



# The dragon awakes in the year of the horse

The number of CiA members headquartered in China is growing. The map shows the current Chinese CiA members (22) and briefly introduces their business activities.

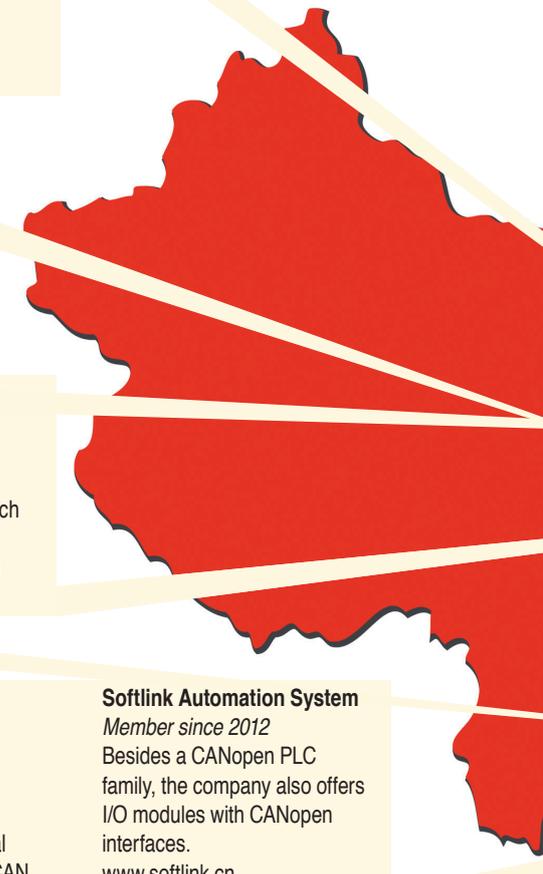
Last year, the number of locally manufactured CANOpen products increased. At the IAS exhibition in Shanghai, local brands (such as Delta, Estun, Kinco, and Softlink) presented industrial control equipment with CANOpen connectivity. Leadshine exhibited its CANOpen servo drives for the first time.

The main challenge is posed by system integration. Most of the European

CANOpen suppliers provide system design services. This leads to the strange situation that device makers employ more system engineers than their customers, which means that OEMs and machine builders are losing their system design knowledge. That is going to change. In the past, Chinese money was invested mainly into treasury bonds. Now, the state-owned companies go on shopping

tours in Europe and America, where they buy technology. As early as 2008, Zoomlion acquired Cifa, the Italian concrete pump maker. In the following years, other leading Chinese construction machine builders, XCMG and Sany, bought the German companies Schwing respectively Putzmeister, also technology-leaders in concrete pumps. This enables the Chinese company to offer complete

infrastructure projects in emerging countries. But there is also an emerging trend to strengthen the system design business of European companies in China. For example, Schneider Electric, Lenze, and Festo increasingly provide CANOpen solutions tailored for Chinese machine builders. The economy of China may slow down, but it is still one of the most growing industries in the world. In ▶



**CSR Nanjing Puzhen Rolling Stock**

*Member since 2008*  
The system designer of metros and light rail vehicles uses CANOpen as an internal network in its products. [www.csrpz.com](http://www.csrpz.com)

**Nanjing Kangni Electronic**

*Member since 2008*  
Their rail vehicle doors come optionally with CAN/CANOpen connectivity. [www.kn-nanjing.com](http://www.kn-nanjing.com)

**Nanjing Lekttec Engineering**

*Member since 2013*  
The company provides CAN-connectable GPS modules, inclinometers, and encoders. [www.lixuegps.com](http://www.lixuegps.com)

**Xi'an Advantech Software**

*Member since 2007*  
The enterprise has developed CANOpen interfaces for several of its products. This includes a CiA-certified CANOpen master board. [www.advantech.com.cn](http://www.advantech.com.cn)

**Xi'an Precise Measurement**

*Member since 2013*  
The company manufactures sensors including a CANOpen-compliant inclinometer. [www.siliconmems.com](http://www.siliconmems.com)

**Guangzhou Zhiyuan**

*Member since 2009*  
Besides a broad range of CAN interface products, the company also offers CAN tools from bus-analyzer to CAN oscilloscope as well as CAN evaluation boards. [www.zlg.cn](http://www.zlg.cn)

**Jari Institute**

*Member since 2013*  
The state-owned institute establishes CAN and CANOpen system integration and research services. [www.jari.cn](http://www.jari.cn)

**Taian Technology**

*Member since 2013*  
The company provides frequency inverters and other low-voltage gear-switch products. [www.taian-technology.com](http://www.taian-technology.com)

**China Leadshine Technology**

*Member since 2011*  
The servo motor company demonstrated its integrated CANOpen motion controller at the end of 2013. [www.leisai.com](http://www.leisai.com)

**Kinco Electric Shenzhen**

*Member since 2008*  
The company develops and produces a broad range of CANOpen automation device. This includes PLCs, HMIs, I/Os, and motion controllers. [www.kinco.cn](http://www.kinco.cn)

**Sino Medical-Device Technology**

*Member since 2013*  
The enterprise developing healthcare equipment has developed different medical devices using embedded CAN networks. [www.sinomdt.com](http://www.sinomdt.com)

**Softlink Automation System**

*Member since 2012*  
Besides a CANOpen PLC family, the company also offers I/O modules with CANOpen interfaces. [www.softlink.cn](http://www.softlink.cn)

2013, the growth was about 7,6 percent, and for 2014 the government predicts another 7,5 percent.

Many construction machines use embedded control systems based on CANopen. During the last years, this industry suffered a decrease in business, but the business in emerging countries is going to increase. Chinese companies such as Sany and Zoomlion seem to be prepared. They offer a very broad range of products including machines dedicated for the markets in Africa, South America, and Southeast Asia.

CANopen control systems designed for mobile machines come mainly from Europe, in particular from Germany and North Europe and CANopen sensors such as encoders and inclinometers are made in Europe.

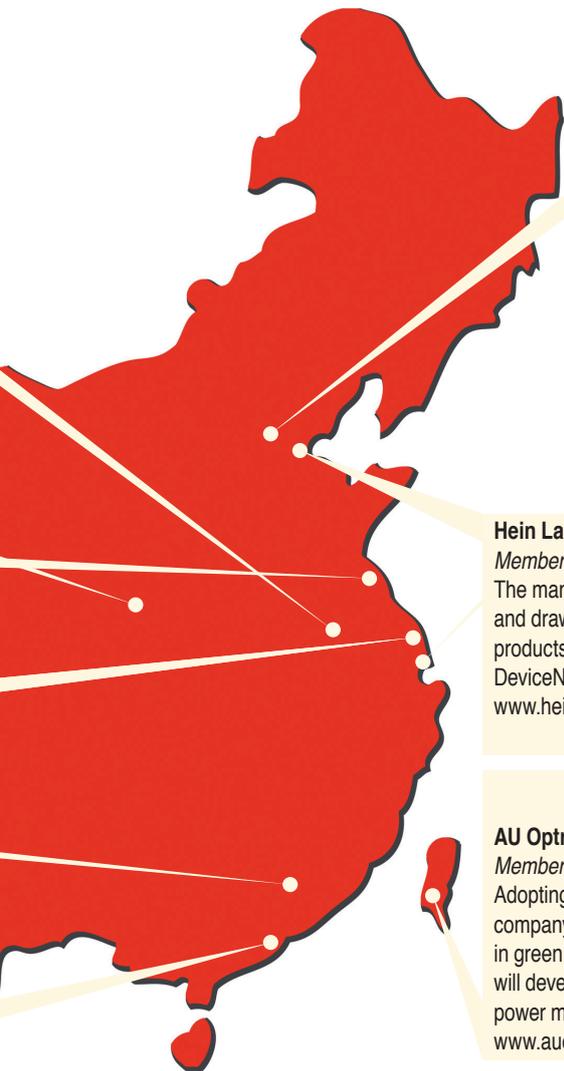
Many Chinese OEMs use them in their machines. However, the first Chinese companies already offer CANopen products for mobile machines and wind power. System design services for these markets are not only offered by European companies: For many years, CiA member Pal-Fin (Shanghai) has successfully integrated CANopen systems for mobile machines using devices from different European suppliers. Also, the state-owned Jiangsu Automation Research Institute (JARI) has started to provide CANopen system integration services for the Chinese mobile machine industry. In other CANopen-committed industries, local heroes are emerging too. Sino MDT has launched a digital mammography system, developed and

produced in Shenzhen. In the beginning the company developed injection/infusion devices. Today, the CiA member is competing against GE Healthcare, Philips Healthcare, and Siemens Healthcare. CANopen devices for this market are also available from Chinese brands, one of them CiA member Kinco. Another CANopen-minded market in China is maritime electronics. The first CANopen implementation in ships was not for fisher-boats. Network redundancy as specified in the CiA 302 series was one of the key elements in adapting CANopen for marine applications.

Chinese carmakers also use CAN-based in-vehicle networks. While the leading automotive suppliers develop most of the CAN-connectable ECUs abroad, nevertheless, the market

for local ECU developers is increasing. High-end CAN interface boards for development and test purposes are still made in Europe or USA. Apparently, even if price matters, performance and quality is required nonetheless. That is why ESD, Kvaser, and others are successful in China.

The current 5-year plan has started an innovation offensive in machine building industries. The government plans on expanding the business, in particular in the state-of-the-art markets, which is supported by governmental research projects. For local mass transportation such as metros and commuter trains, CANopen is one of the candidates to be accepted as coach network. CiA members CSR and Kangni are already using CANopen networks for this purpose. ◀



**Beijing Itekon Technology**

*Member since 2013*  
The CAN interface products and gateways of this company provide CANopen and J1939 interfaces as well as CAN layer-2 ports.  
[www.itek.net.cn](http://www.itek.net.cn)

**Shanghai Pal-Fin**

*Member since 2007*  
The company provides system integration, especially for mobile machines.  
[www.pal-fin.com](http://www.pal-fin.com)

**Shanghai Gemple M & E**

*Member since 2009*  
The sensor maker provides CANopen encoders for different application fields.  
[www.gemple.cn](http://www.gemple.cn)

**Sibotech Automation**

*Member since 2011*  
The gateway specialist offers CANopen and DeviceNet to Profibus-DP or Modbus products.  
[www.sibotech.net](http://www.sibotech.net)

**Hein Lanz (Tianjin)**

*Member since 2013*  
The manufacturer of encoders and draw-wire sensors offers products with CANopen and DeviceNet connectivity.  
[www.heinlanz.com](http://www.heinlanz.com)

**Joint Peer Systec**

*Member since 2010*  
The company produces multi-axis servo controllers featuring optionally CANopen interfaces.  
[www.jps.com.tw](http://www.jps.com.tw)

**TD Hitech Energy**

*Member since 2013*  
Focused on batteries for LEVs, the company participates actively in the development of the CiA 454 specification.  
[www.htenergy.com.tw](http://www.htenergy.com.tw)

**AU Optronics**

*Member since 2014*  
Adopting "Benq Solar", the company has started to invest in green energy. In the future, it will develop CAN-connectable power management systems.  
[www.auo.com](http://www.auo.com)

**Chieftek Precision**

*Member since 2013*  
Following the trend of miniaturized linear motion controllers, the company will offer also products with CAN connectivity.  
[www.chieftek.com](http://www.chieftek.com)

**Fatek Automation**

*Member since 2010*  
The PLC maker provides a CANopen interface board and a related CANopen development tool.  
[www.fatek.com](http://www.fatek.com)