



STRIDER

EUROPE IN THE CROSSHAIRS:

The PRC's United Front Is Boosting Efforts
to Target the Semiconductor Sector



Executive Summary

From artificial intelligence and smartphones to electric vehicles and data centers, semiconductors are critical in powering and advancing today's technologies. For years, the People's Republic of China (PRC) has played a significant role in the global semiconductor industry as both a major consumer and producer.

But as the PRC works to modernize its military and become a global leader in technology, it's seeking foreign sources of expertise to obtain advanced semiconductors. Dozens of PRC government documents published in recent years emphasize leveraging foreign intellectual property (IP) and talent to advance their domestic integrated circuit (IC) industry¹ through three main methods:

Recruiting international talent

Strider's global talent flow data shows that over the past 20 years, more than 30,000 individuals have left top European technology companies, including premier semiconductor firms, and moved to PRC-headquartered companies. PRC economic statecraft actors leverage government-backed talent programs, overseas alumni associations, and industry events to encourage overseas experts to relocate.

Expanding international research collaboration

Strider's global publications data shows there have been more than 3,000 instances of collaboration between top European semiconductor companies and PRC organizations over the past 20 years, including those linked to the PRC government and military. This collaboration allows PRC government organizations to build relationships with overseas experts and facilitate their travel to the PRC for technical exchanges and recruitment into PRC government talent programs.

Acquiring leading global companies

The PRC government is also funding the acquisition of global technology firms. Strider's global investment data shows that over the past 20 years, more than 200 instances of PRC organizations, including several state-owned enterprises, investing in European semiconductor companies.

In Europe, one such talent-recruitment organization is called the IC-Forum. At its peak, the IC-Forum boasted nearly 200 members. By 2019, 101 members had returned to the PRC, where more than 15 percent were inducted into the Thousand Talents Program, one of the PRC's most elite talent-recruitment initiatives.

Shortly after the U.S. government unveiled its new semiconductor trade restrictions in 2022, General Secretary Xi Jinping called for accelerating the country's drive for self-reliance and stated that the PRC must "win the battle in key core technologies."² Such statements are not performative. As the PRC accelerates efforts to acquire advanced semiconductor capabilities beyond America, its efforts to acquire the necessary technology and talent in Europe will increase. The best course of action organizations can take is to increase visibility and awareness of the tactics, techniques, and procedures (TTPs) the PRC government uses to acquire IP, technology, and talent and take necessary steps to safeguard their competitive advantage.

On the Front Line of a Geopolitical Battle for Technology and Talent

In October 2022, the U.S. government imposed unprecedented restrictions on cutting-edge semiconductor technology exports to the People's Republic of China (PRC). Shortly after, the Netherlands and Japan followed suit. These actions have turbocharged a years-long battle between the PRC and the West for semiconductor-industry intellectual property (IP)—and Europe is at the epicenter.

The PRC's efforts are organized, systematized, and effective. The first step in countering further widespread IP theft in the semiconductor industry is building awareness. Utilizing Strider's proprietary data, this report will provide context and analysis of the PRC's tactics, techniques, and procedures (TTPs) to obtain IP in Europe and reveal real-world examples of how the PRC is accelerating its efforts in a push to leapfrog competitors in developing dual-use technologies.

Extending Influence and Control: Understanding the United Front and Its Role in Europe

Established during the 1940s Chinese Communist Revolution, the “United Front” is responsible for advancing the Chinese Communist Party’s (CCP) influence in industry and civil society both at home and abroad. The United Front is a network of entities employed by the CCP to align nonparty actors with its policies and neutralize internal and external opposition to CCP rule.³ Referred to by General Secretary Xi Jinping as one of the CCP’s “magic weapons,” the United Front appoints influential persons in the public and private sectors to advance the country’s strategic initiatives. It also provides networks and cover institutions used by Chinese intelligence services to conduct activities overseas.⁴

Incorporating traditional political-influence operations as well as commercial activities, the United Front’s efforts in Europe have been expanding for years—specifically in the semiconductor industry. In 2014, the PRC State Council published the *Guideline for the Promotion of the Development of the National Integrated Circuit Industry*.⁵ This document asserted that the PRC’s semiconductor industrial development was essential to “the maintenance of national security” and “increasing comprehensive national power.” It also spurred the establishment of the RMB 120

billion (EUR 14.6 billion) National Integrated Circuit Industry Investment Fund.⁶ The following year, the State Council published *Made in China 2025*, an industrial strategy that identified semiconductors and the equipment needed to manufacture them as top priorities.⁷

As a result of the United Front’s expansion, European semiconductor companies find themselves increasingly in the crosshairs of a geopolitical battle for intellectual property and talent.

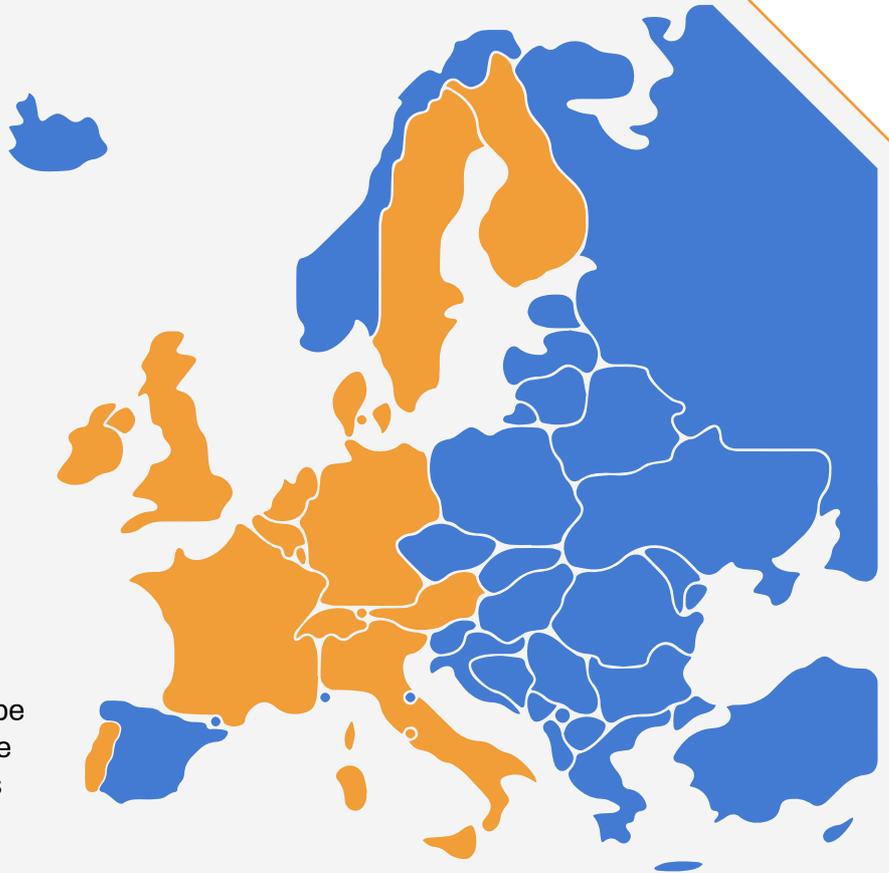
Two organizations that are part of the United Front system play central roles in targeting European semiconductor technology: the Federation of Chinese Professional Associations in Europe (FCPAE) and one of its subsidiary organizations, the European Chinese Microelectronics Professional Forum—also known as the IC-Forum.⁸

The FCPAE was founded in Germany in 2001 with the stated goal of serving the PRC and “contributing to the strength of the motherland and the rejuvenation of the nation.” Consisting of more than 60 professional organizations in some 13 European countries, the association organizes events and provides services that

promote the return of “overseas Chinese” from Europe to start businesses or work in laboratories in the PRC.⁹ Though the FCPAE claims to be nonpolitical,¹⁰ its leaders receive direct instruction from CCP and PRC government authorities,¹¹ and CCP-led entities advertise and attend its events.¹²



The FCPAE’s Presence in Europe



The Federation of Chinese Professional Associations in Europe (FCPAE) currently comprises more than 60 professional organizations in 13 European countries.

By incorporating professional associations like the FCPAE, alumni associations, start-up incubators, and investment funds, the United Front acts as a critical cog in a machine that facilitates the transfer of European technology and talent to the PRC.¹³

Strider’s proprietary data uncovered an example of this system playing out to critical success in the PRC-based semiconductor start-up, AutoRock.

How the PRC is Advancing its Domestic Integrated Circuits (IC) Industry

PRC government documents call for leveraging foreign IP and talent to advance its domestic IC industry through three main methods:

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Expanding international research collaboration

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Acquiring leading global companies

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The United Front in Action: AutoRock and the PRC's Electric Vehicle Industry

The origins of AutoRock illustrate how the United Front system is actively acquiring European semiconductor companies' talent and know-how to advance PRC state industrial objectives.

Founded in 2013, AutoRock is a PRC-based semiconductor start-up that provides digital instrument clusters to automotive manufacturers. Integrated circuits (ICs) play a fundamental role in digital instrument clusters, and their demand has grown with

the rise of next-generation electric vehicles (EVs).¹⁴ At 2015 Auto Shanghai, the PRC's premier international automotive exhibition, AutoRock's digital instrument clusters were found in seven of the 14 new, domestically produced EVs. Astoundingly, AutoRock was founded just 16 months before the event.¹⁵

AutoRock's stunning success can be traced back to Europe and the company's founder, Jin Xing (金星).

“TO MASTER FOREIGN ADVANCED TECHNOLOGY.”

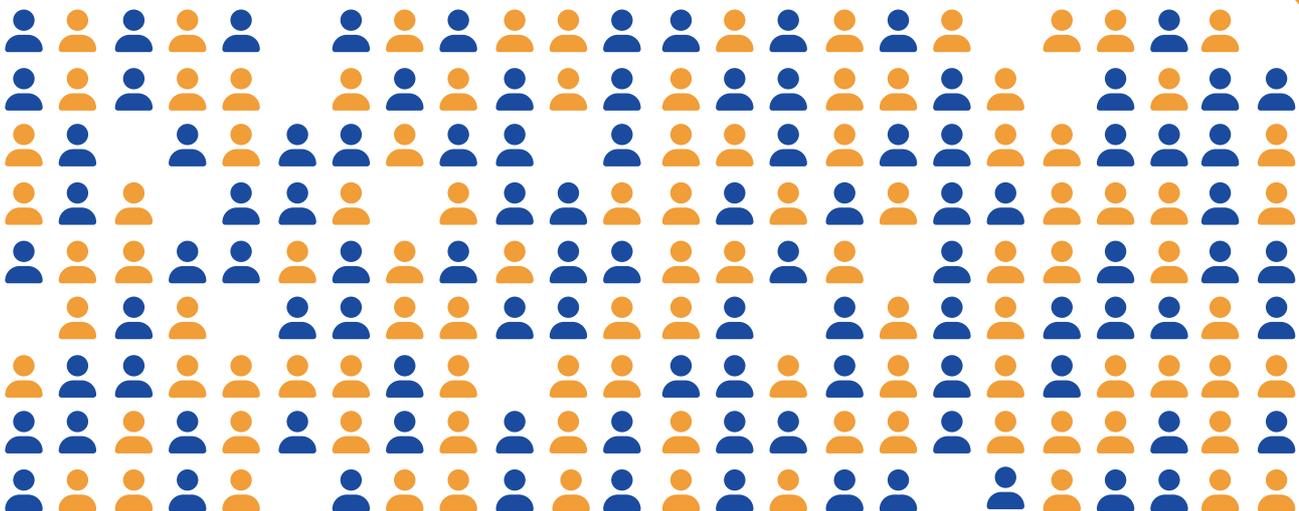
Jin moved to Belgium from the PRC in 1996.¹⁶ He spent the next three years as a postdoctoral researcher at the Interuniversity Microelectronics Center's (IMEC) Silicon Technology Device Integration Division.¹⁷ In 1999, he was hired as chief engineer for the automotive electronics department of a Dutch semiconductor company.¹⁸ In an article published years later, Jin was described as having “worked hard to study the company’s advanced design scheme and production technology.”¹⁹

While living in Belgium and the Netherlands, Jin was active in United Front professional associations seeking to recruit talent for the PRC and helped grow the United Front system in Europe. He served as secretary-general of FCPAE and founded the IC-Forum.

Among its many functions, the IC-Forum “actively contacts overseas Chinese microelectronics experts in Europe ... [and helps] members return to China to start businesses and serve the country.”²⁰

Between 2003 and 2010, Jin led at least seven delegations on visits to China.²¹ In September 2009, Jin led a delegation consisting of employees from his current employer and from his previous employer, IMEC, to the Chinese Academy of Sciences (CAS) Shanghai Institute of Microsystems and Information Technology. According to press coverage of the event, Jin called on the delegation to “serve the country and return to China to start businesses.”²²

Visualization of Talent Transfer



At its peak, the IC-Forum boasted nearly 200 members. By 2019, 101 members had returned to the PRC, where more than 15 percent were inducted into the Thousand Talents Program, one of the PRC’s most elite talent-recruitment programs.³⁸

“THE KNOWLEDGE AND EXPERIENCE IN MY HEAD.”

In 2010, Jin moved back to the PRC, where he began organizing R&D teams in Europe that would cooperate with him on automotive electronic chip designs. PRC media at the time described Jin as “currently working in the Automotive Electronics Department of a Dutch semiconductor company” and leading a research team of fellow “returnees” from Europe.²³

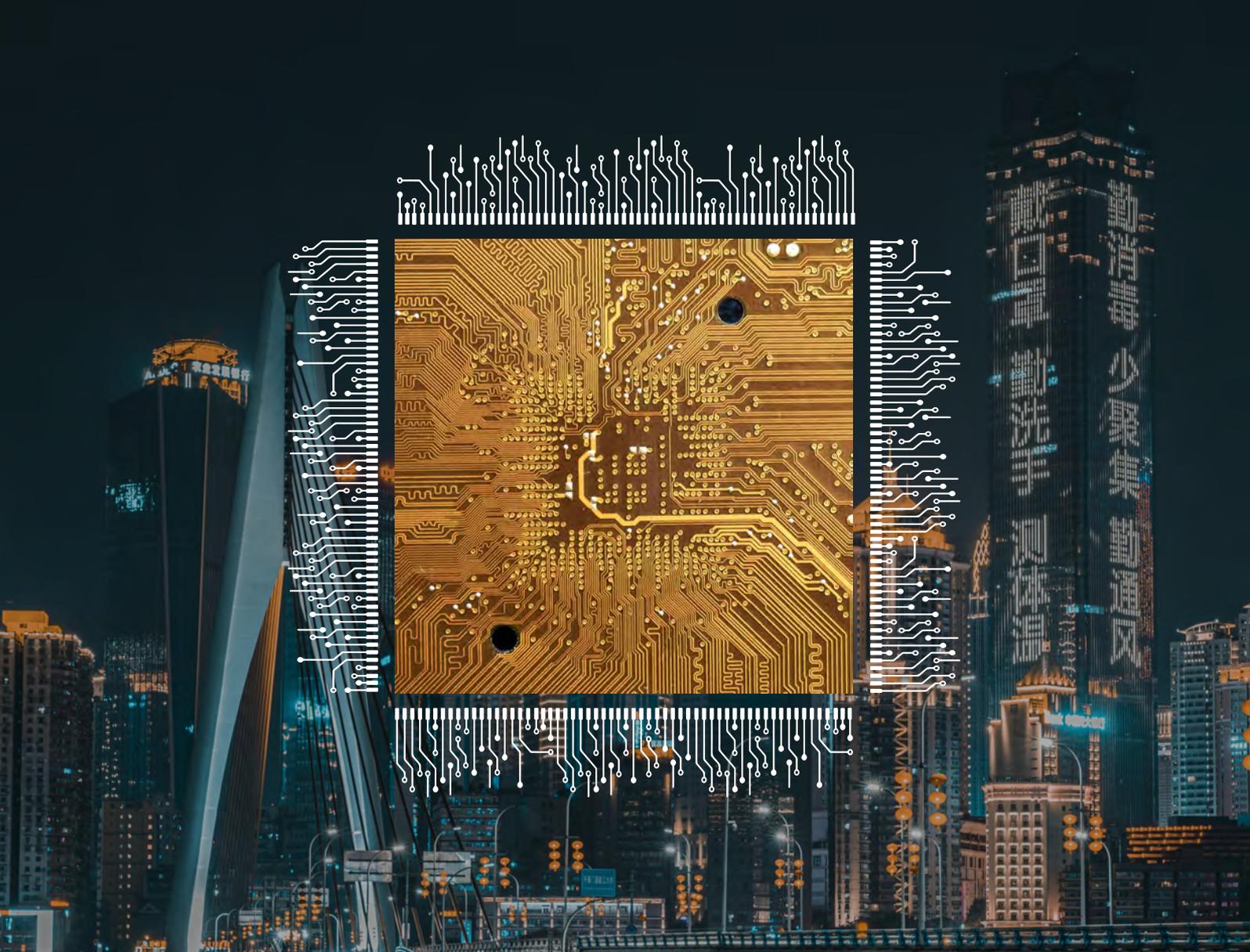
In the years following, Jin was selected into multiple PRC government talent programs, including the elite Thousand Talents Program and the Help Our Motherland through Elite Intellectual Resources from Overseas (HOME) program.²⁴ Talent programs provide incentives such as financial benefits and lucrative employment opportunities to recruit and retain experts in support of national strategic development priorities. For example, the HOME program, which is managed by the China Association of Science and Technology (CAST), recruits overseas talents and encourages them to remain overseas while supporting the development of the PRC's strategic industries.

The Help Our Motherland through Elite Intellectual Resources from Overseas (HOME) program was established by the China Association of Science and Technology (CAST) and 35 overseas-based science and technology groups in 2003.²⁵ HOME recruits overseas talents and encourages them to remain overseas while supporting the development of the PRC's strategic industries.²⁶

Between 2004 and 2014, the HOME program recruited 5,483 individuals living and working outside of the PRC to “serve the country.” Nearly 700 have joined other talent programs.²⁷

CAST is an organization whose stated mission is to serve “as a bridge that links the Communist Party of China and the Chinese government to the country's science and technology community.”²⁸

CAST manages a network of HOME “workstations” in foreign countries. These workstations provide the United Front a platform for scholars and professionals to share research and knowledge.²⁹ As of 2019, more than 30 workstations had been established in locations throughout Asia, Europe, and the U.S., including Belgium and Silicon Valley.³⁰



In 2011, Jin again increased the reach of the United Front by founding a CAS center in China to develop automotive semiconductor technology in collaboration with a team of researchers in Europe.³¹ By the end of the year, he had recruited at least six members of the team to come to the PRC, where they became the core of the center's 50 experts in automotive electronics.³²

According to public comments by Jin, he and his recruits' former European employers took steps to ensure that they did not take IP with them when they left. Jin joked later, however, that the companies could not stop him from bringing back "the knowledge and experience in my head."³³



**“BREAKING THROUGH THE
INDUSTRY MONOPOLY OF
FOREIGN COMPANIES.”**

In 2013, Jin founded AutoRock with a stated mission to “break through the industry monopoly of foreign companies.”³⁴ The PRC government’s material support for AutoRock, years before its formation, is apparent when examining its corporate ownership. While Jin holds the largest share, 30.6 percent, his former employer—the CAS Institute of Microsystems and Information Technology—holds 15.7 percent. The remaining shares are held by Shanghai and Hangzhou government entities and a number of individual investors.

By leveraging the know-how he and his team acquired from decades of experience in European companies and advanced research institutions, Jin quickly turned AutoRock into one of the PRC’s top EV semiconductor companies.³⁵

His influence in the PRC has increased over the years, and by June 2023, Jin had become chief technology officer of the Shanghai Automotive Chip Engineering Center.³⁶

AutoRock’s success is impressive, but Jin’s United Front work in Europe is arguably his greatest achievement. At its peak, the IC-Forum boasted nearly 200 members.³⁷ By 2019, 101 members had returned to the PRC, where more than 15 percent were inducted into the Thousand Talents Program, one of China’s most elite talent-recruitment programs.³⁸ Today, many of the Forum’s members hold executive positions in the PRC’s semiconductor industry, where they lead state-directed projects to break the country’s dependence on foreign technology and recruit talent from their European networks.

Notable IC-Forum alumni include:

REN Qiwei (任奇伟):³⁹

In 2006, Ren left a Dutch semiconductor company to work at a Qimonda research center in the PRC.⁴⁰ In 2009, the research center was acquired by a Tsinghua Unigroup-backed start-up run by Ren.⁴¹ Tsinghua Unigroup is a government-supported shareholding group with more than 200 subsidiaries, many of which are semiconductor start-ups. In 2011, Ren was selected into the Thousand Talents Program.⁴² By 2022, he became CEO of UNISOC, a subsidiary of Tsinghua Unigroup and the world's fourth-largest mobile processor manufacturer with 9 percent of global market share.⁴³

ZHAO Chao (赵超):

Zhao co-founded the IC-Forum with Jin while researching complementary metal-oxide semiconductor (CMOS) technology at IMEC in Belgium.⁴⁴ CMOS is a digital circuitry design used in most of today's advanced integrated circuits.⁴⁵ Zhao returned to the PRC in 2010 and was selected into the Thousand Talents Program.⁴⁶ He went on to lead the CAS team that Zhao claims built the country's first R&D line for advanced CMOS technology.⁴⁷

ZHAO Weisheng (赵巍胜):

Zhao joined the IC-Forum while serving as a researcher at the French National Academy of Sciences.⁴⁸ After he returned to the PRC in 2013, he was selected into the Youth Thousand Talents Program.⁴⁹ Today, Zhao is the dean of Beihang University's School of Integrated Circuit Science and Engineering.⁵⁰ Beihang University is one of the "Seven Sons of National Defense" and works closely with China's defense industry and military. He also serves as director of the Fert Beijing Research Institute, which brought the Nobel scientist Albert Fert to the PRC from France.⁵¹ Fert became the first Nobel Prize winner to obtain permanent residence in China.⁵² Today, he teaches at Zhao's School of Integrated Circuit Science and Engineering.⁵³

As the PRC accelerates a systematic approach to target the European semiconductor industry, simply acknowledging this risk is not enough. European governments and semiconductor companies need to be more proactive in developing security measures to safeguard their IP, technology, and talent.

Timeline of Jin Xing

Semiconductor start-up AutoRock's stunning success can be traced back to Europe and the company's founder, Jin Xing.

1996

Jin moves from China to Belgium to work as a postdoctoral researcher at the Interuniversity Microelectronics Center's Silicon Technology Device Integration Division.

1999

Jin starts work at Dutch semiconductor company as chief engineer.

2003-10

Jin leads at least seven delegations on visits to China.

2004

Jin establishes the IC-Forum, a subsidiary organization within the FCPAE that focuses on integrated circuits.

2010

Jin leaves the Dutch semiconductor company and returns to China. He begins organizing R&D teams in Europe that cooperate with him on automotive electronic chip designs.

2013

Jin founds AutoRock.

2015

AutoRock debuts at the Auto Shanghai exhibition, where its digital instrument clusters are found in seven of the 14 domestically produced EVs.

2018

The IC-Forum permanently relocates to China. 101 of its members have also returned, while the other members remain in Europe today.

2023

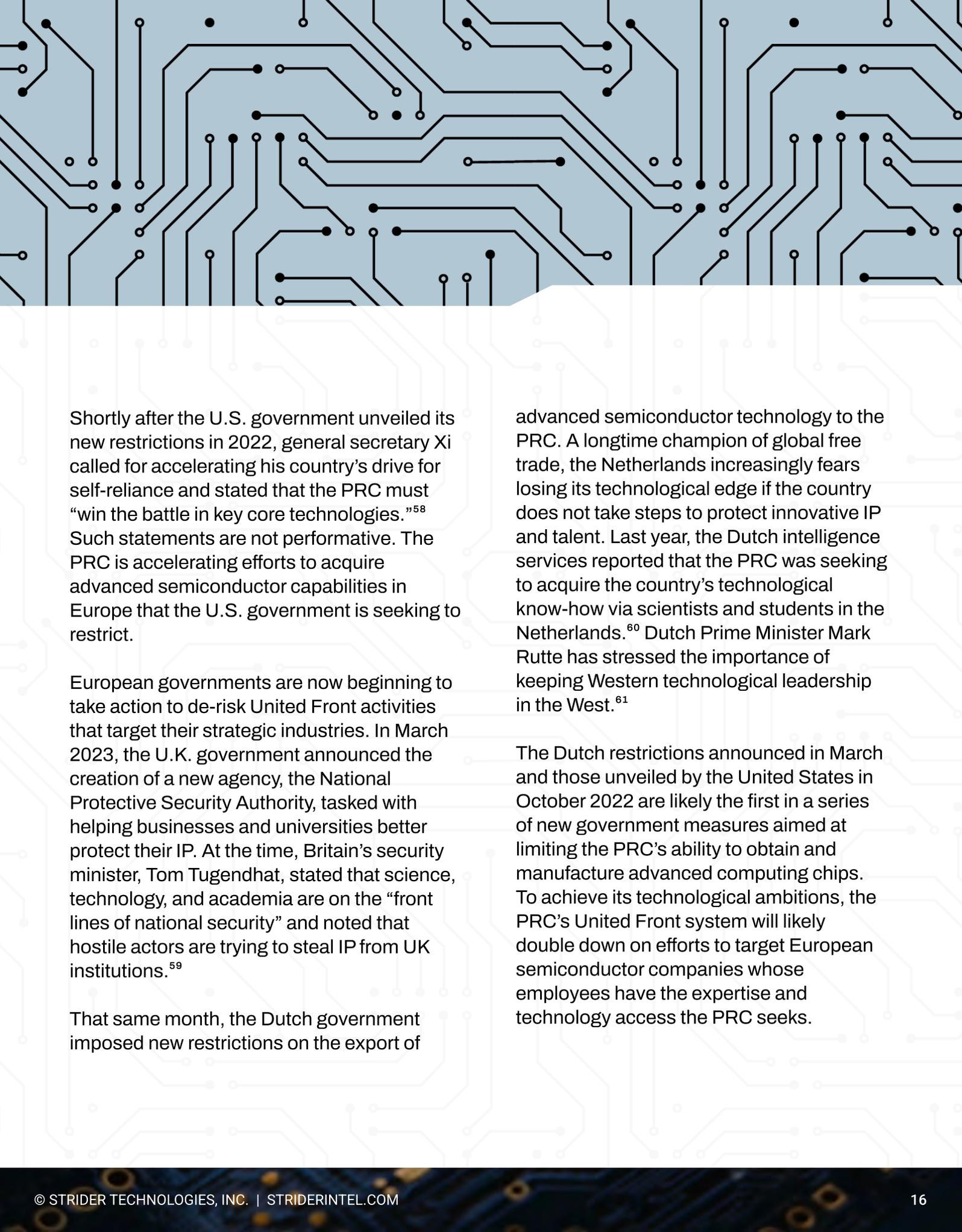
Jin is named chief technology officer for the Shanghai Automotive Chip Engineering Center.

Pursuing Semiconductor Independence: United Front Accelerates Efforts to Leapfrog Competitors

Despite its objectives, the PRC's IC sector remains heavily reliant on foreign IP and technology. In May 2022, the market research firm IC Insights forecasted that by 2026, the PRC will produce only one of every five ICs that the country uses.⁵⁴ According to a May 2019 estimate from the China Semiconductor Industry Association, an organization that advises and coordinates government policy, the PRC faces a gap of 300,000 semiconductor experts.⁵⁵

To address these shortfalls, the PRC is seeking foreign sources of expertise.

Dozens of government documents published in recent years emphasize leveraging foreign IP and talent to advance the PRC's domestic IC industry.⁵⁶ For example, the 2020 *Notice on Several Policies to Promote the High-Quality Development of the Integrated Circuit Industry and Software Industry in the New Era* calls for the government to “facilitate enterprises’ jointly building research and development centers overseas and making better use of international innovation resources to improve the [PRC’s] level of industrial development.”⁵⁷



Shortly after the U.S. government unveiled its new restrictions in 2022, general secretary Xi called for accelerating his country's drive for self-reliance and stated that the PRC must "win the battle in key core technologies."⁵⁸ Such statements are not performative. The PRC is accelerating efforts to acquire advanced semiconductor capabilities in Europe that the U.S. government is seeking to restrict.

European governments are now beginning to take action to de-risk United Front activities that target their strategic industries. In March 2023, the U.K. government announced the creation of a new agency, the National Protective Security Authority, tasked with helping businesses and universities better protect their IP. At the time, Britain's security minister, Tom Tugendhat, stated that science, technology, and academia are on the "front lines of national security" and noted that hostile actors are trying to steal IP from UK institutions.⁵⁹

That same month, the Dutch government imposed new restrictions on the export of

advanced semiconductor technology to the PRC. A longtime champion of global free trade, the Netherlands increasingly fears losing its technological edge if the country does not take steps to protect innovative IP and talent. Last year, the Dutch intelligence services reported that the PRC was seeking to acquire the country's technological know-how via scientists and students in the Netherlands.⁶⁰ Dutch Prime Minister Mark Rutte has stressed the importance of keeping Western technological leadership in the West.⁶¹

The Dutch restrictions announced in March and those unveiled by the United States in October 2022 are likely the first in a series of new government measures aimed at limiting the PRC's ability to obtain and manufacture advanced computing chips. To achieve its technological ambitions, the PRC's United Front system will likely double down on efforts to target European semiconductor companies whose employees have the expertise and technology access the PRC seeks.



Towards a Collective Security Approach

While the battle for IP and talent ramps up across Europe and throughout the world, companies and governments can take proactive measures to secure important and critical technology from state-sponsored IP theft. We must work together to protect innovation and fair competition to ensure technical advances remain part of our collective competitive advantage.

For access to the sources cited in this report, reach out to our team via email at info@striderintel.com

