Science, Technology, Education and Health News from China

Number 102 – December 2012

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Introduction
This month’s newsletter features China’s home-developed GPS system—Beidou/Compass Navigation System which is now officially available for commercial use. In education, all provinces in China released plans to allow children of migrant workers to take college entrance examination at the city of their current residence. Education fairs in China see an increasing number of less well-known U.S. universities looking for less qualified Chinese students. In science and technology, the longest high-speed railway linking Beijing with Guangzhou has been launched. A new legislation in China officially legalizes on-line post deletion. Chinese Telecommunication giant Huawei will soon open research center in Finland. In health, officials involved in the scandal of testing genetically modified rice on Chinese pupils have been sacked, investigation still on-going.

The Science, Technology and Education Section of the Embassy of the Switzerland in China wishes you a prosperous year of 2013!

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1 Please click on the blue texts to activate the hyperlinks to either email addresses or related websites.
China’s GPS Navigation System Officially Available for Civilian and Commercial Use

Beidou (also known as “Compass”), China’s own competitor to GPS, is now officially available for civilian and commercial use in the Asia-Pacific region. The news was announced by the official press Xinhua News Agency in December, which reported that a spokesman said the service is “comparable” to GPS, and is capable of pinning down locations by 10 meters (about 33 feet).

China started to build up its own space-based Positioning, Navigation and Timing (PNT) system in 2000 by launching the first satellite for an experimental version of the Beidou. The first Beidou Navigation satellite was launched in April, 2007. It was the initial step in the roadmap towards the Beidou Regional Navigation System. Four years later, in April 2011, China sent the 8th Beidou Navigation satellite into orbit, marking the successful formation of the Beidou Regional Navigation System, followed by the 12th and 13th satellites into orbit in April, 2012. The Beidou Regional Navigation System was fully completed on October 26th, 2012, when the 16th satellite was launched.

The Beidou network is planned to expand to a constellation of 35 satellites by 2020, at which point it could rival the U.S. Global Positioning System (GPS), the EU-developed Galileo and Russia’s Global Navigation Satellite System (GLONASS) for services around the Earth. Upon full implementation, positioning accuracy of Beidou is expected to be better than 10m, velocity accuracy better than 0.2m/s and timing accuracy at 20ns. To compete with foreign rivals, the Beidou terminal features an unique function which enables communication with the ground station by sending and receiving short messages, 120 Chinese characters in each, in addition to the navigation and timing functions that the world's other major navigation systems can provide.

Experts believe that the home-grown navigation system Beidou will gradually reduce China’s reliance on the US-developed GPS system, especially in national security-related projects. Since its demonstration phase, the Beidou navigation satellite system has been used in the area of transportation, marine fisheries, hydrological monitoring, weather forecasting, forest fire prevention, timing for communication systems, power distribution, disaster mitigation, national security and many others. So far the service of Beidou is limited to government and military clients. By opening up the system to commercial use, a market with huge potential is incubating.

According to the prediction of CCID Consulting, the scale of China’s Beidou satellite navigation industry will amount to RMB 30.346 billion Yuan in 2014, the compound annual growth rate in the next 3 years being as high as 52.3 percent. A Chinese Beidou Satellite Navigation industry union predicts that the Beidou Navigation Satellite industry will reach RMB 50 billion Yuan in 2015. In the few years to come, the annual growth rate of the Beidou Navigation Satellite industry will be over 50 percent, or even over 60 percent, with demands in the civil market increasing steadily\(^2\). A number of domestic businesses are working towards reasonably-priced terminals and applications to materialize the estimated growth.

RAN Chengqi, the spokesperson of Beidou system announced at the press conference on the official launch of the Beidou system that goal of Beidou system is to take 70 to 80 percent of the now GPS-dominated domestic market by 2020, and to eventually to take 20% of the global market share.

\(^2\) Beidou aiming 20% of global market share, 13.06.2012, China.org.cn: [http://www.china.org.cn/opinion/2012-06/13/content_25637912.htm](http://www.china.org.cn/opinion/2012-06/13/content_25637912.htm)
1. **Easing Gaokao Restrictions: A New Year’s Gift?**

(Asia WSJ, 01-01-2013)

Major Chinese cities in recent days rolled out plans to loosen restrictions on gaokao, the famously competitive college entrance exams for a nation that treasures education, to meet a New Year’s Eve deadline set by the central government. But they might not be as far-reaching as critics had hoped.

The State Council, China’s cabinet, set the deadline in an effort to level the playing field for getting into good schools by smoothing the path for the children of migrant workers. Students without a local hukou — the registration of residence that migrant workers generally lack, denying them local benefits — have to go back to their hometowns to take the gaokao. That puts them at a disadvantage, because elite schools in big cities like Beijing and Shanghai normally give preference to local students.

While critics of the existing gaokao restrictions say they deny some of China’s highest potential students access to education, the limits are welcomed by some local hukou possessing residents who believe the gaokao system that’s already competitive enough presents their children with nearly insurmountable odds.

The move aims at “ensuring the education rights of the children of migrant workers,” and is “crucial to maintaining social harmony,” the State Council said in an August 2012 statement.

Beijing, where nearly 37% residents don’t have a local hukou, according to the Beijing Municipal Bureau of Statistics, posted its plan on the website of the Beijing Municipal Commission of Education on Sunday. But while its plan offers a loosening of the rules, it falls short of offering students a shot at the gaokao.

Starting this year, children of migrant workers have addition access to education if their parents have had full-time jobs for three years and have contributed social insurance for three consecutive years. The students must have completed three-year middle school study in Beijing. But that qualifies them only for exams for secondary vocational schools.

In 2014, they get additional access but still fall short of the full entry the local gaokao offers. If the parents have full-time job for six years and have contributed social insurance for six consecutive years, and their children have completed three-year high school study in Beijing, the children can take exams for higher vocational schools. Kids who want to pursue higher education in Beijing can apply for adult education, self-taught higher education and long-distance colleges.

“It is very difficult to effectively balance between the interests of students with and without a Beijing hukou,” the Beijing education commission said in the statement in an attempt to explain the cautious and gradual nature of the plan.

Beijing’s provisional plan will likely fall short of the hopes of migrant workers, the state-run Xinhua news agency said via its official account on the Sina Weibo microblog service. “The excuse of disturbing educational order” to reach a compromise, the post said, “contradicts the goal of enhancing social justice.”

Southern Guangdong province took a similar approach, though officials there seemed somewhat more determined to free up educational resources.

Beginning this year, the province — where more than a quarter of its residents lack a hukou — will guarantee that the children of what it calls “high tech” skilled workers will gain credits toward taking the gaokao. Beginning in 2016, students who have completed three years of high school study in Guangdong are eligible for the gaokao if their parents have full-time jobs for over three years and have contributed social insurance for a total of more than three years, according to Xinhua.
Shanghai decided to connect its gaokao regulations to its residency management system and is still seeking public opinions, the Shanghai Municipal Education Commission said on its website on Sunday. From 2014, children of qualified residents can take the gaokao in Shanghai.

Applicants of the qualifying residents have to submit copies of their diploma, employment contracts showing more than one year of work or evidence of making investments or starting a business, and contributing to urban social insurance, according to a statement about the resident posted on the central government website on Nov. 22. Authorities will evaluate the applicants’ qualifications based on a residency credit system, but the statement didn’t specify how many credits are required to qualify for such residency.

If the conditions set by the developed areas seem daunting to some parents, there are indeed some places making sweeter offers.

Eastern Jiangsu province said beginning 2013, all students who are enrolled in Jiangsu’s grades one through nine can take gaokao locally. Similarly, central Henan province said late Monday night that beginning in 2013, as long as one of the parents has a full-time job and the children are enrolled in local high schools, the students can take the university entrance exam locally.

Many in the online community on Sina Weibo weren’t impressed with the plans offered by the most economically developed area. “Anyone with some common sense will know that it won’t be a good idea to take gaokao at Henan, where the competition is intense due to big number of students and high admittance thresholds,” said one poster. “There’re not many good universities in Henan and few universities outside Henan will enroll students from there.”

Supporters of the plans unveiled by Beijing, Shanghai and Guangdong believe conditional opening up of the gaokao is more feasible than a complete freeing up that could squeeze educational resources for residents with a local hukou. “Look how crowded Beijing and Shanghai are already. How many graduates from the cities will eventually leave there?” said one person.

Part of the problem, according to critics, is that true gaokao reform isn’t possible without hukou reform, a topic that appears to be gaining steam. “The issues surrounding gaokao exist because of the hukou system...thus we should take timely measures to carry out reforms outside the educational system,” said Wang Xuming, the former spokesperson for the Ministry of Education, in an article in the 21st Century Business Herald on Monday.

(\text{http://blogs.wsj.com/chinarealtime/2013/01/01/easing-gaokao-restrictions-a-new-years-gift/})

2. \textbf{China Opens Longest High-Speed Railway}

\text{(WSJ, 14-11-2012)}

China has became home to what it says is the world’s longest high-speed rail line, a 2,298 kilometer stretch of metal bisecting the country between the capital Beijing in the north and the southern boom city of Guangzhou.

The project signals that China hasn’t given up on its rail ambitions despite major setbacks. The deadly train crash in 2011 near the city of Wenzhou laid bare deep problems with China’s high-speed rail surge. China’s Ministry of Railways has also endured hits to its finances. But the new line will help China reach its goal of having 18,000 kilometers of high-speed railway by 2015.

The question for Chinese travelers is whether the route beats the hassle of flying.

Anyone who has taken both in China knows that the process of getting on a train is much easier than getting on a plane – provided, of course, that you already have a ticket and aren’t traveling during the Lunar New Year. The food’s nothing to write home about, unless you like writing home about instant noodles, but the cars tend to be clean and the ride smooth.
In the case of the Beijing-Guangzhou line, a passenger will also need an extra dollop of patience. The ride takes eight hours, a sharp reduction from the previous 20 on the still-operational old-fashioned track between Beijing and Guangzhou. But that's roughly enough time to fly between the two cities twice with some airport shopping in between. Unlike the traditional line, the new line doesn't appear to offer an overnight service yet, so it isn't much of an alternative for a passenger hoping to catch some Zs.

In a note last week Barclays said it sees high-speed rail as competitive in terms of travel time, price and comfort. It said the lowest price tickets came to 865 yuan (about $139) for the rail line and 1,190 yuan for air travel, adding that it sees long-term pressure particularly on China's short-haul flight operators.

Chinese airlines agree that high-speed rail represents competition, but dispute the idea that competition is heavy. A representative for Air China said the previous inauguration of the Beijing-Shanghai high-speed rail line pressured air ticket prices, but she said short flight durations still lure customers.

Airlines are also looking for ways to work with rail. James Wang, company secretary at China Eastern Airlines, said the airline has begun introducing ways to integrate tickets and luggage transfer between its planes and the rail lines, so that a traveler could choose to take a train to Shanghai to meet a friend for lunch before zipping to the airport to fly to Beijing on one ticket and without visiting baggage claim.

Mr. Wang also hopes a wider train network will encourage more Chinese people to travel, which he said could benefit the industry long term. "Travelers have more choice, and more choice means more travelers," he said.

(http://blogs.wsj.com/chinarealtime/2012/12/26/china-opens-worlds-longest-high-speed-rail-line/)

3. **China Tightens Internet Controls, Legalizes Post Deletion**

(Reuters, 28-12-2012)

China unveiled tighter Internet control plans on December 28th 2012, legalizing the deletion of posts or pages which are deemed to contain "illegal" information and requiring service providers to hand over such information to the authorities for punishment.

The rules signal that the new leadership headed by Communist Party chief Xi Jinping will continue muzzling the often scathing, raucous online chatter in a country where the Internet offers a rare opportunity for debate. The new regulations, announced by the official Xinhua news agency, also require Internet users to register with their real names when signing up with network providers, though, in reality, this already happens.

Chinese authorities and Internet companies such as Sina Corp have long since closely monitored and censored what people say online, but the government has now put measures such as deleting posts into law.

"Service providers are required to instantly stop the transmission of illegal information once it is spotted and take relevant measures, including removing the information and saving records, before reporting to supervisory authorities," the rules state.

The restrictions follow a series of corruption scandals amongst lower-level officials exposed by Internet users, something the government has said it is trying to encourage.

Li Fei, deputy head of parliament's legislative affairs committee, said the new rules did not mean people needed to worry about being unable to report corruption online. But he added a warning too. "When people exercise their rights, including the right to use the Internet, they must do so in accordance with the law and constitution, and not harm the legal rights of the state, society ... or other citizens," he told a news conference.
Chinese Internet users already cope with extensive censorship measures, especially over politically sensitive topics like human rights and elite politics, and popular foreign sites Facebook, Twitter and Google-owned YouTube are blocked.

Earlier 2012, the government began forcing users of Sina’s wildly successful Weibo microblogging platform to register their real names.

The new rules were quickly condemned by some Weibo users. “So now they are getting Weibo to help in keeping records and reporting it to authorities. Is this the freedom of expression we are promised in the constitution?” complained one user. “We should resolutely oppose such a covert means to interfere with Internet freedom,” wrote another.

The government says tighter monitoring of the Internet is needed to prevent people making malicious and anonymous accusations online, disseminating pornography and spreading panic with unfounded rumors, pointing out that many other countries already have such rules.

Despite periodic calls for political reform, the party has shown no sign of loosening its grip on power and brooks no dissent to its authority.

(http://www.reuters.com/article/2012/12/28/net-us-china-internet-idUSBRE8BO01320121228)

4. **Huawei to Open Research Center in Finland**

(NY Times, 10-12-2012)

Huawei Technologies, a Chinese maker of telecommunications equipment, said on December 10th 2012 that it planned to open a research and development center in Helsinki next year, accelerating its investments in Europe, where its business is expanding rapidly.

The move illustrates a trans-Atlantic difference in attitudes toward Huawei. The company has been largely shut out of the United States market for network gear because of Congressional concerns about possible security threats — fears the company insists are unfounded.

While Huawei has faced difficulties in some European markets, like France, it has done better elsewhere. Huawei employs more than 7,000 people in the region, and it says that total could double in the next three to five years. Huawei already has a research center in Italy and is studying the possibility of opening one in Spain. It also recently announced a $2 billion investment in Britain.

The planned center in Helsinki, involving an investment of 70 million euros, or about $90 million, will work on smartphone development, including features like user interfaces and power management, the company said. When the center opens next year, it will employ 30 people, but this could grow to 100 over the next five years, the company said.

The announcement is a plus for the Finnish technology industry, which has been suffering from the woes at Nokia. The company was once the world’s biggest cellphone maker, but its market share has fallen sharply in recent years.

“‘The open and innovative environment in Finland,’ Huawei said, ‘is an ideal place for Huawei to strengthen our global R&D capabilities for devices, creating opportunities for both Huawei and the Finnish telecommunications industry.’

Huawei has been known mostly for its network equipment, but the company is pushing to make a name for itself with its handsets. Mobile devices accounted for 22 percent of its revenue last year, an increase of 37 percent. That compares with growth of 12 percent for the overall business.

5. **Smaller U.S. Colleges Try to Crack Chinese Market**

(NY Times, 14-12-2012)

In autumn 2012, American colleges recruited at a fair in Nanjing, China held by the EIC Group, a Chinese education agency, and one in Shanghai held by the Institute of International Education, a nonprofit group based in New York.

“This is becoming kind of big business,” said Peggy Blumenthal, senior counselor to the president at the Institute of International Education. “With the economic downturn in the U.S., schools are more eager to have international students at the undergraduate level who are full fee-paying students.”

Among newer entrants are small-town Christian and community colleges that focus on students who may not make it to top universities. Admissions officers from some smaller colleges say they are interested in China partly because they want more globalized campuses, but also because they can find students to pay full tuition.

Annual tuition for international students at Samford University is $24,570, not including housing. At the University of Mary Hardin-Baylor, a Baptist college in Belton, Texas, it is $17,520 per year. Green River Community College, outside Seattle, charges $9,600 per semester; local students pay $3,522 for the same number of credits.

The challenge these schools face while recruiting in China is that they are not among the big-name universities. To compensate, most offer programs to help students with language skills before they enter undergraduate classes. They also emphasize, particularly to nervous Chinese parents, their pastoral care. For the University of Mary Hardin-Baylor, their hands-on treatment is a major selling point in China. Staff members pick students up from the airport, prepare bedding for them when they arrive, take them to the doctor and stay in touch with parents back home.

The possibility of moving to another institution, perhaps a better-known one, is another selling point. This is particularly true of community colleges, which are two-year government-financed institutions that can be used as a steppingstone to four-year universities. Green River Community College, for example, emphasizes the number of students it helps transfer to institutions like the University of Washington or the University of California, Berkeley.

“To be honest, recruitment works better in second- and third-tier cities,” Ross Jennings, a recruiter for Green River, said on a recruiting trip to China. “We can’t compete with the big-name universities, and the top schools in Beijing or Shanghai are looking for brand names,” he said of elite high schools.

China remains a difficult market for lesser-known schools. “It is not easy,” said Scott Han, the assistant director of international marketing at Cascadia Community College in Bothell, Washington, who attended the expo in Beijing. “The parents and students just block their ears and walk away. They really don’t understand that we are just trying to give the less-qualified students a chance to study in the U.S.”

(http://www.nytimes.com/2012/12/17/world/asia/17iht-educlede17.html?pagewanted=2&_r=0&ref=china)

6. **China Sacks Officials Involved in GM Rice Test**

(Xinhua, 06-12-2012)

Three officials who had approved and conducted a controversial test of genetically modified (GM) rice on school children in central China’s Hunan Province had been sacked, authorities said on December 6th.

The officials were punished for “violating relevant regulations, scientific ethics and academic integrity,” according to a statement jointly released by Chinese Center for Disease Control and Prevention (China CDC), Zhejiang Academy of Medical Sciences, and Hunan provincial CDC.
The officials include Yin Shi'an from China CDC, Wang Yin from Zhejiang Academy of Medical Sciences and Hu Yuming from Hunan provincial CDC.

Earlier, the Ministry of Health ordered China CDC to investigate whether dozens of children in Hunan were used in 2008 as test subjects in a U.S.-China joint research project that included GM food Golden Rice.

Greenpeace broke the news on the controversial test in late August 2012, saying that the joint research involved feeding Golden Rice, which is genetically modified to be rich in beta carotene, to 25 children aged between six and eight in Hunan.

It cited a paper published in the August edition of The American Journal of Clinical Nutrition. The paper claimed that Golden Rice is effective in providing vitamin A to children. The research, approved by the National Institutes of Health of the United States in December 2002, was led by Tang Guangwen, director of the Carotenoid and Health Laboratory of Tufts University in the United States. It was intended to explore ways in preventing deficiency of Vitamin A in children.

Tang conducted the research in cooperation with Yin Shi'an from China CDC and Wang Yin from Zhejiang Academy of Medical Sciences.

In 2008, the test was conducted on 80 pupils in Hengnan County of Hunan Province, with 25 of them being fed 60 grams of Golden Rice on June 2. The research team had informed parents of the tested children about the experiment but withheld the truth that GM rice would be used.

(http://usa.chinadaily.com.cn/china/2012-12/06/content_15993459.htm)

Events (January 15th – February 15th 2013)

S&T, Education and Health-related Events in China

China Design Exhibition 2012
Date: December 7th to February 26th 2013
Place: Shenzhen
Contact: http://www.chinadesign-cde.com/

Bo’ao Forum for Asia SME Development Forum 2013
Date: January 16th to 19th
Place: Bo’ao
Contact: http://www.boaoforum.org

The 9th China Expo Forum for International Cooperation CEFCO 2013
Date: January 17th to 19th
Place: Chongqing
Contact: http://server71.ccpit.org/ccpit/website/201210002/en/index.jsp