

The 2nd Meteorological Service Technology Innovation Competition of China and Annual Forum of CMSA

A joint event hosted by China Meteorological Administration (CMA) and China Meteorological Service Association (CMSA)

(19 and 20 November 2019, Beijing, China)



Fig. 1 Opening Ceremony of the 2nd Meteorological Service Technology Innovation Competition of China and Annual Forum of CMSA (19-20 November 2019, Beijing, China)

Background and Purpose

Today's world is undergoing a level of profound change that has not been seen in a hundred years, particularly of which the demand and call for innovation on meteorological services by all sectors has become increasingly prominent. How to meet the growing needs for services and utilize its full potential are common issues faced by National Meteorological Services amongst many countries.

The 18th World Meteorological Congress (Cg-18) in June last year adopted *the Geneva Declaration 2019: Building Community for Weather, Climate and Water Action* which calls for collaborative actions to address the global challenge related to extreme weather and climate change. The Open Consultative Platform (OCP), launched at the High-Level Round Table during the 18th Congress, will work towards that goal by fostering partnership and innovation for the next generation of weather and climate Intelligence. WMO's policies and initiatives provide guidance to members for promoting cooperation between and among the public, private and academic communities for a global weather enterprise to collaboratively cope with global risks related to weather, climate, water and environment.

China Meteorological Administration (CMA) and China Meteorological Service Association (CMSA) share the great vision of the public-private engagement (PPE) advocated by WMO. In order to boost innovation for bridging weather service gaps in an opening, cooperation, integration and sharing manner, and to provide a forum of conversation involving public, private and academic sectors, CMA and CMSA jointly sponsored the 2nd Meteorological Service Technology Innovation Competition of China. It was aimed at promoting the synergy between public, private and academic sectors, showcasing scientific and technological innovations in the field of meteorology, devising a mechanism to facilitate the application of novel service deliverables, making innovation a sustained driving force behind the expanded and enhanced meteorological service. Preparation and selection process of the competition started in August and proceeded throughout months until the middle of November 2019. A two-day closing event composed of an award ceremony, a forum and an Expo took place from 19 to 20 November 2019, drawing the Competition to a successful close.

Competition Process

The Competition sparked a passion for innovation, attracting more than 300 registered teams crossing different sectors, including 136 universities, 121 enterprises, national centers and local meteorological offices of CMA, who contributed more than 1700 entries of innovative works in total. The competition gave out four categories of prizes, namely Meteorological Service Technology, Meteorological Service Application, Meteorological Services on TV and Meteorological Service Algorithms. The submitted entries addressed demands for weather and climate services in a wide range of areas, such as emergency response, transportation, agriculture, water management, environment, aviation, energy and daily life of the public.

Through rounds of preliminary and final review and evaluation, a high-level jury made up of renowned experts from China Meteorological Administration (CMA), businesses, academics and user community selected 48 entries for award-winning works with recognition of their excellence in technological sophistication, social benefits, and/or market prospects

Excellent Examples of Award-Winning Works

Among the 48 entries of award-winning works, many are results of cooperation between or among meteorological offices, businesses and academic institutions. The following are some examples.

Shanghai Meteorological Service (SMS), together with China Commercial Flying Company Civil Aircraft Flight Test Center and China Flight Test Establishment, developed aviation meteorological support technology, and made a breakthrough in the weather service in support of test flight of new aircraft in such severe circumstances as high crosswind and natural icing. Based on the innovation, it now operates the aviation meteorological forecast support system that provides sound service for the routine test flight, transition and test flight in severe weather.

Jiangsu Meteorological Service Center, Jiangsu Zhenyuan Applied Meteorological Research Institute Co., Ltd. and Nanjing Weigang Dairy Co., Ltd. pioneered the atmospheric environment services for pastures and dairy farms by establishing a meteorological service platform that uses the diffusion model of air pollutants to predict the weather impacts on the disposal of domestic animals' wastes and other pollutants. Its predictions in terms of intensity, range and time of pollutants transmission serve to minimize local air pollution and promote the environment-friendly management of pastures and farms.

Beijing Jiutian Meteorological Technology Co., Ltd., CMA Public Meteorological Service Center and State Grid Beijing Electric Power Company Co., Ltd worked together to develop applied technologies to integrate precise impact-based weather service into the power grid management system. It keeps power grids safe from meteorological hazards by providing customized weather impact forecasts and warnings down to specific power facilities and specific scenarios.

The Lake and Wetland Meteorological Service, a project jointly undertaken by Hubei Meteorological Service, Jiangxi Meteorological Service, Hunan Meteorological Service, China University of

Geosciences (Wuhan) and Hubei University, was designed to provide climate services addressing the needs of ecological restoration of wetland and lakes in the middle and lower reaches of the Yangtze River from such problems as the declining water quality, biodiversity loss and habitat destruction. The service fills in the technological and operational gaps in this connection.



Fig. 2 Award-Winning at the 2nd Meteorological Service Technology Innovation Competition of China and Annual Forum of CMSA (19-20 November 2019, Beijing, China)

Annual Forum of CMSA

The Annual Forum of CMSA was held on the same day as the award ceremony, which was aimed at pooling wisdom, and promoting dialogues at national level on key issues in relation to meteorological service innovation, including the complementary roles of public, private and academic sectors, the expanded opportunities and challenges associated with PPE.

Dr. Zhang Wenjian, Assistant Secretary General of WMO, Dr. Dimitar Ivanov, Director of Public and Private Engagement Office of WMO, Mr. Yu Yong, Deputy Administrator of CMA, Dr. Matthew Alto,

Accuweather's Manager of Global Data Partnership, Academician Zhang Renhe, Vice President of Fudan University and Dr. Zhu Zhaosheng, Vice President of Hua Wei Cloud participated in the panel discussion of the forum and shared with the audience their thoughts as to what the landscape of future weather and climate services would look like with the increasing diversity of players from public, private and academic sectors.

At the forum, Dr. Zhang Wenjian, Assistant Secretary General of WMO, presented to the audience about WMO strategic priorities in the coming years and the recent restructuring of constituent bodies of WMO, illustrating WMO's vision for the global development of meteorological science and technology. In another presentation, Dr. Dimitar, Director of Public and Private Engagement Office of WMO, highlighted WMO's latest policies and initiatives in enhancing collaborative engagement of public, private and academic sectors for the development of Global Weather Enterprise, including the Geneva Declaration 2019 and the Open Consultative Platform adopted and launched during the 18th World Meteorological Congress.



Fig. 3 Invited Guest Speakers Dr. Zhang Wenjian, Assistant Secretary General of WMO(left) and Dr. Dimitar, Director of Public and Private Engagement Office of WMO(right)at the 2nd Meteorological Service Technology Innovation Competition of China and Annual Forum of CMSA (19-20 November 2019, Beijing, China)



Fig. 4 Annual Forum of CMSA during the 2nd Meteorological Service Technology Innovation Competition of China (19-20 November 2019, Beijing, China)

Technological Innovation Alliance for Meteorological Services

In order to develop a mechanism for collaborative innovation between and among the public, private and academic sectors, Huafeng Group which is CMA's business corporation, together with a dozen external actors including Baidu, Tencent, Sogou, Huawei, Lenovo and Nanjing University of Information Science and Technology (NUIST), launched an Technological Innovation Alliance for Meteorological Services at the award ceremony of the competition. The purpose of the alliance is to pool and utilize, in an optimum and efficient way, the resources from different sectors for weather- and climate-related technological innovation and application of its deliverables, and to explore innovative mechanism and model of collaboration.

Expo

A Meteorological Service Technology Exposition was held concurrently with the award ceremony and forum, which became a gathering place for the latest innovations in the field of meteorological service and a platform for their demonstration to potential users. More than 100 items of innovative

technologies were on display and attracted visitors representing more than 120 institutional users. Contracts or letters of intent were reached on over 20 innovative projects during the Expo, including intelligent agro-meteorological service, urban water-logging weather service, gridded meteorological service, satellite data service, etc., which are foreseen to speed up the translation of those research results or innovative service deliverables into practical application.



Fig. 5 Meteorological Service Technology Exposition during the 2nd Meteorological Service Technology Innovation Competition of China and Annual Forum of CMSA (19-20 November 2019, Beijing, China)

Outlook

CMA will continue to develop and optimize future competition events and explore new models of engagement and cooperation with private bodies and academic institutions in the interest of public good, social well-being and economic prosperity, contributing China's experience and practice to the development of global meteorological enterprise advocated by WMO.
