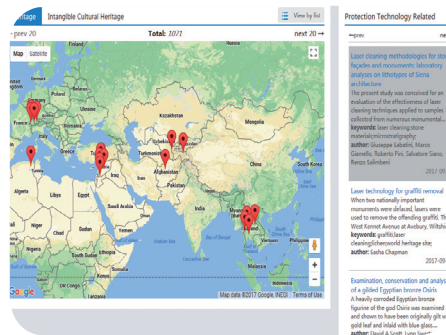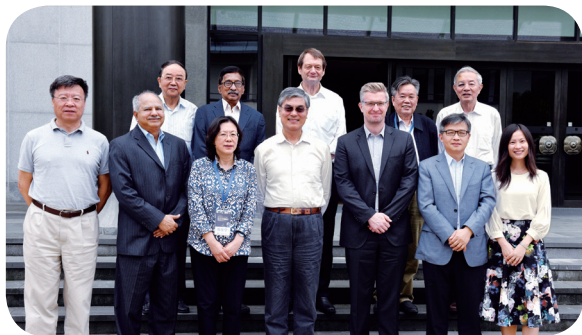UNESCO | IKCEST

**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

September 2017 No. 3

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

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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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WomEng co-founder visited IKCEST for cooperation

On July 3, 2017, Ms. Naadiya Moosajee, co-founder of Women in Engineering (WomEng), paid a visit to the Chinese Academy of Engineering to explore cooperation with the International Knowledge Centre for Engineering Sciences and Technology (IKCEST) and the International Centre for Engineering Education (ICEE), and had a meeting with Liu Chang, Director of Division of International Cooperation of IKCEST, Liu Hongyang and Ma Yingchen from IKCEST Secretariat, and Zhang Man and Wang Xiaoxiao at the secretariat of ICEE.

Ms. Naadiya Moosajee gave a briefing on the background, nature and mission of WomEng. Established in South Africa as a non-profit organisation, WomEng is committed to promoting the participation and contribution of women in engineering science and technology. WomEng, IKCEST and ICEE discussed the current status of female presence in engineering and their common work goals and cooperation possibilities, and agreed to have further discussions through telecommunication on cooperation details.

IKCEST development promotion meeting held in Beijing

On July 5, 2017, a meeting was held at the Chinese Academy of Engineering to promote the development of the International Knowledge Centre for Engineering Sciences and Technology (IKCEST). The meeting was chaired by Song Dexiong, Executive Deputy Director of IKCEST and attended by representatives of participating organisations in four IKCEST knowledge systems — Disaster Risk Reduction, Intelligent City, Silk Road Science and Technology, and Engineering Education, and relevant personnel of the IKCEST platform development team .

Based on full discussions, the meeting reached consensus on a series of topics including work summary of the May 30 launch, preliminary plan of integrated advancement of the general platform and sub-platforms, preliminary plan of IKCEST operation and promotion, and work plan on the September 30 iteration, and set forth clear work goals regarding the September 30 iteration and the subsequent advancement of the IKCEST.

First, experts from the IKCEST platform development team introduced the achievements of platform development, including resource information, main added functions, optimisation, top-down design, resource aggregation at sub-centres, and user traffic of the general platform and its individual sub-platforms, and summarised problems encountered in the process of project development, such as content, platform operation, integration of the general platform and its sub-platforms, and operation.

After that, the platform development team briefed on the preliminary plan to advance the integration of the general platform and its sub-platforms, and had thorough discussions with other attendees on specific issues like unified user authentication and data quality audit in line with the

integration guideline of "strong control, medium coupling, and sophisticated technology".

For the third item on the meeting agenda, the platform development team briefed on the preliminary plan to operate and promote IKCEST platform, and explained the goals and approaches of platform operation, organisational structure for reference, content of general platform maintenance, tasks of operation, proposal on promotion, implementation of operations, and progression of plan.

For the fourth item on the agenda, the attendees discussed the preliminary arrangements of the September 30 iteration of the general platform and the four knowledge service systems. The IKCEST Secretariat assigned specific tasks of the September 30 iteration, and the participating organisations in the development of the general platform and the four knowledge service systems each reported their September 30 iteration plan.

In conclusion, Song Dexiong gave a summary of the meeting. The meeting clarified work in four aspects: 1) goals are clarified — with the ultimate goal being to achieve the September 30 iteration; 2) tasks are clarified — the general platform should strengthen coordination and reduce repeating of the same work by participants, and the individual participating organisations should further refine their development plans; 3) responsibilities are clarified — the IKCEST Secretariat should establish individual accountability and accountability should also be clarified for the participating organisations as well; and 4) progress is clarified — to basically complete iteration and bring the system online before September 25. It is important that IKCEST development produces expected effects. To make that happen, every participant must make concerted efforts to construct IKCEST.

ISTIC visited IKCEST for cooperation

On July 6, 2017, Lee Yee Cheong, former Chairman of the Governing Board of the International Science, Technology and Innovation Centre for South-South Cooperation (ISTIC), paid a visit to the Chinese Academy of Engineering, the International Knowledge Centre for Engineering Sciences and Technology (IKCEST) and the International Centre for Engineering Education (ICEE) and had a meeting with Wang Sunyu, Director of ICEE, Liu Chang, Director of Division of International Cooperation of IKCEST, and project managers Liu Hongyang, Ma Yingchen and Zhang Ye.

Lee Yee Cheong said that his visit was for the purpose of strengthening ties with UNESCO Category 2 centres in developing countries and promoting cooperation among developing countries in science, technology and innovation against the backdrop of the Belt and Road. Lee Yee Cheong shared ISTIC's experience in providing training in countries such as Nigeria and proposed to strengthen development of talents in infrastructure maintenance and repair. The representatives of the three centres expressed the same commitment to strengthening cooperation among developing countries and agreed to further strengthen communication and develop specific cooperation mechanisms.

2017 International forum for online engineering education held at Tsinghua University

The 2017 international forum for online engineering education, jointly sponsored by the International Knowledge Centre for Engineering Sciences and Technology (IKCEST) and the International Centre for Engineering Education (ICEE) and organised by XuetangX, took place at Tsinghua Unisplendour International Centre on July 16. The event received a strong support from China National Steering Committee of Professional Education of Masters of Engineering.

Held under the theme of "Connecting to the Future: Online Learning in Engineering Education", the forum was attended by Chinese and foreign experts including Yuan Si, Director of Research Centre for Online Education under the Ministry of Education, Vice President of University Council of Tsinghua University, and Executive Director of ICEE, Michael Auer, President of International Federation of Engineering Education Societies (IFEES) and President of International Society for Engineering Pedagogy (IGIP), Li Zhimin, Director of Science and Technology Development Centre under the Ministry of Education, Lueny Morell, former President of IFEES, and Danilo Zutin, Vice President of International Association of Online Engineering (IAOE), and co-chaired by Nie Fenghua, Deputy

Secretary-General of Tsinghua University, Director of Tsinghua Online Education Office, Deputy Director of Research Centre for Online Education under the Ministry of Education, and Chairman of XuetangX, and Zhang Bo, Vice President of XuetangX.

In his address to the forum, Yuan Si, Director of Research Centre for Online Education under the Ministry of Education, Vice President of University Council of Tsinghua University, and Executive Director of ICEE, said that in the process of the engineering education being oriented towards the industry, the world and the future, it is necessary to integrate engineering education with new ways of learning offered by online education such as hybrid learning and flipped classroom. He added that it is a topic worth serious reflection and thorough discussion, and called on the attendees to share their insights and suggestions to promote the development of engineering education in the world and allow engineering to contribute more to a beautiful future of humankind.

In his keynote speech entitled "Industry 4.0 and the Impact on Education", Michael Auer, President of IFEES, said that globalisation has had huge impacts on all dimensions of life and we should

respond to the rapid technological and digital development with greater flexibility and agility. This requires new pedagogical methods and ways of learning to meet the educational needs of all groups, and in this regard, the Internet will provide a main platform and is and will remain a key enabling technology of inclusive education.

Li Zhimin, Director of Science and Technology Development Centre under the Ministry of Education, analysed the impact of technological development on education in different historical periods. He pointed out that technological progress is the fundamental driver of the progress of human civilisation and that every major technological invention in history brought changes to education. The Internet age has taken education into the era of teacher-student interaction as information technology permeates education in all dimensions. Educators should adapt to the new situation and the evolving landscape of education.

Other attendees, including Lueny Morell, former President of IFEES, Danilo Zutin, Vice President of IAOE, Syed Ahmad Hassan, Associate Professor at University of Technology Malaysia, Susan Zvacek, Associate Provost at University of Denver, Greet Langie, Vice Dean for Education at Faculty of Engineering Technology of the University of Leuven in Belgium, Yang Fang, Associate Professor at the Department of Foreign Languages and Literatures of Tsinghua University, Chen Zhenyu, Professor at the Software Institute of Nanjing University, and Li Weiping, President of MOOC-CN Education and Professor at University of Science and Technology of China, also gave keynote speeches on extensive topics such as online learning and applications of information technology, the dialectical relationship between technology and learning, the advantages and disadvantages of flipped classroom, hybrid teaching of English courses of Engineering masters, software talent development and practices driven by industry-university-research institute data, and problem-driven learning and teaching in engineering education.

In his concluding speech, Wang Sunyu, Deputy Director and Secretary-General of the International Centre for Engineering Education (ICEE), gave an introduction to the ICEE website and the online education platform established by the University of Lagos with assistance from XuetangX. He said that this marked the beginning of high-quality online resources like those of Tsinghua University becoming available to developing countries and will promote the development of engineering education in developing countries and contribute to China's Belt and Road Initiative. He hoped that Chinese and overseas experts and scholars in engineering education will continue to strengthen cooperation to advance hybrid teaching in engineering education, continuously improve teaching quality and make a greater contribution to the cultivation of engineering science and technology talents.

Preparatory meeting held for 2017 IKCEST International Symposium

The preparatory meeting for the 2017 IKCEST International Symposium was held in the meeting room of the Administrative Commission of Hangzhou Future Science City to discuss and determine the preparatory plan of the upcoming symposium on August 17. The meeting was attended by Song Dexiong, Inspector of the Department of General Administration of the Chinese Academy of Engineering and Executive Deputy Director of IKCEST, Liu Chang, Director of Division of International Cooperation of IKCEST, Fang Ying at IKCEST Secretariat, Chen Xialin, Director of Administrative Commission of Hangzhou Future Science City, Zhang Zhiwei, Deputy Director of Investment Promotion Bureau of Administrative Commission of Hangzhou Future Science City, Mo Yun, Deputy Editor-in-Chief of Zheshang Media, and Yang Jianping and Jiang Ping at Zheshang Media, among others.

The meeting yielded fruitful results: 1) it defined the roles of the symposium sponsor, organiser and implementer; 2) it clarified their respective obligations and duties; and 3) it reached consensus on the tripartite cooperation and symposium service and support. Yuhang District People's Government and IKCEST will co-sponsor the 2017 IKCEST International Symposium. Yuhang District government will provide strong support to ensure the success of the event. The preparatory work for the symposium officially kicked off after the meeting.

IKCEST platform development (phase II) project acceptance meeting held in Shanghai

The CKCEST Project Management Office held the IKCEST system platform development (phase II) project acceptance meeting in Shanghai on August 24, 2017. The meeting was chaired by Song Dexiong, Director of the Project Management Office.

The project management office formed a review panel led by CAE Member Chen Zuoning with members including Zeng Ming, research fellow and former Director of the Information Centre of National Natural Science Foundation of China, Zhang Xiangyang, research fellow and chief engineer at Software Engineering Centre of Chinese Academy of Sciences, Wang Xin, professor and Deputy Director of Informatisation Office of Fudan University, and Wang Yuyin, Director of Shanghai State-Owned Assets Information Centre. The review panel performed acceptance inspection of the project in accordance with the project contract.

The review panel listened to the report made by the contractor Shanghai Softline Information Technology Co., Ltd. regarding the project, watched the system demonstration, examined relevant system and management documents, and checked third-party testing reports. After that, the panel asked questions on project and documentation details and got satisfactory answers. Based on thorough discussions and comprehensive assessment, the panel concluded that the project completed all required tasks and was given the green light.

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2017 WUPAI held in Shanghai

The World Urban Planning AI Summit (WUPAI), co-sponsored by IKCEST and Tongji University and co-organised by China Association of City Planning (CACP), Chinese Society for Urban Studies, China Artificial Intelligence Industry Development Alliance, China Intelligent Urbanisation Co-Creation Centre for High Density Region, Yangtze Delta Region Urban Economic Coordination Office New Urbanisation Construction Professional Committee, and Tongji University Science Park Co., Ltd., was held at West Bund in Shanghai on August 30, 2017. The conference was attended by Wu Zhiqiang, Vice President of Tongji University, Hu Xiaoming, Partner of Alibaba Group and President of Alibaba Cloud, Liu Chang, Director of Division of International Cooperation of IKCEST, Sun Anjun, President of CACP, Deputy Director of Shanghai Municipal Commission of Economy and Informatisation, Xiao Jing, chief scientist and General Manager of Intelligent Engine Department of Ping An Technology, Lin Chenxi, co-founder of Yitu Technology, professors Wang De and Cao Buyang at Tongji University, Cai Xiaobing, Vice President and chief adviser at Esri China, Yang Tangtang, chief engineer at Guangzhou Land Resources and Urban Planning Committee, and Hu Hai, Secretary-General of Academic Committee for New Technology Applications in Urban Planning, CACP.

The summit, chaired by Wu Zhiqiang, announced the establishment of the World Urban Planning Artificial Intelligence League and published the Declaration of World Urban Planning Artificial Intelligence. The inaugural ceremony of the League was jointly launched by Wu Zhiqiang, Sun

Anjun, Wu Jincheng and Hu Xiaoming.

Wu Zhiqiang gave a presentation on "Artificially Intelligent Urban Planning", observing that artificial intelligence will play an important role in increasing people's understanding of cities and urban development and addressing urban development issues. Liu Chang introduced IKCEST's recent development and major activities including its background, progress (including platform construction, academic exchanges, international training, international cooperation, and support of UNESCO action plans) as well as main achievements. Other industry experts such as Hu Xiaoming, Xiao Jing and Lin Chenxi also gave reports on relevant themes including "Path to Intelligence", "Intelligent Perception Transforms Financial Services", and "Yitu for Intelligent City", introducing their research and activities in their respective fields such as intelligent city, intelligent finance and industrial manu-facturing.

The summit also featured a roundtable discussion on AI development and issues, chaired by Wu Zhiqiang and attended by Wang De, Cao Buyang, Cai Xiaobing, Yang Tangtang and Hu Hai, who discussed AI technologies and their applications in industries, talent development, and AI industry ecosystem.

The trailblazing summit, which combined urban planning and artificial intelligence for the first time, provided a platform for top-notch experts, scholars and industry leaders in urban planning and artificial intelligence to discuss pertinent topics such as laws of urban development and AI-assisted planning and design, shared cutting-edge ideas, and explored areas where artificial intelligence and urban planning can be integrated, portraying an exciting future for intelligent urban planning.

IKCEST delegation visited UNESCO headquarters for cooperation in disaster risk reduction and intelligent city

To implement the disaster risk reduction and intelligent city development tasks given by UNESCO, an IKCEST delegation led by Executive Deputy Director Song Dexiong visited the UNESCO headquarters to brief on and discuss its relevant work from September 11 to 15, 2017.

(I) Brief on and discuss IKCEST's work on disaster risk reduction knowledge service system development

The IKCEST delegation led by Executive Deputy Director Song Dexiong held a meeting with Soichiro Yasukawa and other staff members at UNESCO DRR section on September 12, 2017.

First, the IKCEST delegation briefed on its three-year plan of disaster risk reduction knowledge service system, and its current development and application progress. The two sides had thorough discussions on the specific details. After the briefing, UNESCO DRR gave a positive affirmation of the system development, agreed to link the UNESCO DRR departmental website with the IKCEST Disaster Risk Reduction Knowledge Service System website, and offered to introduce and recommend the system on appropriate future occasions. In addition, UNESCO DRR will recommend experts in disaster metadata, disaster knowledge system and disaster training to IKCEST. It invited IKCEST to attend the "UNESCO International Conference on Earthquake Early Warning Systems: From Science to Policy" to be held in Chengdu, Sichuan Province, in April 2018, in hopes that it will give IKCEST a better understanding of the frontline work of UNESCO DRR.

The meeting then discussed the preparation of the International Workshop for the Disaster Risk Reduction Knowledge Service System. UNESCO DRR section recommended 5-6 international experts including three keynote speakers and some Chinese experts, and confirmed that its section chief Soichiro Yasukawa will also attend the event and give a thematic presentation.

(II) Brief on and discuss IKCEST's work on intelligent city knowledge service system development

The IKCEST delegation had a meeting with relevant sections under UNESCO Natural Sciences Sector and Communication and Information Sector, where it briefed on its basic information, development goal and development highlights and had discussions on its Intelligent City Knowledge Service System on September 13, 2017.

Based on discussions, the two sides agreed to carry out cooperation in three key areas — platform and database, thematic research on cities in small islands and remote regions, and training.

In platform and database, the IKCEST Intelligent City Knowledge Service System can cooperate with two existing UNESCO projects. The

first project is the "Global Observatory of Science, Technology and Innovation Policy Instruments (GO->SPIN)" which aims to establish an online platform offering a complete set of information on STI policies. The second project is the "STEM (Science, Technology, Engineering and Mathematics) and Gender Advancement — SAGA" which is committed to promoting the development of women in STEM.

In thematic research on cities in islands and remote regions, the IKCEST Intelligent City Knowledge Service System can help address issues of scientist resources and knowledge dissemination and cooperate with UNESCO's Small Islands and Indigenous Knowledge Section in desertification observation and Inner Mongolia research projects.

In training, the IKCEST Intelligent City Knowledge Service System can leverage its database and analytics to participate in collaborative research regarding cities in small islands and remote regions.

The visit further strengthened the cooperative relationship between IKCEST and UNESCO departments and, through signed agreements and work communication, further broadened and deepened cooperation with UNESCO. The visit not only fulfilled its intended purposes but also was instrumental in IKCEST's work.

IKCEST Silk Road Training Base unveiling ceremony held in Xian International Trade & Logistics Park

On the morning of September 23, the unveiling ceremony of the IKCEST Training Base for Silk Road Engineering Science and Technology Development and the Silk Road Innovation and Entrepreneurship Base was held at Xi'an International Trade and Logistics Park, where Xi'an Jiaotong University, Xi'an International Trade and Logistics Park and Xi'an International Inland Port Investment & Development Group Co., Ltd. jointly signed a "Belt and Road" talent development strategic framework agreement to support the IKCEST training program.

The IKCEST Training Base established at Xi'an International Trade and Logistics Park aims to develop and incubate high-end international, specialised and practical talents familiar with international trade rules and norms to provide human resources support for the Belt and Road Initiative. By providing overseas students with internship opportunities, it encourages overseas students from Belt and Road countries to start business in the park with a view to tapping their overseas resources. According to the framework agreement, the parties will, based on the IKCEST Training Base, leverage their respective strengths to establish a "Belt and Road" international interactive talent development and experience centre, an online training platform, and a "Belt and Road" talent training base and mass innovation centre to develop talents for China's "Belt and Road" strategy.

IKCEST Silk Road Training Base held 2017 seventh and eighth (the 14th to 15th in total) Training Program for Silk Road Engineering Science and Technology Development

IKCEST and Xi'an Jiaotong University jointly held the 7th (the 14th in total) Training Program for Silk Road Engineering Science and Technology Development on "frontiers in life science" from September 16 to 23 and the 8th (the 15th in total) on "IoT theory, practices and innovative applications" from September 24 to 28. A total of more than 130 trainees from more than 30 Belt and Road countries attended the program.

The "frontiers in life science" training program covered a range of subjects including applications of integrated biological solutions in translational medicine, current status and outlook of cancer treatment, neurosecretory and neurodegenerative diseases, innovative thinking and crossover study, tissue engineering and regenerative medicine, and aging and anti-aging research in China, which broadened trainees' knowledge in life science and was much welcomed. The trainees also toured Xi'an International Trade and Logistics Park, where they watched publicity videos and toured Xi'an railway container central station.

The "IoT theory, practices and innovative applications" training program focused on specialised knowledge including IoT and smart life, IoT-oriented smart components and systems, software-defined

networking, concept technologies and challenges in the IoT age, and 5th generation mobile communication systems and networks, and also featured lectures on the history and future of the "Belt and Road", Chinese culture, and legal issues in the entertainment industry.

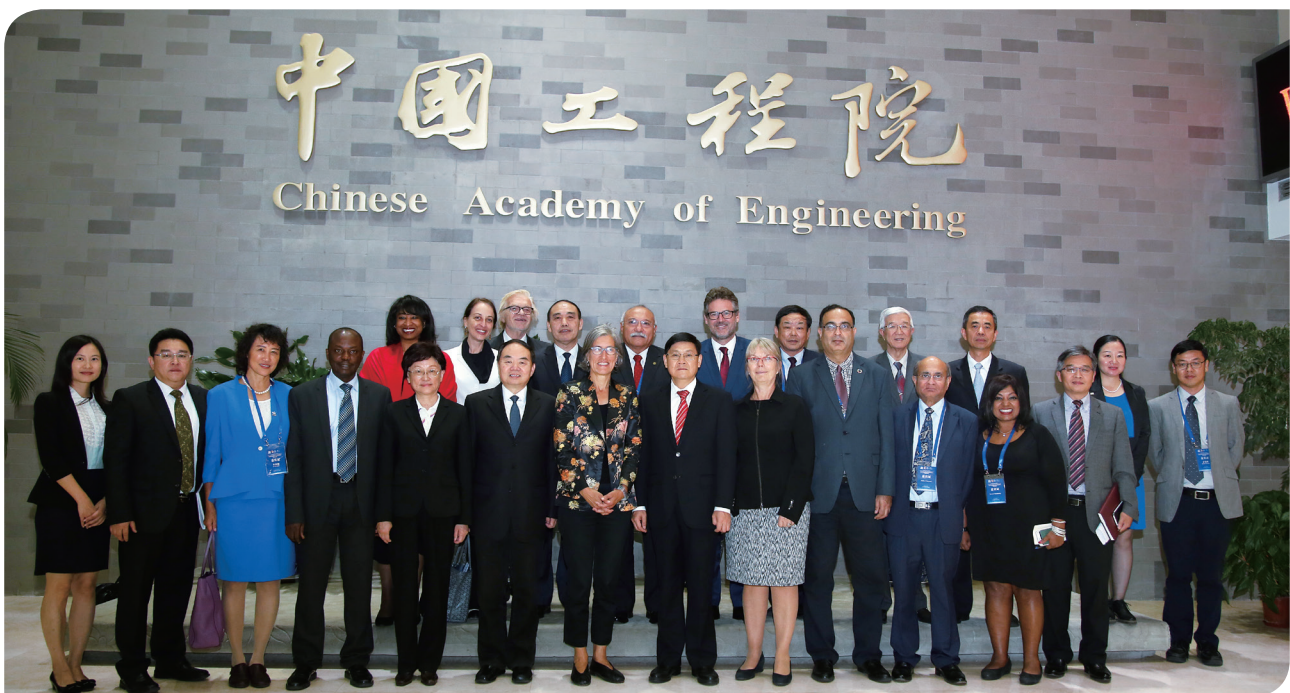After the conclusion of the classes, the co-organisers conferred graduation certificates on qualified trainees.

The 15th Training Program for Silk Road Engineering Science and Technology Development

Xi'an jiaotong University, 2017 sep.

UNESCO Assistant Director-General visited IKCEST

On September 26, 2017, a UNESCO delegation led by Assistant Director-General for Natural Sciences Flavia Schlegel paid a visit to the International Knowledge Centre for Engineering Sciences and Technology (IKCEST) and had a meeting with Zhou Ji, President of the Chinese Academy of Engineering (CAE) and Li Xiaohong, CAE Party Secretary . The IKCEST Secretariat and the Secretariat of the International Centre for Engineering Education (ICEE) briefed the Assistant Director-General on recent activities of their centres. The Assistant Director-General expressed thanks for the efforts and achievements of the two centres in fulfilling their responsibilities and said that their work provided an important support for the achievement of the UN Sustainable Development Goals (SDGs), adding in particular that the development and promotion of the IKCEST platform holds great significance for using the internet technology to promote the dissemination of engineering knowledge and solve engineering education problems and thus advance the 2030 Agenda.

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New Generation AI Summit & IKCEST International Symposium 2017 held in Hangzhou

New Generation AI Summit & IKCEST International Symposium 2017 was successfully held in Hangzhou on 28th September 2017. With "knowledge Service and artificial intelligence" as its theme, the summit was hosted by the Chinese Academy of Engineering (CAE), organized by the International Knowledge Centre for Engineering Sciences and Technology (IKCEST), Department of Science and Technology of Zhejiang Province, Zhejiang Lab, Yuhang District People's Government of Hangzhou, and supported by the Administration Committee of Zhejiang Hangzhou Future Science and Technology City and Zheshang Media. Over five hundred participants from various circles, including over ten internationally renowned foreign and domestic academicians, top experts, government officials and entrepreneurs from industries were present at the summit.

In the opening ceremony, Chen Zuoning, Vice President of CAE, Feng Fei, Executive Deputy Governor of Zhejiang Provincial People's Government and Hans Thulstrup, UNESCO Senior Program Specialist delivered opening addresses. CAE President Chen stated that the CAE has attached great importance to the knowledge service and AI technology for many years and will fully implement what President Xi JinPing required in his speeches regarding science innovation and a community of shared future for mankind. The CAE will intensify the relevant cooperation with UNESCO and high level scientific institutions at home and abroad.

The symposium was divided into two sessions. The morning session was moderated by CAE Member, Gao Wen, with five speakers from all over the world giving keynote speeches respectively. CAE Member Pan Yunhe analyzed the theoretical and practical challenges ahead when AI went to 2.0. He pointed out how the digitization evolved to the intelligentization and proposed his corresponding solutions. Raj Reddy, Turing Award Winner and CAE Foreign Member, took Guardian Angels (GATs) and Cognition Amplifiers (COGs) as examples of AI 2.0 technologies in support of humankind. He strongly suggested that some AI 2.0 foundational technologies of data driven learning, augmented intelligence through human-machine collaboration, multi-lingual and multimedia data mining, autonomous and autonomic self-healing system technologies should be developed. CAE Member Wu Cheng and Fan Yushun, both Professors of Tsinghua University, gave the structure analysis of complex service network and took the intelligent tourism platform as an example to illustrate the service network applications in real life. N. Balakrishnan from Indian Institute of Science advised that we have a broader outlook on learning sciences impacted by the resurgence of AI to provide highly scalable global class rooms and lifelong and life wide learning. Director of AI Lab of Tencent Group Zhang Tong, shared some major research and progress that AI lab of Tenchent Group made as well as its direction for future development.

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The afternoon session was moderated by CAE Member Li Guojie with four speakers giving speeches. CAE Member Li Bohu illustrated what Smart Manufacturing Cloud was and its great value for the big data key technologies. He also gave some suggestions for further research, application and development for smart manufacturing cloud in his report. Chua Tat-Seng, Professor of National University of Singapore, introduced the application system aimed to offer deep personalized wellness recommendation as well as persuasive health advice dissemination using automatic natural language and multimedia generation. Otthein Herzog, Member of German Academy of Science and Engineering, expressed that knowledge service was just one component in a potentially complex set of knowledge services. Artificial Intelligence technologies offered a wide range of representational and processing functionalities including the orchestrating of complex knowledge services. Zhuang Yueting, Professor of Zhejiang University, introduced the recent progress on the development of a system called KS-studio, which was the kernel technology supporting the China Knowledge Center for Engineering Science and Technology (CKCEST) led by CAE.

An atmosphere of warm friendship prevailed at the two panel discussion sessions, with speakers answering questions raised by the audience, and in-depth interactive communication being carried out.

The summit has provided a precious opportunity for top experts, scholars and entrepreneurs from industries to share research findings and insights on AI related issues and exerted a positive and far-reaching influence on the future of technology research and cooperation.

Third Session of the First Governing Board of IKCEST held in Hangzhou

The Third Session of the First Governing Board of the International Knowledge Centre for Engineering Sciences and Technology (IKCEST) was held in Hangzhou on September 29, 2017. The session was chaired by Chen Zuoning, Chairman of the First Governing Board of IKCEST and Vice President of the Chinese Academy of Engineering (CAE) and attended by board members Pan Yunhe, Raj Reddy, Hans D. Thulstrup, Li Guojie, Wu Cheng, Gao Wen, Li Bohu and Otthein Herzog and, as observers, IKCEST Advisory Committee member Narayanaswamy Balakrishnan, experts of the IKCEST platform development team, representatives of IKCEST sub-centres, and relevant staff members at the IKCEST Secretariat. Four board members — Eduardo M. Krieger, Du Yue, Zhong Zhihua and Zheng Nanning — were unable to attend the meeting due to other engagements.

The session heard and deliberated on the 2017 annual report made by the IKCEST Secretariat. The attending Governing Board members expressed affirmation of the various activities conducted by the centre in 2017. Hans D. Thulstrup, senior project specialist representing UNESCO, said that the 2017 work report of IKCEST was comprehensive and well-substantiated and expressed

appreciation and thanks for the centre's progress in 2017 and its support and contribution to various endeavours of UNESCO. At the meeting, the board members provided valuable suggestions on the centre's future work: 1) Give full scope to the role of the expert members of the governing board by holding video meeting on a regular basis to discuss the centre's development plan and development direction and leveraging the expertise of the experts in their specialised areas to provide strategic and technical support for the centre; 2) Clearly define IKCEST's positioning by strengthening exchanges and cooperation with similar Category 2 centres in developed countries to provide better services for developing countries or third world countries; and 3) Clarify user groups and provide unique services by developing services tailored to the specific needs of various user groups.

The IKCEST Secretariat expressed thanks to all experts of the Governing Board for their long-term support and said that the IKCEST staff will make effective efforts to act on the opinions and suggestions of the experts. After the meeting, the attendees took a group photograph.

Third Session of the First Advisory Committee of IKCEST held in Hangzhou

The Third Session of the First Advisory Committee of the International Knowledge Centre for Engineering Sciences and Technology (IKCEST) was held in Hangzhou on the morning of September 29, 2017. The session was co-chaired by committee co-chair CAE Member Pan Yunhe and Professor Raj Reddy and attended by committee members Li Guojie, Wu Cheng, Li Bohu, Gao Wen, Otthein Herzog and Narayanaswamy Balakrishnan and, as observers, Chen Zuoning, Chairman of the First Governing Board of IKCEST, UNESCO senior project specialist Hans D. Thulstrup, experts of the IKCEST platform development team, representatives of IKCEST sub-centres, and the IKCEST Secretariat. Committee member Zhuang Yueting was unable to attend the meeting due to other engagements.

The committee heard the reports of the IKCEST general platform and sub-platforms before proceeding to discussions on specific topics and put forward a series of suggestions including 1) carrying out policy research and increasing data

sharing; 2) strengthening publicity and promotion to increase the platform's visibility; 3) strengthening resource development and improving system functions; 4) planning unique contents and improving unique services; 5) enriching meeting information to facilitate exchanges and communication; and 6) strengthening service awareness and actively pushing pertinent information.

The meeting also discussed the 2017 IKCEST International Symposium and decided that the theme of the 2018 symposium will be related to "artificial intelligence" with the specific theme to be determined after subsequent communication between the IKCEST Secretariat and the experts. The Advisory Committee authorised the Secretariat to determine the time and location of the 2018 IKCEST International Symposium according to actual conditions.

After the meeting, the attendees took a group photograph.

IKCEST platform 2.1 version officially launched

The IKCEST platform 2.1 version was officially launched to provide services for engineering personnel in developing countries on September 30, 2017.

Compared to the 2.0 version, the 2.1 version featured extensive optimisations, including layout redesign, aggregation of more data resources, addition of several knowledge-based apps, and improvements of existing platform functions. Specifically, additions include 1) online training and translation to and from Chinese, English, French and, for some knowledge service systems, Russian; 2) knowledge-based apps — Technology Trends, Cultural Heritage Protection, China's Experience in Natural Disaster Relief, Macroeconomic Database of the Belt and Road, and Academic Voice & Focus; and 3) more than 2,000 maps relating to disaster, history, natural geography and humanities, 27 dataset resources, and dozens of MOOC courses. In addition, the existing data resources are optimised.

Since the launch of the IKCEST general platform and its four knowledge service systems on May 30, the IKCEST site traffic has been steadily increasing with a growing influence. To provide engineering personnel in developing countries with more high-quality and professional knowledge services, IKCEST will refine its platform on a regular basis and keep improving its service capabilities with the focus on users' needs.

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Laser technology for graffiti removal
When two nationally important monuments were defaced, lasers were used to remove the offending graffiti. The West Kennet Avenue at Avebury, Wiltshir...
keywords: graffiti;laser cleaning;lichen;world heritage site;
author: Sasha Chapman
2017-09-12

Examination, conservation and analysis of a gilded Egyptian bronze Osiris
A heavily corroded Egyptian bronze figurine of the god Osiris was examined and shown to have been originally gilt with gold leaf and inlaid with blue glass....
author: David A Scott, Lynn Swartz Dodd
2017-09-12

China's Experience In Natural Disaster Relief

Jiuzhaigou Earthquake

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Wenchuan Earthquake More

Wenchuan Earthquake

The 2008 Sichuan earthquake, also known as the First Great Sichuan earthquake or Wenchuan earthquake, occurred at 14:28:01 China Standard Time on May 12, 2008. Measuring at 8.0 Ms the earthquake's epicenter was located 80 kilometres (50 mi) west-northwest of Chengdu, the provincial capital, with a focal depth of 19 km (12 mi). Over 69,000 people lost their lives in the quake, including 68,636 in Sichuan province. 374,176 were reported injured, with 18,222 listed as missing as of July 2008. It was the deadliest earthquake to hit China since the 1976 Tangshan earthquake.

Zhouqu Debris Flow More

Jiuzhaigou Earthquake More

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Weekly	Monthly	
Ranking	Keyword	Heat
1	cyber	13
2	black	11
3	amazon	10
4	friday	10
5	monday	9
6	uber	8
7	deals	8
8	data	7
9	samsung	7
10	ai	6

Current search: cyber

Lately: ● 7Day ○ 30Day ○ 90Day ○ Half a year ○ Annual
2017-11-23 - 2017-11-29

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Nov 23 Nov 24 Nov 25 Nov 26 Nov 27 Nov 28 Nov 29

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IKCEST   Newsletter September 2017 No. 3

›› 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").

Training conference on data collection & metadata specifications held in Beijing

The training conference on resources Collection specification & metadata specification was held at the Chinese Academy of Engineering on the morning of May 23, 2017. All construction units of the China Knowledge Centre for Engineering Sciences and Technology took part in the meeting. Director Song Dexiong of the Project Management Office called upon all sub-centres to submit data according to the latest standards and the General Platform to complete data delivery according to the latest specifications. Director Song Dexiong also asked the metadata standards formulation team to conduct full survey and research on the types of data resources at the various sub-centres and complete the formulation of common new resource metadata standard, while the specific sub-centres should formulate the specifications for characteristic resource metadata.

CKCEST conducted innovation and entrepreneurship survey & study in Shenyang and Ningbo

A delegation led by Director Song Dexiong of the Office of the China Knowledge Centre for Engineering Sciences and Technology (CKCEST) went to Sanhao Maker Space in Shenyang City and Hefeng Creative Square in Ningbo City respectively to conduct survey and study on the pilot implementation of innovation and entrepreneurship platforms in April and May 2017.

During their survey and study in Shenyang, the CKCEST delegation held a meeting on the promotion of pilot implementation of innovation and entrepreneurship platforms in Shenyang with Director Chen Dawei of Shenyang Big Data Bureau, officials of the government departments concerned and staff of Inspur Liaoning. At the meeting, the delegation listened to the report made by the Inspur Group on the CKCEST Northeast China Innovation & Entrepreneurship Platform Construction Plan, and focused their discussions on data cooperation, platform operation, innovation and entrepreneurship services and other topics. The two sides both agreed to strengthen cooperation and push forward the implementation of the CKCEST innovation and entrepreneurship platform in Shenyang.

During their survey and study at the Hefeng Creative Square in Ningbo, the delegation led by Director Song Dexiong visited the Ningbo Hefeng Creative Square Design Results Exhibition and relevant enterprises in the Square. The delegation also met with Ying Liren, Deputy General Manager of Ningbo Industries Investment Group Co., Ltd., Gu Dedao, Chairman of Hefeng Creative Square & Director of Ningbo Academy of Smart City Development and other related personnel for discussions on directions of cooperation, operational models and other topics. Service creative design is an important part of CKCEST's service to the Made in China 2025 strategy. In the future, the two sides will strengthen cooperation in platform construction, knowledge services and professional training.

NDRC-CKCEST Project Launch Meeting held in Beijing

On June 1, 2017, the launch meeting of the Major Project of National Development and Reform Commission Promoting Big Data Development - China Knowledge Centre for Engineering Sciences and Technology Project ("NDRC-CKCEST Project") was held at the Chinese Academy of Engineering. The meeting was chaired by Vice President Chen Zuoning of the Chinese Academy of Engineering and attended by CAE Member Chen Zhijie, Professor Peng Yang, Executive President Chen Dongfeng, Director Song Dexiong, Deputy Director Zhang Kailin of NDRC's Department of High-Tech Industry, and other officials and experts.

At the meeting, Vice President Chen Zuoning read out the lists of the leading group and the expert committee of the Project, while Vice President Xiao Xue of the Inspur Group reported on the construction plan of the Project. Deputy Director Zhang Kailin gave full recognition of the construction plan.

Vice President Chen thanked NDRC for its attention to the NDRC-CKCEST Project and stressed that the NDRC-CKCEST Project will improve on the existing MoF-CKCEST Project. Meanwhile, Vice President Chen pointed out that the NDRC-CKCEST Project as a model for big data projects will explore technology and operation experiences for promotion. Finally, Vice President Chen called for the project team to further strengthen close cooperation with the Inspur Group and fully leverage CAE Member resources and the strengths of the expert committee so as to deliver a satisfactory project to NDRC.

CKCEST Big Data Intelligence Building Workshop held at CAE

The China Knowledge Centre for Engineering Sciences and Technology (CKCEST) Big Data Intelligence Building Workshop was held at the Chinese Academy of Engineering on July 12, 2017. The workshop was chaired by Vice President Chen Zuoning of the Chinese Academy of Engineering and attended by personnel from the CKCEST Project Management Office, Zhejiang University, the Inspur Group and other organisations concerned, as well as technical experts.

At the start of the workshop, Vice President Chen Zuoning stressed the necessity of big data intelligence built by CKCEST and pointed out that after several years of work, the CKCEST general platform has been preliminarily built and now provides services to external users. Professor Wu Fei from Zhejiang University reported the big data intelligence building plan and pointed out that the overall CKCEST big data intelligence building plan should be based on continuous mining knowledge capacity and innovative service system building and be implemented from the 4 aspects of basic theory, core technology, representative platform and innovative services. Director Song Dexiong put forward the CKCEST big data intelligence building work plan for the next stage: start the CKCEST big data intelligence engineering construction project based on the deliberated result of the workshop; fully consider how to connect KS-STUDIO with the project and how each sub-centre can connect with the project for making exhibitions; and complete the full-scale promotion and application plan for the CKCEST big data intelligence engineering construction plan and big data intelligence engineering in 2018.

Finally, Vice President Chen made a summary of the workshop and pointed out that CKCEST is a very suitable test ground for new-generation AI and called upon CKCEST to unswervingly press ahead along this path and build itself into an intelligent centre.

Materials specialty professional knowledge service system project launch meeting held in Beijing

The materials specialty professional knowledge service system project launch meeting was held in Beijing on May 31, 2017. A total of 34 participants attended the meeting, including Member & former Vice President Gan Yong of the Chinese Academy of Engineering, CAE Members Wang Haizhou, Li Wei and Li Zhongping, Director Song Dexiong of the Project Management Office of the China Knowledge Centre for Engineering Sciences and Technology, and experts from the materials field. At the meeting, Central Iron and Steel Research Institute made a report on the background and construction plan of the materials specialty professional knowledge service system. Attending CAE Members and experts saw expanding the metal materials specialty knowledge service system into a materials specialty knowledge service system as a major initiative by CKCEST to respond to the country's strategic needs in the new materials field. Finally, Prof. Gan Yong also put forward the requirements for the project team to focus on the major strategic needs of the country, expand data resources acquisition channels and improve the quality of knowledge services.

China Good Design online platform launch ceremony held in Tianjin

The China Good Design online platform launch ceremony & China Good Design Tianjin centre plaque unveiling ceremony was held in Tianjin University on June 15, 2017. The China Good Design online platform is jointly built by the Innovation Design Alliance of China in collaboration with the Chian Knowledge Centre for Engineering Sciences and Technology (CKCEST). In the future, the online platform will draw upon CK-CEST's data resources and provide online services centring on the areas of online application for innovative designs, design demand releases, results commercialisation, and resource connectivity.

CKCEST will work with the Innovation Design Alliance of China to organise China Good Design selections and play an active role in enhancing China's innovative design capabilities and helping the country to improve the quality, efficiency, transformation and upgrading of its manufacturing services. Representatives from CKCEST, the Innovation Design Alliance of China, the Tianjin Municipal Party Committee and Government, Tianjin University and other organisations attended the launch ceremony.

Knowledge organisation system annual project launch meeting held

The knowledge organisation system annual construction tasks launch meeting & knowledge organisation system construction, maintenance and service platform V2.0 training conference was held on June 21, 2017. The meeting was attended by Director Song Dexiong of the Project Management Office of the China Knowledge Centre for Engineering Sciences and Technology (CKCEST), Director Dai Guoqiang of the Institute of Scientific and Technical Information of China, and representatives of the Inspur Group and various CKCEST sub-centres. At the meeting, Director Dai Guoqiang presented a complete set of books on Chinese Subject Lists to CKCEST and expressed the hope that the lists would be used at CKCEST as soon as possible. On behalf of the Project Management Office, Deputy Director Fu Zhijie issued the annual knowledge organisation system construction tasks for 2017 and specified the implementing organisation, time nodes and other requirements of each task. Finally, the Institute of Scientific and Technical Information of China provided training on the specific use of knowledge organisation system construction, maintenance and service platform V2.0.

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Academic competition in machine intelligence held in Beijing

On July 18, 2017, the Open Academic Data Challenge 2017 organised by the Academic Sub-centre of the China Knowledge Centre for Engineering Sciences and Technology (CKCEST) in collaboration with IEEE Computer Society, Microsoft and Chinese Association for Artificial Intelligence officially kicked off. Contestants need to extract the personal description information of scholars based on the datasets provided by academic data mining system AMiner and Microsoft Academic Graph, analyse their research interests, predict their paper citations, provide the academic circles with information on experts, evaluate the research work of scholars, introduce scientific research progress and present academic developments.

As of August 15, 2017, a total of nearly 500 contestants participated in the competition, with 225 official teams from Tsinghua University, Peking University, the Chinese Academy of Sciences, Fudan University, Nanjing University and other academic institutions, as well as Baidu, Tencent, Alibaba, Sohu, Sogou and other enterprises. The competition will conclude in mid-September.

After the competition is over, the MIFS 2017 International Symposium on Frontiers of Machine & 2017 China Artificial Intelligence Competition Award Ceremony will be held in early October.

CKCEST general platform and cloud infrastructure platform construction plan report meeting held at CAE

On August 29, 2017, the Project Management Office of the China Knowledge Centre for Engineering Sciences and Technology (CKCEST) held CKCEST general platform and cloud infrastructure platform construction plan report meeting at the Chinese Academy of Engineering. The meeting was chaired by Director Song Dexiong of CKCEST Project Management Office and attended by Vice President Chen Zuoning of the Chinese Academy of Engineering, Vice President Xiao Xue of the Inspur Software Group, and representatives of the team of engineers-in-chief for project implementation, the implementation team and CKCEST Project Management Office.

Vice President Chen Zuoning listened to the report on the construction plans, gave full recognition of the early work achievements of the Project Management Office at CKCEST and the team of engineers-in-chief of the Inspur Group, and put forward specific opinions: CKCEST must establish cloud-based data and application service layers and achieve cross-domain data integration in the future; AI technologies must be used on CKCEST's search engine; AI technologies of the Research Centre for Key Technologies of Zhejiang University must be applied in the construction of the CKCEST general platform; in the construction of CKCEST's cloud infrastructure platform, a "public cloud" environment (engineering sciences and technology cloud) must be established for the engineering sciences and technology field; and for cloud building at sub-centres, relevant specifications and requirements must be formulated.

Finally, Director Song Dexiong put forward the requirements for pushing forward follow-up work: The team of engineers-in-chief need to further refine the CKCEST general platform and cloud infrastructure platform construction plans; the general platform construction plan must include key time nodes, while highlighting the construction results of the key nodes; cloud infrastructure platform construction must be considered at the implementation level, while related cloud standards and specifications must be formulated as soon as possible.

Academic Sub-centre's AMiner team joined hands with Microsoft to release 100 million-level OAG

Recently, the AMiner team at the Academic Sub-centre of the China Knowledge Centre for Engineering Sciences and Technology (CKCEST) and Microsoft Academic jointly released a 100 million-level Open Academic Graph (OAG), which integrates the 2 largest open academic graphs: Microsoft Academic Graph, and AMiner Academic Graph. Following integration and matching, these 2 graphs have generated 65 million link (matching) relationships. The project can gather rich academic knowledge data, share open data, and provide users with richer data services. Meanwhile, the project also provides a powerful handle for CKCEST to undertake its publicity and promotional work.

CKCEST Metadata Specification (V1.0) printed and distributed

To guide and standardise the metadata collection of various digital resources, meta search services, resource integration and system interoperability at the China Knowledge Centre for Engineering Sciences and Technology (CKCEST) and fundamentally gather and connect various resources at CKCEST, the Project Management Office of CKCEST has organised the project team to formulate CKCEST Metadata Specification (V1.0). This specification establishes metadata exchange standards for 14 types of resources, including journals, books, journal papers, conference papers, dissertations, experts and scholars, science and technology institutions, research projects, research results, patents, standards, industrial policies, news and information, and pictures. After fully consulting the general platform, experts from the Resources Team, and sub-centres of CKCEST and following several rounds of revisions and improvement, the specification has now been finalised. On August 28, 2017, the Project Management Office formally printed and distributed the Specification to all CKCEST sub-centres in the form of an official document through the General Office of the Chinese Academy of Engineering. Meanwhile, the metadata specification project team will continue to formulate metadata specifications for other types of resources.

Top News for Big Data Era

China to build integrated national big data centre

On the World Telecommunication and Information Society Day (WTISD) which fell on May 17, 2017, the Ministry of Industry and Information Technology announced that China will build an integrated national big data centre to promote the opening of public data and the cross-department and cross-region sharing of basic data resources, improve data application efficiency and use value. Meanwhile, China will also strengthen security supervision, severely crack down on illegal disclosure of and trade in personal data, safeguard network data security, and push forward the opening of credit, transport, medical, healthcare, and employment data to society first.

Excerpt from Xinhua News Agency

National Big Data Innovation Alliance founded

On May 25, the National Big Data Innovation Alliance was inaugurated at the China International Big Data Industry Expo 2017 held in Guiyang. The Alliance was jointly established by the 14 organisations participating in China's National Engineering Laboratory on Big Data. A total of 76 research institutions and companies voluntarily joined the Alliance.

The Alliance will leverage the role of the national engineering laboratory on big data and other innovation entities, undertake major research tasks and conduct joint research on forward-looking and strategic issues in big data; establish normalised information reporting mechanisms, and provide support for the country to formulate policies that promote the development of big data; promote cooperation between industry, academia, research institutions and users of big data, step up talent training, push forward the commercialisation of research results, and boost the demonstration and application of big data in the public service field; summarise the collection of innovative big data in public services and other fields; gather outstanding cases of big data innovation and applications, and organise the formulation of annual big data development reports; and centre on big data to serve social governance, public services and other fields, organise relevant major events and stage various application exchanges, consulting, services, training and other activities.

Excerpt from www.xinhuanet.com

State Council issued Plan for New-Generation Artificial Intelligence Development

On July 8, 2017, the State Council issued Plan for New-Generation Artificial Intelligence Development (the "Plan"), China's first national plan for medium- and long-term AI development. The Plan sets out the guiding thought, strategic goals, key tasks and safeguarding measures for the development of AI in China up to 2030 with a view to establishing China's first-mover advantages on AI development and speeding up efforts to build China into an innovative country and a science and technology leader in the world.

Experts believe that the launch of the Plan amid the rapid development of mobile internet, big data, supercomputing and brain science shows that China is actively adapting to the historical trend and taking AI as a key driving force for industrial transformation and economic transformation and upgrading.

Excerpt from www.gov.cn

2017 China Big Data Industry Ecosystem Map & White Paper on China Big Data Industry Development released

Guided and backed by the Ministry of Industry and Information Technology, the Big Data Industry Alliance of China released the 2017 China Big Data Industry Ecosystem Map at the 2017 China Big Data Industry Ecosystem Conference held on August 2, 2017. Meanwhile, it also published the 2017 White Paper on China Big Data Industry Development. These research results were completed by the Big Data Industry Alliance of China in collaboration with Software & Integrated Circuit magazine, CCID Consulting, and CCID Think Tank Software Industry Research Institute.

The 2017 China Big Data Industry Ecosystem Map & White Paper on China Big Data Industry Development presents a precision hierarchical analysis of the ecosystems at the 3 levels of infrastructure support, data services and integrated applications. It elaborates on the current status of development of China's big data industry from the aspects of policy & government support, overview of development of big data enterprises, users, talents and capital. Moreover, it puts forward a classification of enterprises by corporate functions and missions, offering a panoramic outlook to peers in the big data industry.

Excerpt from www.sohu.com

Construction of Beijing-Tianjin-Hebei Big Data Collaborative Processing Centre launched in Tianjin

The construction of Beijing-Tianjin-Hebei Big Data Collaborative Processing Centre was officially launched at the National Supercomputing Centre of Tianjin in the Tianjin Economic-Technological Development Area on August 18, 2017 in accordance with the Construction Plan for Beijing-Tianjin-Hebei Integrated Big Data Experimental Zone. Once China's new-generation supercomputer Tianhe-3 is up and running in 2020, the data processing capacity in the Beijing-Tianjin-Hebei region will reach Exascale per second.

Based on the National Supercomputing Centre of Tianjin, the collaborative processing centre will focus on building big data processing-oriented infrastructure that integrates supercomputing and cloud computing.

Meanwhile, leveraging integrated innovation platforms, the centre will deploy a basic innovation environment for developing industry-oriented big data applications and collaborate to master key big data application technologies. Through the collaborative innovation of R&D cooperation mechanisms and the support of integrated innovation platforms, the centre will provide big data industrial application services for energy, transportation, mining, steel and healthcare industries, and raise the level of industrial development and applications.

Excerpt from www.cac.gov.cn