1   Introduction

Application   The OS 525 operator communication and visualization system is a bus–linked component of the TELEPERM M process control system.
It is employed as a central operator communication and visualization system for

– AS 215, AS 230, AS 235 (S, K, H), AS 220 EAI, AS 488, LR 600 automation systems and SIMATIC S5–150U and S5–155U programmable controller systems that are connected to the CS 275 bus system,

– AS 388/AS 488 automation systems and programmable controller systems that are connected to the SINEC L2 bus system.

A terminal bus permits the system to be used as a multi–position system with a free selection of devices and system configuration. This permits flexible allocation of base unit (host) and operator input channel (terminal). The structure can be set up under ergonomic and I&C–related aspects.

The OS 525 system is based on AT–compatible hardware. Its advanced software structure provides a graphic operator desktop in window design and object–oriented control and configuration functions. Fig. 1.1 shows the basic structure of a multi–position system.
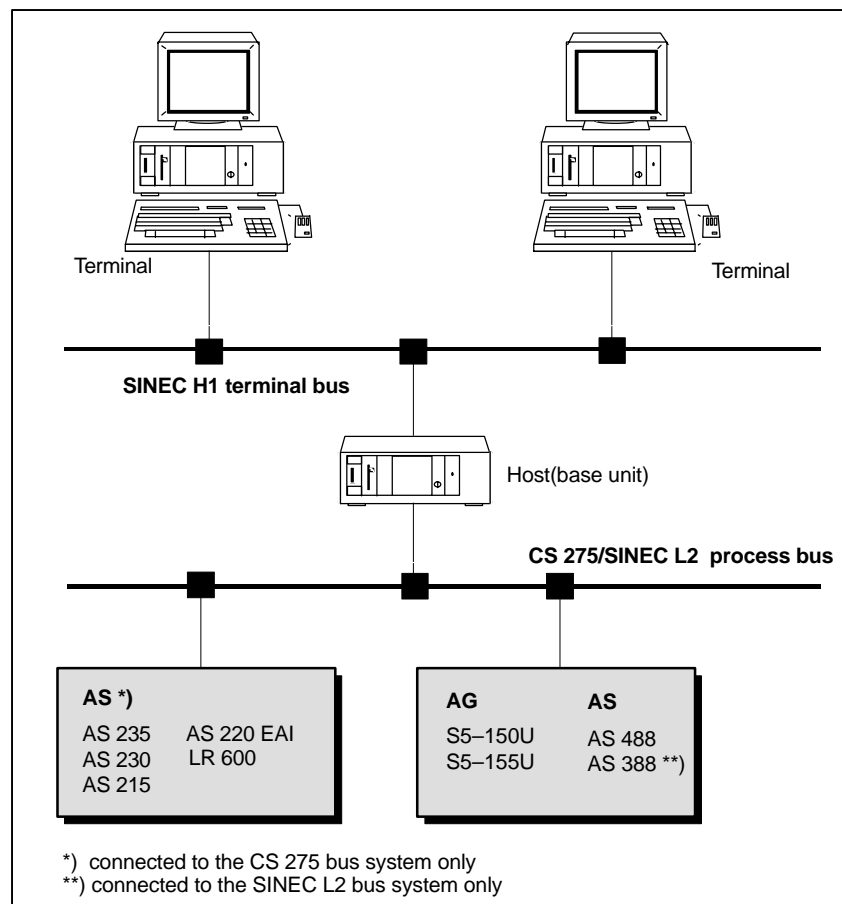

Fig. 1.1   Multi–position system with terminal bus and process bus

Function range   Based on a multitasking and real time operating system, the OS 525 operator communication and visualization system provides all functions that are required for process control and configuration. A mouse and alphanumeric keyboard or an optional touch screen facilitate operator input. The following components are available for process control:

- Graphic system for graphical visualization, including curve display and control elements in window technique.
- Signalling system, with archiving and analysis by selection criteria.
- Logging system for creating user–related reports.
- Process data storage system for user data and measured value archives.

Editors   The operator desktop for process control is defined during configuration. For this purpose the OS 525 contains the CONFIG software package with the following editors:

- GRAPHICS for configuring process displays and curve displays that contain the necessary control elements.
- ALARMS   for message display configuration.
- REPORTS   for report configuration.
- ARCED   for process data storage configuration.
- COMED   for configuring communications to the subordinate automation systems.
- UTILITIES for supporting configuration tasks, such as configuration uploading and data package compilation.

Description of functions

Basic design   Interconnecting individual computers via the SINEC H1 terminal bus to a network permits a multi–channel OS to be set up. The OS 525 software executes in one of these computers and employs the computers connected to the terminal bus as additional operator positions. The computer that contains the OS 525 software is known as the base unit (host computer).

The OS 525 software has been installed on the hard disk of the host computer. The terminals connected merely contain the OS terminal software. The OS terminal software consists of the EASYS I/O system of the OS 525 software.

Each operator position features a monitor, a keyboard and a mouse (and a trackball as an option).

A printer may be connected to any host and terminal.

XGEM desktop

The OS 525 software in the host computer is a multitasking system that executes under the FlexOS operating system. Likewise, the OS terminal software (EASYS) also runs under the FlexOS operating system.

This permits several applications to be shown on the screen at the same time (each on its own virtual console).
Toggling (topping) between the virtual consoles enables the topped application to be controlled.
A host computer may also be used as an OS terminal. This is supported by the subordinate graphic XGEM resource.
Changing user desktops is possible by changing virtual consoles.
This enables you to perform 'operator communication and visualization' (process control) and 'configuration' (CONFIG) at the **same** operator position (provided that the software protection connector has been installed).

Process control

The major statements about the system response of the process control software with several operator positions are:

- Process control data (on line form, .OSO file) created by configuration and on line setting is not specific to an operator position. This means that it does not possess any information that is related to the device configuration used during process control.
- All operator positions of each host work on the same on line form.
- The device configuration used in process control is set in the OS–SET configuration tool (cf. Section 3.1.6. in this Manual).
- When process control starts, the configured start screen is displayed at all configured and connected operator positions. Afterwards, each operator position permits independent operator input.
- The measured–value and message archives are updated when starting a redundant OS (cf. Section 3.3 in SUPERVISOR C79000–G8076–C524).

  For the measured–value adjustment the measured–value archives are installed in the skip mode i.e. there is a reserved place for each time unit even when the OS does not work at that time.
  So the measured values can be called by the redundancy partner and entered.
  The adjustment is carried out from present to past.

  The message archive is completely transmitted to the redundant partner i.e. when the OS2 comes back the message archive is copied physically by the OS1. After that all unclosed messages from the OS2 are closed and a message adjustment is made to determine the present active messages. From this moment the message acquisition works normally.

- Any operator input privilege level (password protection) selected during process control is only valid for the related operator position.
- The language selected during process control is only valid for the related operator position.