

# EUROS Overview



## EUROS - The key to realtime

The realtime operating system **EUROS** is a modular system. The core component is the Microkernel with its I/O system. Additional base components are the Process Manager and the C Library.

Building on top of these base components EUROS can be extended by other components like TCP/IP and device drivers (eg. CAN).

### Base components:

The **Microkernel** contains a collection of routines for basic functions. These include services for interrupt state transitions, interrupt handler management, timer services, console services, watchdog services and object management.

Furthermore, the Microkernel contains a number of functions used by the other EUROS components.

The **I/O System** contains the driver interface and forms the interface to the hardware. The I/O systems offers a uniform API to access device drivers, manages I/O requests for them and notifies tasks when I/O requests are completed.

The **Process Manager** contains a set of system services like task management, inter-task communication, coordination, synchronisation and memory management. Signal objects, event-flag objects, mailboxes, pipelines and semaphores are available for inter-task operations. The application can choose among Mega-Pools, Memory Pools and fixed-size Buffers for suitable types of memory management. Bit-processing services allow comfortable access to simple peripherals.

The **C Library** complies with the ANSI-C standard and is reentrant. It's installed once in a system and is used by all tasks simultaneously. The C stream functions allow access to device drivers and to the file system. The C Library also allows the stream functions to interface to other components.

### Additional components:

The EUROS core functionality can be extended by additional components. The following sections introduce some of the available components:

The **Filesystem Manager** allows access to block devices, eg. hard disks and Compact Flash devices. Currently the file system formats FAT12, FAT16 and FAT32 are supported. Long file names are supported for these formats.

The **Network Manager** implements a TCP/IP protocol stack with BSD sockets. The Network Manager is the base for additional products like the Web Server, FTP Server, SMTP, SNMP and DHCP. On the link layer the Network Manager supports Ethernet interfaces and PPP over serial lines and ISDN.

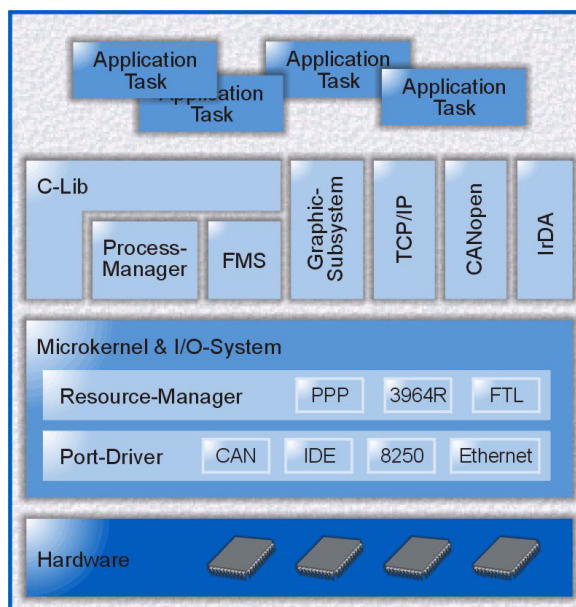
The **Graphic Subsystem** offers a hardware-independent API for graphics output on LCD displays and screens.

Another connection to the "outside world" is the **IrDA component**. It implements the two variations IrDA and IrDA Lite.

### Device drivers:

Using device drivers can shorten the development time for an application considerably.

Furthermore, a uniform driver interface increases portability. A number of device drivers are available for EUROS, supporting a variety of peripheral controllers, eg. serial controllers, CAN, Profibus, AS-i, SPI, I<sup>2</sup>C, ARCNET, Ethernet, IDE.



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