



olivetti 1957

CNC die erste numerische Steuerung mit Magnetband und verdrahteter Logik

AB 1982
OSAI

Joint Venture zwischen **Olivetti** und **Allen-Bradley** aus Olivetti Sistemi per L' Automazione Industriale wird **OSAI-AB**

AB 1992
Rockwell Automation

OSAI wird von **Allen-Bradley / Rockwell Automation** gekauft

osai 1997
NUMERICAL CONTROL

Management buyout ermöglicht die Gründung der neuen **OSAI** als eigenständiges Unternehmen

PRIMA ELECTRONICS 2007

Kauf von **OSAI** durch **Prima Electronics**

osai 2009
PRIMA ELECTRONICS

OSAI wird eingebettet in **Prima Electronics** mit der Weiterführung der Brands **OSAI** & **TECHmark**



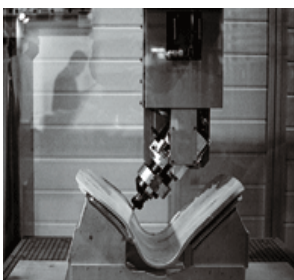
Metall- & Sondermaschinenbau
21%



mehr als
200 OEM's
in Europa



Glas- & Steinbearbeitungsmaschinen
33%



Holz- & Kunststoffbearbeitungsmaschinen
40%



über
50.000
installierte
Einheiten



Robotics & Automation
6%



10/8 Light CNC



>>> 10Series high-performance compact CNC



The OSAI architecture incorporates a series of products, combining simple and cost effective hardware with high-end performance. The complete version has been called "10 Series Light" to represent this concept. This product line is characterized by an up-to-date PC technology hardware platform which runs our proprietary multi-tasking, real-time, Operating System. The whole software environment and all available tools remain fully compatible with the other products in the OSAI 10Series Family, this version being specifically optimized to offer the best performance with OSAI OS-Wire Digital Package.

The 10S Light family gives a choice of two different architectures:

◆ **10/510 Light:** a black box, network connectable CNC, available in two versions: **10/510S Light** and **10/510i Light**, that differ only in CPU Power.

In addition to the optimum architecture, **OS Wire** interface for Axes and I/O, this version also allows different analogue or digital axes cards and many alternative I/O fieldbus to be used. It also allows a choice between Solid State or Hard Disk mass storage. This makes the 10/510 Light the most flexible solution available. OSAI WinMedia range of intelligent operator panels is the most appropriate user interface, developed specifically for this product.

◆ **10/110 Light OS-Wire:** a single unit, integrating 10.4" TFT LCD Screen, CNC CPU, solid state mass storage, 48 Inputs, 24 Outputs and a OS-Wire Interface for up to 6 Axes.

The 10S Light family is best integrated in the OS-Wire Architecture, which includes I/O devices, available in modular or compact version, **OS³ Family Digital Servo Drives** and **OS³ brushless Servo Motors**. This architecture, thanks to the high throughput **OS-Wire bus**, provides a truly flexible and powerful global solution to highly demanding, cost effective CNC applications.

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10/510S Light

- embedded **CPU 600 MHz**
- max. 6 Achsen, max. 4 Prozesse
- E/A's über OS-Wire-BUS®, CANopen-BUS, INTERBUS, PROFIBUS
- verschiedene Schnittstellen zu Achsenreglern: OS-Wire, Analog, Mechatrolink II™
- Front-End Panel/PC OperatorPanel

10/510i Light

- embedded **CPU 1 GHz**
- max. 32 Achsen, max. 4 simultane Prozesse (max. 20 gesamt)
- E/A's über OS-Wire-BUS®, CANopen-BUS, INTERBUS, PROFIBUS
- verschiedene Schnittstellen zu Achsenreglern: OS-Wire, Analog, Mechatrolink II™, SERCOS II™
- Front-End Panel/PC OperatorPanel

10/510i

- embedded **CPU 1 GHz**
- max. 32 Achsen, max. 4 simultane Prozesse (max. 20 gesamt)
- E/A's über I/O-Ring (LWL), OS-Wire-BUS®, CANopen-BUS, INTERBUS, PROFIBUS
- verschiedene Schnittstellen zu Achsenreglern: OS-Wire, Analog, Mechatrolink II™, SERCOS II™
- Blink- oder OPLink- OperatorPanel, Front-End Panel/PC OperatorPanel

10/510i CM

- embedded **CPU 1 GHz**
- max. 32 Achsen, max. 4 simultane Prozesse (max. 20 gesamt)
- E/A's über I/O-Ring (LWL), OS-Wire-BUS®, CANopen-BUS, INTERBUS, PROFIBUS
- verschiedene Schnittstellen zu Achsenreglern: OS-Wire, Analog, Mechatrolink II™, SERCOS II™
- mit integriertem Blink- oder OPLink- OperatorPanel

10/110 Light

- embedded **CPU 600 MHz**
- max. 6 Achsen, max. 1 Prozess
- 48/24 lokale E/A's, Erweiterung über OS-Wire-BUS®
- OS-Wire Schnittstelle zu Achsenreglern, Analog über Bridge-Modul
- integriertes OPLink- OperatorPanel

10/110

- embedded **CPU 600 MHz**
- max. 4 Achsen, max. 1 Prozess
- 48/24 lokale E/A's, Erweiterung über I/O-Ring (LWL)
- analoge Schnittstelle zu Achsenreglern
- integriertes OPLink- OperatorPanel



>>> **OSWire** is the OSAI proprietary communication bus, enabling a very high performance connection between the CNC and other devices, like drives and digital and analogue modules.

It combines a CNC master with the slave units in a multi-drop topology network. A clock generated by the CNC, received and used by each slave module, synchronizes the communication. An outstanding performance allows the exchange of a large amount of data in real-time, enhancing the control of the machine with a huge advantage in accuracy and speed. The digital command to the motion controller avoids the inaccuracies of traditional analogue control caused by the analogue component drift, and the effect of noise on signals. A unique cabling system for axes and I/O reduces wiring costs and minimises installation and maintenance.

- ◆ Data transfer speed: 90 Mbaud
- ◆ 32 bit word read time: in 1 µs
- ◆ Memory mapping of all slave modules to be accessed by the CNC
- ◆ Real-time access to all the slave parameters
- ◆ Maximum number of connected devices: 64
- ◆ Automatic identification of devices, parameter changes and firmware downloaded via communication Bus
- ◆ Fast backup/restore of all the parameters resident on the Master



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OS-Wire® das digitale BUS-System von OSAI

- Kommunikations-BUS zwischen CNC anderen Geräten, wie Reglern, digitalen und analogen E/A's, Bedienfeldern
- Übertragungsgeschwindigkeit 90 Mbaud
- 1 µs Lesezeit für 32 bit-Wort
- alle im BUS befindlichen Geräte (Slaves) werden in der CNC konfiguriert und gespeichert
- Backup/Restore aller Parameter auf der CNC (Master)
- automatische Geräteerkennung über den OS-Wire BUS®
- Zugriff auf alle Slave-Parameter im real-time-Modus
- Parameterwechsel über den OS-Wire BUS®
- max. 64 Geräte im BUS konfigurierbar
- Firmware-Download über den OS-Wire BUS®

OS-Wire® Devices von OSAI

- OS³ Achsenregler Type A 3x 230-480VAC ± 10%, Größe 3A, 5A, 9A, 18A
Type B 3x 380-440VAC ± 10%, Größe 5A, 10A
Type C 3x 380-440VAC ± 10%, Größe 15A
- Compact I/O E/A-Modul für Hutschienenmontage
24E / 24A / 16 konfigurierbare E/A's, 2 Analogausgänge
Wandler OS-Wire-BUS zu Reglern mit analoger Schnittstelle
- Bridge 3 Encodereingänge, 3 Analogausgänge, 3E/3A 24Vdc
Maschinenbedienfeld
Jog, Feed- und Speed- Drehschalter
Start-, Stopp-, Reset-Taster
Mode-Auswahltasten
- Operator Console 7E / 7 konfigurierbare E/A's
BUS-Koppler für diverse E/A- und Analogmodule
- RIO-EC
RIO 8 I/O -8 konfigurierbare E/A's
RIO 16I -16 Eingänge
RIO 16O -16 Ausgänge
RIO 8I+8I/O -8 Eingänge + 8 konfigurierbare E/A's
RIO 4AI+4AO ±10V -4 Analogeingänge+4 Analogausgänge
RIO 4AI+4AO 20mA -4 Analogeingänge+4 Analogausgänge
RIO 4AI ±10V -4 Analogeingänge
RIO 4AI 20mA -4 Analogeingänge



WinMedia



>> The 10Series Numerical Control family keeps on growing



One of the reasons for the success of the 10Series Numerical Control is continuous product evolution. We constantly strive to advance our technical know-how to maintain the high standard that our customers have come to expect from OSAI products. The 10G CNC is an acknowledged Market Leader thanks to the efforts made towards power and flexibility.

In further pursuance of this goal, PRIMA ELECTRONICS is proud to present the new range of "WinMedia" Intelligent Operator Panels. In addition to the performance that is to be expected from a high specification Panel-PC, WinMedia marks a great visual, tactile and ergonomic innovation of the machine-operator interface concept.

Being equipped with pre-installed **MS-Windows™ XP Embedded** multi-language, the preferred language can be chosen from the 23 options available, without re-installing the operating system. In this environment **WinNBI**, the new OSAI operator interface suite, becomes the leading edge. By offering a standard interface for the CNC and all the development and set-up tools, WinNBI provides "user friendly" management of the CNC giving complete integration into the operator panel through simple but powerful multi-screen customization with Unicode support for non-European fonts. The same total ease-of-use approach has enabled us to reach new ambitious targets through the introduction of **NC-CAM Suite**, a Windows™-based suite, to be run on the WinMedia panel, dedicated to the interactive programming of multi-head, multi-spindle, drilling and routing centers for wood panels and glass sheets. The new product range, **powered at 24VDC**, is available in the **WinMedia Basic** and **WinMedia Value** versions, both based on the scalable ETX platform, equipped with "M" generation Intel® CPU's, with low heat generation that provides maximum reliability in a fanless structure. Both can be optionally equipped with **Touch Screens**. Access to the PCI expansion slot, the PC104 - PC104Plus expansions and, for ease of maintenance, to the HDU and CPU, is now very much simplified.

PRIMA ELECTRONICS also offers an **OSAI Operator Console**, matched with the WinMedia design, that can be connected to the CNC through **OS-Wire** (OSAI digital ball) or through the standard **CANopen** interface.



The combination of **WinMedia** and **Operator Console** brings an innovative image and homogeneity to the CNC front end. The ability to customize the console buttons with industry standard parts (the IO interface is integrated into the console) gives the flexibility to configure the complete operator interface for various types of application minimizing cabling.

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WinMedia PanelPC Bedienfelder

WinMedia Basic

- 15" Farb-TFT Auflösung 1024 x 768
- 64 Bit CPU Intel® ETX Celeron M 600 MHz
- SoDDR RAM 256 – 1GB
- 2.5" Festplatte >= 40GB
- CD-ROM Laufwerk
- 3 USB 2.0 Schnittstellen
- serielle Schnittstellen RS232 + RS232/422/485
- 1 Ethernet Schnittstelle RJ45 10/100Mb
- 1 Tastatur/Maus Schnittstelle PS/2 mini-din
- 1 Erweiterungssteckplatz PC104/PC104-PLUS
- 1 Erweiterungssteckplatz PCI
- 24 Vdc Spannungsversorgung

WinMedia Value

- 15" Farb-TFT Auflösung 1024 x 768
- 64 Bit CPU Intel® ETX Celeron M 1.0 GHz
- SoDDR RAM 256 – 1GB
- 2.5" Festplatte >= 40GB
- CD-ROM Laufwerk
- 3 USB 2.0 Schnittstellen
- serielle Schnittstellen RS232 + RS232/422/485
- 1 Ethernet Schnittstelle RJ45 10/100Mb
- 1 Tastatur/Maus Schnittstelle PS/2 mini-din
- 1 Erweiterungssteckplatz PC104/PC104-PLUS
- 1 Erweiterungssteckplatz PCI
- 24 Vdc Spannungsversorgung

WinMedia Compact

- 12.1" Farb-TFT Auflösung 800 x 600
- CPU VIA Eden 733 MHz
- SoDIMM RAM 256 – 512MB
- 2.5" Festplatte >= 40GB
- 2 USB 2.0 Schnittstellen
- serielle Schnittstellen RS232 + RS232/422/485
- 1 Parallele Schnittstelle (EPP/ECP/SPP)
- 1 Ethernet Schnittstelle RJ45, 10/100 MB
- 1 Tastatur/Maus Schnittstelle PS/2 mini-din
- 1 PC 104 Erweiterungssteckplatz
- 24 Vdc Spannungsversorgung

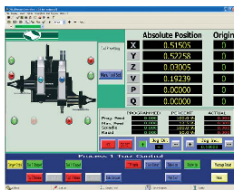


WinNBI



>> Configurable Graphic Suite

WinNBI, OSAI's new Windows™ Network Based Interface, is a part of the suite allowing full customization of the Human Machine Interface in a multi-screen environment, to enable a simple and friendly interface for the machine tool operator. A wide selection of "objects" can be assembled to create customised screens in a "user friendly" graphical interface. The mouse is used for "Point & Click" and "Drag & Drop" operations to create the screens without the need for Windows™ programming knowledge. These screens can be selected and activated automatically (as and when events occur) or manually by toggling real or virtual buttons. Among the various objects available are **programmable push buttons**, directly interfaced with CNC functions or managed by the machine logic. The **display and animation of graphic bitmap-objects**, **data entry fields**, **CNC messages and variables display** are also available. The suite ideally runs on an **OSAI WinMedia**



panel in the Windows™ XP environment, which allows transparent management of 23 languages. WinNBI also integrates **Unicode** support, enabling non-European characters to be used. An integrated tool allows all the text used in the screens to be extracted and automatically copied to text files, thus allowing straightforward translation of each screen with minimal effort. **WinNBI**, based on **COMDCOM** technology, is aimed at distributed architectures and managed through a communication server called **CNDEX**. It can therefore connect to many CNCs on the LAN, located in different areas of the factory or as parts of a modular machine. Screens can integrate data from all the CNCs on the LAN, on separate pages or on a single page. Customizing WinNBI (or as an alternative to it), specific operator interface applications can be developed. These can be written in Visual Basic, C++ or other advanced languages, interfacing with the CNC through a set of **DLL libraries**, managed through **CNDEX** communication. These software applications can also exchange data with WinNBI through local variables, defined and managed in the Windows™ environment.



WinNBI graphische Schnittstelle zwischen PC und CNC

WinNBI

- Funktionen:
- Datenübertragen via Ethernet zwischen CNC <-> PC
 - CNC screen emulator (Nachbildung der CNC-Oberfläche auf einem PC)
 - OS-Wire® RIO Konfigurator (I/O Konfigurator)
 - ODM / Oscilloscope (OS³ Drive Manager)
 - System Backup-Funktion
 - Boot Manager
 - Servo Monitor
 - Logic Timing Monitor
 - Security
 - Provideo
 - Table Editor
 - Machine Plot
 - System History

WinNBI customized

- Funktionen:
- OEM-Tool zur Gestaltung von kundenspezifischen Bildschirm-, Prozess- und Logik- Seiten
 - Erzeugen von eigenen Layouts, Graphikseiten sowie Implementierung vom FirmenLogo, Bildern, Graphiken in der Windows-Umgebung

Cndex DLL

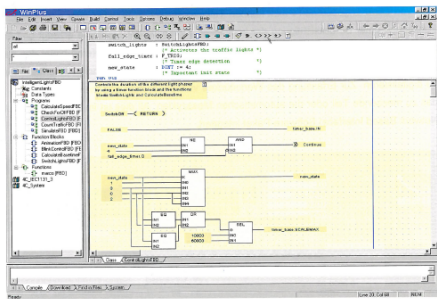
- Funktionen:
- OEM-Sonder-Software (generiert in C oder C++) zum Datenaustausch WindowsPC - CNC (mit DLL-Bibliothek)



WinPLUS



WinPLUS, das neue Entwicklungswerkzeug für die Maschinenlogik, arbeitet unter Windows und entspricht dem Standard IEC 61131-3. Die Maschinenlogik kann in 4 verschiedenen Programmiersprachen, wie ST, KP, FB und SFC programmiert werden. Es stehen ebenfalls umfangreiche Hilfsmittel für die Diagnose zur Verfügung wie: "Program Tracing" und "Break Point" Verwaltung. Die Multitasking-Struktur der integrierten SPS ermöglicht parallel zum Foreground-Task bis zu 12 weitere Background-Tasks. Einzelne Programme können gestoppt werden, ohne dass andere Programme beeinflusst werden. Darüber hinaus können Werte und der Zustand der Variablen im gleichen Fenster angezeigt werden.



WinPLUS

SPS Entwicklungs-Software nach IEC 61131-3

Programmiersprachen

- IL (Instruction List), dt. AWL Anweisungsliste
- ST (Structured Text), dt. ST strukturierter Text (ähnlich C oder Pascal)
- LD (Ladder Diagram), dt. KOP Kontaktplan
- FB (Function Block Diagram), dt. FUP Funktionsplan
- SFC (Sequential Function Chart), dt. AS Ablaufsprache

Funktionen

- 1 Vordergrund-Task (Foreground)
- bis zu 12 Hintergrund-Tasks (Background)
- multi-tasking PLC-Programm, Ausführung im real-time Bereich der der CNC
- on-line debugging mit Haltepunkten und Ablaufverfolgung

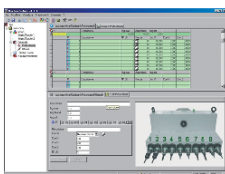
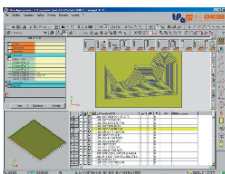
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NC-CAM



>> Enhanced Productivity machine-integrated CAM package



If necessary. At this stage, the head and tool data created with the MACHINE SETUP tool are used in graphic mode. The tool includes a powerful optimizer, that allow the management of the entire part-machining process efficiently, minimizing the execution time.

• **JOB MANAGER** package: this allows the grouping of processes to be performed on various parts into a single process file, thus controlling its execution launch and following its progress.

The NC-CAM Suite is supplied with a user licence for each individual installation, protected by a USB key. The option will also require to be enabled on each 10 Series CNC. Alternatively, a more comprehensive licence is available: this includes a kit with one USB key for installation on the machine and another USB key for office use. In addition to the option being enabled on the control.

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NC-CAM Suite

CAM-Programm für OSAI CNC's Typ 10/S unter Windows™ Umgebung

NC-CAM Suite

Funktionen:

- Machine Setup
Maschinenkonfigurations-Paket zum Setzen und Positionieren von Fräs- und Bohrköpfen, Werkzeugen, Werkzeughaltern und Werkstückhaltern und anderem Zubehör
- TPAEDI32
Grafik-Editor Paket zum Erstellen von Anwenderprogrammen in der grafischen Oberflächen unter Nutzung von kunden- und/oder OEM-spezifischen Makros.
- Job Manager
dient zum Zusammenfassen der verschiedenen einzelner Prozesse und Bearbeitungen zu einer einzigen komplexen Prozessliste zur Nachverfolgung und Kontrolle der Teilefertigung

- Installation von NC-CAM Suite auf allen WinMedia OperatorPanels sowie PanelPC's möglich
- NC-CAM Suite auch als OFF-Line Version erhältlich