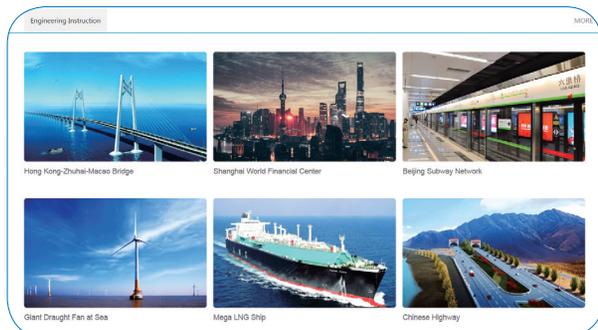




International Knowledge Centre  
for Engineering Sciences and Technology  
under the Auspices of UNESCO  
联合国教科文组织国际工程科技知识中心

# Newsletter

December 2017 No. 4



International Knowledge Centre for Engineering Sciences  
and Technology under the Auspices of UNESCO



**International Knowledge Centre  
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联合国教科文组织国际工程科技知识中心**

The International Knowledge Centre for Engineering Sciences and Technology (shortened as “IKCEST” ) is a category 2 centre under the auspices of the United Nations Educational, Scientific and Cultural Organization (shortened as “UNESCO” ). IKCEST was established on June 2, 2014. The Chinese Academy of Engineering is responsible for the operation and management of the IKCEST.

Under the auspices of UNESCO, IKCEST is a comprehensive and international knowledge centre devoted to the engineering sciences, technology and applied technology. IKCEST aims at connecting engineering sciences and technology institutions globally, assembling various digital resources relating to engineering sciences and technology, building up a public data service platform and corresponding service environment, and coordinating the building of various professional knowledge systems, thus providing knowledge-based services at a global scale in the form of consultancies, scientific research and education for policy-makers and engineering science and technology professionals in the world, with particular reference to the developing countries.

The specific tasks and functions of IKCEST are as follows: to establish an international engineering and technology resources hub; to establish a public data service platform, and to develop the technology for mining and analyzing knowledge from big data; to cooperatively build professional knowledge service systems, and to build capacity in developing countries; to foster interdisciplinary engineering talents with big data processing ability; and to assist UNESCO to fulfill its aims and support its action plans.

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## » IKCEST News

### 2017 training workshop on data sharing of environment and resource and international scientist think-tank for One Belt and One Road countries held in Beijing

A 21-day training workshop on data sharing of environment and resource and international scientist think-tank for One Belt and One Road countries was successfully held in Beijing from Oct. 10 to Oct. 30, 2017. This training was sponsored and undertaken by the Academy for International Business Officials (AIBO), The Ministry of Commerce of the People's Republic of China (MOFCOM) and assisted by the Institute of Geographic Sciences and Natural Resources (Disaster Risk Reduction Sub-Centre of IKCEST), the Chinese Academy of Sciences (CAS). Nine directors or above level officers from Ghana, Oman, Turkey and Ukraine at-

tended this training.

This training workshop included two parts, i.e., special lectures and technical visits. The part of special lectures involved China's national condition, China's reform and opening-up policy and economic development, resource environmental framework and green development model of the Belt and Road, resources environmental information sharing and union of concerned scientists of the Belt and Road, visual analysis and computing driven by artificial intelligence, and big data technology and industry application contents. Dr. Liu Chang from the International Knowledge Centre for



Engineering Sciences and Technology under the Auspices of UNESCO (IKCEST), Prof. Wang Juanle from the Disaster Risk Reduction Knowledge Service System of IKCEST, and other experts gave lessons to trainees. Besides, these trainees visited the Institute of Geographic Sciences and Natural Resources, CAS, the Institute of Oceanology, CAS,

the Shanghai Urban Planning Exhibition Hall, etc.

The training and visit promote exchanges and cooperation among organizations and professionals of countries along the Belt and Road countries in science data, information and knowledge sharing and other fields.



## IKCEST Silk Road Training Base held 2017 12th and 13th (the 19th and 20th in total) Training Program for Silk Road Engineering Science and Technology Development

From November 4 to 14 and November 23 to 27, the IKCEST Silk Road Training Base held the 12th (the 19th in total) Training Program on “chemical engineering” and 13th (the 20th in total) on

“advanced aeronautics and astronautics” for Silk Road Engineering Science and Technology Development, which provided training for a total of more than 110 trainees from 35 Belt and Road coun-



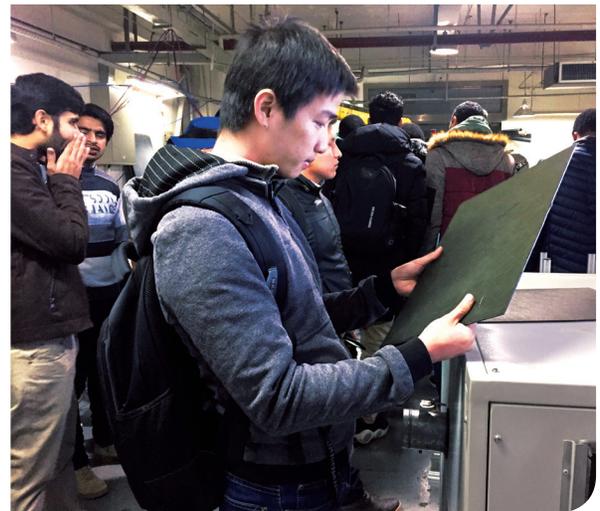
tries including Ethiopia, Angola, Pakistan, Nepal, Ukraine and Yemen.

The Program on chemical engineering, with focus on basic knowledge, industry applications and development trends, offered lectures on extensive related subjects including polymer chemistry, materials chemistry, membrane separation technology, carbon dioxide capture and storage, and the opportunities and challenges of biological sequestration, with a view to introducing the trainees to the importance of chemical engineering and the main subjects and trends of chemical engineering, stimulating their enthusiasm for chemical engineering, developing chemical engineering talent, and pro-

moting the development of chemical engineering.

The Program on advanced aeronautics and astronautics gave specialized lectures on the applications of light and ultralight materials in space flight and aviation, unmanned aerial vehicle, aerospace propulsion systems, high-temperature mechanical behavior of gas turbine, and introduction to mechanics of smart materials. The two Programs also featured Belt and Road historical and cultural lectures such as introduction to Chinese culture and 3D printing tour.

After the conclusion of the Program, the co-organizers conferred graduation certificates on qualified trainees.

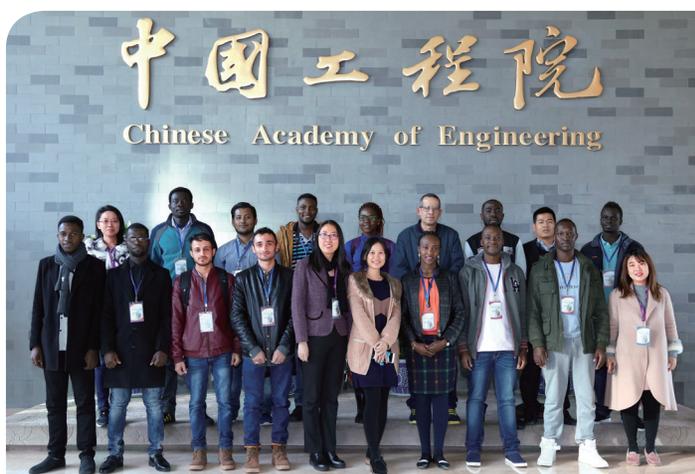


## 2017 IKCEST training workshop on engineering education held in Beijing

The 2017 IKCEST foreign-aid training workshop on engineering education, jointly organized by the International Knowledge Centre for Engineering Sciences and Technology (IKCEST), the International Centre for Engineering Education (ICEE) and MOOC-CN Information Technology (Beijing) Co.Ltd., took place at Tsinghua University from November 5 to 14, 2017. The workshop was attended by 14 overseas students from African developing countries such as Kenya, Zambia and Ghana.

The training combined classroom teaching and field visit. For classroom session, lecturers including Professor Shi Jinghuan, Executive Vice President at Institute of Education of Tsinghua University, Professor Lin Jian, Associate Professor

Zhong Zhou, and Kang Jincheng, former Director of the Department of International Cooperation of the Chinese Academy of Engineering, gave informative and entertaining lectures on relevant topics such as the quality system of China's higher education against the backdrop of globalization, China's Excellent Engineer Education and Training Program, internationalization strategy and science and technology innovation of Tsinghua University. For field visit, the trainees visited the Tsinghua University History Museum, the Fundamental Industry Training Center of Tsinghua University, the headquarters of MOOC-CN, the Chinese Academy of Engineering (CAE), and the IKCEST Secretariat. During the visit to the CAE, Liu Chang, Director of





Division of International Cooperation of IKCEST, introduced the founding philosophy and current practices of IKCEST, and asked the trainees to share their opinions and suggestions. The trainees also toured the China Engineering Science and Technology Exhibition and were amazed by China's glorious achievements in engineering science and technology and expressed their admiration for the outstanding contributions of the CAE Members.

After ten days of intense and fulfilling study,

the trainees completed all tasks and passed the online exam, and was conferred the certificates of graduate jointly issued by IKCEST and ICEE. The trainees all gave full affirmation of the training workshop and said that the training, with its well-designed courses and informative content, had broadened their horizons and substantially improved their strengths of scientific research. They expressed their determination to become an excellent engineer, and ones with a global vision.



## Trainees of IKCEST training workshop on engineering education visited IKCEST

A group of foreign-aid trainees of the Engineering Education Sub-Center of IKCEST, which from African countries such as Kenya, Zambia and Zimbabwe, visited IKCEST Secretariat on the afternoon of November 7, 2017.

Liu Chang at the IKCEST Secretariat briefed the trainees on IKCEST's founding philosophy, knowledge service systems and achievements, and played an introductory video of IKCEST. She hoped that the trainees should pay continuous attention to the IKCEST platform and its various knowledge service systems and share their opinions and suggestions on IKCEST's development. After that, the

trainees toured the China Engineering Science and Technology Exhibition and the Gallery of CAE Members' Calligraphy and Painting and expressed great admiration for China's huge achievements in engineering science and technology.

At the end of the visit, the trainees said that they benefited greatly from the visit and expressed thanks to IKCEST for providing them with the valuable opportunity of training and learning. They spoke highly of the solid work and achievements of IKCEST and looked forward to participating in other activities of IKCEST.



## IKCEST conducted survey and study of Engineering Education Knowledge Service System sub-project

On November 10, 2017, IKCEST made a study visit to the Tsinghua University Science Park on the development progress of the Engineering Education Knowledge Service System sub-project. Song Dexiong, Executive Deputy Director of IKCEST, Liu Chang, Director of Division of International Cooperation of IKCEST, Project Manager Fang Ying, ICEE Secretary-General Wang Sunyu, Assistant Researcher Tian Huijun and Li Zhengwen, XuetangX Vice President Li Chao, Vice President of Technology Guan Jian, and Technical Coordinator Zhao Danfeng joined the meeting.

The meeting was chaired by Professor Wang Sunyu. He gave a warm welcome to the IKCEST delegation. At the meeting, Li Chao briefed on the development of XuetangX, Tian Huijun on work related to the Engineering Education sub-platform

and Guan Jian on the development of the Engineering Education Knowledge Service System. IKCEST representatives had in-depth exchanges with other attendees on relevant work. In his closing speech, Song Dexiong made the following suggestions: 1) strengthen “end control” and innovate in training models; 2) sharpen platform positioning and get to know users’ needs; 3) enrich website content by including more resources; and 4) step up publicity to increase the platform’s reputation. He emphasized that the IKCEST platform is not a short-term research project but a long-term initiative which will ultimately be developed into an internet product of knowledge service. He encouraged the Engineering Education Sub-Center team to keep up their good work and score higher marks.



## First video seminar between IKCEST and UNESCO Division of Water Science held at CAE

The first video seminar between IKCEST and UNESCO Division of Water Science was held in Room 220 of the Chinese Academy of Engineering on November 15, 2017. Liu Chang, Director of Division of International Cooperation of IKCEST, Ma Yingchen, Zhang Ye and Fang Ying at IKCEST Secretariat, Professor You Jinjun at China Institute of Water Resources and Hydropower Research, and relevant specialists at UNESCO Division of Water Science including Alexandros Makarigakis (Alex), Youssef Filali-Meknassi, Jose Alberto Gaona Currea, Bruno Nguyen, and Ana Deligny attended the meeting.

At the onset of the meeting, Alex introduced the background and development of the International Hydrological Programme (IHP) and gave an online presentation on the IHP website and its data construction. Alex stated that China is a member state of the program and that IHP has obtained the

liaison information about China's relevant water resources authorities. He looked forward to, through cooperation with IKCEST, deepening communication and coordination with China, promoting useful IHP data globally, and enhancing capacity building of water resources management in countries around the world. Liu Chang proposed that the two sides may collaborate to provide knowledge services for countries by way of co-organizing training workshops and thematic meetings, adding that IKCEST would conduct survey and study domestically for better knowledge of relevant situations to lay foundation for their future cooperation. You Jinjun introduced water resources management in China and the related challenges and difficulties facing the world. In closing, the two sides agreed to continue communication through email and video conference to further clarify the scope and content of future cooperation.



## IKCEST representative attended seminar on deepening cooperation with UNESCO

On November 17, 2017, the seminar on deepening cooperation with UNESCO initiated and organized by the Chinese National Commission for UNESCO took place in Beijing. More than 30 representatives from the Publicity Department of the CPC Central Committee, Cyberspace Administration of China, Ministry of Foreign Affairs, Ministry of Land and Resources, Ministry of Housing and Urban-Rural Development, Ministry of Water Resources, Ministry of Commerce, Ministry of Culture, State Administration of Press, Publication, Radio, Film and Television, Xinhua News Agency, Chinese Academy of Social Sciences, Chinese Academy of Engineering, State Oceanic Administration, State Administration of Cultural Heritage, People's Daily Overseas Edition, Guangming Daily and Tsinghua University attended the meeting.

At the meeting, Du Yue, Secretary-General of the Chinese National Commission for UNESCO, first gave a briefing on the meeting's background. With the appointment of a new Director-General at its 39th session of the General Conference and the withdrawal of the United States, UNESCO is at a new crossroad. As China is set to become the largest contributor to UNESCO's funding, it is imperative for the country to come up with measures to strengthen its influence in UNESCO, especially by addressing the existing issues such as lack of say, few high-level positions being held by Chinese, limited involvement in existing mechanisms, and inadequate utilization of existing platforms. Du Yue identified a number of priorities: 1) strengthen substantial involvement; 2) leverage the role of Category 2 centers; 3) recommend candidates

for positions in international organizations; and 4) strengthen coordination and collaboration among relevant central and local government departments.

Tian Lin, Counsellor of the Department of International Organizations and Conferences of the Ministry of Foreign Affairs, stated that we need to take advantage of this historical opportunity to expand the influence of China as a major responsible country. He also proposed strengthening top-down design to better leverage the coordinating role of the Chinese National Commission for UNESCO in this effort. Representatives from other agencies also gave speeches and offered insights into and suggestions on specific measures to deepen cooperation with UNESCO and steadily increase China's influence. IKCEST's representative shared IKCEST's practices of cooperating with UNESCO at various levels under the leadership of UNESCO and its host the Chinese Academy of Engineering, and proposed several approaches to and suggestions on deepening cooperation with UNESCO.



## 2017 life-long learning and modern education service summit held in Xi'an

On November 23, the 2017 Life-long Learning and Modern Education Service Summit, co-sponsored by China Association of Higher Education, IKCEST and Xi'an Jiaotong University, organized by National Center for Open and Distance Education, and supported by Xi'an Municipal People's Government, was held in Xi'an under the theme "Transition — Docking of Global Perspectives and Innovation of China".

At the summit, Wang Shuguo, Vice President of China Association of Higher Education and President of Xi'an Jiaotong University, Song Dexiong, Executive Deputy Director of IKCEST, and Fang Guanghua, Deputy Mayor of Xi'an Municipal People's Government gave addresses, and 11 distinguished guests, including Kang Kai, Deputy President and Secretary-General of China Association of Higher Education, Michael Worbs, former Chair of UNESCO Executive Board, Han Min, Deputy Director of the Chinese Education Development Research Center under the Ministry of Education and Vice Executive President and Secretary-General of Chinese Society of Educational Development Strategy, Zheng Qinghua, Vice President of Xi'an Jiaotong University, Yossi Dashti, Deputy Director of China-Israel Entrepreneurship and Innovation Center and Vice President of Weizmann Institute of Science, Chen Zhicheng, Standing Committee Member of Basic Professional Committee of Chinese Association for Artificial Intelligence and Director of the AI Professional Committee of the International Society for Information Studies China Chapter, Leslie A. Twine, Director Asia Pacific of Lucas-Nuelle GmbH, Zhao Min, CEO of National Center for Open and Distance Education Limited, Yu Shengquan, Deputy Director of Faculty of Education of Beijing

Normal University, Qin Yuyou, Vice President of China Institute of Rural Education Development, and Liu Wenqing, President of The Open University of Guangdong, gave keynote speeches. The summit was attended by more than 1,300 people from home and abroad, including education experts and scholars, education officials, and representatives of universities and enterprises.

In his opening address to the summit, Wang Shuguo, Vice President of China Association of Higher Education and President of Xi'an Jiaotong University, said that "People in the 21st century have a far greater demand for technology and knowledge than in any period before. Anyone in any place is under the constant pressure to update their knowledge to keep pace with the quickly advancing times. Therefore, life-long learning will become a defining characteristic of this century. It is important to take life-long learning as an effective means to promote human progress, drive cultural exchange and communication between people around the world, and advance affluence and prosperity for all."

In his address, Song Dexiong, Executive Deputy Director of IKCEST, said that "IKCEST together





with Xi'an Jiaotong University has, through specific practices geared to meet the talent development needs in countries and regions along the Belt and Road, provided thematic training on extensive subjects such as big data, medicine, IoT and aviation and aerospace for more than 1,000 trainees from more than 80 countries and regions and put in place an IT-driven Belt and Road oriented talent development system for the effective improvement of the capability, efficiency and quality of modern education services in the internet+ era. IKCEST will remain committed to developing in extensive sectors more high-caliber personnel with a global vision, deep expertise and strong innovation capability to advance the Belt and Road connectivity initiatives and carry forward the Silk Road spirit.”

During the opening ceremony, Wang Shuguo, Song Dexiong, Fang Guanghua, Kang Kai, Zheng Qinghua, and relevant leaders of Shaanxi Provincial Department of Education, Xi'an International Trade and Logistics Park and National Center for Open and Distance Education jointly inaugurated the “Silk Road International School of Xi'an Jiaotong University” project.

During the reporting session, Kang Kai, Deputy President and Secretary-General of China Association of Higher Education, gave a keynote speech on “Reflection on the Basic Directions of Professional Education in Higher Learning Institutions”. He observed that life-long learning and life-long education are two sides of the same coin and the natural result of the convergence of internal needs and external requirements and that

reflection and practice are the two cornerstones of life-long learning and life-long education. Higher learning institutions should focus on developing students' critical thinking skills, practical abilities, integrity awareness, and collaborative skills, which he said are the soul of professional education and the foundation of lifelong learning and which, therefore, should be highlighted throughout the teaching process.

Zheng Qinghua, Vice President of Xi'an Jiaotong University, gave a keynote speech on “MOOC-CN: China's Online Education for the Belt and Road”. Focusing on China's Belt and Road Initiative and citing Xi'an Jiaotong University's effective practices of talent development for the Belt and Road and Xi'an's geographical advantages as the bridgehead of the Silk Road Economic Belt, Zheng Qinghua proposed a new market-based international school mechanism of “government-led, demand-driven, university-enterprise collaboration, and industry-education integration” and emphasized the importance for China to achieve the strategic goal of seizing the commanding height of talent development for the Belt and Road.

The summit forum was held to discuss the development paths and models of life-long learning and modern education service industry in China, explore new ways of supply of normal education and teacher development services against the backdrop of “internet+”, construct a platform of communication for enterprises engaged in different formats of life-long education, and establish a life-long learning system for people in different sectors.



## IKCEST conducted survey and study of Silk Road Science and Technology Knowledge Service System sub-project

IKCEST conducted survey and study of Silk Road Science and Technology Knowledge Service System sub-project on November 23, 2017. Song Dexiong, Executive Deputy Director of IKCEST, Zheng Qinghua, Vice President of Xi'an Jiaotong University and Director of the Silk Road Science and Technology Sub-Center, Suo Zhihai, Director of Network Information Center at Xi'an Jiaotong University, Gong Wending, Director of Social Education Management Office, Vice Dean of School of Continuing Education, Xu Mo, Deputy Director of Network Information Center, and other staff members of the IKCEST Secretariat and the Silk Road Science and Technology Sub-Center took part in the meeting.

Zheng Qinghua briefed the meeting on the implementation of the Belt and Road Initiative, the main activities in 2017, and the plan for the subsequent work. In 2017, the Silk Road Science and Technology Sub-Center made the following achievements: introducing the MOOC-CN platform; completing 530 and 930 iteration development; collecting nearly 700,000 entries of data as planned; organizing 12 sessions of training which covered more than 1,000 people; and co-organizing the Silk Road Robotics Innovations Competition. In 2018, the Sub-Center will focus on the following activities, including creating relevant standards and norms, building an online-offline integrated talent development model, developing and promoting unique





resources, introducing the Chinese Proficiency Test (HSK), and introducing the CTC SOL program, and strives to make breakthroughs. In anticipation of the development progress in 2019, the Sub-Center will, based on the platform of the Silk Road Training Base, unite forces to establish a new market-based international school mechanism featuring “government-led, demand-driven, university-enterprise collaboration, and industry-education integration” to advance the Belt and Road Initiative.

After that, staff members of the Sub-Center gave presentations on the development progress of the Silk Road Science and Technology Knowledge Service System.

After hearing the briefings, Song Dexiong put forward several suggestions on the Sub-Center’s subsequent work: 1) further strengthen under-

standing of the significance of the various activities involved as part of an important national strategy of China; 2) maintain a strong user-centered “end control” awareness; 3) have the future in mind by effectively summarizing the activities in 2017 and well planning the work in 2018; 4) integrate training and platform development to create synergy of “1+1>2”; 5) improve responsibility awareness to achieve exemplary results; and 6) strengthen project management and executive efficiency.

The relevant responsible officers at the Sub-Center expressed their commitment to implementing the suggestions given by the IKCEST Secretariat with a strong sense of responsibility and mission, closely aligning their work with the national strategy, and achieving the Sub-Center project in high quality.

## First international symposium on disaster risk reduction knowledge service held in Beijing

The first international symposium on disaster risk reduction knowledge service, jointly sponsored by IKCEST and the Disaster Risk Reduction Section of UNESCO (UNESCO DRR) and organized by the Institute of Geographic Sciences and Natural Resources Research (IGSNRR) of the Chinese Academy of Sciences (CAS), was held in Beijing from November 21 to 22, 2017. Nearly 40 people, including Song Dexiong, Executive Deputy Director of IKCEST, Soichiro Yasukawa, specialist and coordinator from UNESCO DRR, Gretchen Kalonji, former UNESCO Assistant Director-General and incumbent President of Sichuan University–Hong Kong Polytechnic University Institute for Disaster Management and Reconstruction, Himalchuli Gurung, UNESCO Beijing Office officer, Feng Kai, Deputy Director of the Department of International Cooperation of the Chinese Academy of Sciences, Shi Peijun, Executive Vice President of Beijing Normal University, Liu Jiyuan, researcher at IGSNRR, Liu Chang, Director of Division of International Cooperation of IKCEST, Zhang Ming, Deputy Director of International Cooperation Department of IGSNRR, and relevant representatives from CAS, National Disaster Reduction Center of China, China Institute of Water Resources and Hydropower Research, China Earthquake Networks Center, Sichuan University, and IKCEST Disaster Risk Reduction Knowledge Service System team attended the meeting.

The opening ceremony was officiated by researcher Wang Juanle, Technological Director of the IKCEST Disaster Risk Reduction Knowledge Service System. Soichiro Yasukawa, Himalchuli Gurung, Song Dexiong and Feng Kai gave addresses respectively. During the keynote speech session, Soichiro Yasukawa gave a presentation on “The UN’s Disaster Risk Reduction Section and UNESCO’s Disaster Risk Reduction Actions”, Gretchen Kalonji on “Cross-disciplinary Disaster Research and New Model of Education”, and Shi Peijun on “Global Death Rates of Multiple Natural Disasters and Risk Map of Affected Population”. During the work reporting session, Liu Chang gave a report on “IKCEST’s Founding Philosophy and Current Practices” and Wang Juanle on “Progress and Development Plan of IKCEST’s Disaster Risk Reduction Knowledge Service System”. The attendees had in-depth discussions and exchanges on issues relating to the work reports.

Liu Jiyuan summarized the work in the first stage and give suggestions on specific aspects such as the selection of priority areas of knowledge service, formulation of standards of disaster mega-data, analysis of knowledge service users’ needs, disaster location information knowledge service, disaster big data knowledge service applications, and open knowledge services. With reference to the exchange activities in the previous two stages, Soichiro Yasukawa gave suggestions on



the subsequent activities including case study of disaster meta-data standards, video conferencing communication, and improvement of the disaster risk reduction knowledge service with priorities.

Song Dexiong emphasized the great significance of formulation of standards for disaster meta-data to promote the sharing of disaster data globally. He gave four suggestions: 1) work with the UNESCO DRR to create a long-term mechanism in the form of regular international symposium which to be held annually or every two years; 2) keep close communication between the disaster risk reduction knowledge service system group and the participating high-level experts towards the establishment of a global expert network; 3) strengthen

international cooperation and promote the disaster risk reduction knowledge service system platform globally through UNESCO; and 4) strengthen cooperation and communication with relevant domestic organizations to promote the application of the disaster risk reduction knowledge service.

The meeting closed with a study tour of the National Disaster Reduction Center of China. The IKCEST Disaster Risk Reduction Knowledge Service System (<http://drr.ikcest.org>), hosted by IGSNRR, will fully absorb the outcomes of the symposium and deepen cooperation with relevant international and domestic organizations to comprehensively and steadily improve the system's application and service capabilities.

## IKCEST Silk Road Training Base held 2017 14th, 15th and 16th (the 21st, 22nd, 23rd in total) Training Program for Silk Road Engineering Science and Technology Development

From December 2 to 10, December 9 to 24, and December 17 to 20, the IKCEST Silk Road Training Base held the 14th (the 21st in total) Training Program on “new energy and energy technology”, the 15th (the 22nd in total) on “advanced medical technology” and the 16th (the 23rd in total) on “big data theory and applications” for Silk Road Engineering Science and Technology Development, which provided training for a total of more than 170 trainees from over 30 Belt and Road countries including Pakistan, Nepal, Thailand and Peru.

The Program on new energy and energy technology covers specialized subjects including combustion, turbomachinery and energy conversion, modern energy science and technology and trends, energy recovery technology, new cooling and heat pump technologies, and innovative compressed-air energy storage and key equipment, as well as general subjects such as Belt and Road related historical and cultural background. The Program also included a visit to Xi’an International Inland Port Investment & Development Group.

The Program on advanced medical technology covers specialized knowledge and latest developments in basic and clinical medicine, including aging and brain research, characteristics and use of 16S rRNA gene, light microscopy and techniques of in-situ detection of tissue macromolecules, application of laparoscope and robotic-assisted laparoscopic minimally invasive surgery in urinary surgery, and new developments of drug treatment of diabetes.

The Program on big data theory and applications covers IT development and business applications, productization management of data, cloud computing and big data analytics, legal issues of the entertainment industry, history of China’s communication with the outside world, introduction to Chinese culture, and Chinese paper-cutting. The class also featured a 3D printing tour for an understanding of advanced 3D technology in action and its close relevance to everyday life.

After the conclusion of the classes, the co-organizers conferred graduation certificates to qualified trainees.



## IKCEST and UNESCO Small Islands and Indigenous Knowledge Section held video conference to promote cooperation

IKCEST and UNESCO Small Islands and Indigenous Knowledge Section held a video conference to discuss cooperation between IKCEST's Intelligent City Knowledge Service System with UNESCO in small islands and remote regions on December 19, 2017. Head of the Small Islands and Indigenous Knowledge Section Nigel Crawhall, Project Expert Khalissa Ikhlef and Project Assistant Amalie Larsen, Professor Otthein Herzog, member of the IKCEST Governing Board and Advisory Committee, Professor Cao Buyang of the School of Software Engineering of Tongji University, Li Xiang from Tongji University, Liu Chang, Director of Division of International Cooperation of IKCEST, and Zhang Ye from the IKCEST Secretariat attended the meeting.

At the beginning of the meeting, Nigel Crawhall gave a background briefing and overview of the Small Islands and Indigenous Knowledge Section: one of the major tasks of the Small Islands and Indigenous Knowledge Section is to help Small Island Developing States (SIDS) and other entities in data collection, analysis and monitoring to address the challenge of sustainable development. In Nigel Crawhall's opinion, most of the SIDS are faced with problems such as fragile ecological environment, vulnerability to extreme climate conditions and imbalance in urban and rural development. The Small Islands and Indigenous Knowledge Section of UNESCO hopes to help SIDS achieve sound development by sharing best practices in the sus-

tainable and balanced development of urban and rural areas. Citing specific cases on the ground, Khalissa Ikhlef explained that the challenge facing UNESCO now is to find the right way for SIDS scientists and policymakers to make the best use of local knowledge, including collected data. Khalissa Ikhlef also gave a briefing on the UNESCO SIDS action plan and the SIDS Accelerated Modalities of Action [S.A.M.O.A.] Pathway (also known as the Samoa Pathway), which is the outcome document of the Third International Conference on Small Island Developing States (SIDS Conference) in 2014. Covering such areas as sustainable and equitable economic growth, climate change, sustainable energy, disaster reduction and biodiversity, the Samoa Pathway provides guidance for accelerating the pace of actions for SIDS.

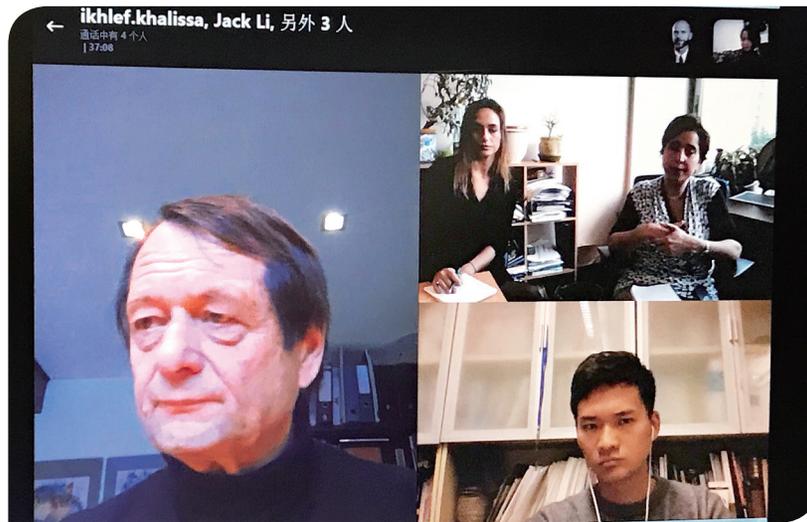
After that, the two sides had a discussion on the specific issues. In data collection, during a visit to UNESCO in September 2017, the IKCEST delegation had proposed for the two sides to cooperate in platform and database, and set up a global observation platform for technology and innovation tools. UNESCO shared the view that given the insufficient data acquisition capabilities, equipment and network of SIDS, the relevant cooperation needs to consider the actual situation of the island countries. IKCEST promised to study the issue and look for the best way to help SIDS in data collection. Speaking of the possible model of



cooperation, the two sides believed that cooperation can be carried out in the platform and data research and training of SIDS. On platform and data research, IKCEST suggested to run pilot programs in selected countries based on IKCEST's data resources (e.g. the Dominican Republic where IKCEST has rich data resources), set up an online platform for data sharing, learn about the country's overall situation in coastal monitoring by evaluating available data, and, on that basis, make coastal planning that can be replicated by other SIDS. UNESCO approved the proposal put forward by IKCEST, but suggested that more economically advanced countries such as Mauritius and Seychelles should be chosen for the pilot program. The two sides agreed to carry out follow-up discussions on

the selection of pilot countries. On training, UNESCO expressed the hope to organize joint training courses with IKCEST in China in 2018. UNESCO will assist with the enrollment of trainees, while IKCEST will provide course training and corresponding support. IKCEST's Intelligent City Knowledge Service System offered to provide special training courses on specific issues for young scientific research personnel from SIDS with its own database and analysis technology, and contribute to the personnel training and capacity building of SIDS.

At the end of the meeting, the two sides agreed to maintain communication through mails and conference calls to further clarify the models and contents of future cooperation.



## IKCEST Silk Road Training Base held 2017 17th (the 24th in total) Training Program for Silk Road Engineering Science and Technology Development in Huaqiao University

The seventeenth Training Program for Silk Road Engineering Science and Technology Development, sponsored by IKCEST, organized jointly by Xi'an Jiaotong University and Huaqiao University, was successfully held in Huaqiao University (Xiamen campus) from Dec. 22 to Dec. 24, reaching the 24th of its serial, while being the 1st special training program on "Silk Road Outreach" for international students. This program attracts 74 foreign students from 13 Belt and Road countries like Thailand, Malaysia, Indonesia, Myanmar, Angola etc.

The training program lasted 3 days, with its contents focused on topics such as the past and future of "One Belt One Road", Chinese traditional etiquette, cultural differences between China and west, internet of things and smart living, cloud computing and big data. This training program also included a field visit of Maritime Silk Road culture, an opera of the Story of Southern Fujian, which is a valuable comprehensive show that combined technology, fashion, art and history.

The success of the program is the fruit of the





joint effort of IKCEST, Xi'an Jiaotong University and Huaqiao University. It is the second IKEST Silk Road training program that was held outside Xi'an, with the first being held in Xinjiang University, and it is also the first union of the "Silk Road" and the "Maritime Silk Road" with Xi'an being the starting

point of "Silk Road" and Xiamen the "Maritime Silk Road". The collaboration between Xi'an Jiaotong University and Huaqiao University is a perfect interpretation of the cultural inheritance and innovation of One Belt One Road.



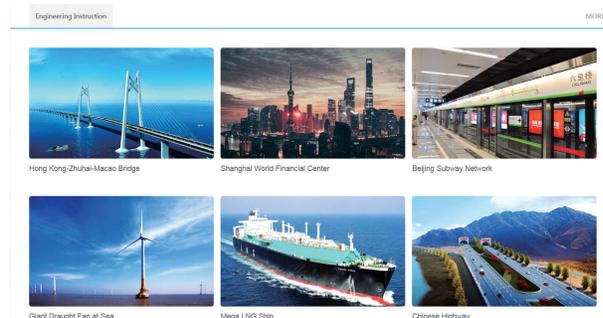
## Version 2.2 of IKCEST platform officially launched

Version 2.2 of the IKCEST online platform was officially launched to provide services for engineering science and technology personnel from developing countries worldwide on December 30, 2017.

Compared to Version 2.1, Version 2.2 offers extensive new services and functions in addition to comprehensive enhancements. New knowledge applications and data set resources are added, including hydrologic, flood disaster and basic geographic databases of Songliao basin in northeast of China, and also knowledge applications such as the Engineering Instruction, and existing ones are improved upon. In terms of functionality, the new platform offers new functions such as on-site messaging, RSS subscription, site map, and a new section dedicated to IKCEST training and event information. In addition, user authentication is unified as part of the effort to integrate the general platform and its sub-systems.

Since the launch on May 30, 2017, the IKCEST general platform and its four knowledge service systems have gained steadily growing influence with increasing visits to its sub-platforms. IKCEST will update its platform on a regular basis in the

light of user traffic information and user feedback to continuously improve its service capability.



Home / Subject Database / Science Databases / Text

### The hydrologic database of Songliao basin in northeast of China

Label: English, Data, Basic, Small Image

Date: 2018-01-29

author: japing

Views: 62

**Data Abstract**  
Based on the reconnaissance and analysis technology, the data set is made up of the reconnaissance and analysis results and the interpretation of remote sensing, and the spatial reference (projection and coordinate system) is Adobe. The survey results images are derived and read in software ArcMap, using a variety of tools for a map, based on the scale of standard training view of interpretation, the formation of vector data is formed into the file. Finally, the data is exported in the vector file. The hydrologic data of river, lake, reservoir and the basin range were extracted from the file library to build the hydrologic database of Songliao basin.

Data Identifier	
Subject Id	Environmental and Toxic
Country ID	CN
Language	English
Data Category	
Category Name	Basic: Geography
Category Code	01
Category Standard Name	Data classification standard of Disaster Risk Reduction Knowledge Service
Category Standard Revision	V1.0
Spatial Cover	Songliao basin(39°43'—53°30'N, 118°30'—135°30'E)
Temporal Cover	2001-2017
Data Type	Formatted Document/Relational database/Excel
Data Volume	2 MB
Data Quality	This data is complete and reliable.
Data Contributor	Bu Kun
Contributor Name	Bu Kun
Contributor Email	bukun@igsn.cn
Contributor Agency	Northeast Institute of Geography and Agroecology, Chinese Academy of Sciences
Creation time	2017.11.10
Responsible Department	
Responsible Name	Northeast Institute of Geography and Agroecology, Chinese Academy of Sciences
Responsible Address	No. 4888 Sheng Bai street, Nuerh North District, Changchun, Jilin
Fax	
Update Frequency	Irregular updates
Resources Type	Self built
Sharing Type	After login
Price	0
Access Link	<a href="http://dx.doi.org/10.5636">http://dx.doi.org/10.5636</a>
Version	1
Data Citation	The hydrologic database of Songliao basin in northeast of China Disaster Risk Reduction Knowledge Service of International Knowledge Centre for Engineering Sciences and Technology (IKCEST) under the Auspices of UNESCO, 2017.11.10. <a href="http://dx.doi.org/10.5636">http://dx.doi.org/10.5636</a>
Last Modified	2017.11.10
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Article link: The hydrologic database of Songliao basin in northeast of China



## » CKCEST News

The China Knowledge Centre for Engineering Sciences and Technology (shortened as “CKCEST”) is a significant part of and vital support for the International Knowledge Centre for Engineering Sciences and Technology (shortened as “IKCEST”).

### CKCEST Northeast Platform on Innovation and Entrepreneurship launched

The 2017 China Smart City (International) Innovation Conference was held in Shenyang on September 22, 2017. China Knowledge Centre for Engineering Sciences and Technology (CKCEST) Northeast Platform on Innovation and Entrepreneurship was launched on the sidelines of the conference. Sun Pishu, Chairman and CEO of Inspur Group, Song Dexiong, Director of CKCEST, and Liu Xiaodong, Deputy Mayor of Shenyang, were present at the launch ceremony.

CKCEST Northeast Platform on Innovation and Entrepreneurship was built by Inspur Group's big data team with instructions from CKCEST and support from Shenyang municipal government. The platform, backed by big data resources provided by CKCEST and Inspur, offers knowledge services, big data services and helps transform S&T achievements into industrialised products, and aims to expedite the connection between S&T resources and industrial resources in the northeast region and facilitate the region's economic and social development. The launch of the platform suggests CKCEST has produced fruitful results in serving local economy.

### MIFS 2017 International Symposium on Frontiers of Machine & Award Ceremony of 2017 China Artificial Intelligence Competition held in Beijing

The MIFS 2017 International Symposium on Frontiers of Machine & Award Ceremony of 2017 China Artificial Intelligence Competition wrapped up on November 4, 2017 at the Academic Hall of the Chinese Academy of Engineering. Prof. Chen Zuoning, Vice President of the Chinese Academy of Engineering, Prof. Sun Maosong from Tsinghua University and Dr. Zhou Ming, Vice President of Microsoft Research Asia, participated in the forum and presented awards to winners at the competition.

In her speech, Prof. Chen Zuoning said artificial intelligence has drawn enormous interest from researchers worldwide, and China has also devoted great attention to this field. China Knowledge Centre for

Engineering Sciences and Technology (CKCEST) and Tsinghua University's Department of Computer Science and Technology have established a joint research centre for knowledge intelligence, with the purpose of overcoming key technology barriers in S&T big data analysis and knowledge intelligence services and making significant breakthroughs in AI application.

The symposium was accompanied by the award ceremony of 2017 China Artificial Intelligence Competition and a sharing session by award winners. The competition consisted of two separate contests - Open Academic Data Challenge and Smart Travel Contest. Microsoft Academic Graph, AMiner.org and smart bike sharing company Mobike are data providers. With a total prize of US\$52,000, the competition has drawn about 4,000 participants worldwide, and 13 teams were awarded.

## 2017 Chinese Congress on Innovative Design & Award Ceremony of 2017 China Good Design held in Shenzhen

The 2017 Chinese Congress on Innovative Design & Award Ceremony of 2017 China Good Design was held in Shenzhen on November 24, 2017. The selection of China Good Design was co-organised by the Innovation Design Alliance of China and China Knowledge Centre for Engineering Sciences and Technology (CKCEST) with the aim of “improving the capacity to create innovative design” as proposed by the “Made in China 2025” initiative and expediting the transformation and upgrade of China's manufacturing industry. Some 600 guests attended the conference, including delegates from the organisers, design experts and researchers as well as media representatives.

The conference was themed on “Innovative Design, Better Future”. Prof. Lu Yongxiang and Prof. Pan Yunhe delivered keynote speeches, and they separately talked about how good design works can create a better future and the development direction of China's digital creative industry. The conference was followed by the award ceremony of 2017 China Good Design. Five-hundred-meter Aperture Spherical radio Telescope, Fuxing high-speed train and Sunway TaihuLight supercomputer were among the award winners. Representatives of the award-winning teams shared their experience in innovative design and made extensive exchanges with the participants.

## Meeting on CKCEST big data intelligent platform development scheme held in Beijing

On the afternoon of October 12, 2017, China Knowledge Centre for Engineering Sciences and Technology (CKCEST) held a meeting on big data intelligent platform development scheme at the conference room 318 of the Chinese Academy of Engineering (CAE). Song Dexiong, Director of the Project Management Of-



vice at CKCEST, presided over the meeting, and Prof. Chen Zuoning, Vice President of CAE, heard a report on the scheme and made instructions.

On behalf of CKCEST, Prof. Wu Fei, Vice Dean of the College of Computer Science and Technology, Zhejiang University, made the report. According to the report, CKCEST covers massive data of China's engineering sciences, and should have basic theories, core calculation methods and supportive framework for intelligent processing of big data so as to identify rules and modes in mass data and provide innovative big data services. Prof. Wu also introduced research progress and application of relevant key technologies, and seven tasks of CKCEST big data intelligent platform development.

Prof. Chen stressed that CKCEST and the general platform should work together to effectively combine big data intelligent technology development and the application of the general platform to ensure the implementation of the big data intelligent development scheme on the general platform.

## Construction of Nutrition and Health Sub-Centre kicked off

In view of the conclusions of the "China Knowledge Centre for Engineering Sciences and Technology (CKCEST) Sub-Centre Construction Plan 2016-2018" as well as actual situations of CKCEST and candidate organisations, a meeting of chief engineers in July 2017 decided to construct a new nutrition and health sub-centre. After inspecting organisations such as National Institute for Nutrition and Health of Chinese Centre for Disease Control and Prevention and COFCO Nutrition & Health Research Institute, the expert group chose COFCO Nutrition & Health Research Institute to establish the Nutrition and Health Sub-Centre. On October 19, 2017, a training meeting of the Nutrition and Health Sub-Centre was held at the conference room 220 of the Chinese Academy of Engineering. The project management office, the general platform, and the Agriculture Sub-Centre exchanged views with COFCO Nutrition & Health Research Institute on the management system and procedures of the sub-centre, development ideas of the general platform and sub-centre construction experience.

## User test of CKCEST active push system completed

On October 16, a meeting on the user test of China Knowledge Centre for Engineering Sciences and Technology (CKCEST) active push system was held at the Chinese Academy of Engineering, with attendance of staffers at sub-centres of chemical engineering, information, medicine, metal, and hydraulic engineering. According to the user test program, testers tested the work flow of the new system, interface friendliness and browser compatibility. Users reckoned that the new active push system functioned well and provided better user experience, and all functions of the system met the requirements for a launch. The test report was submitted. The active push system has supported CAE Member push services, and the new version will further improve the services.

## CKCEST and CNAS Secretariat signed strategic cooperation agreement

China Knowledge Centre for Engineering Sciences and Technology (CKCEST) and the Secretariat of the China National Accreditation Service for Conformity Assessment (CNAS) signed a Strategic Cooperation Agreement on Promoting National Accreditation to Support Scientific and Technological Innovation on November 14, 2017. The signing ceremony was hosted by Wang Haizhou, Member of Chemical Engineering, Metallurgy and Materials Engineering Department of the Chinese Academy of Engineering (CAE). Song Dexiong, Director of the CAE General Office, and Xiao Jianhua, Secretary-General of the CNAS Secretariat, signed the agreement. Representatives of the General Office of the Chemical Engineering, Metallurgy and Materials Engineering Department, CKCEST Project Management Office, and the CNAS Secretariat as well as some users attended the meeting.

Under the strategic agreement, the CNAS Secretariat and CKCEST will capitalise on their respective advantages to pool innovation resources and national quality infrastructure resources during the implementation of key national development strategies and science and technology support programs to promote national scientific and technological innovation.

## Sub-Centres of Agriculture, Meteorology, Geography and Medicine & Health clinched 2017 Best Practice Awards for Knowledge Services presented by China Society for Scientific and Technical Information

The 2017 Conference on Knowledge Service and Intelligence Engineering was held in Nanjing from November 23 to 24. The conference was organised by China Society for Scientific and Technical Information and co-organised by the Institute of Scientific and Technical Information of China and Southeast University. Pan Gang, Deputy Director of China Knowledge Centre for Engineering Sciences and Technology (CKCEST) Project Management Office, attended the conference. Deng Qiancheng, Deputy Chief Engineer of CKCEST, gave a report on the CKCEST's construction progress and its knowledge services. The 2017 Best Practice Awards for Knowledge Services were announced at the conference. Knowledge service cases of four sub-centres - agriculture, meteorology, geography and medicine & health with their knowledge service cases were honoured with the Best Knowledge Service Case.



## »» Top News for Big Data Era

### Chinese government joined hands with Alibaba, Inspur to establish joint research mechanism

The State Council News Office held a press release at 10 am, October 10, 2017. Ning Jizhe, Deputy Director of the National Development and Reform Commission and Commissioner of the National Bureau of Statistics, introduced China's economic achievements since the 18th National Congress of the Communist Party of China and took questions from reporters.

When asked by a Bloomberg journalist about how China pursues innovation-driven economic growth, Ning said the National Bureau of Statistics has worked together with Alibaba and Inspur Group to set up a joint research mechanism. Under the partnership, they will use internet, cloud computing and big data technologies to make sure the statistical data are more accurate and integral and are published in a more timely way. He said China's 13th Five-year Plan on Statistics proposed to introduce internet, cloud computing and big data technologies into statistical work, and they are moving in an orderly manner toward that direction.

Excerpted from Sina Technology

### NDRC issued 13th Five-year Plan on Information-based Government Administration

The National Development and Reform Commission recently published the 13th Five-year Plan on Information-based Government Administration. The plan proposed to advance the construction of an integrated, interconnected and inter-coordinated information-based government administration system characterised by openness, sharing, security and reliability, and the system should meet the expectations for modern national governance. The plan will be used as an important reference for national investments in building the system during the five-year period.

Excerpted from NDRC website

## NASG released Technology Guidelines for Building Smart City's Time-Space Big Data and Cloud Platform (2017 Edition)

The National Administration of Surveying, Mapping and Geoinformation of China recently issued a circular to release the Technology Guidelines for Building Smart City's Time-Space Big Data and Cloud Platform (2017 Edition). The document is of great significance to instruct local governments to accelerate the construction of smart city's time-space big data and cloud platform, strengthen communication and coordination with other departments involved in the smart city initiative and support the development of smart cities.

In order to make the platform more widely applicable, the document has classified the time-space cloud platform into general platform, professional platform and customised platform. For the part of professional platform, there are two development directions. The first is to build a space planning platform to facilitate integrated urban planning. The second is to build an environment monitoring platform, which can be used for monitoring a city's natural resource reserves, environmental and geographic conditions and evaluating outgoing officials' job performance in environmental protection. The 2017 technology guidelines are also demand-oriented and problem-oriented, addressing public concerns and allowing information sharing and business integration. The document provided ten practical cases in such areas as smart community, smart land surveying, smart public security and smart traffic.

Excerpted from NASG website



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