# INDUSTRY OVERVIEW

*Certain of the information and statistics set out in this Industry Overview have been extracted from various official public sources. Reasonable care has been exercised by the Directors in extracting and repeating such information and statistics. No independent verification has been carried out on such information and statistics. The Company, [●], the [●], their respective directors and advisers or any other party involved in the [●] make no representation as to the accuracy of such information and statistics, which may not be consistent with each other or with other information. The information and statistics set out in this section may not be consistent with other information compiled by other official sources within or outside the PRC or Hong Kong.*

## INTRODUCTION

Industrial automation instruments are used to monitor and control industrial production processes and are used in many different industries including aerospace, mining, power generation, oil, gas and petrochemical, metallurgy, food and pharmaceutical. The Group produces a range of high precision industrial automation instrument and technology products, which are classified by function into three categories (i) detector; (ii) indicator; and (iii) controller. The middle to high-end market segments in which the Group targets is oligopolistic in nature.

The horological instruments manufactured by the Group are sold to quartz watch manufacturers to be assembled into watches. The Group manufactures three major types of horological instruments, namely, two-hand, three-hand and calendar horological instruments. The Quartz watch movements industry in which the Group competes is also oligopolistic in nature.

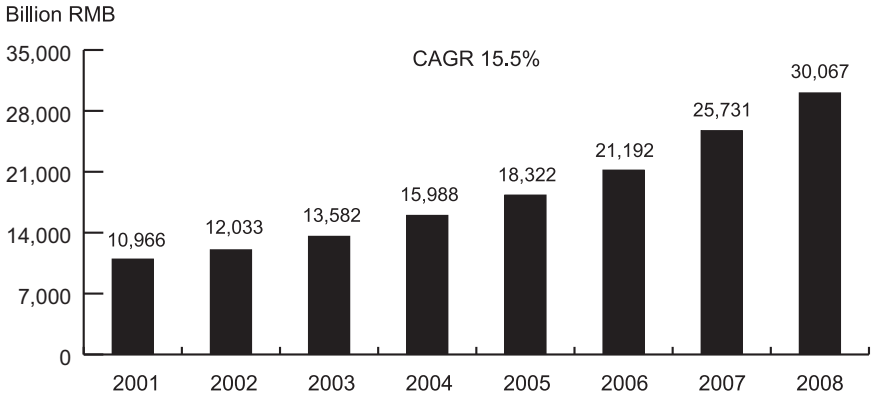
According to the PRC Instrument Industry Research and Development Report (中國儀器儀錶行業調研報告) dated March 2008, the instrument industry is classified into 4 categories based on target end-user base. The 4 categories are (i) automation instruments & systems; (ii) scientific testing instruments; (iii) specialty instruments; and (iv) instrument materials and components. Automation instruments and systems account for about half of the total instrument industry sales revenues, while scientific testing instruments account for about a quarter.

According to the National Standard of the Classifications and Codes of National Economy Industries (GB/T4754-2002) (《國民經濟行業分類》國家標準 (GB/T4754-2002)), industrial automation instruments and horological instruments and timer are both classified in the instruments industry (儀器儀錶行業).

## THE PRC ECONOMY

According to the National Bureau of Statistics of China, the PRC economy has grown at an average GDP growth rate of approximately 16% from 1985 to 2008. In particular, this rapid economic growth is reaffirmed in 2008, when China experienced an annual GDP of 9% despite the global economy downturn.

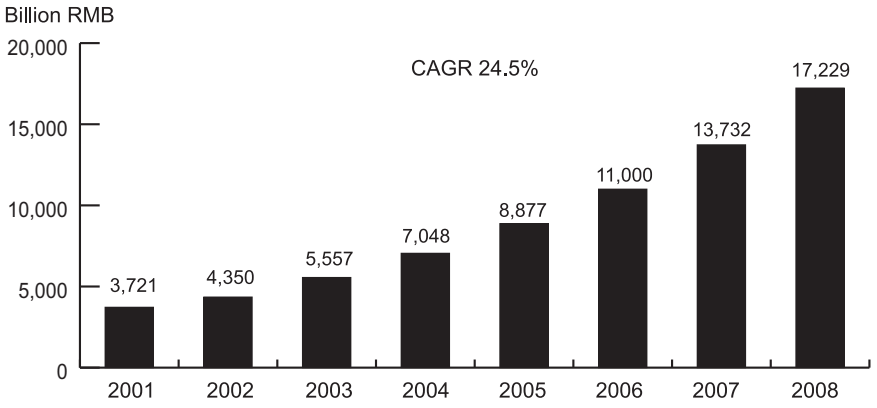
**China GDP during 2001–2008**




*Source:* National Bureau of Statistics of China

One of the key economic drivers of the strong economic growth in the PRC is fixed asset investment. Fixed asset investment in China has grown from RMB3,721 billion in 2001 to RMB17,229 billion in 2008, representing a compound annual growth rate of 24.5%, making the PRC one of the countries with the highest growth rate of fixed asset investment in the world.

**China FAI (Fixed Asset Investment) during 2001–2008**




*Source:* National Bureau of Statistics of China

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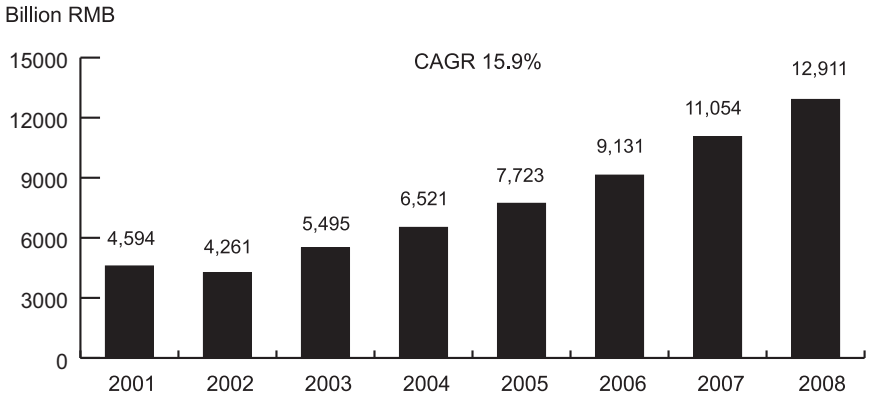
Another key drive of the strong economic growth in the PRC is industrial development. Industrial value added in China has grown from RMB4,594 billion in 2001 to RMB12,911 billion in 2008, representing a compound annual growth rate of 15.9%.

**China Industrial Value Added during 2001–2008**




*Source:* National Bureau of Statistics of China

The Directors believe the continued growth in fixed asset investment and industrial development is expected to increase the rate of the construction of new and the replacement of existing production facilities, both of which require large quantities of industrial automation instrument and technology products.

### GROWTH OF THE INDUSTRIAL AUTOMATION INSTRUMENT INDUSTRY

As illustrated in the following table, the Chinese instrument industry's total sales have grown at CAGR of 36.2% for the four years ended 31 December 2007.

| **Billion (RMB)** | **2004** | **2005** | **2006** | **2007** |
|---|---|---|---|---|
| Gross industrial output value | 123.7 | 177.7 | 233.0 | 307.8 |
| Sales revenue | 118.9 | 172.6 | 220.7 | 300.5 |

*Source:* The PRC Instrument Industry Research and Development Report (中國儀器儀錶行業調研報告) dated March 2008.

# INDUSTRY OVERVIEW

The table below shows the breakdown of the 2007 production values of various instrument industry segments in the PRC.

| **The PRC Instrument Industry Production Value in 2007** | *(RMB millions)* |
|---|---|
| Industrial automation instruments | 78,384 |
| Horological Instruments | 20,911 |
| Electronic chain instruments | 12,571 |
| Supply chain instruments | 39,266 |
| Optics instruments | 51,905 |
| Medical and related instruments | 20,883 |
| Vehicle and other measuring instruments | 14,230 |
| Others | 69,615 |
| TOTAL | 307,765 |

*Source:* The PRC Instrument Industry Research and Development Report (中國儀器儀錶行業調研報告) dated March 2008.

**Characteristics of China's Instrument Industry**

According to the PRC Instrument Industry Research and Development Report (中國儀器儀錶行業調研報告) dated March 2008, there are only 22 enterprises, out of 3,954 enterprises in total, in the PRC instrument industry with sales of over RMB300 million in 2007. Overall for the PRC instruments industry, domestic enterprises have generally only reached standards which are comparable to mid-1980s international levels.

In an industry with a small number of large enterprises and a large number of small enterprises, the higher and lower end market segments for the industrial automation instrument market in China have very different industry characteristics and competitive dynamics. With the exception of limited involvements by some domestic enterprises, the middle to high-end segment of the PRC market with high stability, reliability and precision requirements is oligopolistic in nature and almost exclusively reliant on imports or products manufactured by foreign invested enterprises (三資企業) such as the Group, with a relatively limited number of international brands commanding dominant market positions. On the contrary, the middle to low-end segment of the PRC market is highly fragmented and dominated mainly by domestic enterprises, characterized by intense competition amongst a large number of small and weak manufacturers with low research and development and product innovation capabilities and whose product standards are generally only comparable to mid-1980s international standard levels.

**Growth Forecast**

During the "Eleventh Five Year Plan (十一五規劃)" Period, industrial automation instruments and control systems are expected to grow at an annual rate of 25%, according to the PRC Instrument Industry Research and Development Report (中國儀器儀錶行業調研報告) dated March 2008. The PRC demands will rank among the top three globally for core products such as DCS, PLC, transmitters, flow meters, control valves and electronics actuators.

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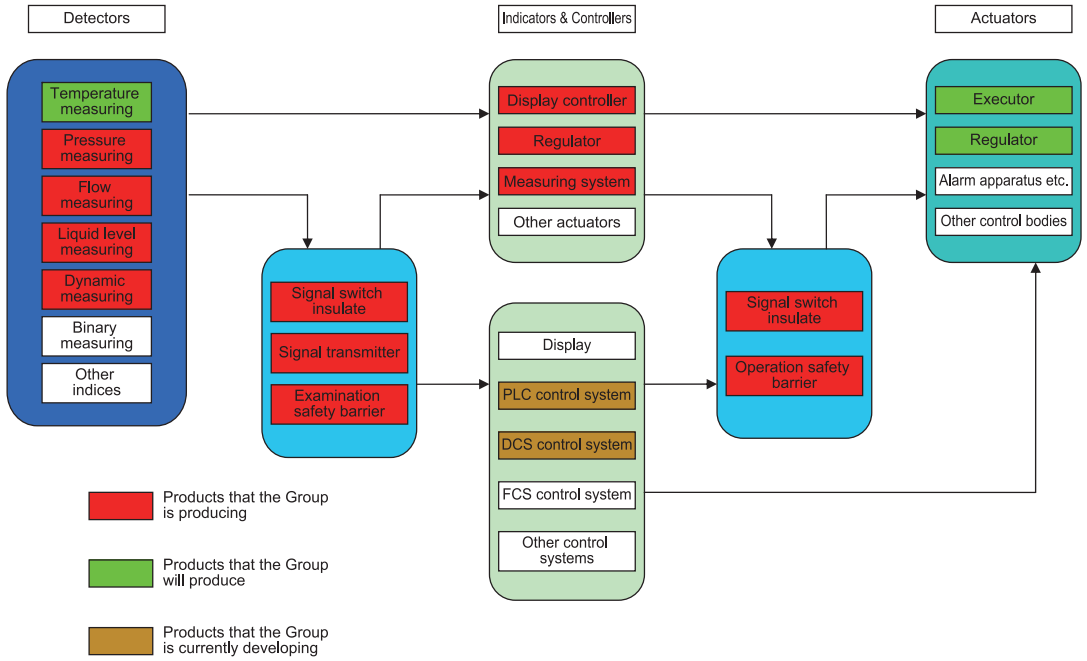
The products in the industrial automation instruments and control systems sector can be categorized into detectors, indicators & controllers, and actuators. The diagram below illustrates how a control system is linked with the industrial automation instrument and technology products of the Group.




The Directors believe the large scale of this market has enormous potential and as shown in the table above, there are various product types which the Group will produce or are currently under development.

## MAJOR HIGH PRECISION INDUSTRIAL AUTOMATION INSTRUMENT AND TECHNOLOGY PRODUCTS RELATED TO THE GROUP'S BUSINESS

### Indicators and Controllers

The annual production output of indicators and controllers in China in 2006 was approximately 3 to 3.5 million units in aggregate. Indicators and controllers are mainly used in oil pressure equipment, machine tools, plastic injection moulding machines, domestic ovens, industrial ovens, environmental testing systems, industrial electric furnaces, thermal treatment equipment, medical equipment, pharmaceutical production equipment, tobacco ovens, water heaters and furnaces. The technical capabilities of the PRC based manufacturers can meet the requirements of end-users in China and is also considered competitive in the international markets.

The Group was the industry leader in the PRC indicator and controller markets in terms of sales volume in 2006.

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**Market Share of Major Indicator and Controller Manufacturers in 2006**

| | | Market *('000 units/ sets)* | Enterprise Type |
|---|---|---|---|
| 1. | **The Group**[(Note 1)] | 300 | Hong Kong |
| 2. | RKC | 150 | Japan |
| 3. | OMRON | 120 | Japan |
| 4. | Xiamen Yudian Automation Technology Co., Ltd | 80 | China |
| 4. | Fujian Shunchang Hongrun Precision Instrument Co., Ltd | 80 | China |
| 4. | Sichuan Instrument Complex Co., Ltd. Control Meter Branch | 80 | China |
| 5. | Autonics Electronic (Jiaxing) Corporation | 50 | South Korea |
| 6. | Shimaden | 30 | Japan |
| 6. | Shanghai Dahua Chino Instrument Co., Ltd. | 30 | Joint Venture |
| 7. | Others | 2,200–2,700 | |
| | Total | 3,000–3,500 | |

*Source:* The PRC Instrument Industry Research and Development Report (中國儀器儀錶行業調研報告) dated March 2008

*Note 1:* The above ranking is attributed to Wide Plus.

**Pressure/Differential Pressure Transmitter Products**

Pressure transmitters convert changes in liquid, gas or vapour pressures into standardized signals.

In 2006, the total production of pressure transmitters in the PRC reached approximately 560,000 units. As illustrated in the table below, the pressure transmitter market is characterized by a small number of large and a large number of small manufacturers.

The Group was the PRC-based industry leader for the PRC pressure transmitter market based on sales volume in 2006.

**Market Share of Major Pressure Transmitter Manufacturers in 2006**

| | | Market *(units)* | Enterprise Type |
|---|---|---|---|
| 1. | Emerson | 145,000 | Joint Venture |
| 2. | Yokogawa | 120,000 | Joint Venture |
| 3. | **The Group**[(Note 1)] | **45,000** | **Hong Kong** |
| 4. | Chongqing Wecan | 38,000 | China |
| 5. | E+H | 30,000 | Joint Venture |
| 6. | Others | 182,000 | |
| | Total | 560,000 | |

*Source:* The PRC Instrument Industry Research and Development Report (中國儀器儀錶行業調研報告) dated March 2008

*Note 1:* The above ranking is attributed to Wide Plus.

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The industrial application of pressure transmitters in China is also relatively concentrated, with four industries (i.e. chemical, electricity, oil and petrochemical industries) contributing to more than 75% of the market.

**Pressure Transmitter Market in China (by Industry)**

| **Industry** | *(Units)* |
|---|---|
| Chemical | 156,000 |
| Petrochemical | 116,000 |
| Electricity | 96,000 |
| Metallurgy | 60,000 |
| Oil & natural gas | 39,000 |
| Papermaking | 16,000 |
| Urban | 12,000 |
| Construction | 10,000 |
| Food and beverages | 4,000 |
| Others | 51,000 |
| Total | 560,000 |

*Source:* The PRC Instrument Industry Research and Development Report (中國儀器儀錶行業調研報告) dated March 2008

For the total production of pressure transmitters in China of approximately 560,000 units, nearly 48% of the pressure transmitters are used for measuring pressure, and more than 51% of the pressure transmitters are used to measure differential pressure (the latter is called differential pressure transmitter).

In general, the level of precision required for differential pressure transmitters should be higher than that of pressure transmitters. In measuring differential pressure, the level of precision required for measuring liquid level is higher than that of measuring the flow rate of gas or liquids.

**Market Size of Pressure Transmitters in 2006**

| **Type of application** | **Market size** | |
|---|---|---|
| | *Units* | *Percentage* |
| Pressure | 270,000 | 48.2% |
| Flow | 150,000 | 26.8% |
| Liquid | 140,000 | 25.0% |
| Total | 560,000 | 100.0% |

*Source:* The PRC Instrument Industry Research and Development Report (中國儀器儀錶行業調研報告) dated March 2008

Emerson, Yokogawa, Foxboro, Fuji and the Group are considered comprehensive automation instrument manufacturers providing on-site instrument products as well as other automation products in the area of workflow control, while the other enterprises focus more on on-site instrument products.

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As at the end of 2007, the Group has passed the certification (e.g. CE Mark) that is necessary to enter the European Union market, in particular the ATEX anti-explosion certification of the European Union.

Certain foreign manufacturers in China have set up joint ventures with domestic manufactures in China. Yokogawa Electric Corporation and Chongqing Sichuan Instruments Co. Ltd. jointly established Chongqing Yokogawa Sichuan Instruments Co. Ltd., which is engaged in the production and sale of pressure transmitter. Emerson and Far East Instrument Co., Ltd. (北京遠東儀錶有限公司) jointly established Beijing Rosemount Far East Instrument Co., Ltd. (北京遠東羅斯蒙特儀錶有限公司) to produce pressure transmitters. The instrument department of ABB set up a new production line in Shanghai. And in 2005, E＋H established a production base of instruments in Suzhou to engage in the production of various on-site instruments, including pressure transmitters.

For industrial end-users, as a key part in their production process control, the stability of the industrial automation instruments used in such production process affects not only the production process but also the end-users' own reputation. Hence, stability and reliability of instrument products are the most important selection criteria for end-users.

**End-users Product Selection Priorities**

| Selection Criteria | Priority |
|---|---|
| Stability | 1 |
| Failure rate | 2 |
| Ease of installation | 3 |
| After-sales services | 4 |
| Degree of Precision | 5 |
| Ease of use | 6 |
| Delivery time | 7 |
| Price | 8 |

*Source:* The PRC Instrument Industry Research and Development Report (中國儀器儀錶行業調研報告) dated March 2008

**Electronics Actuator and Control Valve**

The market for electronics actuator is historically dominated by product manufactured by foreign manufacturers. Domestic manufacturers in China have started to gain market share in the high-end market. In 2006, annual sales of electronics actuators was approximately RMB1.5 billion in the PRC, of which sales of products manufactured by PRC manufacturers was approximately RMB700 million.

In 2006, the total sales of control valves in China were approximately RMB4.4 billion, of which approximately RMB2 billion consists of sales of control valves produced by domestic Chinese manufacturers.

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## HOROLOGICAL INSTRUMENT INDUSTRY

The global quartz watch movement industry is an oligopoly market dominated by a relatively small number of market players.

According to the Report on the PRC Quartz Watch Movement Development and Industry Status Analysis (中國石英錶芯發展及產業現狀評析) dated July 2009, over the past decade the annual global output of watches has been stable at approximately 1.2 billion to 1.3 billion pieces, with quartz watches accounting for approximately 1.1 billion to 1.2 billion pieces, and low-end quartz watches accounting for an estimated 800 million to 900 million pieces.

The high-end watch market is characterized by branded, multi-functional watches. This segment of the global watch industry is dominated by Swiss manufacturers, with limited market shares by other European and Japanese producers. The high-end watch movements produced by watch manufacturers are generally retained exclusively for own use and generally not sold to external customers.

The mid-end watch market is characterized by watches with higher technology contents such as multi-functional quartz watches (多功能石英錶), radio-controlled watches (電波錶) and IT watches (信息錶). Quartz watch movements catering to this market segment are dominated by Seiko and Citizen.

The Group focuses on the low-end watch segment, which is characterized by fashion accessory watches, toy watches and gift watches. With annual output of 800 to 900 million pieces, low-end watches account for approximately 70% of the total global watch output by volume. The quartz watch movements in this segment are dominated by Seiko, Citizen and three other leading Chinese manufacturers. The three leading Chinese manufacturers, along with eight other smaller Chinese manufacturers, collectively produced approximately 400 million quartz watch movements per year, with the balance produced mainly by the Seiko and Citizen.

Unlike the global watch industry where there are numerous watch assemblers and manufacturers, the global quartz watch movements industry is an oligopoly dominated by a relatively small number of manufacturers. The Directors believe the entry barriers are high as (i) quartz watch movements are high precision instruments with high technical and production expertise requirements, (ii) quartz watch movement designs, including the designs of the raw materials and components used, are generally proprietary to the various manufacturers, and (iii) various high precision equipments and machineries used in the production processes are also proprietary to various manufacturers and are generally not available for purchase commercially.

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In recent years, large shifts have been seen in the strategies of the Swiss and Japanese watch producers. The largest Swiss watch producer, Swatch, has since 2006 stopped overseas production of low-end quartz watch movements. Citizen in recent years has altered its strategy to de-emphasize focus on the low-end market segment to instead focus on the higher-end market segment. Seiko, the global industry leader, has turned its focus on the higher-end segments of the quartz watch movement market. According to the Report on the PRC Quartz Watch Movement Development and Industry Status Analysis (中國石英錶芯發展及產業現狀評析) dated July 2009, at the end of 2008, Seiko, the largest global low-end quartz watch movement manufacturer, with its principal manufacturing lines in Singapore, Malaysia have ceased production and left the low-end quartz watch movement market.

The PRC quartz watch movement industry has been growing steadily in recent years with annual production volumes reaching nearly 400 million quartz watch movements in [2008]. Behind only Japan, the PRC is now the second largest low-end watch movement manufacturing base in the world. The significant price advantage Chinese manufacturers have over their Japanese counterparts has resulted in Chinese manufacturers increasingly gaining market shares from the Japanese in the low-end segment, with the mid-end segment representing substantial longer term opportunities for Chinese manufacturers that can upgrade their product qualities.

According to the Report on the PRC Quartz Watch Movement Development and Industry Status Analysis (中國石英錶芯發展及產業現狀評析) dated July 2009, the Group is one of the three PRC quartz watch movement industry leaders in 2008 in terms of production volume, and the only domestic enterprise being acknowledged to lead industry innovations with products that are of international quality standards.

## GOVERNMENT POLICY AND REGULATION

According to the Opinions of the State Council on Accelerating the Invigoration of Capital Goods and Equipment Industry ("State Council Opinions") (國務院關於加快振興裝備製造業的若干意見) dated 13 February 2006, the strong invigoration of the capital goods and equipments industry is an important directive for the Chinese government. The capital goods and equipments industry, which industrial automation instruments is included, is deemed a pillar industry that is crucial towards the developments of the overall Chinese economy and national defense infrastructure.

The State Council Opinions outlines various policy initiating to invigorate the capital goods and equipments industry, it views as having, amongst other problems, (i) weak technical and innovation abilities, (ii) strong reliance on foreigners, (iii) unreasonable product or output mix, and (iv) weak competitiveness internationally. Various detailed policy directions were highlighted, including the following:

1. Using policy directives to assist in the development of a group of large, relatively competitive domestic enterprises with strong and proprietary expertise in manufacturing know-how in order to satisfy the demands for the Chinese energy, transportation, national defense and other sectors;

2. The development of domestic automation control and systems and critical high precision detection and testing instruments;

3. Use major national projects as a foundation and basis for promoting the growth of domestic capital goods and equipment enterprises;

4. Strengthen policy supports and encourage governments at all levels to enhance supports for educational institutions and initiatives to help develop and foster the necessary talent pool and foster closer collaborations with enterprises;

5. Revise tax policies when appropriate, including import tax exemptions or rebates for key components and materials used by domestic enterprises for the production of capital goods and equipments and cancellation or gradual cancellation of tax exempt status for imported finished capital goods and equipments;

6. Encourage procurements of domestically produced capital goods and equipments, using preferential procurement policies for domestically produced products in major national projects as showcase for domestic enterprises; and

7. Strengthen financial supports, including setting up dedicated funds for supporting initiatives that can help upgrade the industry and enhancing R&D tax incentives towards investments in areas such automation control and innovation technologies.