The Tandem Control System

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The computer control system for the tandem accelerator has been developed further. All programs and tools for visualization and development are now running under WINDOWS 3.11.

As an example the gas transport control window is shown in fig. 1. A separate PC under LINUX contains the common database and acts as the file server. All control desk computers are connected via ETHERNET to the file server and via ARCNET to the control system network.

The Open Network Forth ONF has been extended by a new set of routines to handle communication on the control system network in an easier manner. The communication philosophy on the network is based on the client-server scheme, in other words, the client normally gets from one node for one REQUEST one RESPONSE message. This operates for the most objects in our control system, but, for example to display the beam current (called a composed object), the visualization program needs activity and information from more than one node at the same time. There are now routines available to handle problems like this. A REQUEST can result in forwarding a message or it causes additive advanced commands to additional nodes in a background task. Based on these RESPONSE information you can calculate and display the properties of the composed object adequately.

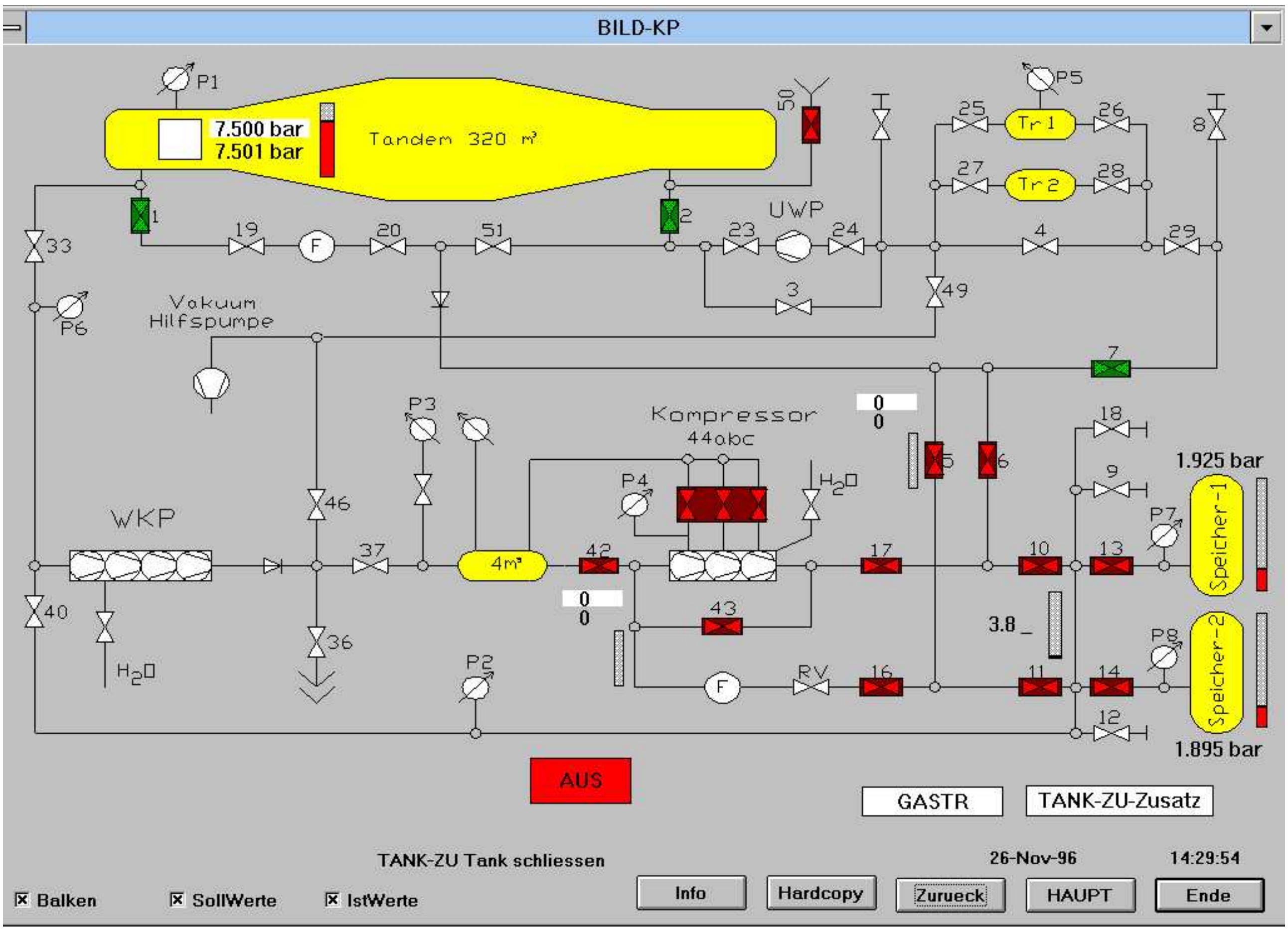

Fig. 1: Control window for the gas transport system. One can see the readings of the pressure gauges. The states of compressors, pumps, and valves are shown in different colours. All objects can be activated by mouse clicks.