QUESTION:
What possibilites are there to connect online a PG/PC to a S7 control via Ethernet?

ANSWER:
When setting up an online connection between a PG/PC and a S7 control via industrial Ethernet there are some aspects to keep in mind.

Firstly in NetPro a PG/PC must be inserted that is to show the logical connection of your PG/PCs to the Ethernet bus.
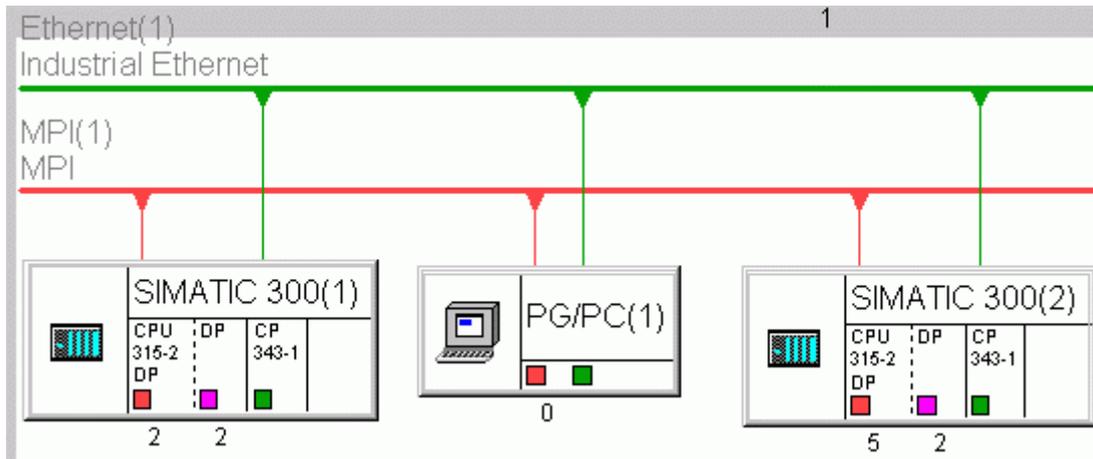
Fig. 1: Inserting a PG/PC in NetPro

In properties dialog you connect the PG/PC via the interface Ethernet to the Ethernet bus and assigning a IP address, which is unambiguous to the network, to the PG/PC.

Note:
IP addresses of the PG/PCs and S7 controls in NetPro must lie in the same range of IP addresses!
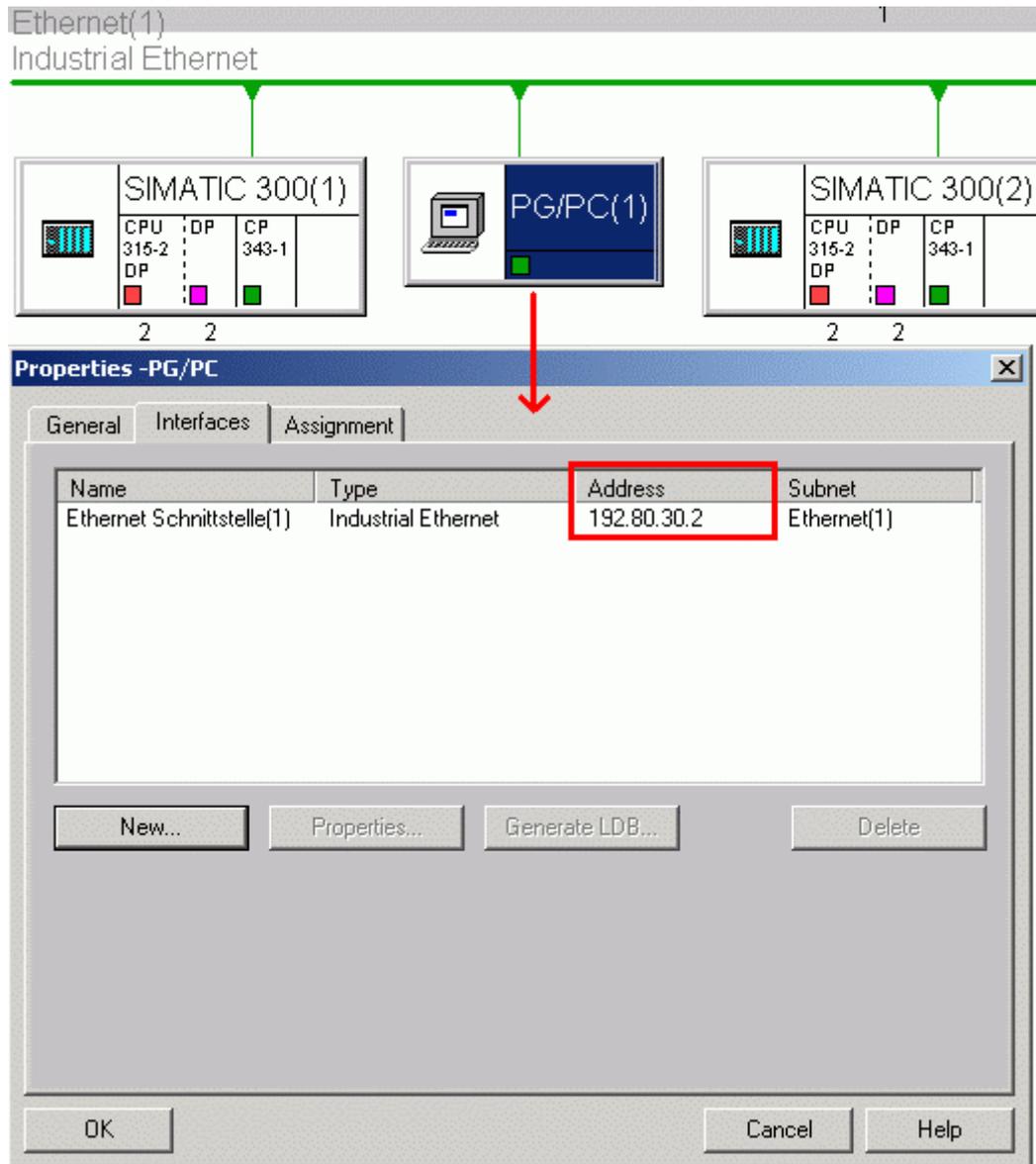
Fig. 2: Configuration in NetPro

The IP address that is set in Microsoft Windows' control panel need not match the IP address configured in NetPro!

Please mind the following three aspects when **assigning Windows IP address**:

1. In Windows settings (Start > Control panel > Network Connections > Properties > Internet protocol (TCP/IP) > Properties) of the PG/PCs the **same or an IP address of the same subnet** is set.
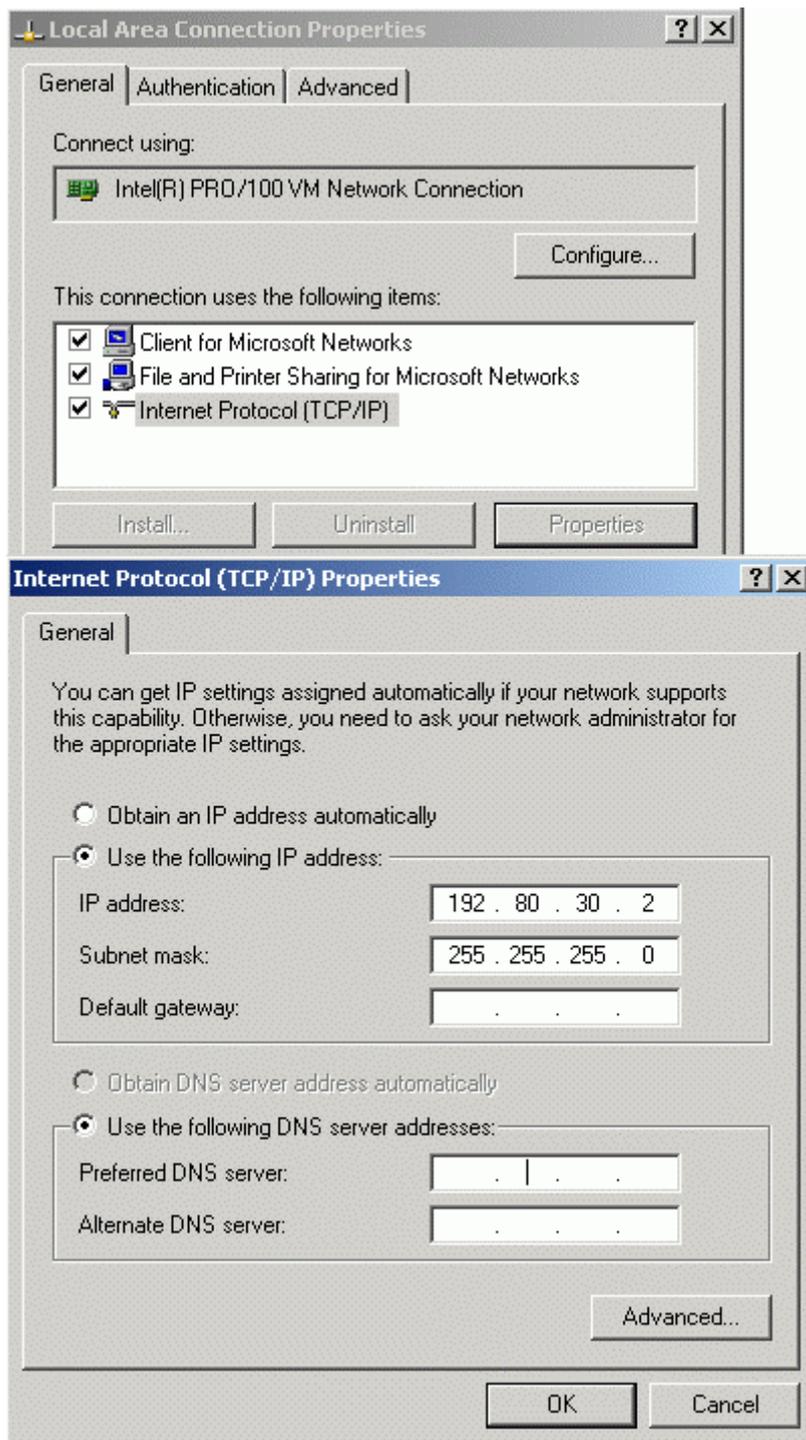
Fig. 3: Microsoft Windows Settings

Possible IP Addresses for the PG/PC:

S7 Control	PG/PC
192.80.30.1	192.80.30.4 – 192.80.30.254
192.80.30.3	192.80.30.2

Table 1: Possible IP Addresses of the PG
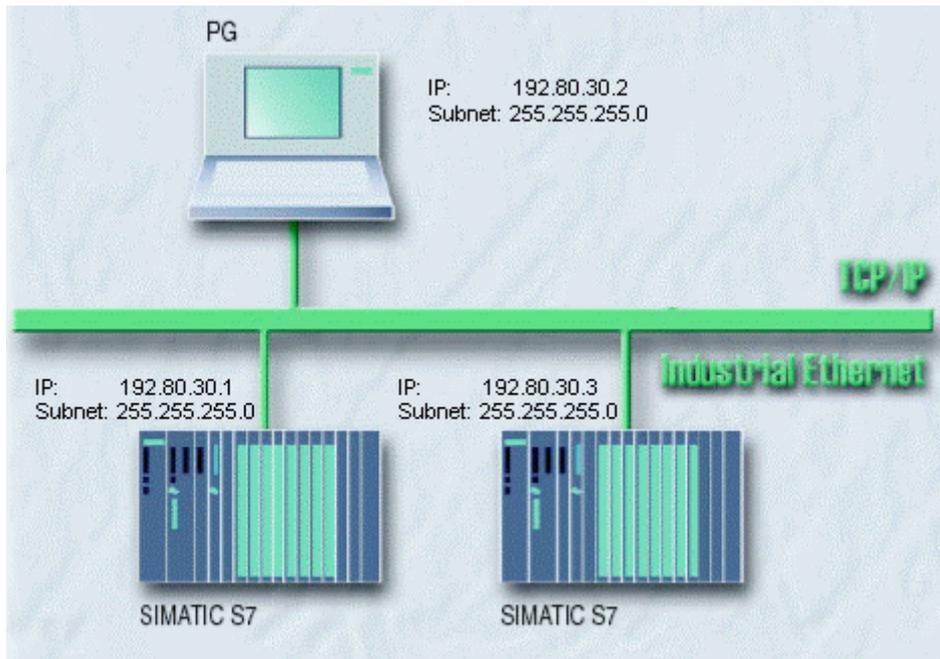
Fig. 4: Possible Configuration

2. The Windows IP address (Start > Control Panel > Network Connections > Properties > Internet protocol (TCP/IP) > Properties) of the PC lie in a different subnet than the IP address configured in NetPro.
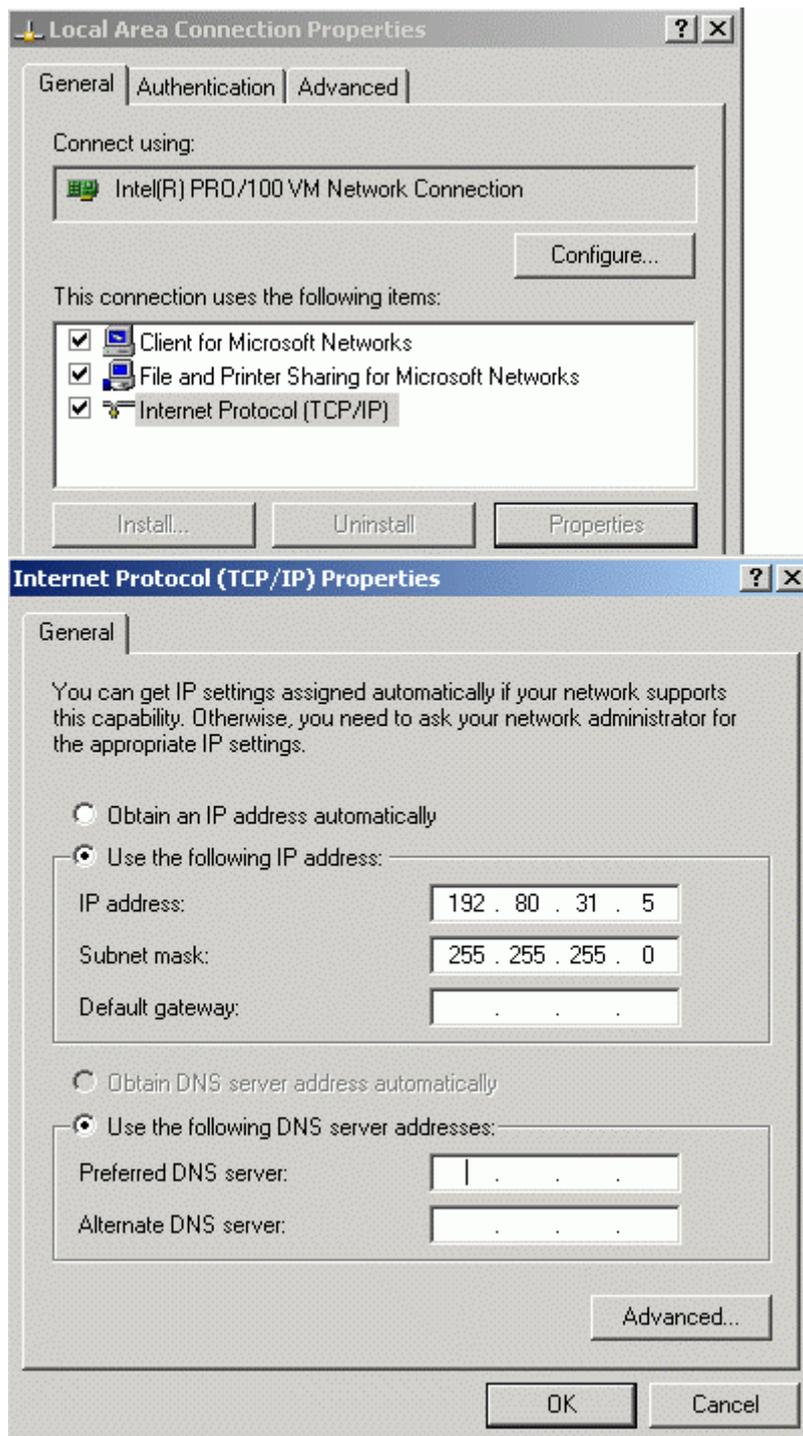
Fig. 5: Microsoft Windows Settings

In this case an online connection between the control and the PG can only be implemented via an **IP router**. The IP router can exchange data packages between different IP subnetworks by means of a routing table. In the routing table IP addresses and subnet mask of the control and of the PG must be entered in order to have the online connection setup.
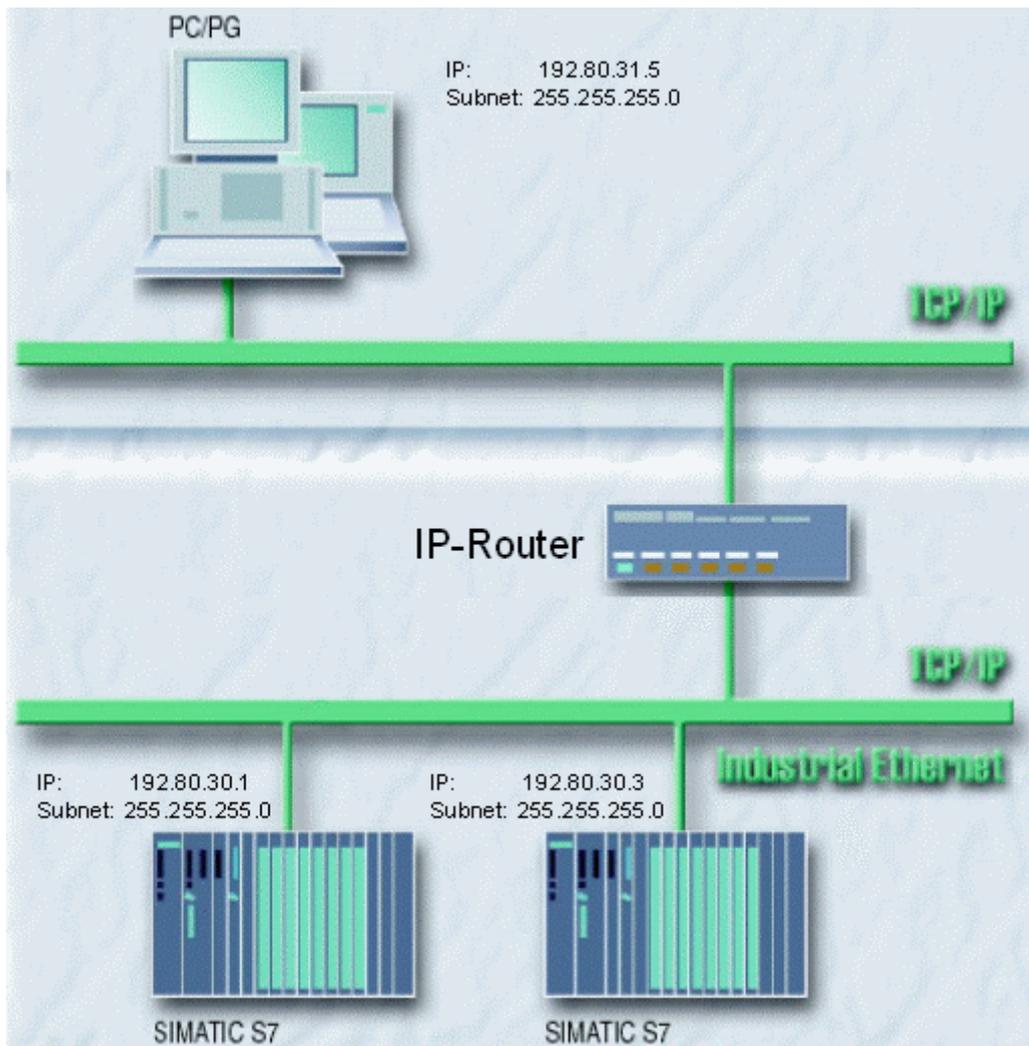
Fig. 6: Connection via IP Router

3. The Windows IP address is received **automatically via a DHCP server**.
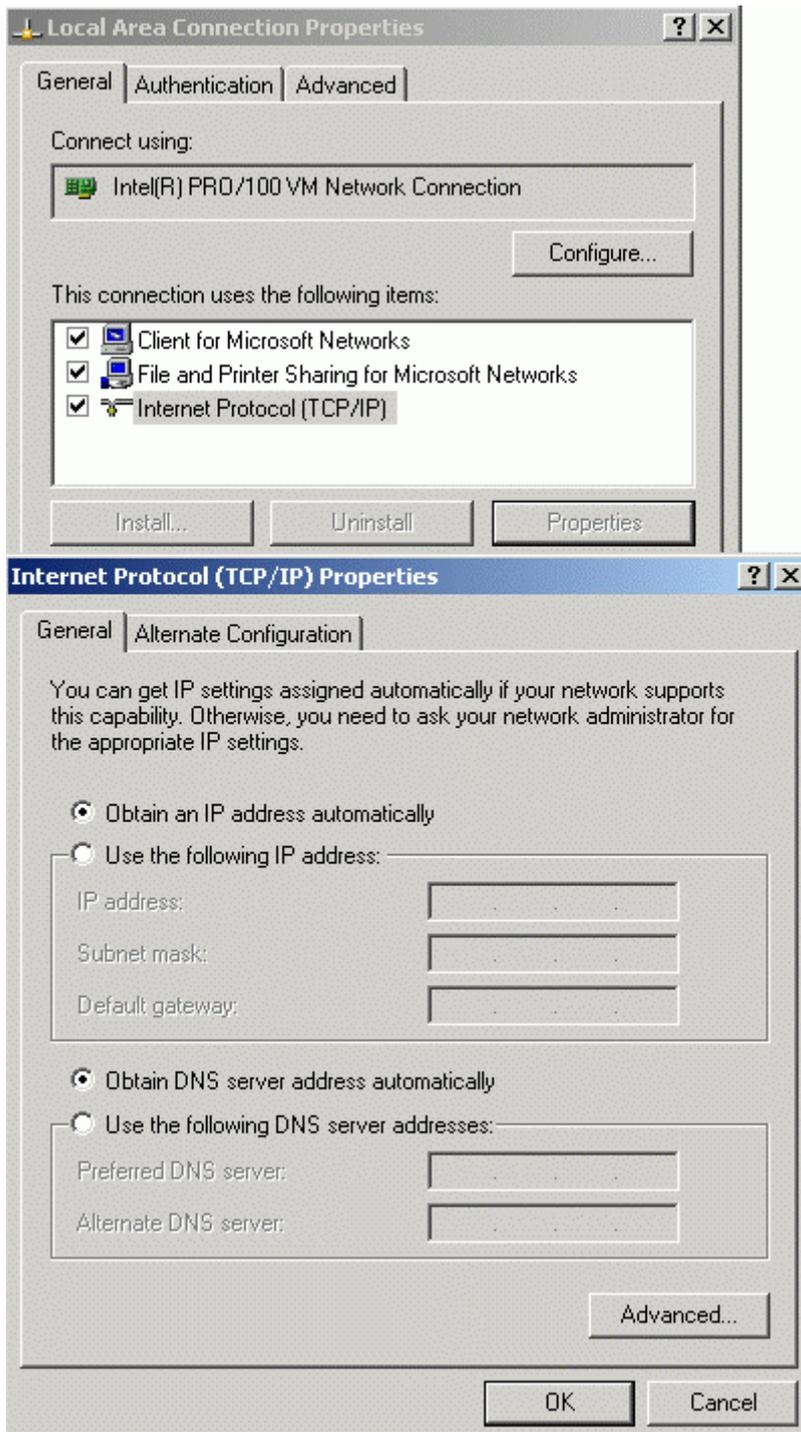
Fig. 7: Windows Settings

The IP address can also be received automatically via DHCP, if the assigned IP address already complies to the above described rules in point 1 and point 2.

Note:

You can test with command ping, if a connection Ethernet can be setup between the PC and the S7 control or the CP 343-1/ CP 443-1.

- For this open a MSDOS prompt ("Start > Run > cmd").
- Type "**ping**" and the IP address of the S7 control - e. g. **ping 192.80.30.2**
- The S7 control can be reached via industrial Ethernet, if the reply telegrams are sent in response to the ping request.

Fig. 8: PING Command to S7 Control