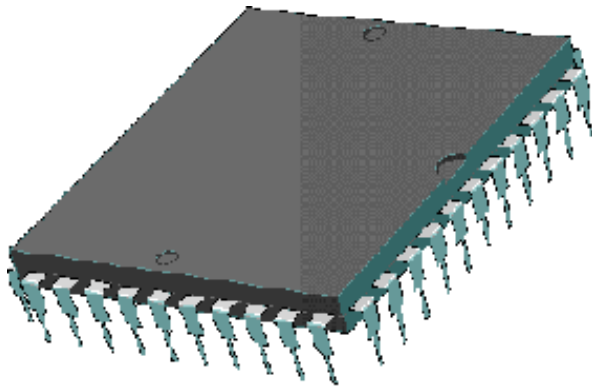


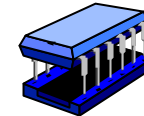


PROFIBUS Technology Products

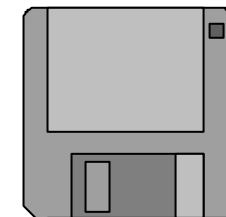
ASICs



Interface modules

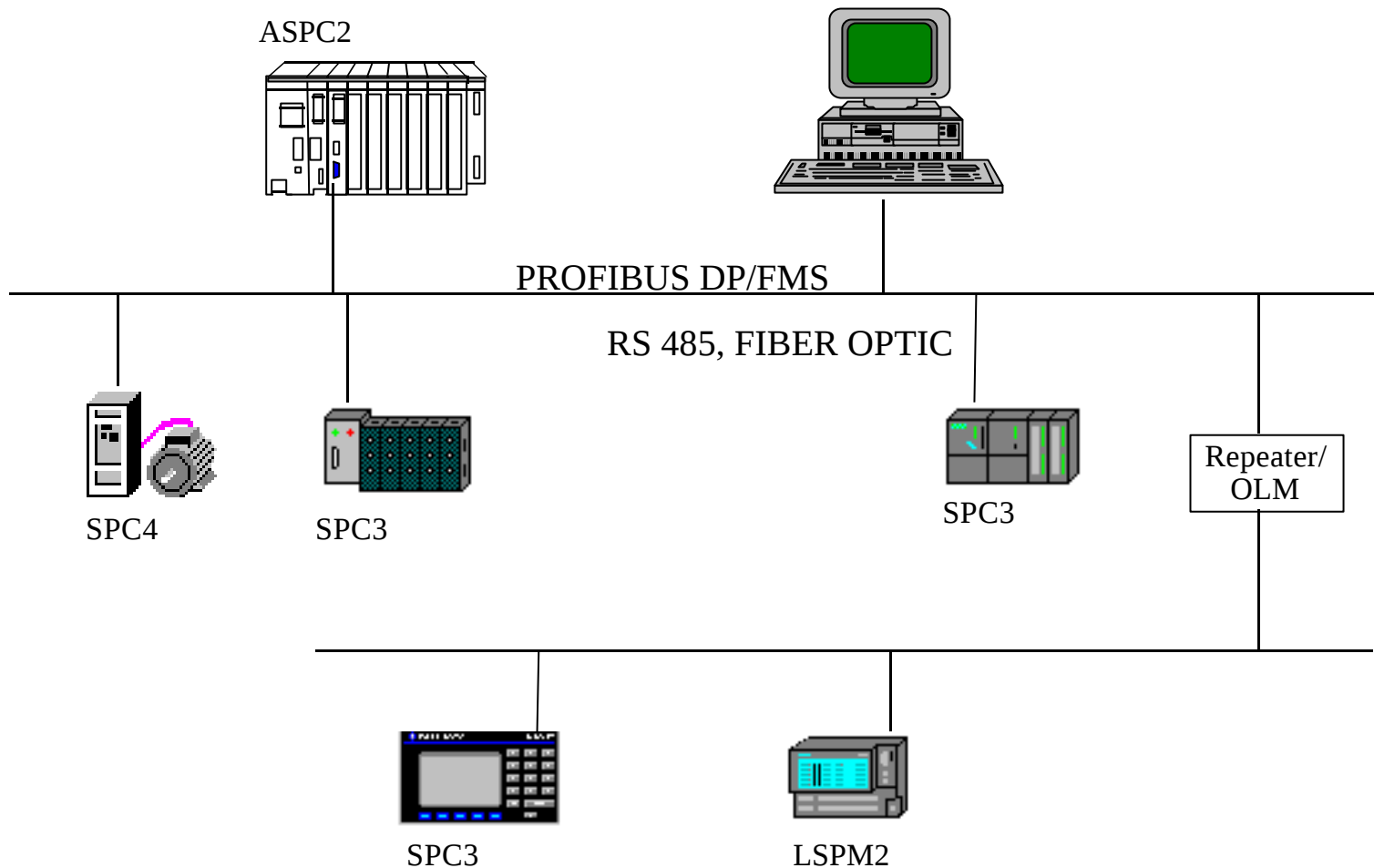


Development packages



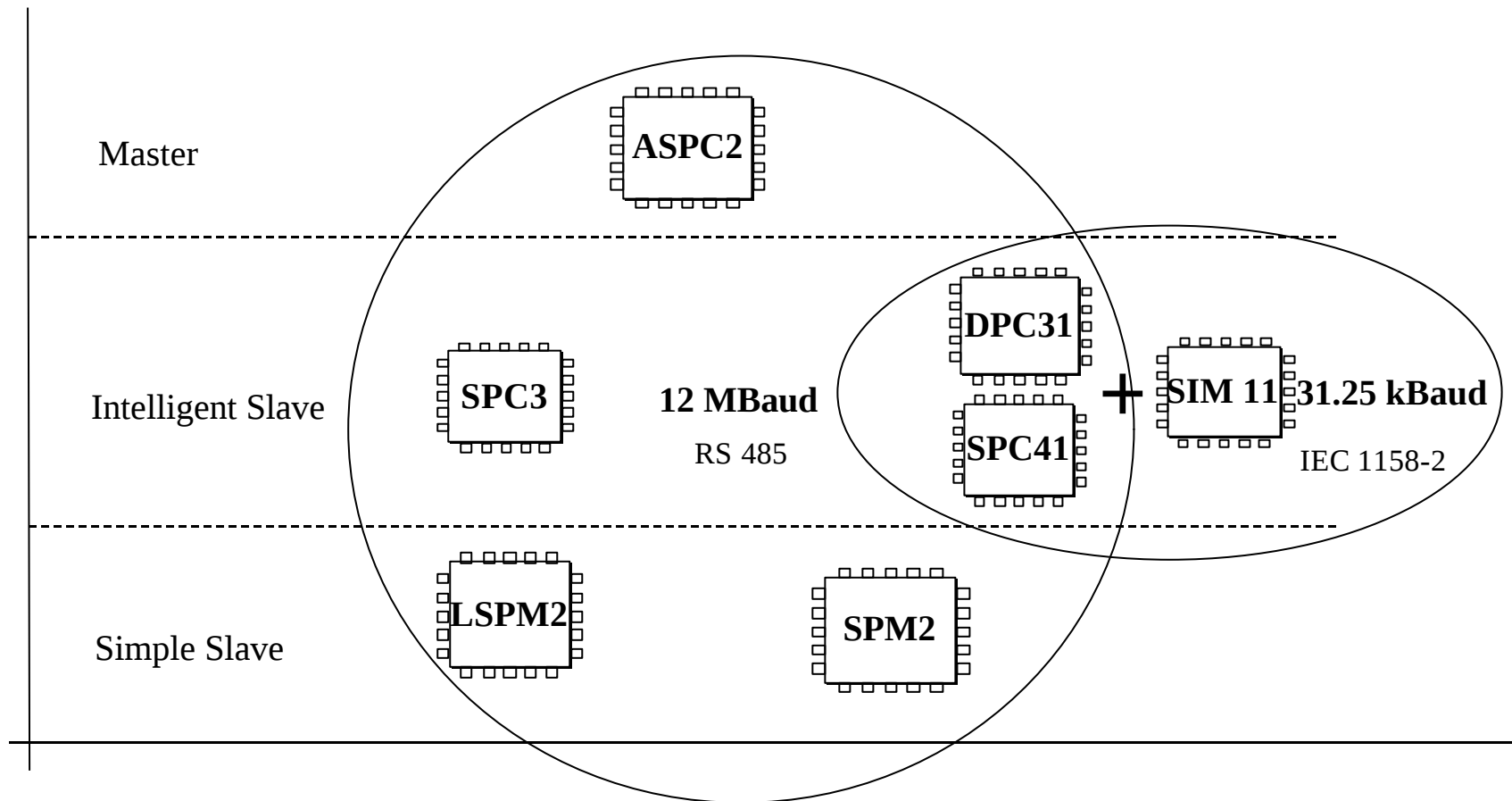


PROFIBUS concept



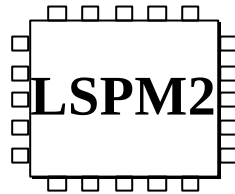


PROFIBUS ASICs

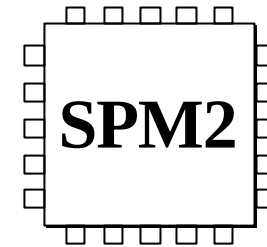




Single Chips



MQFB, 80 Pin, 2cm²



PQFB, 120 Pin, 10cm²

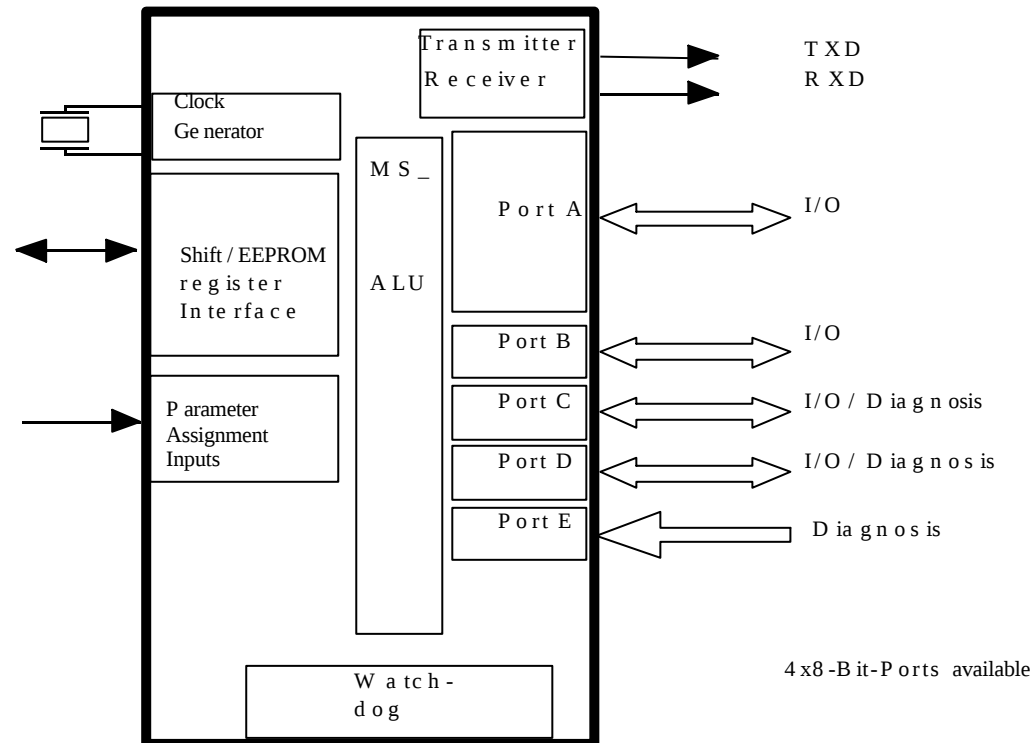
- ⇒ **Maximum Transmission Rate 12 MBaud**
- ⇒ **Complete Processing of DP Protocol**
- ⇒ **No processor required**
- ⇒ **Data Volume:**
 - ✓ **LSPM 2: 32 Bit I/O, 8 Bit Diagnosis**
 - ✓ **SPM 2: 64 Bit I/O, 16 Bit Diagnosis**



LSPM2 schematic



⇒ Complete DP Slave block





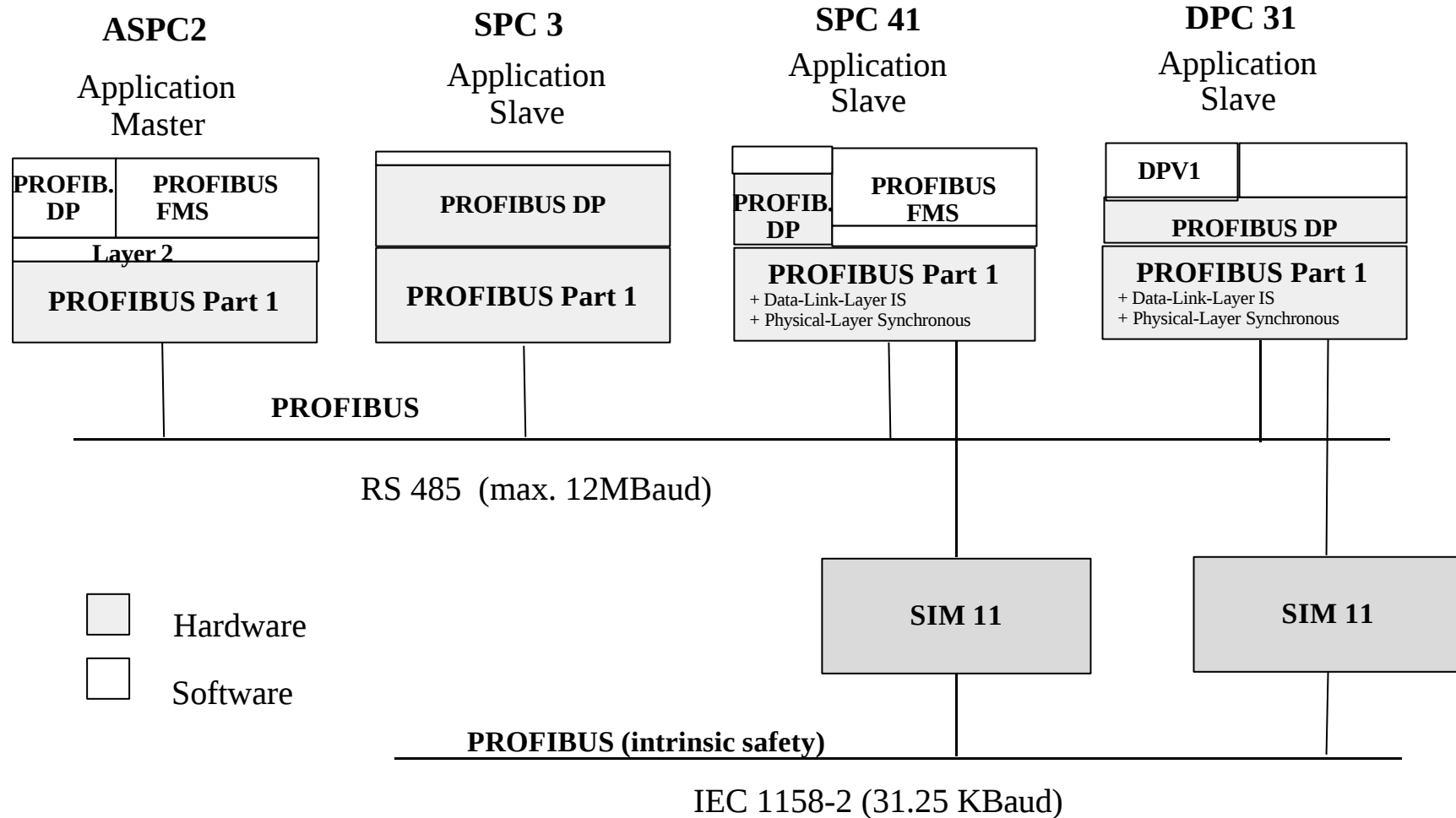
Function L - /SPM2



- ✓ Watchdog Timer integrated
- ✓ Automatic baudrate generator
- ✓ EEPROM interface for station address, Ident number
- ✓ Shift register interface
- ✓ I / O Interface
- ✓ Parameterization ports
- ✓ Diagnostic data is specified
- ✓ LSPM2/ SPM2 supports all mandatory and optional services for slave solutions

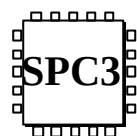


intelligent ASICs





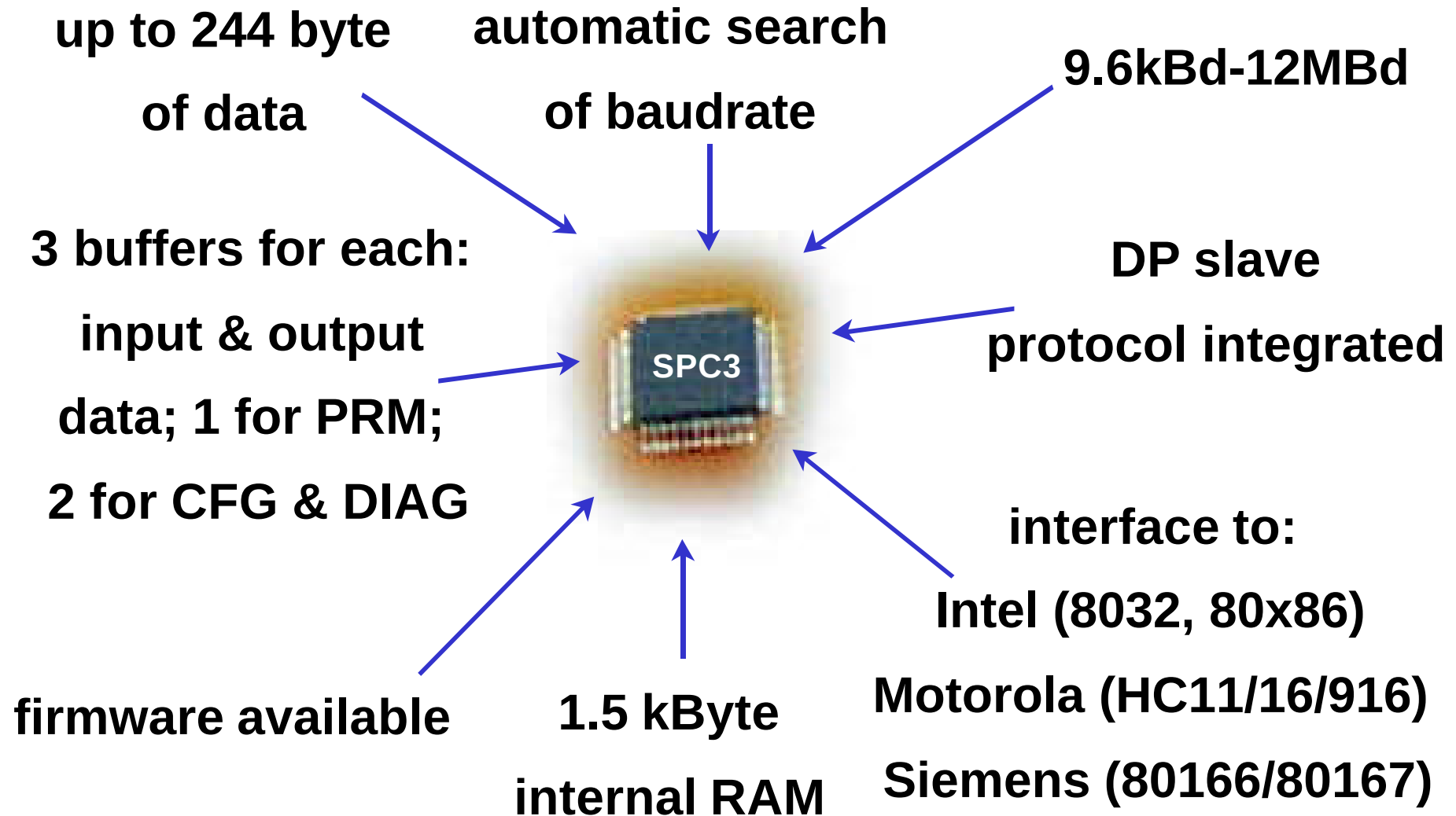
intelligent ASICs



Max. Transmission Rate [Mbaud]	12	12	12	12
Transm. Medium	RS 485	RS485 / IEC 1158-2 (with SIM 11)		RS 485
Protocol	DP (DPV1)	DP/FMS/PA	DP/DPV1	DP/DPV1/FMS
Message Buffer [kByte]	1.5	1.5	6	1,000 external
Housing	PQFP, 44 Pin	PQFP, 44 Pin	PQFP, 100 Pin	MQFP, 100 Pin

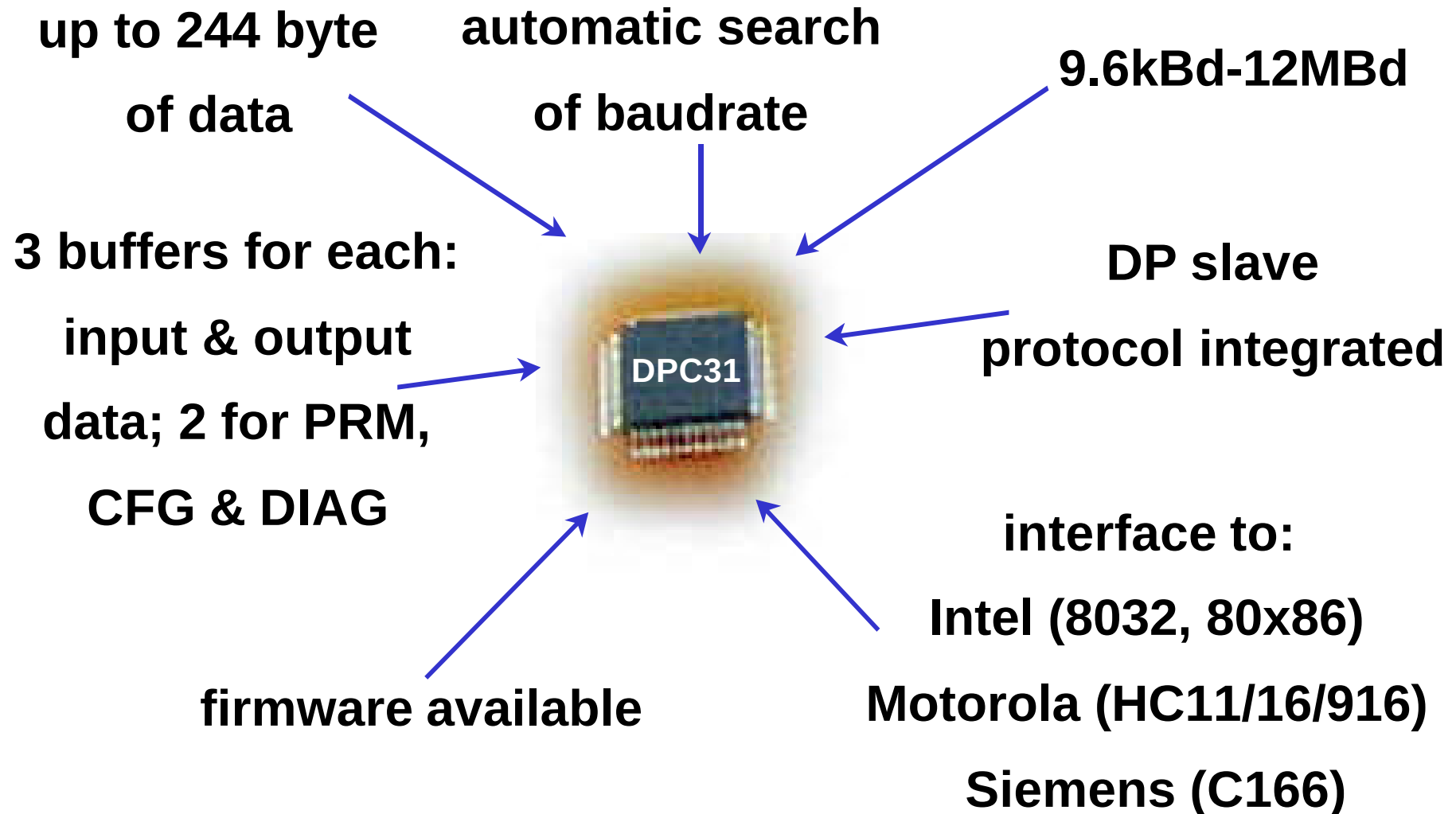


SPC3 ASIC



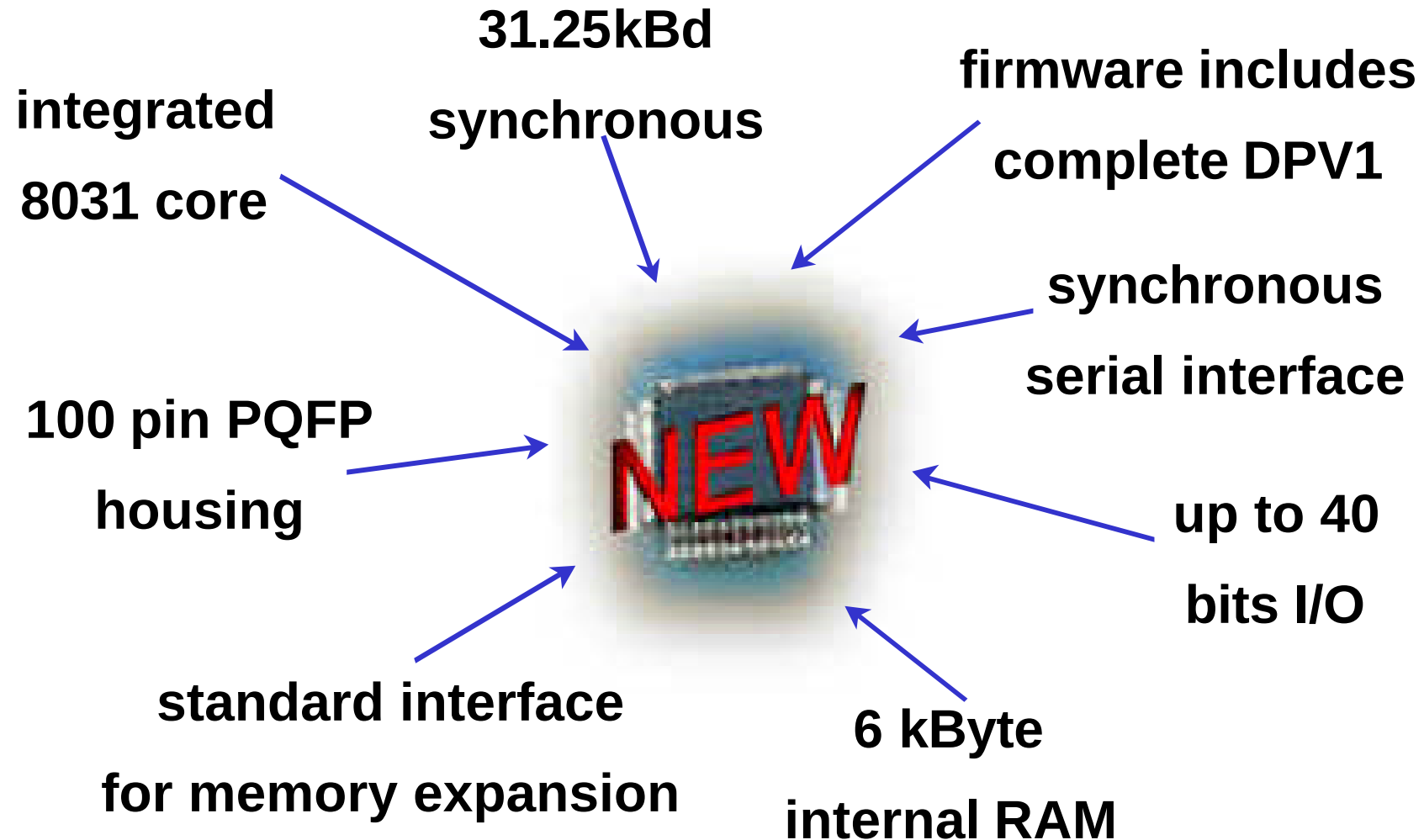


DPC31 ASIC





DPC31 ASIC





SPC41 ASIC

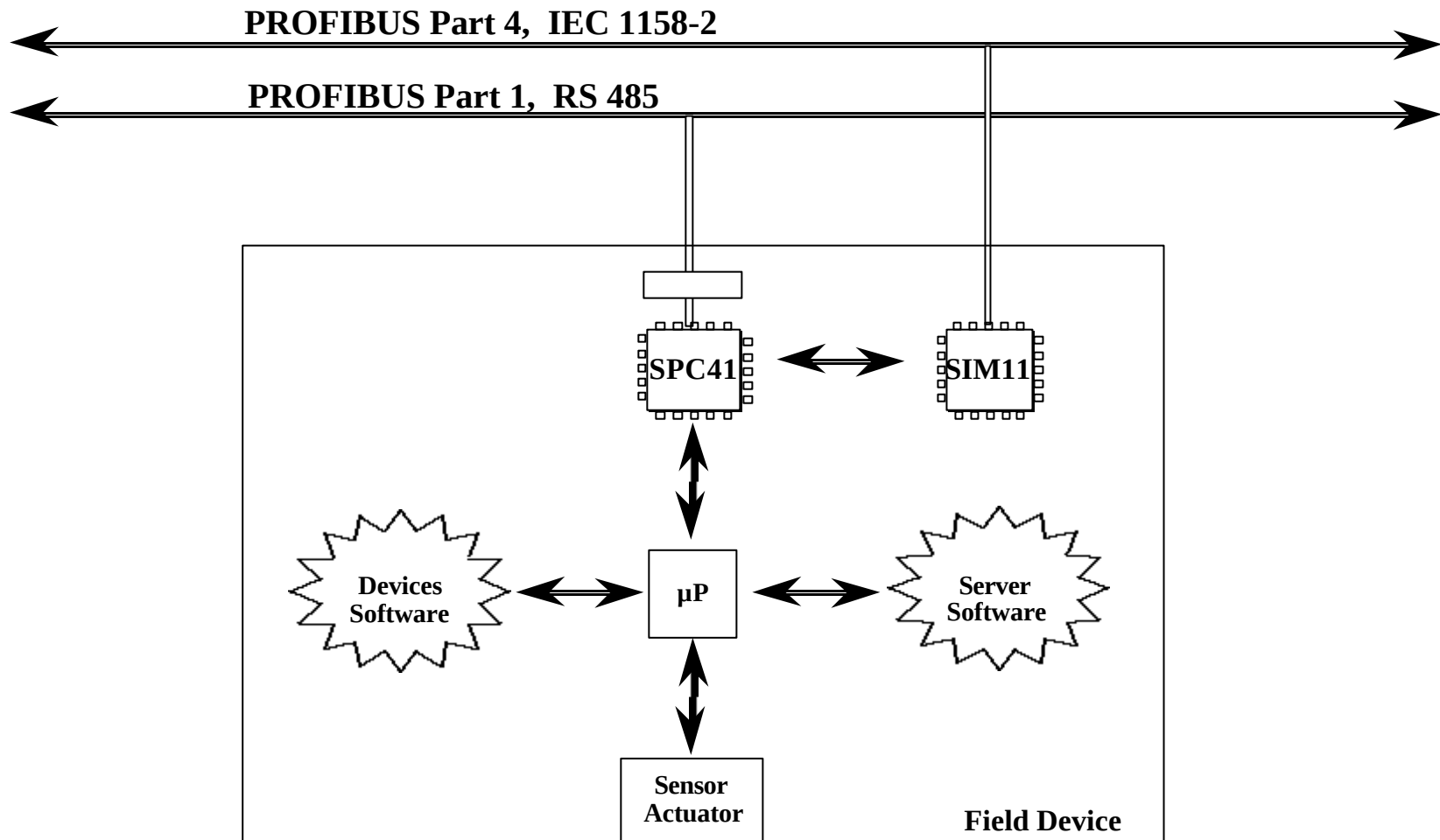


- ✓ Maximum Transmission Rate 12 MBaud
- ✓ Large data volumes (up to 244 Byte)
- ✓ Fast, since time critical functions reside in hardware
- ✓ Integrated part of DP functions
- ✓ FMS support and PA support
- ✓ Simultaneously Slave to ISP 3.0 (Now Part IV of PROFIBUS)
- ✓ 10 mW power loss (when used over IEC H1)
- ✓ 8 bit fixed parallel interface





SPC41 ASIC





SPC41 ASIC



✓ Free FDL access is supported by (used for DP-V1):

- × 5 System Management Service Access Points (SAPs)
- × Default- SAP
- × 64 SAPs (structure specified)

⇒ **Supported PROFIBUS DP services realized in HW :**

- ✓ Data-Exchange
- ✓ Read-Input-Data
- ✓ Read-Output- Data
- ✓ Global-Control (Sync,Freeze, Clear-Data)

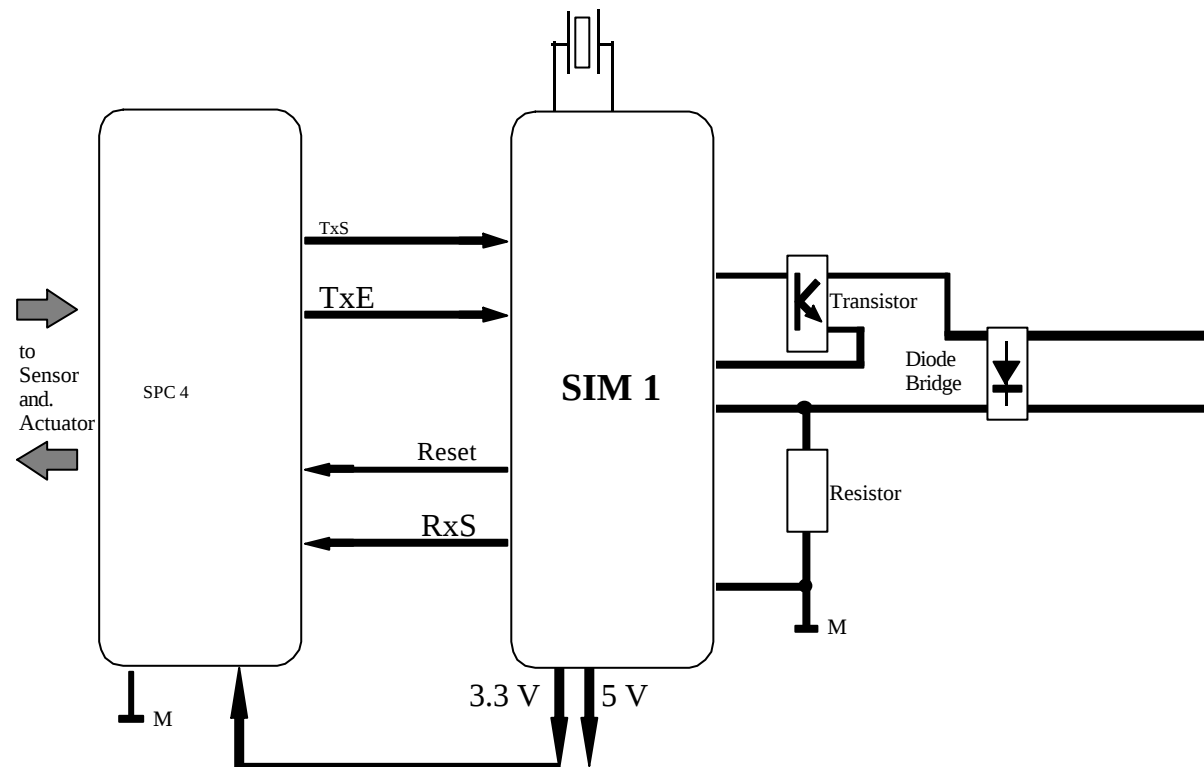
⇒ **Diagnosis, parameter assignment, configuration is realized through the FLC -Software (Server Software)**



DPC31/SPC41 - use for PA



- ✓ The communication block SIM 11 is intended for use in fail-safe fieldbus systems with 31.25 kbit/s and there supplies the functions of a medium attachment unit for IEC H1 (identical PROFIBUS-PA) according to IEC 1158-2
- ✓ Except for the SIM 11, only few external components are needed to connect modules or field devices to a fail-safe network for PROFIBUS-PA according to the PNO Guideline



SIM 11 in Constant Current Mode with SPC 41 without isolation



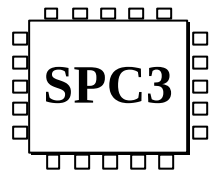
Software



+

**Master SW
Protocol DP
for 80165**

(80 kByte)



+

**Slave SW
Protocol DP**

(6 kByte)



+

**Slave SW
Protocol DP/DPV1**

(depends on
implementation)



+

**Slave SW
Protocol DP,
FMS,PA**

(30 kByte)



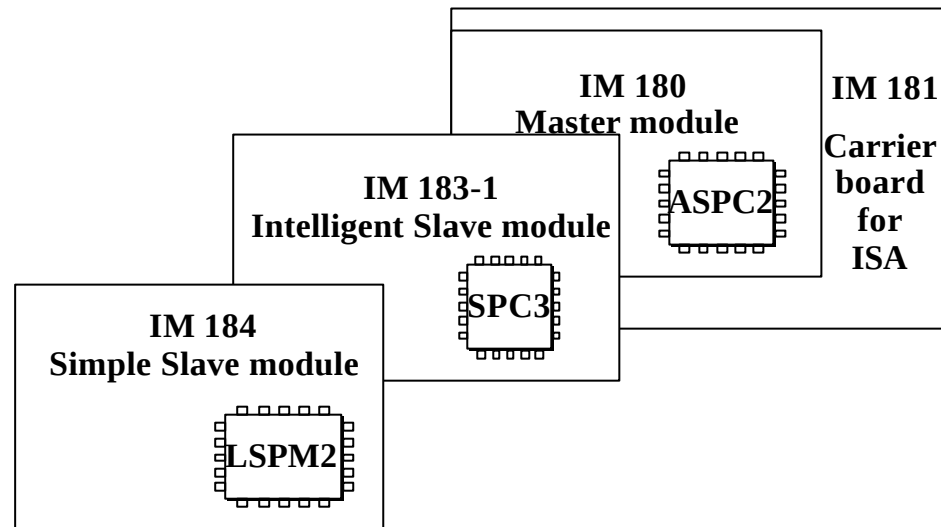
Modules



- ⇒ **Make the fastest PROFIBUS implementation possible**
- ⇒ **Requires no SMD technology by the device manufacturer**
- ⇒ **Reduces development effort**
- ⇒ **Low cost solution for getting started, and low volume units**
- ⇒ **PROFIBUS part is already complete**
- ⇒ **Proven technique**



Modules



Common features:

- ⇒ 5V DC power supply
- ⇒ 0 to 70 °C permissible ambient temperature
- ⇒ Transmission rate 12 Mbaud maximum



IM 184



- ✓ **PROFIBUS protocol handling by LSPM 2 ASIC**
- ✓ **32 configurable inputs/outputs**
- ✓ **8 separate diagnostics inputs**
- ✓ **connection: 2x34-pin connectors for connection to host network**
- ✓ **10-pin connector for RS-485**
- ✓ **floating RS-485 interface for PROFIBUS-DP**
- ✓ **power consumption typ. 100 mA**
- ✓ **dimensions (W x H): 85 x 64 mm / 3.3 x 2.5 in (modular design)**



IM 183



- ✓ PROFIBUS protocol handling by SPC 3 ASIC
- ✓ CPU 80C32 microprocessor
- ✓ 20 MHz clock frequency
- ✓ 32 Kbytes SRAM user memory
- ✓ 32 kBytes (mirrored) or 64 kByte EPROM
- ✓ the host interface is the address and data bus on the interface module
- ✓ 50-pin connector for connection to host network
- ✓ 14-pin connector for RS-232
- ✓ 10-pin connector for RS-485
- ✓ dimensions (W x H): 86 x 76 mm / 3.3 x 2.7 in



IM 180



- ✓ PROFIBUS protocol handling by ASPC 2 ASIC
- ✓ 80C165 microprocessor
- ✓ 40 MHz clock frequency
- ✓ 2 x 128K x 8-bit RAM user memory
- ✓ 128K x 16-bit flash EPROM program and parameter memory
- ✓ 48 MHz oscillator chip for ASPC 2
- ✓ 16/8-bit data bus can be connected; dual-port RAM (8K x 16 bit); 64-pin connector (4 rows); optional 8/16-bit data bus connectable
- ✓ high integrity data exchange via dual-port RAM
- ✓ dimensions (W x H): 100 x 100 mm



Development Package

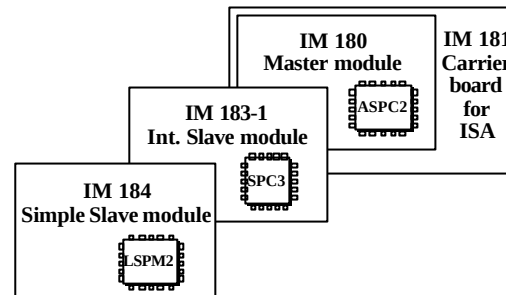


What is a development package?

- ⇒ **Complete package with Slaves and Master and Software**
- ⇒ **Only prerequisite for setup is a PC-AT**
- ⇒ **Easy start for newcomers**
- ⇒ **Easy to understand (Plug and Play)**
- ⇒ **Included test software can be used for each Slave**
- ⇒ **Information about the handling with EN 50170**



Development Package 4



- ⇒ **Consists of** **+ SW**
- ⇒ **Suitable for master- and slave developments in 12 Mbaud technology**
- ⇒ **Permits setting up, configuring, running diagnostics of a complete PROFIBUS-DP network**
- ⇒ **Includes examples for user diagnostic and parameterization**
- ⇒ **Handling of sync and freeze mode**



Services



- ✓ **ASICs, DP-Modules, DP-Slave Software for SPC 3/ DPC 31 and Development Package 4 can be ordered normally**
- ✓ **DP/FMS/PA-Slave SW for SPC 4 is offered by ITEC**
- ✓ **Master SW for ASPC2 available with license agreement (object code)**
 - × **\$19,500 Master SW (DP)**
- ✓ **Support via phone and PROFIBUS seminars at the are free of charge**