

CMZ

Company profile

SYSTEMS & SOLUTIONS FOR MOTION CONTROL

2022



soga  energyteam



COMPANY

APPLICATIONS

PRODUCTS

WHERE WE ARE

CMZ engineers and produces in Italy electronic systems for industrial automation.

CMZ offers a **complete range of custom and standard solutions**:

HARDWARE

- IEC61131 controllers
- Drives and Motors
- Peripherals & I/OS
- HMI

SOFTWARE

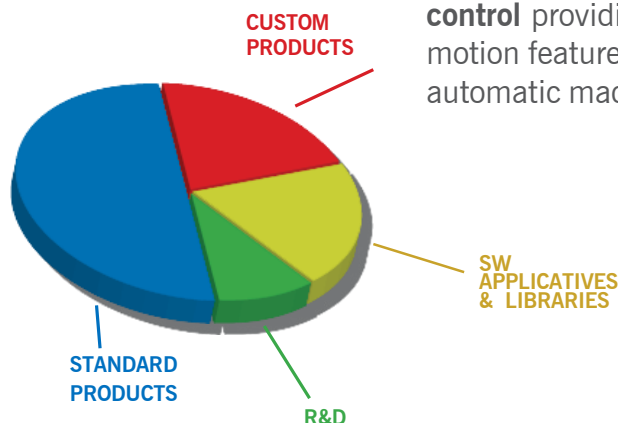
- Communication, motion and utility libraries
- Applicatives

SERVICE

- Engineering & Co-design
- Remote technical assistance
- Maintenance programs
- Revamping

CMZ core skill is the development of **customized and specific projects**, being certified as a Research Laboratory co-operating with University of Padua, Italy.

46 years of experience within automation have allowed axis control expertise to be refined and some **dedicated software packages** have been created for special applications and specific sectors: **real configurable applications for multi-axis motion control** providing all the motion features of automatic machines.



1976
origins

73
employees

9,4
millions
consolidated
revenues

Worldwide
network of
partners



- 3 companies : SOGA SpA, CMZ Sistemi Elettronici Srl, Sincro doo
- 5 commercial brands, international presence in 80 countries
- Turnover yearly~ 50.000.000,00 € • ~ 300 employees
- Plants and offices for over 76.000 sq.m.



POWER GENERATION, MOTION & CONTROL

AGRICULTURE AUTOMOTIVE BEVERAGE
 COGENERATION CONSTRUCTION INDUSTRIAL
 LIGHTING MARINE OIL&GAS PACKAGING
 RAILWAY RENEWABLES RESCUE RESIDENTIAL
 TELECOM WELDING



COMPANY

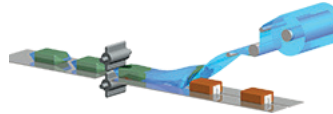
APPLICATIONS

PRODUCTS

WHERE WE ARE



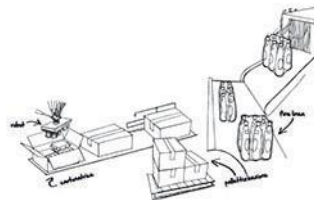
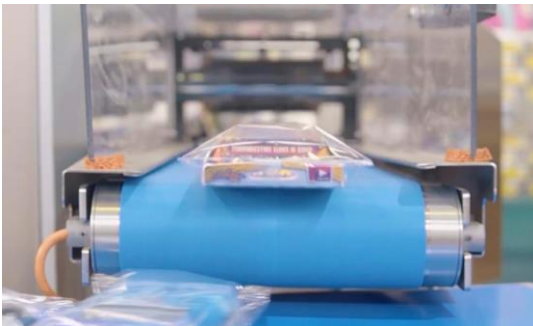
Packaging



HORIZONTAL PACKAGING MACHINE



VERTICAL PACKAGING MACHINE

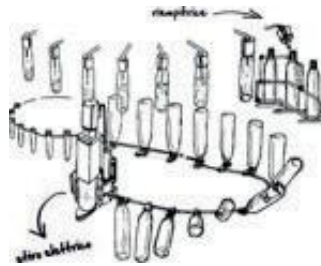
LOADING SYSTEMS
SMART BELTS

END LINE

Food & Beverage

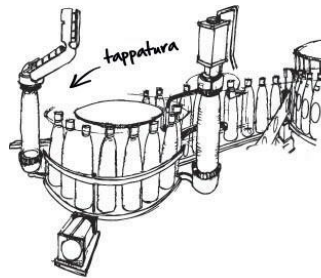


LABELLING MACHINES



FILLING MACHINES

BLOWING MACHINES



CAPPING MACHINES

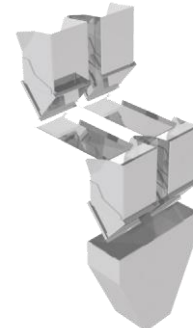
Dosing & Weighing



MULTIHEAD WEIGHERS



LINEAR WEIGHERS



VIBRATING FEEDERS



Printing



SYNCHRONIZATION OF PRINTING CYLINDERS

REGISTRATION CONTROL OF PRINTING CYLINDERS

Paper converting



INTERFOLDERS

REWINDERS CUTTING LINE

FLEXO MACHINES

Textile



MACHINES FOR FIBERS TREATMENT
(SYNTHETIC AND NATURAL) SUCH AS:
COMBING MACHINES, DRAW FRAME MACHINES

CROCHET AND JACQUARD MACHINES

SEWING/EMBROIDERY MACHINES

SINGLE AND MULTI NEEDLE QUILTING MACHINES

ISO interpreter (G-code)



CNC MACHINES

Glass



THREADING MACHINES
SEALING MACHINES EDGERS
MACHINES COATING
REMOVERS
GLASS CUTTING

Metal sheet



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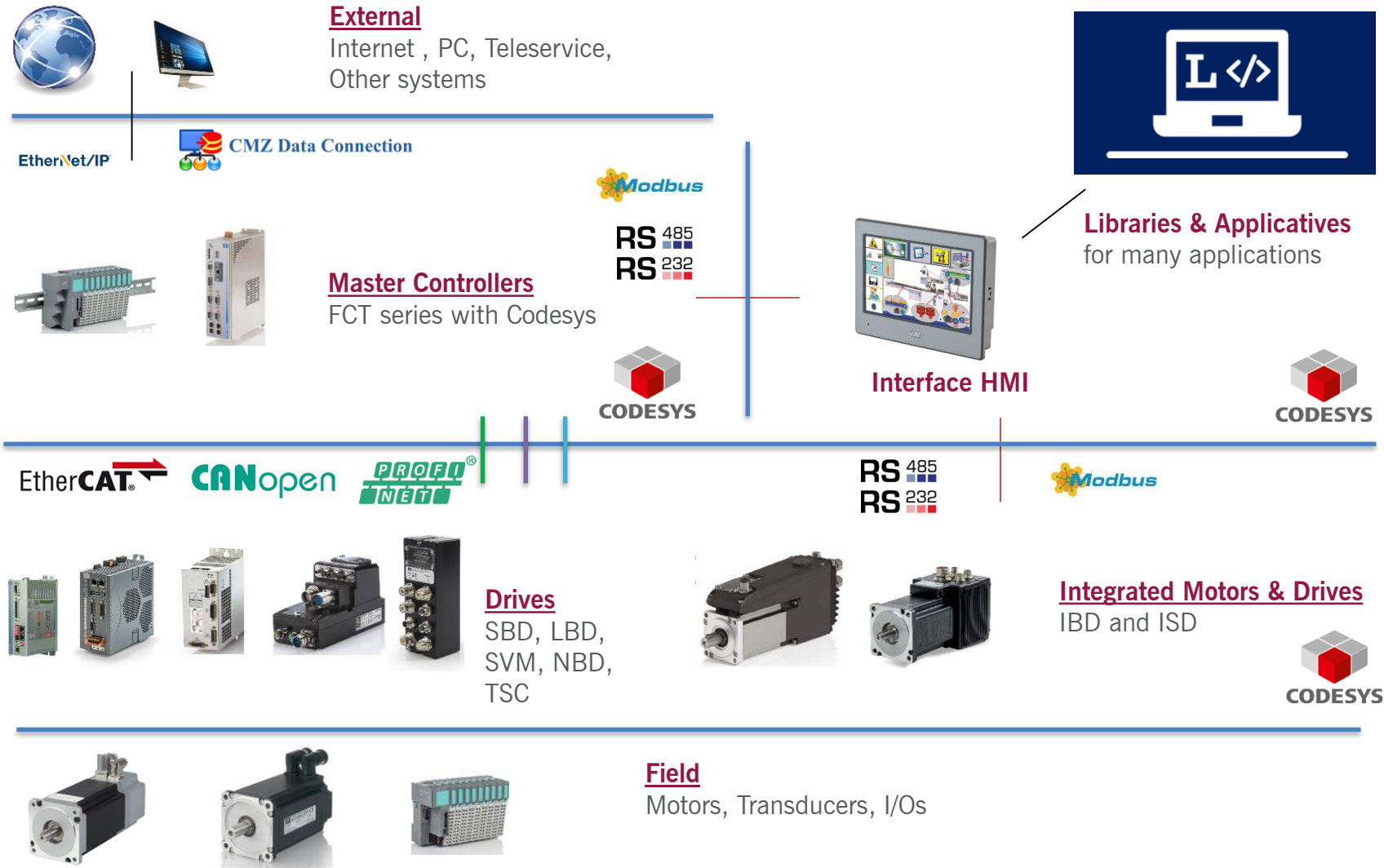
FLYING SHEAR
DEFORMATION

COMPANY

APPLICATIONS

PRODUCTS

WHERE WE ARE



FCT640: Master Controllers

Up to 99 axes

Processor:

CPU: RISC dual core 64bit, 1.0 GHz three level cache

Memory capability:

1 GB Nand Flash for storage

512 MB DRAM high bandwidth 64 bit 1666 MT/s

32 KB Ferromagnetic RAM (non-volatile PLC data)

SD-Card

Communication ports:

1xRJ45 Ethernet 10/100 MBit TCP/IP (Debug)

2xRJ45 Ethernet 10/100 MBit (Fieldbus)

1xRJ45 CAN-Bus (CANopen Master)

Local I/O modules:

64 modules, each with a maximum of 16-bit IO (1024 digital) or
8 channels analog (512 analog) - Big variety of modules available.

Wide variety of modules available

Fieldbus:

EtherCAT Master, CANopen Master

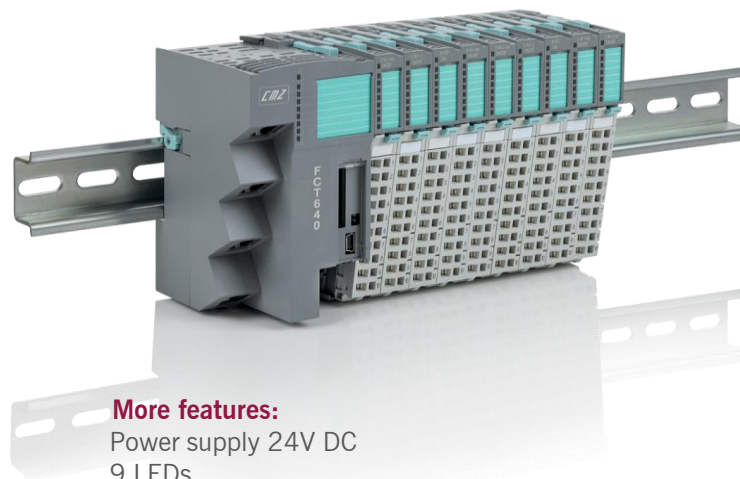
Connectivity:

OPC-UA

Modbus TCP Master/Slave

Communications based on UDP-TCP

WEB server, PLCHandler



More features:

Power supply 24V DC

9 LEDs

RTC with CR2032 Battery

Reset-Button – Restore-Button

0° - 50°C ambient temp

Fanless



FCT200: Master Controllers

Up to 8 axes real - time via CANopen

Communication ports:

RS232, Ethernet, RS422-485, SMI port

Field BUS on board:

up to 2 CANopen ports

Optional Field BUS: Profibus-DP slave

Mass memory: SD card



FCT300: Master Controllers

Up to 99 axes real-time via CANopen & EtherCAT

Communication ports:

RS232, 2xEthernet, RS422-485, SMI port

Field BUS on board:

2 CAN ports, 1 EtherCAT port

Optional Field BUS:

2xCANopen auxiliary, 2x Ethernet port, Profibus DP slave, DeviceNet, Ethernet/IP

Mass memory: 1xSD card, 1X internal, SD card

CANopen

EtherCAT

PROFI
BUS

EtherNet/IP

DeviceNet



SOFTWARE ENVIRONMENT

2 choices: same HW platform-same support

CODESYS (3.5 version)

4CONTROL (CMZ proprietary environment IEC61131)



LBD: Servo Drives

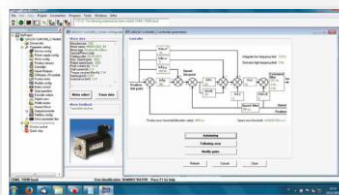
Brushless drive with CANOpen and EtherCAT interface

- From 8 to 200 A nominal
- 230 and 480 Vac
- Feedback: Resolver or absolute/incremental encoder
- Encoder OUTPUT or second encoder INPUT
- STO



EtherCAT  CANopen 

**CMZ PROPRIETARY
SOFTWARE ENVIRONMENT**



SBD: Servo Drives

Brushless drive with CANOpen, EtherCAT and Profinet interface

- From 5 to 20 A nominal
- 230 Vac and 400 Vac
- Bluetooth control*
- Feedback: Resolver or absolute/incremental encoder
- Encoder OUTPUT or second encoder INPUT
- STO



EtherCAT 

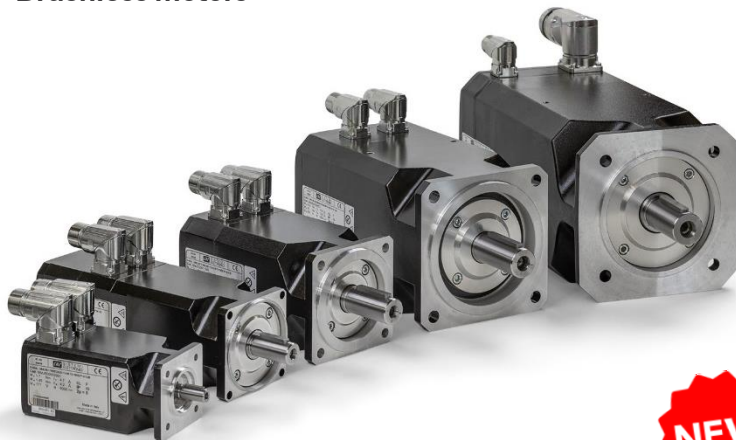
CANopen 

**PROFI
NET** 

* coming soon

MMD/B/S: Servo Motors

Brushless motors



WEB CONFIGURATOR

TRY IT ON OUR WEBSITE!

www.cmz.it/en/brushless-motors-product-finder/



TORQUE RANGE

- From 0,5 to 120 Nm stall torque

POWER SUPPLY

- 230 Vac and 400 Vac

SPEED

- From 1500 to 6000 rpm

FLANGE

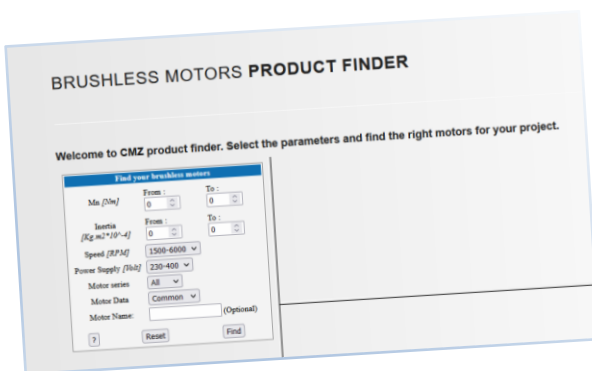
- From 70 to 240 mm

FEEDBACK

- Resolver / Incremental / Absolute – Hyperface / DSL

OPTIONS

- Brake / Flywheel / IP67



IBD: Integrated Brushless Drives

Power supply: 275 ÷ 730 Vdc (560 Vdc Nominal)

Logic supply: 24 Vdc

Torque range

Stall torque 1,3 - 2,8 - 4 - 5,6 - 6 - 15,4 - 30 Nm

Rated speed:

Vn=5000 rpm (for 1,3 Nm)

Vn=3000 rpm (for 2,8 - 4 - 5,6 - 6 - 15,4 - 30 Nm)

Feedback

HIPERFACE absolute encoder single or multturn

On board I/O's

for size 1,3 Nm:

3 digital inputs PNP 24 V

2 digital outputs PNP 24 V

1 programmable input/output PNP 24 V

for sizes from 2,8 Nm to 30 Nm:

6 digital IN 24 Vdc general purpose, configurable as:

PSTOP, NSTOP, Enable, Home, Capture, Step/Direction

3 digital OUT 24 Vdc 250mA, general purpose

1 digital IN/OUT 24 Vdc with configurable function

3 differential I/O's configurable as master incremental encoder

1 Analogue IN +/-10 V

Interface:

EtherCAT, CANopen

PROFINET (IBD up to 6 Nm)

Safety:

-For size 1,3 Nm: SIL3 (pending)

-For sizes from 2,8 Nm to 30 Nm:

STO 2 channels (only CAN and ETC)

SIL3 (pending)

Protection:

IP65

Option:

Internal brake

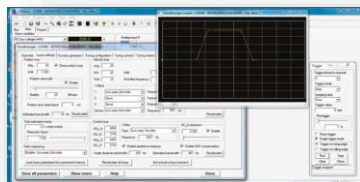


EtherCAT®

CANopen



PROFI®
INDUSTRIAL ETHERNET
NET



SOFTWARE ENVIRONMENT

SD Setup

NBD: Nearby Servo Drives

Drive IP65 for linear and rotating brushless motors

Power supply: 275 ÷ 730Vdc (560Vdc Nominal).

Rated current: 8Arms

Peak motor current: 15Arms

Logic supply: 24Vdc

Protection: IP65

Security: STO 2 channels

Input/Output:

3 digital inputs PNP 24V

2 digital outputs PNP 24V

2 digital input/digital output bidirectional PNP

1 analog input +/- 10V

Encoder master input + 5V out



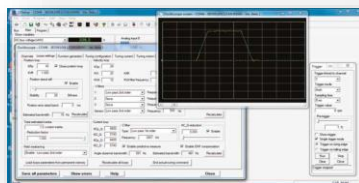
EtherCAT®

CANopen



SOFTWARE ENVIRONMENT

SD Setup



TSC: Nearby Servo Drives

Drive for 3 stepper motors

Power supply: 48 Vdc

Protection: IP65

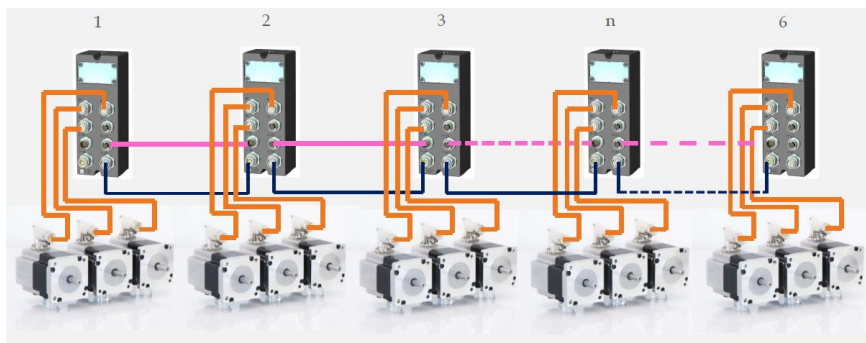
Input: 1 analog input +/- 10V

Daisy chain connection: up to 3 devices

Stepper motors size 60 mm

Torque: 1,65 and 3,1 Nm

Feedback: Absolute single turn encoder



CANopen

PROFI[®] *
INDUSTRIAL ETHERNET
NET



* through external gateway

PRODUCTS – STEPLESS SOLUTIONS

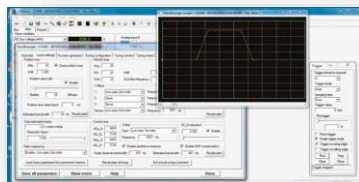
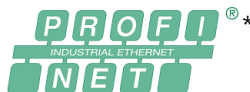
SVM: Stepless Servo Drives

MM: Stepless Motors

Interface: CANOpen, Profibus DP, $\pm 10V$, RS485 Modbus, pulse/direction
Profiles of speed, position and torque

Internal PLC programmable in IEC 61131
dedicated and general purpose IN/OUT's

Motors sizes available up to 21 Nm
on 5 sizes, DC power supply up to 160 Vdc



ISD: Integrated Stepless Drives

Up to 12 Nm, DC power supply up to 130 Vdc

Interface: CANOpen, Profibus DP, $\pm 10V$,
RS485 Modbus, pulse/direction

Profiles of speed, position and torque

Internal PLC programmable in IEC 61131
dedicated and general purpose IN/OUT's



SOFTWARE ENVIRONMENT

SD Setup

* through external gateway



PT2 Series: HMI

HMI panels

- Premium level panels suitable for Industry 4.0
- Embedded touch system
- Sizes from 4,3" to 15" LCD display
- TFT-LCD
- Max. colors 16-bit
- LED
- CPU: RISC ARM9 32 bit
- Working Memory 64 MB
- USB
- IP66
- 5 years life battery



RS 485
RS 232

EtherNet/IP™

SOFTWARE ENVIRONMENT

Panel Master Designer



CP4PWM: solution for vibrating feeders control

Control of 4 vibrating feeders, not depending from frequency and main voltage

Adjustment during installation:

Fast self-search of resonance frequency

Automatic calculation of the impressed voltage

Movement dynamic regulation:

Boost start for product release

Soft Start for silent start

Fast stop of the vibrator for reduction of the product queue

Programmability:

Stand Alone with IEC61131 programmability

Supply voltage:

110/230 Vac 50/60 Hz

Maximum output power 600W/channel

Maximum output power of the system 1,4 kW @ 230 Vac ,

700 W @ 110 Vac

I/O:

8 digital pnp input, 8 digital pnp output 24V 500 mA,

2 analog output 4-20 mA, 4 analog input 4-20 mA

Features:

Fanless, electronically protected against overheating,

configuration trough USB



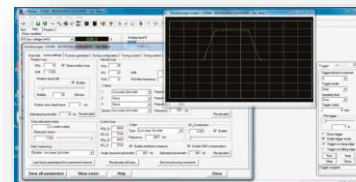
CANopen

EtherCAT®

PROFI[®]
INDUSTRIAL ETHERNET
NET *

SOFTWARE ENVIRONMENT

SD Setup



* through external gateway

SOFTWARES & APPLICATIVES: CODESYS solutions

LIBRARIES	FUNCTIONALITIES	APPLICATIONS
Flying shear	Management of the basic movement cycle of a moving carriage	Cutting and working of material in movement (metal sheet, plastic, wood, etc)
Electronics cams	Movement of a slave in relation with a master. The movement is described by a master-slave positions table with many interpolation modalities between points	Library allowing the movement of an axis in interrelation to master
Interpolation	Synchronized movement of many axes. The movement is described by a table of positions with a lot of interpolation modalities between points	Materials processing, palletizers, pick and place, generic movement
ISO	Management of an ISO file (G-Code)	Allows the execution of a movement with 9 interpolated axes described by a G-Code file
APPLICATIVES	FUNCTIONALITIES	APPLICATIONS
Horizontal and vertical packaging machines (flowpacks)	Complete control of a flowpack or a vertical packaging machine	Offers the complete realization of a flow-pack or vertical packaging machine. It allows to configure a lot of options
Linear & multihead weighers	Complete control of a linear or multihead packaging machine	Offers the complete realization of a linear or multihead packaging machine. It allows to configure a lot of options
TOOLS	FUNCTIONALITIES	APPLICATIONS
MODBUS	Management of the MODBUS protocol, on many communication ports, both in master modalities and slave	Intercommunication between systems, connections of panels and other devices to the controller
PCCOMX	Communication between a PC and a controller	It allows to interface program that runs in a PC with the program that runs in the controller
Embedded file	Mass memory management	Saving and restoring of user data in the mass memory (compact flash or SD)
ProfibusDP	Control of ProfibusDP interface (Hardware option)	Make the controller able to work as ProfibusDP node slave and so to exchange data with a master PLC

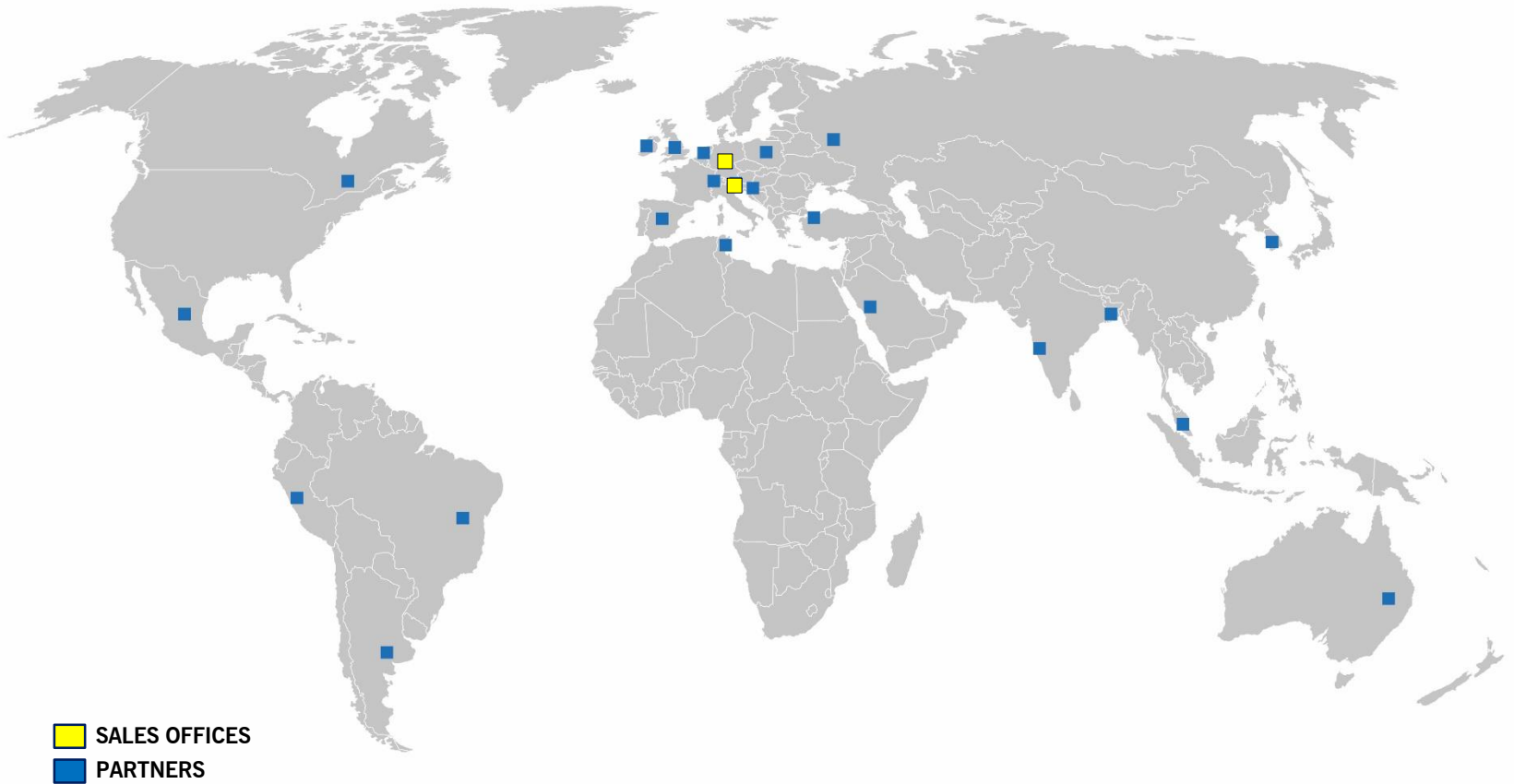
COMPANY

APPLICATIONS

PRODUCTS

WHERE WE ARE

WHERE WE ARE OUR AUTOMATION PARTNERS NETWORK



CMZ

Company profile



cmz.it



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