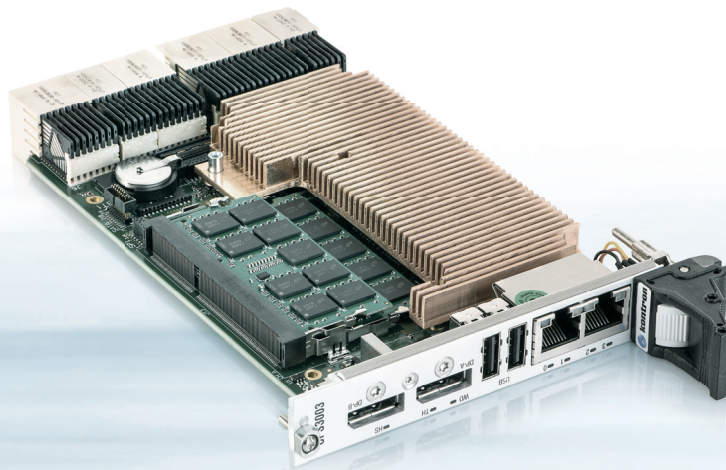


CPS3003-SA



3rd Gen. Intel® Core™ i7 3U CPCI-S.0 CPU BOARD

- ▶ high-performance cpu
- ▶ high-end graphics
- ▶ high-speed connectivity

POSSIBILITIES START HERE



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CompactPCI® Serial, adopted by the PICMG® consortium in 2011, describes a new base standard. The CompactPCI® Serial standard introduces a completely new connector that enables a higher signal density and supports even higher transmission frequencies of up to 12 Gb/s. While being compliant to the proven CompactPCI® mechanics (according IEC 1101), CompactPCI® Serial supports modern point-to-point connections such as PCI Express®, SATA, Ethernet and USB on the backplane.

Powerful CPU and Platform Controller Hub

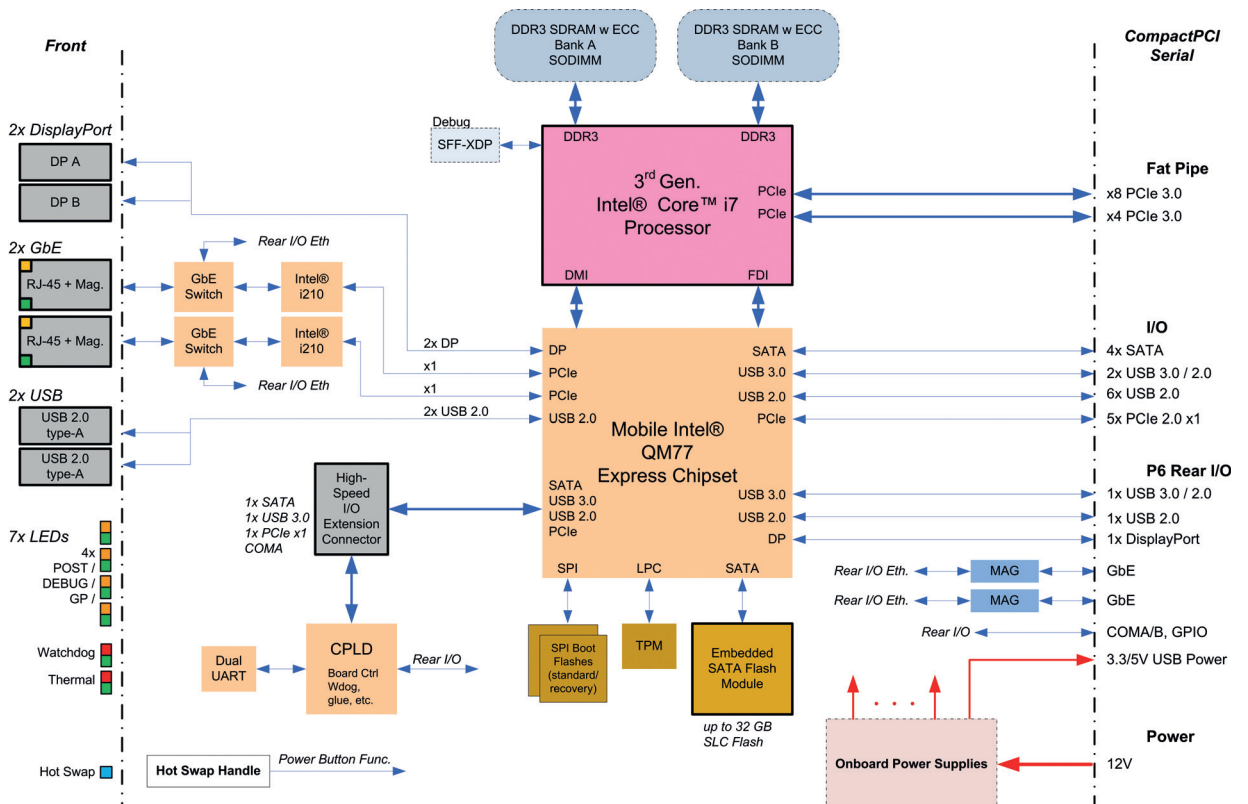
The CPS3003-SA is a highly integrated 3U CPCI-S.0 CPU board based on Intel®'s 3rd Generation Core™ i7 in combination with the mobile Intel® QM77 Express Chipset. The CPU board comes with a multi-core CPU package scalable from the dual-core ULV 1.7 GHz Core™ i7-3517UE up to the quad-core 2.1 GHz i7-3612QE processor. The powerful PCH Intel® QM77 provides a variety of interfaces either routed to front, onboard or the CompactPCI® Serial connectors. Memory-demanding applications can make use of up to 16GB, 1600MHz DDR3 SDRAM with Error Checking and Correction (ECC). As another security feature, the CPS3003-SA provides a Trusted Platform Module (TPM) which offers hardware-based encryption mechanisms to create, seal or store keys, passwords and other important data. For graphics intensive applications, the CPS3003-SA offers an excellent graphics performance with integrated DirectX®11, OpenGL 3.1 and OpenCL 1.1 support as well as three independent graphics outputs.

Variety of Interfaces and Options

The CPS3003-SA comes with a comprehensive I/O feature set supporting the latest high-speed interfaces such as USB 3.0, SATA 6Gb/s or PCI Express® 3.0. Communication interfaces available on the front panel are two DisplayPort, two USB 2.0 and two Gigabit Ethernet ports. Serial interfaces available on the CompactPCI® Serial connectors P1 to P5 are eight USB ports, four SATA interfaces and 17x PCI Express® links. Additional interfaces available on the P6 CompactPCI® Serial rear I/O connector are two Gigabit Ethernet interfaces, two USB ports, one DisplayPort and two serial ports. By adding one of the four extension modules – Smart Extension Module, SATA Flash Module, CPS3003-EXTIO or CPS3003-BRIDGE – the CPS3003-SA's I/O and storage capabilities will be further extended.

Long-Term Availability

Investing in a new project is always a challenge and risky. Extending the lifetime of an application to the possible maximum is therefore a critical issue to save the development investments. Delivering a stable product based on Intel®'s embedded product line, the CPS3003-SA ensures long-term availability. This eliminates the risk of unplanned design changes and unexpected expensive application modification. While minimizing deployment risks by providing a broad range of software support, the CPS3003-SA eases the process of product integration and maximizes your competitive advantage to meet your time-to-market window.



► TECHNICAL INFORMATION (CONTINUED)

COMPACTPCI® SERIAL REAR I/O		<p>The P6 connector holds:</p> <ul style="list-style-type: none"> - Two Gigabit Ethernet ports without LED signals, according to CPCI-S.0 specification <p>Additionally the following interfaces are available for rear I/O connectivity:</p> <ul style="list-style-type: none"> - One DisplayPort - One USB 3.0 port - One USB 2.0 port - Two COM ports (LVTTTL signal level) - Eight GPIOs (LVTTTL signal level) - System write protect signal
SUPERVISORY FUNCTIONS		<p>Watchdog, software configurable, 125ms to 4096s in 16 steps, generates IRQ or hardware reset or dual-stage configuration</p>
SOFTWARE SUPPORT		<ul style="list-style-type: none"> - AMI uEFI, setup console redirection to serial port (VT100 mode) with CMOS setup access, EFI Shell support, board configuration via Shell, diskless, keyboardless, videoless operation - LAN boot support - Board identification number accessible via EEPROM - Support for Windows® XP, Windows® 7, Windows® Embedded Standard 7, Linux®, VxWorks® (Other OSs may also be used with the CPS3003-SA. Please contact Kontron for further information)
COMPLIANCY		<p>Compliant to:</p> <p>Safety: IEC60950-1, EN60950-1, UL94-V0 EMC: EN55022 Class B, EN55024, EN61000-6-1 / -2 / -3 / -4, EN50121-3-2 (Railway)</p> <p>Designed to meet or exceed:</p> <p>Safety: UL60950-1, CSA 22.2 No. 60950-1 EMC: FCC, VCCI, BSMI</p>
GENERAL	<p>DIMENSIONS WEIGHT</p> <p>MTBF</p>	<p>3U 4HP/8HP/9HP, 100 x 160 mm CPS3003-SA with copper heat sink: 530 g CPS3003-SA with aluminium heat sink: 330 g 281,447 h acc. to MIL-HDBK-217 FN2, Ground Benign, controlled at 30°C</p>
POWER CONSUMPTION		<p>CPS3003-SA with i7-3555LE dual-core 2.5 GHz typ. 21W CPS3003-SA with i7-3612QE quad-core 2.1 GHz typ. 29W</p>
ENVIRONMENTAL	<p>OPERATING TEMPERATURE</p> <p>STORAGE TEMPERATURE</p> <p>CLIMATIC HUMIDITY</p>	<p>0°C to +60°C standard -40°C to +85°C extended temperature E2 (with ULV processor) -40°C to +85°C (without additional components) 93% RH at 40°C, non-condensing (acc. to IEC 60068-2-78)</p>

CPS3003-SA EXPANSION CAPABILITIES

The CPS3003-SA provides various expansion capabilities via specifically designed modules such as the SATA Flash Module, the Smart Extension Module, the CPS3003-EXTIO module and the CPS3003-BRIDGE module.

The 4HP CPS3003-SA can accommodate two modules, the SATA Flash Module and the Smart Extension Module. The SATA Flash Module is available with up to 32 GB SLC NAND flash memory and can be used as storage device for onboard data or operating system data. The SATA Flash Module is specifically designed and optimized for embedded systems providing high performance, reliability and security. The Smart Extension Module expands the onboard I/O capability and provides one additional SATA cable connector plus one USB 2.0 connector thereby facilitating the connection to system-internal USB and SATA devices. Furthermore,

two extension modules are available to expand the CPS3003-SA to a double-slot 8HP/9HP version, the CPS3003-EXTIO module and the CPS3003-BRIDGE module. If more interfaces to the front and an easily accessible storage device are needed, the CPS3003-EXTIO is the right choice. This module provides one USB 3.0 port, one COM interface on the front panel. In addition, the CPS3003-EXTIO module provides a CFast card socket accessible from the front panel. The CPS3003-BRIDGE module provides an easy solution to build up hybrid systems comprising a CompactPCI® Serial part and a classic CompactPCI® part. To realize that, the CPS3003-BRIDGE provides a PCIe-to-PCI bridge that converts one PCI Express® data stream to a PCI data stream and makes all signals available for a fully functional CPCI interface available at the J1 and J2 connectors.

SATA FLASH MODULE

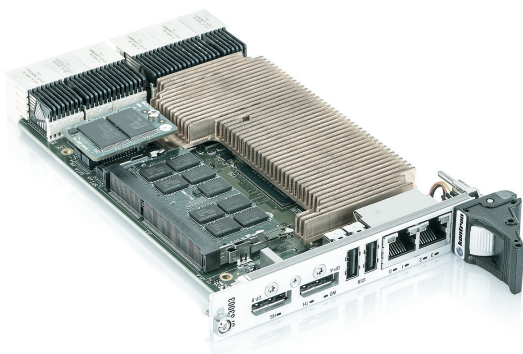
TECHNICAL INFORMATION

MEMORY	CAPACITY NAND FLASH MEMORY BANDWITH	Up to 32 GB SLC-based NAND Flash memory 32nm Toshiba Single Level Cell Components Up to 60 MB/s read rate Up to 55 MB/s write rate
GENERAL	DIMENSIONS WEIGHT MTBF POWER CONSUMPTION	38 x 27mm Ca. 7 grams 3,848,557 h acc. to MIL-HDBK-217 FN2, Ground Benign, controlled at 30°C Typ. 0.5W, 3.3V supply
ENVIRONMENTAL	OPERATING TEMPERATURE STORAGE TEMPERATURE CLIMATIC HUMIDITY	0°C to +60°C standard -40°C to +85°C extended temperature -40°C to +85°C 93% RH at 40°C, non-condensing (acc. to IEC 60068-2-78)

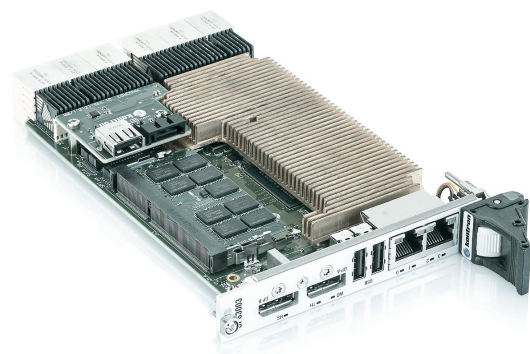
SMART EXTENSION MODULE

TECHNICAL INFORMATION

ONBOARD INTERFACES	SATA USB	One onboard angled standard SATA connector, up to SATA 3Gb/s One onboard angled standard USB 2.0 connector
GENERAL	DIMENSIONS WEIGHT MTBF	37 x 48 mm Ca. 11 grams 5,961,900 h acc. to MIL-HDBK-217 FN2, Ground Benign, controlled at 30°C
ENVIRONMENTAL	OPERATING TEMPERATURE STORAGE TEMPERATURE CLIMATIC HUMIDITY	0°C to +60°C standard -40°C to +85°C extended temperature -40°C to +85°C 93% RH at 40°C, non-condensing (acc. to IEC 60068-2-78)

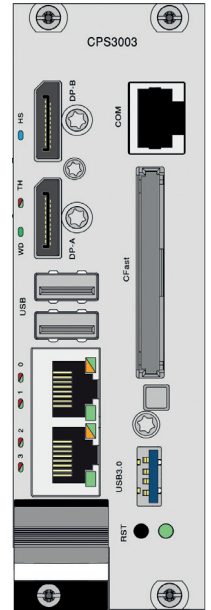
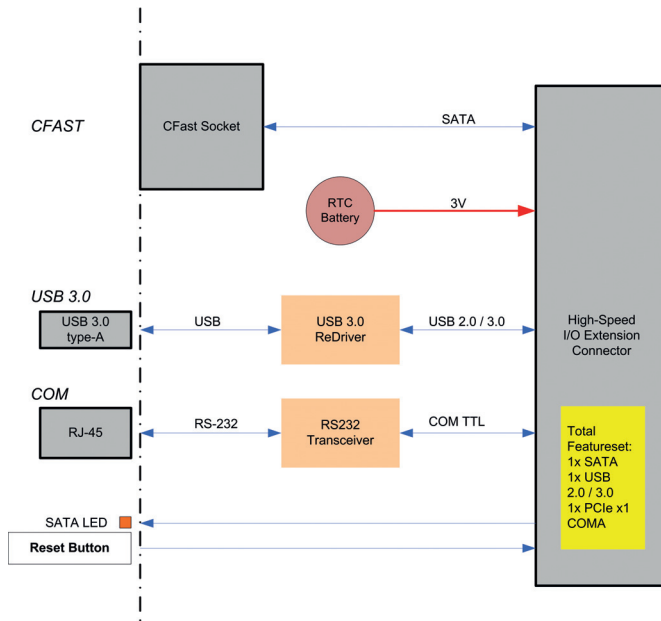


// CPS3003-SA WITH SATA FLASH MODULE



// CPS3003-SA WITH SMART EXTENSION MODULE

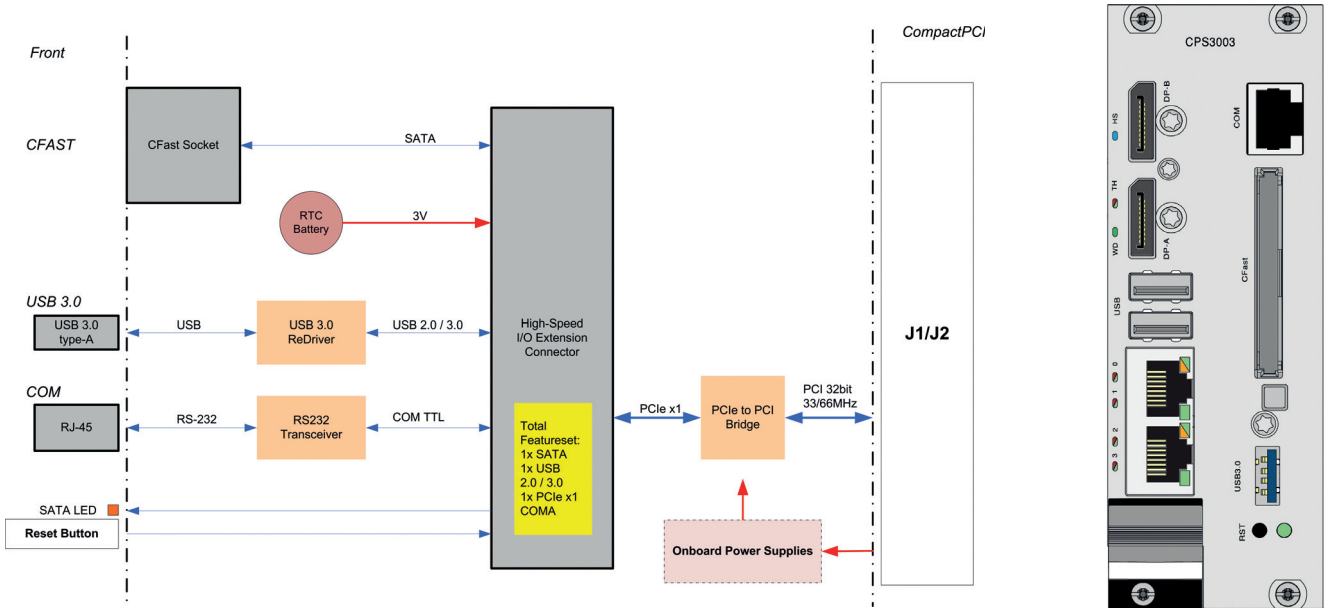
CPS3003-EXTIO



TECHNICAL INFORMATION

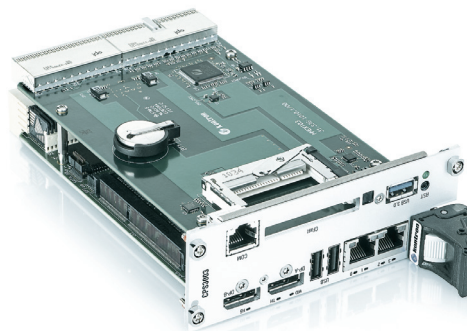
FRONT INTERFACES (8HP)	CFAST USB SERIAL PORT CONTROL	One CFAST card socket, accessible from the front panel One USB 3.0 port, 9-pin type-A connector One 16C550-compatible serial port, RS232 signalling, RJ-45 Reset button and CFAST activity LED
GENERAL	WEIGHT MTBF POWER CONSUMPTION	140 g 1,351,186 h acc. to MIL-HDBK-217 FN2, Ground Benign, controlled at 30°C Typ. 1W, without CFAST and peripheral devices connected
ENVIRONMENTAL	OPERATING TEMPERATURE STORAGE TEMPERATURE CLIMATIC HUMIDITY	0°C to +60°C standard -40°C to +85°C extended temperature -40°C to +85°C (without additional components) 93% RH at 40°C, non-condensing (acc. to IEC 60068-2-78)

CPS3003-BRIDGE



TECHNICAL INFORMATION

FRONT INTERFACES (9HP)	CFAST USB SERIAL PORT CONTROL	One CFast card socket, accessible from the front panel One USB 3.0 port, 9-pin type-A connector One 16C550-compatible serial port, RS232 signalling, RJ-45 Reset button and CFast activity LED
ONBOARD CONTROLLER	PCIe-TO-PCI BRIDGE	Pericom PCIe-to-PCI bridge, converts a PCI Express® data stream into a PCI data stream
CompactPCI® BUS INTERFACE		32-bit, 33/66MHz, universal 5V and 3.3V PCI signalling voltage supported, 4x Req/Gnt & clock lines
GENERAL	WEIGHT MTBF POWER CONSUMPTION	170 g 1,351,186 h acc. to MIL-HDBK-217 FN2, Ground Benign, controlled at 30°C Typ. 1.5 W, without CFAST and peripheral devices connected
ENVIRONMENTAL	OPERATING TEMPERATURE STORAGE TEMPERATURE CLIMATIC HUMIDITY	0°C to +60°C standard -40°C to +85°C extended temperature -40°C to +85°C (without additional components) 93% RH at 40°C, non-condensing (acc. to IEC 60068-2-78)

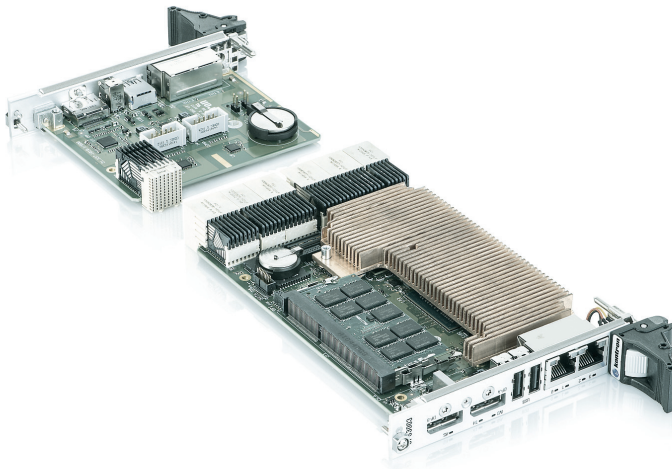


// CPS3003-SA WITH CPS3003-BRIDGE

ORDERING INFORMATION

ARTICLE	DESCRIPTION
CPS3003-SA CONFIGURATIONS	
CPS3003-SA-2.1Q-4-4R-S32-T	Core i7-3612QE, Quad-Core 2.1GHz, 6MB L3, 4GB (2x 2GB) SODIMM DDR3 with ECC, 4HP, with P6 Rear I/O, with SATA Flash 32 GB, TPM
CPS3003-SA-2.1Q-8-4R-T	Core i7-3612QE, Quad-Core 2.1GHz, 6MB L3, 8GB (2x 4GB) SODIMM DDR3 with ECC, 4HP, with P6 Rear I/O, TPM
CPS3003-SA-2.5D-4-4R-T	Core i7-3555LE, Dual-Core 2.5GHz, 4MB L3, 4GB (2x 2GB) SODIMM DDR3 with ECC, 4HP, with P6 Rear I/O, TPM
CPS3003-SA-2.5D-4-4R-S32-T	Core i7-3555LE, Dual-Core 2.5GHz, 4MB L3, 4GB (2x 2GB) SODIMM DDR3 with ECC, 4HP, with P6 Rear I/O, with SATA Flash 32 GB, TPM
CPS3003-SA-2.5D-4-9BR-T	Core i7-3555LE, Dual-Core 2.5GHz, 4MB L3, 4GB (2x 2GB) SODIMM DDR3 with ECC, 9HP with CPS3003-BRIDGE, with P6 Rear I/O, TPM
FLASH STORAGE	(as separate items, not mounted on the CPU)
FLASH-SATA-XGB-CP3002/CP(S)3003	SATA NAND Flash module, various sizes available
CFASTX	Industrial grade CFast, various sizes available
REAR TRANSITION MODULES	
CPS-RI03-01	4HP rear I/O module providing 1x DisplayPort, 2x Ethernet, 1x USB 2.0, 1x USB 3.0, 2x COMs
DEVELOPMENT SYSTEMS	
CPS-CP-ASM4R-84F-200AC-2B0500-STD	19" 84HP/4U hybrid system, with fan tray, 200W AC PSU, 5-slot CPCI-S.0 backplane plus 5-slot CPCI backplane
CPS-ASM4R-44F-300AC-B0500-STD-TT	44HP/4U tabletop system, with fans, 300W AC PSU, 5-slot CPCI-S.0 backplane
SOFTWARE	
VXW-BSP-CP(S)3003-SA-V6.9.2	VxWorks 6.9.2 Board Support Package

Notes: Windows and Linux BSPs are only available as download on the web page
Please contact your local sales representative for other configuration options.



// CPS3003-SA WITH REAR TRANSITION MODULE CPS-RI03-01

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