

# New CiA members by June 2024

*The most asked CiA membership benefits are the access to CiA specifications and the possibility to influence their development process. Currently, CAN in Automation (CiA) has about 743 members. In the first five months of 2024, 35 companies have joined CiA.*

A further important reason to be part of the CAN community is to get in touch with other CAN product and service providers. In particular, small and medium-sized companies need to be networked with partners to be successful in the today's world.

## Semiconductor suppliers

The market-leading micro-controller vendors supporting CAN connectivity are members of the CiA community for many years. This applies also for CAN transceiver suppliers. In the last years, other chipmakers joined the CiA association. This trend is continuing. There are more than 30 members offering CAN-related integrated circuits.

Unisemipower (China) is designing, manufacturing, and selling power semiconductor chips with sales and technical support offices in Shanghai, Beijing, Shenzhen, and the United States. The products are used in communication systems, information security, automotive electronics, medical, industrial, and other application fields.

Another new CiA member, Silvaco (U.S.A.) offers solutions spanning from simulation of material behavior impacting semiconductor devices, to design and analysis of transistor circuits, and providing IP blocks for systems-on-chips (SoC). The solutions are deployed by display-manufacturing companies, automotive OEMs (original equipment manufacturer), memory, 5G, and IoT (internet of things) providers. For example, the MultiCAN controller IP core supports up to six CAN CC interfaces supporting TTCAN (Time Triggered CAN) functionality as standardized in ISO 11898-4.

## Development and engineering services

Some 100 members provide development and engineering services regarding CAN-related hardware and software development. Additionally, many members offer system design and system integration services.

Development of circuit boards, layout changes, as well as the compilation or unbundling of circuit boards are part of the service range offered by HTH Sinus Electronic (Germany). Prototypes and samples, as well as the actual series, are manufactured by the same company. Together with joining CiA, the developer has also registered a CANopen vendor-ID.

Embedded Brains (Germany) offers expertise on system development in the automotive engineering, telecommunications, and industrial automation. The company

is specializing in customized software and hardware development for single and multi-core systems.

JK Energy (United Kingdom) has been founded in 2003 to develop solutions for resource-constrained hardware embedded in products. The specialists work with embedded Linux and have their own-build environment. The company's network management technology has been developed to monitor devices for automated setup and operation. The provider also designs GUIs (graphical user interface) for embedded systems with LCD panels.

Avineas IT Consulting (the Netherlands) offers software (product) development, services for change, and training for the technical implementation of processes with a (software) IT component.

Megmeet Electrical (Germany) is a solution provider in the field of electrical automation, integrating software and hardware development, production, sales, and services. The business areas include industrial automation (e.g. drives, servo systems, and encoders), electric vehicles, railway solutions, power solutions, home appliance control, etc.

A further CiA member Lachmann & Rink (Germany) is engaged in embedded software development for customer's hardware and the connection to the HMI (human machine interface). The company is involved in development of Linux operating systems, firmware, device drivers, sensor solutions, embedded apps, user interfaces, as well as application and business logic software. The application areas span from the machine construction, Industry 4.0 and IoT environment, automotive, and agriculture to building automation.

E.S.T.E. Technology (Italy) offers engineering solutions focusing on automotive, agricultural, heavy-duty, and industrial sectors. Established in 2012, the company deploys a group of entrepreneurs and researchers from the Imamoter Institute, the Italian National Research Council, and the University of Ferrara. The company operates throughout Italy and offers services ranging from hardware and software design, to the advanced on-board diagnostics, functional safety, precision farming systems, etc.

Homatic Engineering (Denmark) is offering customized development and technological consultancy in automation, mechanics, hardware development, software development, and product approval. Application areas include e.g. automation and robotics. Beside others, the company offers PC applications and various drivers for CAN. ▶

CanBusHack (U.S.A.), established in 2010, is a reverse engineering services corporation specializing in automotive embedded controller software and communication understanding.

## Sensing technologies providers

More than 130 CiA members develop and manufacture CAN-connectable sensors. This includes single devices as well as sub-systems for more complex sensing applications.

A further new CiA member Matrix Elektronik (Switzerland) is a provider of sensor technologies since 1976. The manufacturer is specializing in sensor solutions used in applications with explosive and high-temperature environments. The CANopen vendor-ID registration shows that the manufacturer is working on CANopen-based products.

Founded in 2005 Joral (U.S.A.) develops and manufactures harsh-duty electronic devices (e.g. encoders, inclinometers) for mobile hydraulics and industrial applications. Its rugged position sensors provide total electronic package encapsulation, LED status indicators, and true non-contact coupling. For instance, the SGAM and DGAM inclinometers utilize the sensor fusion technology combining more than one sensing method. The IP67-rated incline sensors take input by a gyroscope, accelerometer, and magnetometer to provide a 3-axis output as well as feedback for pitch, yaw, and roll. J1939 and CANopen are the supported higher-layer protocols.

Sika (Germany) is producing sensors for measuring flow, temperature, and pressure. Together with the membership, it registered a CANopen vendor-ID, which is cost-free for members. In addition, the Idec Alps Technologies (Japan) has assigned a CANopen vendor-ID. The company designs, develops, manufactures, and sells sensors, security devices, and value-added human-machine interfaces for industrial applications.

Novotechnik Messwertaufnehmer (Germany) provides sensors for linear and rotary measurements. The devices are available with different measuring technologies and communication interfaces e.g., CANopen and J1939. Versions for redundant measurements, single-turn or multi-turn encoders, compact-size devices, or rugged metal housings are offered, too.

Klug Avalon Mechatronics (India) has joined CiA in April. It provides load cells, limit switches, draw wire sensors, wind speed sensors, inclinometers, as well as HMIs mostly dedicated for use in cranes, lifting solutions, and material-handling equipment.

## Solutions for the energy sector

In the last years, the number of members providing batteries and chargers has increased. This trend goes on. About 40 members offer CAN-connectable electric power solutions. This includes also energy management systems.

For more than half a century, Benning Elektrotechnik und Elektronik (Germany) produces solutions for the conversion of energy in multi-purpose or energy storage. Company's power systems and battery chargers

are dedicated for the telecommunications, industrial, medical, and IT industries. Since its establishment in 2014, Shenzhen ACE Battery (China) offers solutions and services for energy storage, including battery materials, battery cells, battery modules, battery packs, storage systems, and recycling. To equip its products with CANopen connectivity, the company has registered a CANopen Vendor-ID by CiA. ChargePoint (Great Britain) is offering the electric vehicle (EV) charging solutions for passenger cars, delivery vehicles, buses, trucks, etc. Therefore, the company has built an integrated portfolio of hardware, cloud services, and support. Milwaukee Electric Tool (U.S.A.) is another provider of batteries, chargers, modular storage systems, and power supplies.

Established in 2021, Hirschvogel E-Solutions (Germany) is a part of the Hirschvogel Group, founded for work in the electric mobility market. A separate business area for bicycles and micro-mobility is being created with the brand Aximo. The first series product, the Aximo drive axle, is being used in a cargo bike from Cube. Further series for e-bike drive systems are in development. For this company, a CANopen Vendor-ID has been assigned, too.



Figure 1: Aximo Pedelec wheel hub motor with a 60-Nm peak torque (Source: Hirschvogel E-Solutions)

Optical Metrology Services (Great Britain) is a measurement, inspection, and remediation company working within the energy sector. The company's crawlers, tools, and services support and deliver critical requirements. For example, it offers camera and laser inspection services for hard-to-reach areas within energy production. Services include cleaning and surface preparation, weld scanning, defect identification and remediation, pre-coating inspection, and data analysis. Pipes and welds are independently verified. The weld inspection services are mostly deployed within the oil, gas, renewable energy, and nuclear energy sectors.



Figure 2: The Agility.mini crawler is dedicated for pipes from 200 mm to 400 mm internal diameter (Source: Optical Metrology Services)

Another company in this sector is Megger (Sweden) offering electrical testing and measurement services including monitoring solutions. The critical electrical measurements include insulation and ground resistance testing, dielectric testing, transformer diagnostics, dissolved gas analysis, partial discharge analysis, cable fault locating and diagnostics, smart grid testing, and more. The firm serves a range of industries, spanning utilities, manufacturing, maintenance, renewable energy, heavy industry, transportation, etc.

### Welding and cutting equipment suppliers

Last year, CiA started the development for CANopen profiles suitable for manual welding and cutting equipment. This is the reason, why several new members are related to this application.

Lorch (Germany) is one of the recently joined CiA members participating in the SIG (special interest group) specifying the CiA 464 profile for manual arc welding and laser cutting. Two further companies also joined CiA to work in this group. These are EWM (Germany) developing complete welding solutions (e.g. multi-process welding machines) together with its customers. To digitize the used welding technologies and move towards the Industry 4.0, the company participates in the CiA SIG welding and cutting. The same goal follows ESAB (Sweden). It provides advanced welding equipment, welding consumables, automation, and digital solutions that enable the everyday and demanding welding work. The company already uses CAN for communication between the welding equipment.



Figure 3: PEK is a controller for several ESAB power sources and is connected to them via CAN (Source: ESAB)

### Remote control solutions

Remote control is in some applications a requirement, especially in lifting devices, construction machines, etc. Additionally, there is an increasing demand on telematics services for embedded CAN-based control systems.

Cattron (Germany) offers remote control systems, panels, machine stop systems, and telemetry monitoring solutions with CAN(open) CC and J1939 connectivity. The products are dedicated for agriculture, industrial automation, material handling, mining, mobile equipment, oil and gas, power and fluid solutions, rail operations, and water management.

Founded in 1988, IMET (Italy) is a designer and manufacturer of industrial safety radio remote controls used primarily in the construction, ecology, and concrete-processing sectors. The portfolio includes transmitters, receivers, and CAN-based wired remote control also dedicated for explosive and other demanding environments.

Since 2001, Almec (Italy) provides electronics and mechatronics including customized design, production, and technical consulting. The products comprise radio

remote controls, electronic control units, PLCs, push-button panels, operator panels, angular sensors, and actuators. For example, the TRS.ALMX is a safety angular inclinometer sensor with two independent CAN interfaces. Another device, the AL35R15 is an electro-pneumatic distributor for moving machinery and equipment. It supports the CiA 401 device profile for I/O modules.



Figure 4: AL35R15 is an electro-pneumatic distributor (Source: Almec)

Another kind of remote control is offered by telematics systems. With the GPS-based telematics devices, Globtrak (Poland) enables monitoring of the vehicles (e.g. location and speed) and vehicle fleets. Analysis of the collected data reveals functions that could be managed in a more efficient way. Globtrak offers a so-called “cloud tool” that collects, processes, analyses data, and produces ready-made reports. The company has also registered a CANopen vendor-ID at CiA.

### Further new members

Some new members are original equipment manufacturers (OEM). They are looking for CAN-connectable devices and sub-systems featuring interoperability and partly exchangeability. Some of these members are interested in dedicated CiA application profiles, for example the CiA 417 series also known as CANopen Lift.

Won Tech Won (South Korea) is a company working in the medical sector. Since establishment in 1999, it has been researching and developing laser systems, for example, the WON-PDT (photo dynamic therapy) laser for various cancer treatments.

CiA has also assigned a CANopen vendor-ID to Swift Home Lifts (Sweden) providing a lift concept for use in modern homes. The Swift Lite is a small house lift version and the Swift Pro is the company’s residential lift with advanced design features, a dynamic touch display, and several options for personalized settings.

Gunda Automation (Germany) is producing motion control solutions including stepper motor drives, servo drives, positioning systems, multi-axis systems, and linear actuators. For instance, the Colibriservo drive is housed in a compact housing that is directly connected to the motor. The device is available in three performance groups covering torque ranges from 0,22 Nm to 20 Nm. The drive supports the CiA 402 CANopen device profile for drives and motion controllers.

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### Correction for “CANopen-certified by March 2024” article

In the March 2024 issue of the CAN Newsletter magazine, we reported about the recent CANopen-tested devices. It should be corrected that the XU Endurance joystick series from the CiA member Sure Grip Controls (Canada) are not CE-certified and not SIL-2 compatible.

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