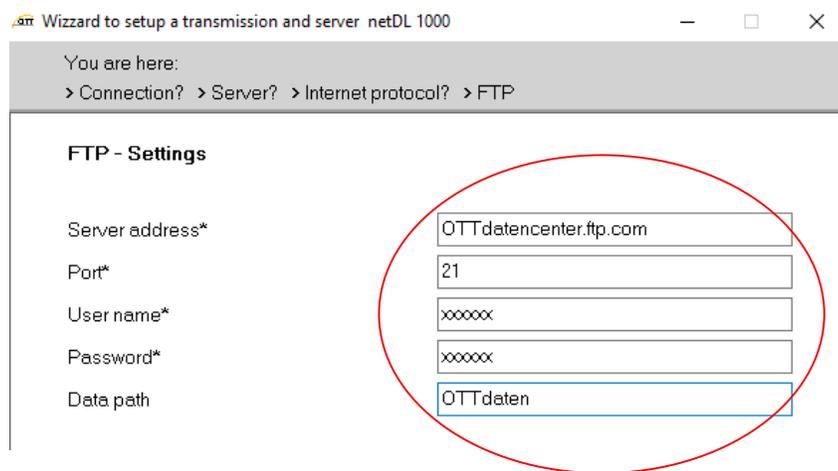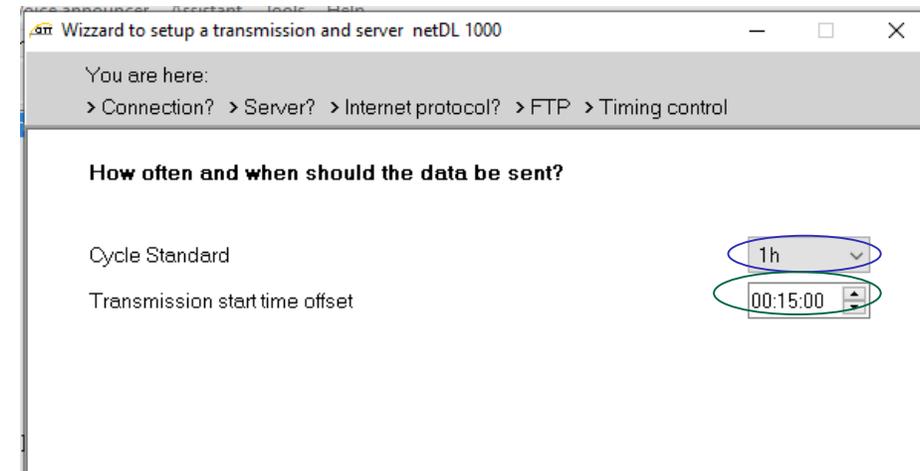
Setup IP connection and device in the OTT netDL wizard

Wizard 2: Select channels for transmission. It is possible to select different formats. Infodata (e. g. observer entries) can only be transmitted via OTT protocol binary (+ XL) and also in OTT-ML.

The additional information marked in red is only available in OTT-ML format.

Before transmission:
select „All Channels" or individual channels
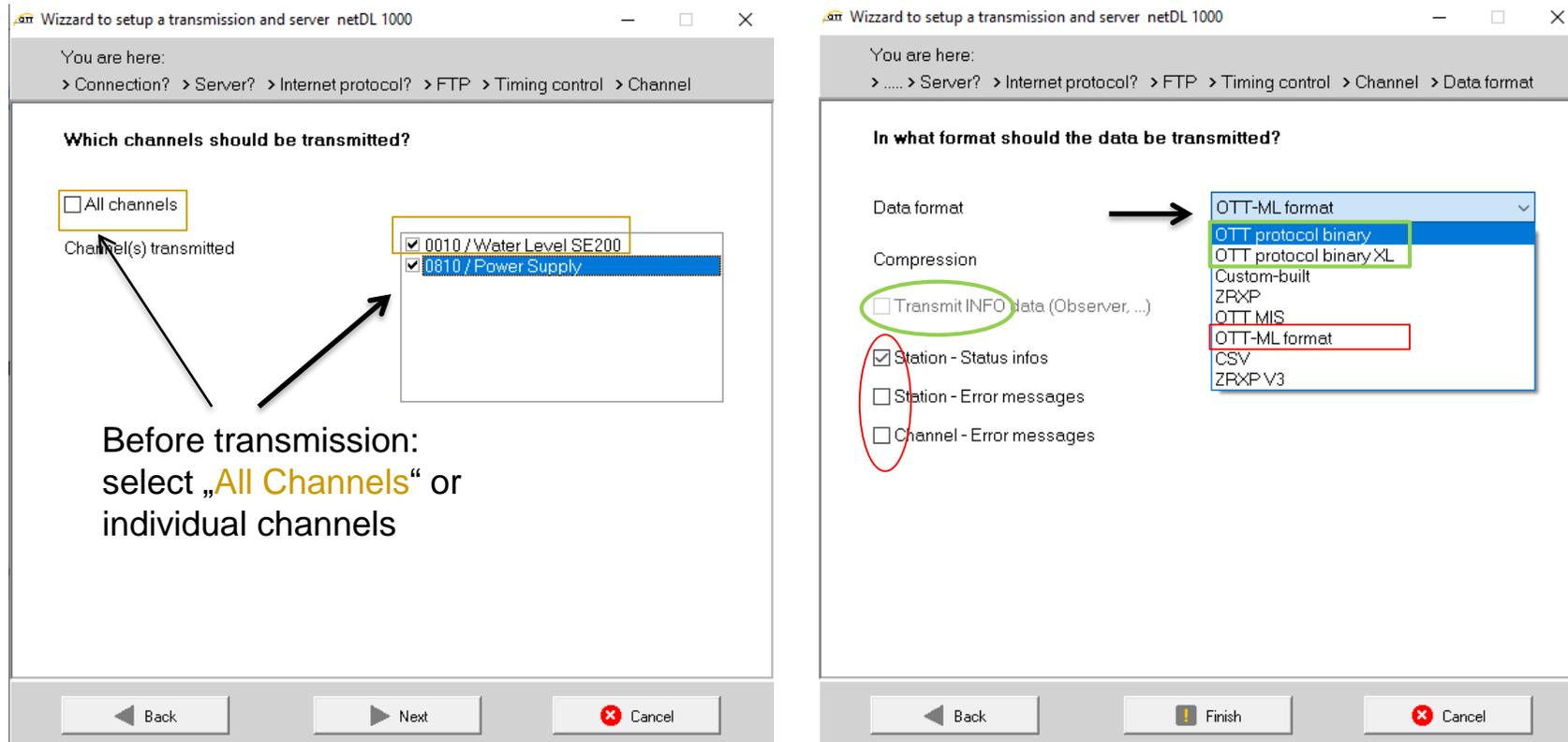
Example for various formats


```
<?xml version="1.0" encoding="iso-8859-1"?>
<StationDataList>
<StationData stationId="0000000001" name="netDL1000_1" timezone="+00:00" >
 <StationInfo time="2015-06-11T11:12:30" firmware="V2630"
configtime="2015-06-11T12:05:07" paramtime="2015-06-11T12:05:07"
batteryVoltage="14.42" temperature="0.00" deviceType="OTT netDL 500"
providerName="Vodafone.de" gsmSignal="18" ipAddress="77.24.129.23"
transmissionCycle="600" transmissionOffset="0" configuredTransmissionCycle="600"
/>
 <ChannelData channelId="0810" name="U Versorgung" unit="V"
samplingInterval="300" storageInterval="300" configuredSamplingInterval="300"
configuredStorageInterval="300" >
  <Values>
   <VT t="2015-06-11T11:00:00" errorcode="10">0</VT>
   <VT t="2015-06-11T11:05:00" errorcode="10">0</VT>
   <VT t="2015-06-11T11:10:00">14.5</VT>
  </Values>
 </ChannelData>
</StationData>
</StationDataList>
```

```
DT. 0000000001.┴0810┐,. Ü'⚥..€'
```

```
#SANR0000000001;*;
#CNR0810;*;CMW288;*;CTYPEn-min-equi;*;
#RINVAL-777.0;*;RNR288;*;
20150611110500 -777.0
20150611111000 14.5
```

```
#SNAMEnetDL1000_1*|
#SANR0000000001|*|
#TZUTC+1|*|
#REXCHANGE0000001.W.Original|*|
#CNAMEWasserstand|*|
#CUNITcm|*|
#RINVAL-777.0|*|
20150611105500 -777.0
20150611110000 -777.0
20150611110500 -777.0
20150611111000 14.48
```

```
OTT-ML format                    ▼
OTT protocol binary
OTT protocol binary XL
Custom-built
ZRXP
OTT MIS
OTT-ML format
CSV
ZRXP V3
```

```
0000000001;0810;20150611;110500;[10]
0000000001;0810;20150611;111000;14.5
```

```
<STATION>0000000001</STATION><SENSOR>0810</SENSOR><DATEFORMAT>YYYYMMDD</DATEFORMAT>
20150611;110500;[10]
20150611;111000;14.5
```
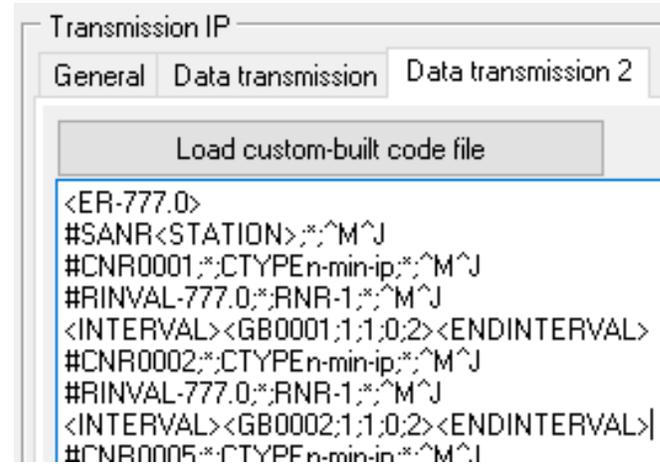
Further data processing

ZRXP for SODA-Box of **Kisters** (additional software might be necessary)

ZRXP V3 for direkt import in WISKI of Kisters

Custom Build Code might be used to implement further ZRXP adaptions

OTT-ML Format for direct import to **Hydras 3** Software (especially Hydras 3 Net) and other Software with corresponding import routine

OTT Protocol binary (also OTT Protocol binary XL): conversion via
Hydras 3 RX Software with MIS output for **Hydras 3** or ZRXP for **Kisters** Software.

CSV Format: **universal** text format

MIS Format for direct (auto-)import to **Hydras 3** (+ additional software if necessary)

# Setup IP connection and device in the OTT netDL wizard

For all text formats a compression can be selected

(for FTP servers only GZIP can be used, for HTTP servers also Deflate).

Please consider possible effects on the processing.

'Deflate' is usually decompressed automatically by the server at time of reception.

With 'GZIP', an unpacking routine must be implemented before import in Hydras 3.
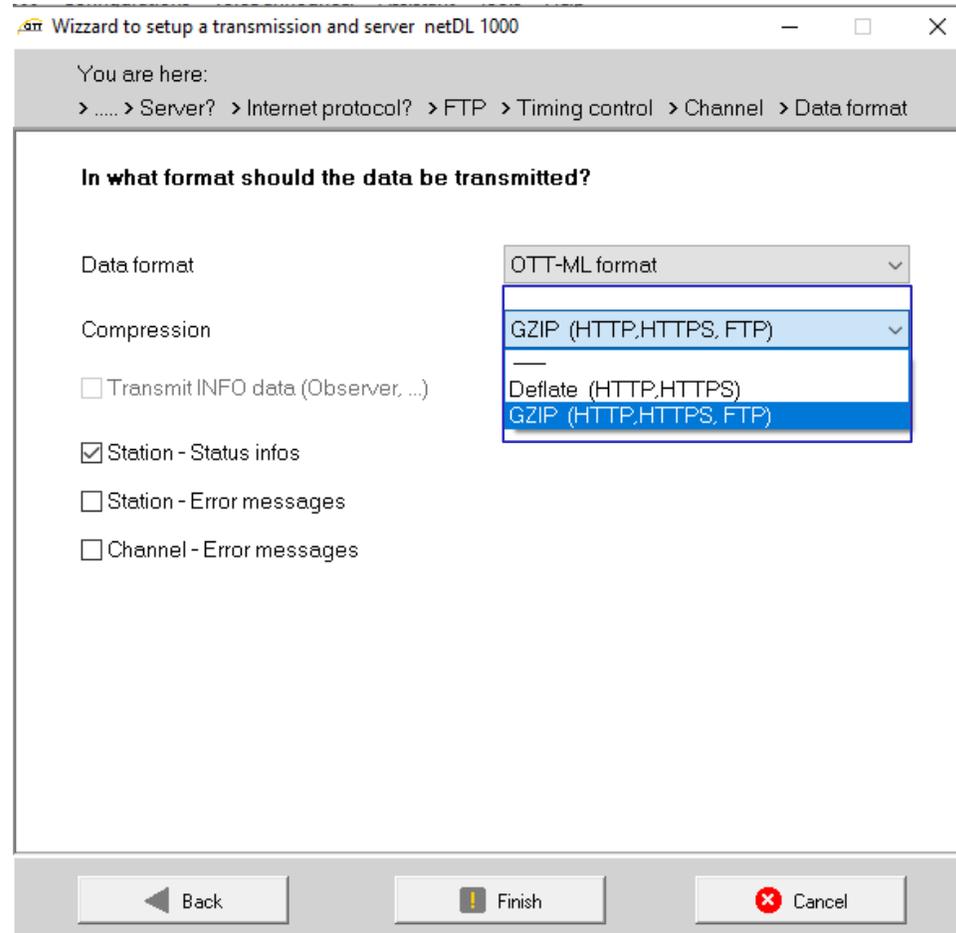
Maintenance window

To enable accessing an OTT netDL remotely, the operating program reminds you to set up a maintenance window when 'programming' (not included in the Wizard). You can set this up under Maintenance Window and "New".
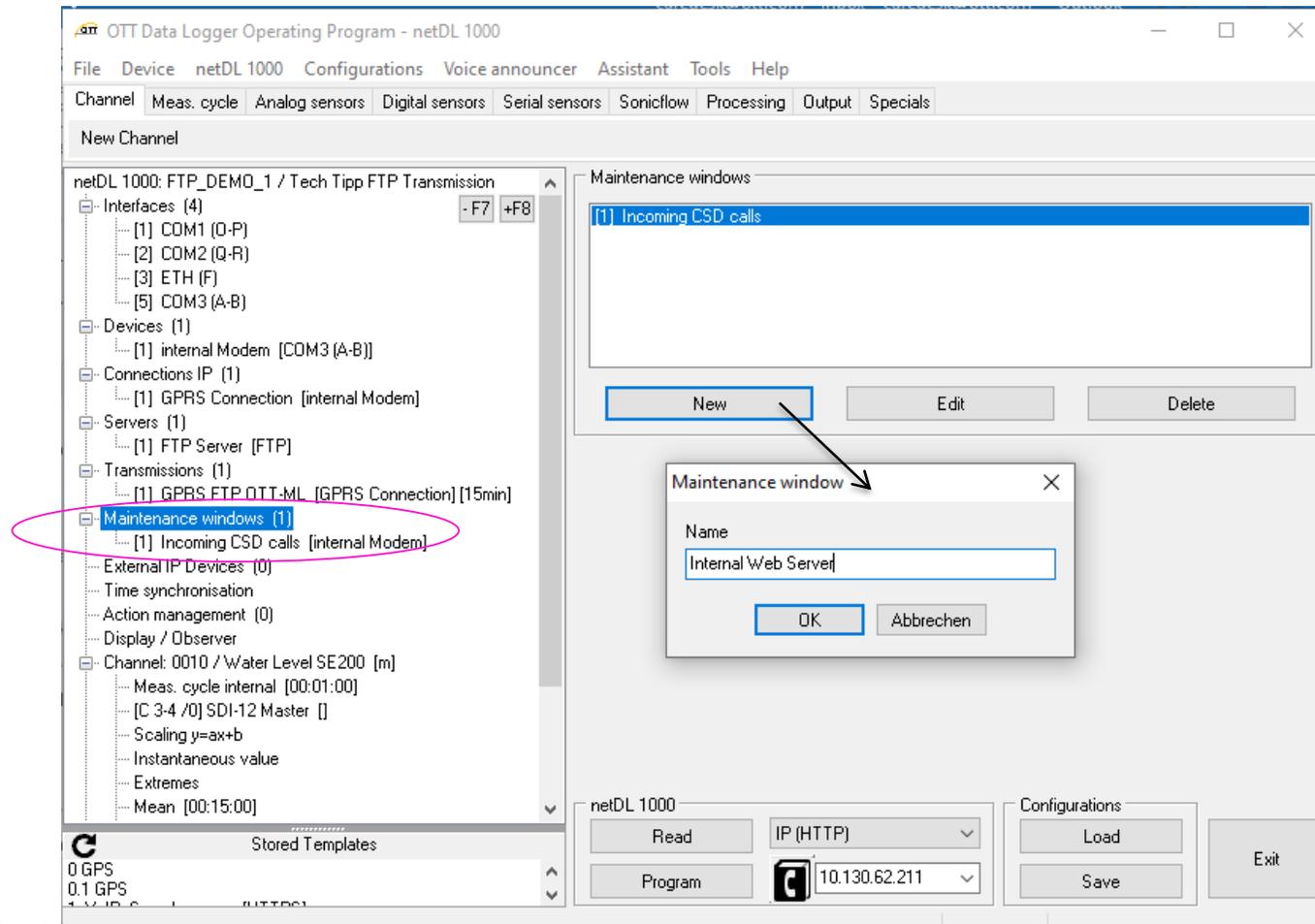
Maintenance window

As connection type you can choose e. g. "Accept incoming calls". Under Devices the configured device needs to be selected.

(CSD service must be supported by the mobile provider; as this is service is going to be discontinues by the providers, please consider using Hydras 3 net for 'offline' configuration or one of the other maintenance window modes)!
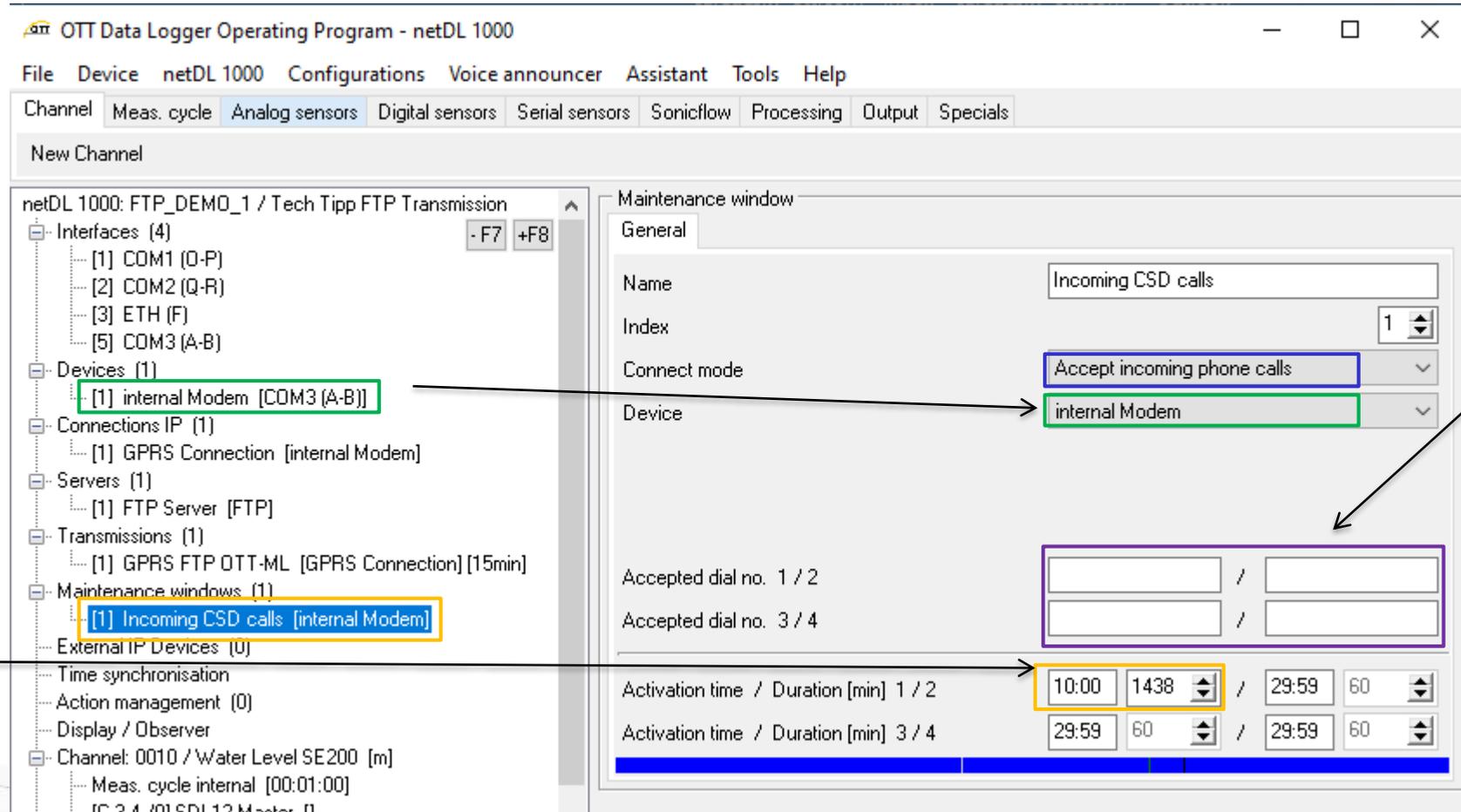
In this example the modem is switched on at 10:00 for 1438 minutes. Up to four time windows can be defined.

Up to four telephone numbers or **parts of telephone numbers** can be entered, which the logger recognizes and accepts when a call is recieved (please make sure, that the telephone numbers are also transmitted to the measuring point! Recommended: test as long as you are still on site).

If no phone number is entered, all phone numbers can contact the logger.

Communication to the FTP server completely set up

This completes the setup of the data transmission to the FTP server :

Device/Connection/Server/Transmission/Maintenance window
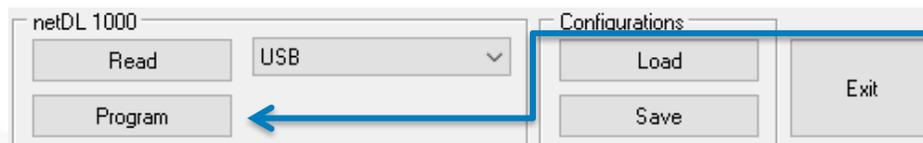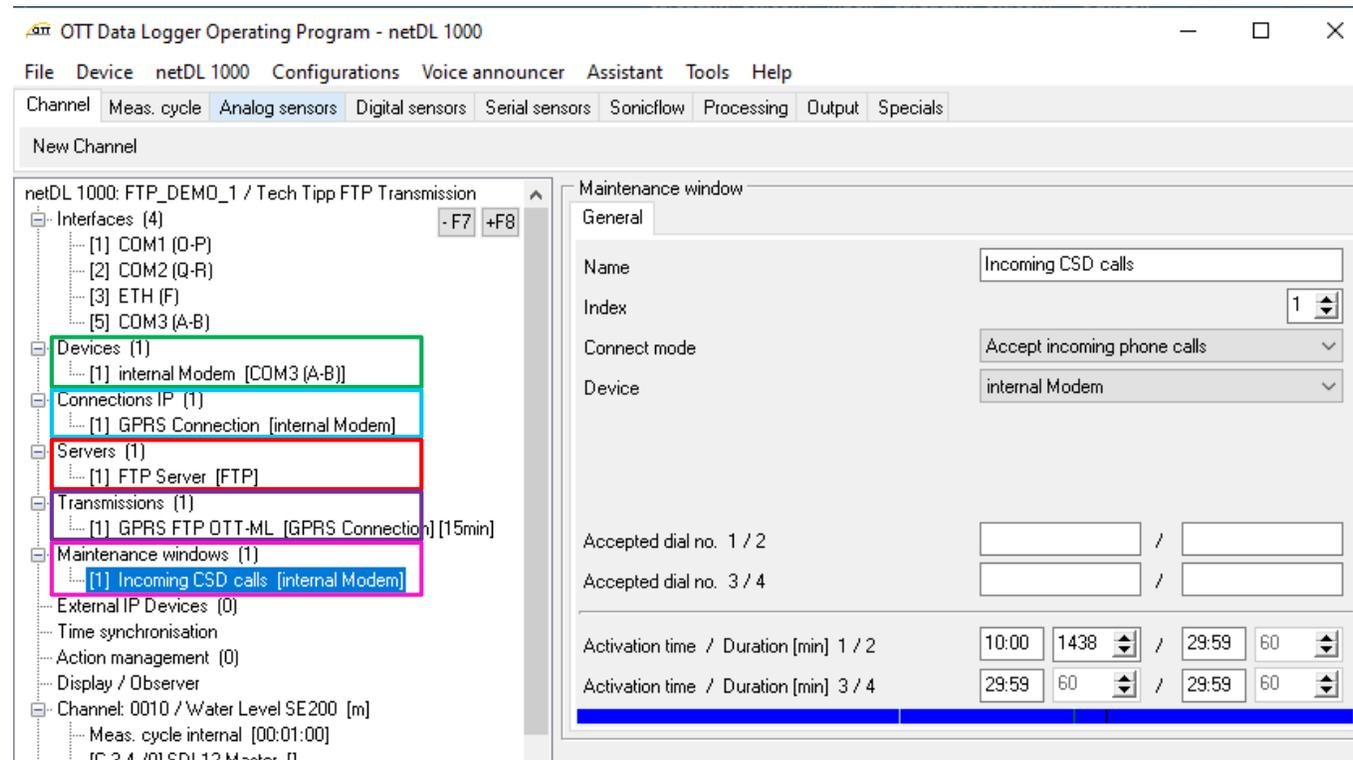

Now "program" the configuration on the OTT netDL (including erase of data memory).
The first FTP transfer in this example takes place hourly with a 15 min. offset (e. g. programmed at 10.48→first transmission at 11.15).

Testing the FTP transmission

Open terminal mode (1) and briefly check the connection to the OTTnetDL with "A" followed by the Enter key (2) which is acknowledged by the OTT netDL with '?08' (eventually type it two times).

To "trigger" the transmission, enter the command cl/ipcom/1 (3); this is confirmed with "Start IP Transmission 1".

Command cl/ipcom is sufficient to start the first IP transmission
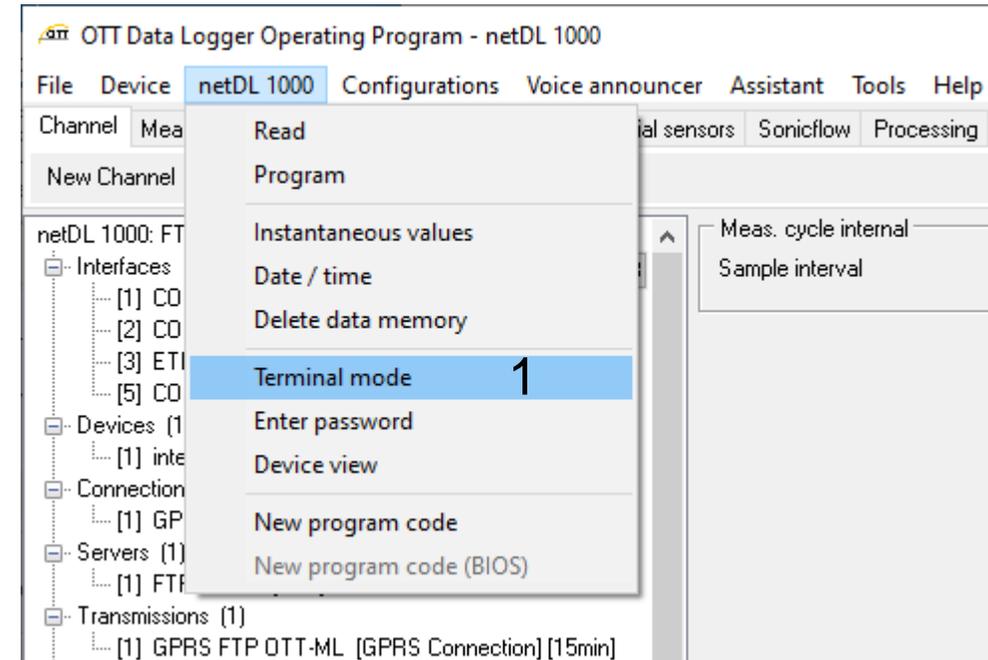
Close terminal window(4).

Testing the FTP transmission

- To check if your transmission is working please have a look at the logger LED.

- After preparation it will blink green 2 times per second. If it will not blink red after that the transmission was successful.

- For details and if it didn't work please have a look at our next

Tech Tipp: error analysis **with the diagnosis files**

Good luck for your realisation

OTT HydroService
(Dr. Torsten Dose)