

## Overview

WinPP104 is a test program for the telecontrol protocol IEC 60870-5-104. It receives, tests, filters, stores, prints and transmits IEC 60870-5-104 messages.

**System Requirements:** Windows 95, 98, Me, XP, 2000 or NT 4.0, 32 MB RAM, 5 MB Disc, Network interface (LAN Ethernet, TCP/IP), LPT or USB for dongle, VGA or better.

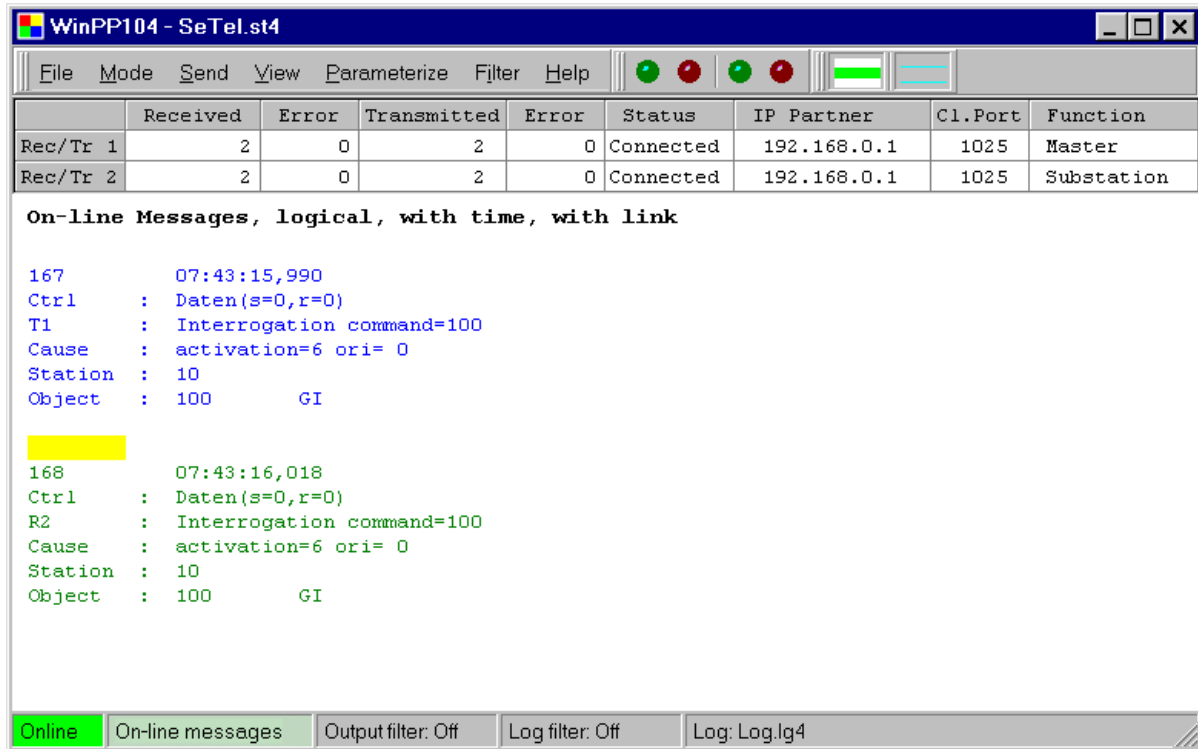


Fig. 1 WinPP104, Online message display

Interfacing to the telecontrol equipment is done via the network interface (LAN, TCP/IP).

## Functionality

You can monitor an existing connection or simulate two Masters or two Substations. You can configure the following parameters for example:

- Ø Plain text of the objects (CSV-file)
- Ø Structure of station address
- Ø Structure of object address
- Ø The parameters  $t_0$ ,  $t_1$ ,  $t_2$ ,  $t_3$ ,  $k$  and  $w$
- Ø Program function (Master, Station, Monitoring)
- Ø IP address of partner station

The program reads the plaintexts of the individual objects from a CSV file, format: "Object address; Color code; Plaintext;"; see also file "ExText4.csv" in the program directory. Select a CSV file in the menu "File | Object Texts Load". The currently used file is indicated in the status bar.

The program checks the received messages for correctness. Faulty messages are marked as such. Every transmitted and received message is allocated a time stamp and is stored in a Log file. The size of the Log file can be parameterized (Standard: 2 MB = ca. 45,000 messages). The messages in the Log file can be output to a printer or stored in a text file.

The Log file is organised as a circular buffer. When the file is full then the newest message overwrites the oldest message.

When storing or displaying messages you can filter them with respect to:

- Ø Time
- Ø Message number
- Ø Type
- Ø Common address
- Ø Object address (and others)

With the time filter you can specify, for example those only messages from 02:00 till 08:00 should be stored.

The transmitted messages are parameterized logically, see Fig. 2.

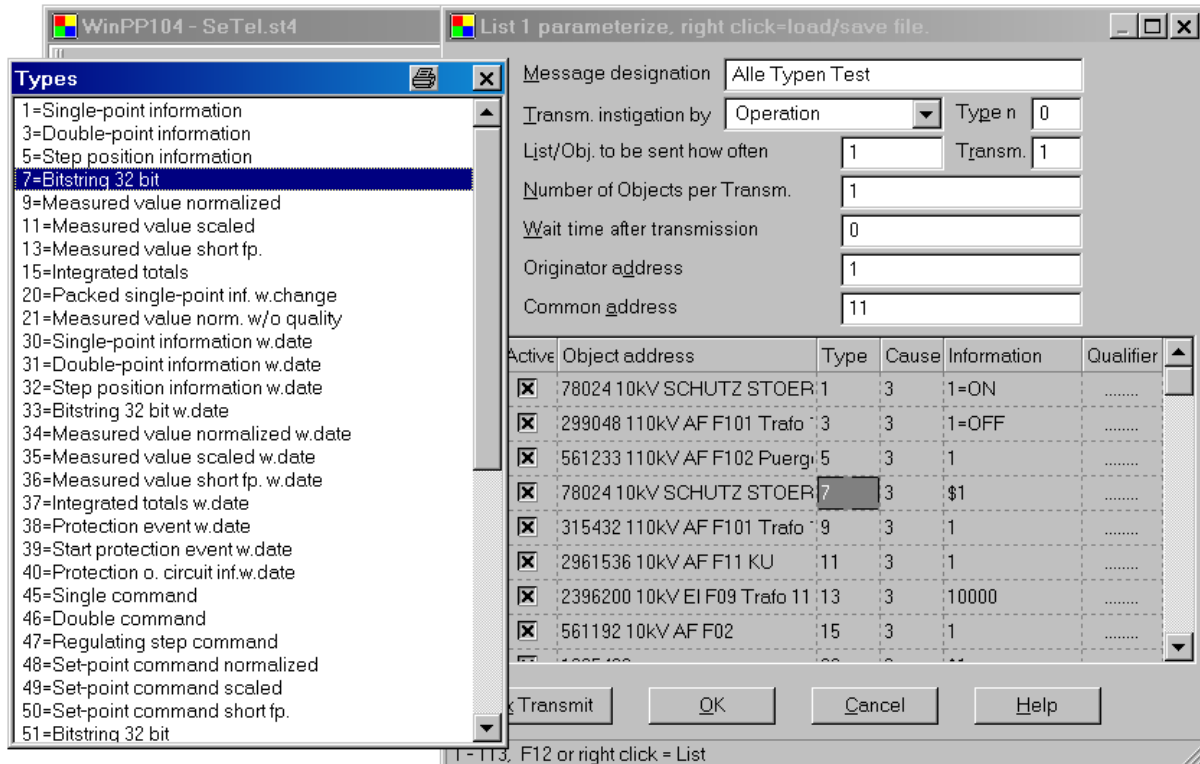


Fig. 2 Parameterizing a message list

There are 12 single messages and 12 message lists available. In a list you can parameterize up to 3000 objects. For the simulation of command responses 1000 objects are available. The transmission instigation for the messages and lists takes place via operation or via an event. An event can be: reception of a particular type of message or successful establishment of a link. You can then send an interrogation command, answer an interrogation command automatically, send commands, simulate responses, transmit cyclic measured values or simulate an avalanche of messages. The parameterized messages and lists can be saved and loaded.

For test purposes you can send illogical messages. For example: send private ASDU, increment the send sequence number by 2, or do not send ACKs, etc.