

# Arab Region Beidou Cooperation on Satellite Navigation

**Prospect in the Field of Precision Agriculture** 

ICG 13th edition- X'ian November 7th 2018



## **AICTO**

- The Arab ICT Organization «AICTO» is a specialized Arab governmental organization working under the aegis of the league of Arab States, located in Tunis, and has been operational since 1st January 2008.
- AICTO creation resulted from the will of the Arab States to contribute to the
  development of ICTs and providing the necessary mechanisms to reinforce
  cooperation between its members while promoting and enriching common
  strategies and policies to ensure an equitable access to ICT to all Arab citizens



## **AICTO Members**

 Being a multi-stakeholder technical organization, AICTO membership is open to the Public and private sectors and the Civil Society dealing with ICT and represented in the Arab region and worldwide in the quality of "Associate Member", in addition to the Arab States members of the League of Arab States, represented by their ministries of ICT.



## **AICTO Mission**

 Providing an open platform for ICT Multi-stakeholders(Public sector, Private sector, Civil Society and specialized bodies) for dialogue, experience & expertise sharing and for technological knowledge transfer

### **AICTO Vision**

 Towards a harmonious Arab digital society based on the creativity and innovation, boosting the Arab-Interregional complementarity and contributing efficiently to the development of the global sustainable digital economy



## **Implemented Activities**



### **Framework**

- Bilateral cooperation between League or Arab States and the Public Republic of China
- Cooperation agreement between AICTO and the China Satellite Navigation Office (CSNO) signed in Cairo-Egypt on the 20th of January 2016

## **Objectives**

- Providing an open platform for Arab users to acquire deeper understanding about BeiDou/GNSS technology through a set of activities such as:
  - Training and Regional Capacity Building
  - Exhibition
  - Testing & assessment, etc...
  - Setting pilot projects
  - Boosting GNSS R&D activities in the region
- Strength the Arab-Chinese cooperation in the field of Satellite Navigation and related services and applications.



# **Deployed Activities**

 Inauguration of the China Arab States BDS/GNSS in AICTO – Tunis April 9<sup>th</sup> 2018





# **Deployed Activities**

• Regional Workshop: "GNSS and BeiDou System Deep Understanding "during the period from 11th to 13th of April 2018 in Tunis.

figenda	
<b>Day one:</b> 11 April 2018	Principle of GNSS and BeiDou     History of GNSS and BeiDou     GNSS/BeiDou Reference Systems     GNSS/BeiDou Measurements, Error Sources & PVT Estimation     Current Status & Future Development of GNSS/BeiDou     Monitoring and Assessment Training
Day two: 12 April 2018	3. Precise Data Process Theory, Methods and Application of GNSS and Beidou  Precise Data Process Theory Precise Data Process Methods Such as real-time differential(RTD), real-time kinematic(RTK), network RTK, precision point positioning(PPP) and PPP-RTK to enhance the accuracy of GNSS and BeiDou Application of BDS/GNSS augmentation system Conclusion and Suggestion
Day three: 13 April 2018	4. Applications of GNSS and BeiDou Including Applications and implementation of GNSS and BeiDou In traffic In aviation In agriculture In timing In remote sensing etc





# **Deployed Activities**

• Regional training Workshop: "GNSS/BeiDou for Smart Agriculture "during the period 24th to 25th of September 2018 in Khartoum.

#### MONDAY 24<sup>TH</sup>

15:30 - 18:15	Report 1: National BeiBou Ground Augmentation System and the Applications, Wang Tao
	Report 2: COmBav Products make Agriculture and other industries more precise, Wen Lulu
	Report 3: Beidou System Status and Applications, Yang Dongkai
	Report 4: Trend of Modern Agricultural Machinery Informatization based on ICT and Cloud Computing Service, Zhang Junning
	Report 5: BDS/GNSS Application in precision Agriculture, Wu Caicong

#### TUESDAY 25TH

14:00 - 17:00 Training 2: Principles of BDS/GNSS, Wu Falin (3hrs)





## **Next in 2019**

# Arab China Beidou Forum – Second Edition

Venue: Tunis-Tunisia

Period: TBD



# Ways forward

- Deployment testing and assessment actions
- Establishing joint research projects with academia and with R&D labs
- Regional/Sector Trainings



# Prospect in the Field of Precision Agriculture



# First Edition of the Interregional Smart Agriculture Forum(ISAF©) - Khartoum - Republic of Sudan - 24 — 26 September 2018

- Agriculture development is the most powerful tool to end poverty and to provide job opportunities.
- "Agriculture is a vector for sustainable and inclusive growth, as well as the ground/basis of an essential system for ensuring a nutritious, safe and accessible food/alimentation for all" WB.
- New ICT trends and services are being the driving force for all economies.
- Precision farming using navigation services if one of most powerful driving technological solution for a high effectiveness agriculture













### Advantages of Precision Farming (using navigation solution)

- Among others
  - Reduce labor costs
  - Improve the quality of work
  - Improve land utilization rate
  - Extend the working operation time
  - Enterprises can carry out accurate planning, tracking rate of progress,
     maintenance records, command and dispatch

Highly improve management efficiency



#### Collaboration next milestones - Khartoum Declaration

7. We acknowledge the initiative of the Arab Information and Communication Technologies Organization to setup a research Lab within the scope of the Arab-China Center of Excellence BDS/GNSS in AICTO, to lead studies and implement innovative projects in the field of Smart Agriculture and Precision Farming by the use of satellite technologies. And we salute the willingness of the Chinese Satellite Navigation Office to support

this initiative.

#### Khartoum Declaration 26 September 2018

WE are the ministers of agriculture, environment, media and communication technology responsible for ag-riculture, livestock, environment and information and communication technology in the participating countries: the installants intigation of installant, the United And Emintest, the Republic of Tunios, the Republic of Sudan, the Kingdom of Saudi Analia, the republic of Irea, the State of Option. The republic of Lebanon, the Subtanate of Omen, the State of Patrickine, Anali Republic of Egypt, and the Issaini Expositio of Majoriania. Present were also representables of regional, informations and Analo organizations working in the fields of agriculture and informa-

WC point to the international, regional, Anal and African orientations which target the enadication of hunger, alteriating powerty achieving food and water security, preserving natural and environmental resources, and acsecondary protein, success produces were recovered precision or present and an elementary with a considering the great role that influences and communications sechnology (ICT) and the new technological trends including the internet of Things [ICT] can play in bringing about a qualitative change in the agricultural sec-tion. This change will allow the scholerment of high levels of productify of the main body commodates that the efficient sent retirous use of available resources, which will positively contribute to improving the rates of economic growing, businesses agricultural development and activities food security in the Arab and African re-gions. In view of all the above we emphasize the following:

- We appreciate the efforts exerted by the General Sourthriet of the League of Arab States, the African Union and the Arab Organization for Agricultural Development to achieve Arab African integration aimed at achiev-ing flood security and lunger emidication through the joint Arab African integration of action.
- The need to support the adoption of smart agriculture and ICT applications in agriculture to increase produc-tivity and achieve food accurity while preserving returni resources and the environment, and establishing a regional institution body for the smart agriculture forum to serve as an effective machine to setup and etop a regional agenda of smart agriculture and its applications, and assuring annual organization of this
- 3. We affirm that we are part of the international consensus aimed at englicating hunger (Goal 2 of the Sustainable Development Goals 2000), combating poverty (Goal 1 of the Sustainable Development Goals 2010), and preserving the environment and natural resources by coordinating efforts in using information and communi-cation technologies in agriculture to achieve integrated on duralmetric solutions for the agricultural section.
- cation technologies in agriculture to achieve integrated and outsimable solutions for the agricultural sector.

  We emphasible the development of smart agricultural systems and technology and their applications and include them in our national pasts in accretance with our francise and number capabilities. We will want in collaboration with the Ansh and Africian countries to create a solicity appated or full time thermal of their [act of the properties of the section of the properties of the Ansh Organization of the development and the Ansh Organization of their efforts to scheler the document of the Ansh Organization and their efforts to scheler the document and the Ansh Organization and their efforts to scheler the document and the Ansh Organization and their efforts to scheler the document and the Ansh Organization and their efforts to scheler the document and the Ansh Organization from boddiens agriculture to modern agriculture asing new technological stread. This approach will have a positive impact on agricultural productivity and the environment and will reflect on economic growth.

  We acconsidered tread that decleration by the Ansh Organization for Agricultural Development and in inter-
- We acknowledge thatbourn doctation by the Area Organization for Agricultural Development and its inten-tion of making the ADAD a knowledge hab in agriculture to serve researchers, experts, decision relates and all statesholders in the agriculture statuct the lates contain the decisionable by the Director General of ADAD or salabilish a centre for embegreenumbilip in agriculture within the diructure of the organization to serve until
- We acknowledge the initiative of the Arab Information and Communication Technologies Organization to setup a research Lab within the scope of the Arab-Chine Conter of Societance SOL/LindS in ACCO, to lead studies and implement innovative projects in the field of Shart Apriculture and Precidion Remining by the use of statistics accordingly. And we assume the willingers of the Chinese Satrista Navigation Office to support
- Somet of advenced aboratories to facilitate the adoption of information and communication technologies through the use of sights applications and the internet of things, while providing a special place for young people [both men and women] to pursue entrepresentation in this field.
- people (poth men and watered) to pursue entregeneering in this feet.

  Nex strass the importance of the establishment of regional and international partnerships between countries producing ICT applications for egriculture, who and African countries, and finding mechanisms for financing small agriculture projects that involve small families countries, and strategies in line with the technological SIA We affirm our support for establishing insolutional frameworks and strategies in line with the technological
- developments to promote the use of smart agriculture. 13. We appreciate and encourage the development by Arab and African countries to set regulations and initiate policies supportive of smart agriculture and related services, while setting up sustainable mechanism for

#### إعلان الخرطوم للزراعة الذكية الخرطوم , السوطن 26 سيلمبر 2018م

ليصل وزراء الزرامة والبيناة والإملام وتعاملونوجها الاتصالات وللعلومات وعاميار للسؤوارن والهيئات التنامصصة الإقليمية والدوليث المنيث بشئون الزراعات والثروة الحيوانيث والبيئث وتمعلواوجها الملومات والاتصالات في عفان من الدول التاليان للملعكة الأردنية الهاشمية، الإمارات المريية للتحداد الجمهورية التونسية، جمهورية السودان الملعكة العربية السعوديث الجمهورية العراقيات دواث فطن الجمهورية اللبنانية سلطنة عمان دولة فلسعارن جمهورية مصر العربية والجمهوريث الإسلاميث للوريثانيث

والتطاراقا من التوجهات الأممية والإقليمية المربية والإفريقية الهادفة إلى اقلضاء على الجوع ولقليل الفقر ولحقيق أتأمن الغذائي والاثلي والحفاظ على الواره الطبيعيث والبيئيث وإيمانا منا بالدور الطعيرر الذي يمطكن أن تاهبه تطعنولوجيا للملومات والاقصالات وخاصة التوجهات التسكنولوجية الجديدة يماطى ذلك فالرنث الأثياد في إحداث نقلة نوعية في القطاح الزراعي والذي يتمثل في تعقيق مستويات إنتاجية مرتفعة من السلع الفذائية الرايسية من غلال الاستخدام الطلقب والرشيد للموارد للناحث مما سيسهم إيجابا في الارتقاد بمعدلات اللمو الاقتصادي وتحقيق الأمن الغذائي العربي والأقريشي والتنميذ الزراعيث الستدامة في دولنا. تؤطعه على الأثيء

- تثمن الجهد الذي تقوم به الأدائلة العادة البادعة الدول العربية والاتحاد الأفيهقي التطبيق التكامل العربي، الإفيهقي يبدق تحليق الأمن الغذائي والتضادعان الجوح من خلال ألية العمل العربي الأفريشي الشارك
- نومته، مثى ضرورة دعم ثبق الزرامة النطعية وتعليبة ان تطعنولوجيا العلومات والاشعالات في الزرامة الزيادة الإنتاجية وتعليق الأدن المذانيء مع للعافظة على اتواره العليمية والبيثية. وميطعاة هذا التثنى ليصبح الأداة الداملة في إعداد وتطوير أجندة إقليمية للتراعة النحكية وتطييقاتها وضمان استمراية انعقاد مذا التتديدوي
- توطعه على أثنا جزء بن الإيماع الدولي الذي يهدف إلى القضاء على الجوع رافيدف الثاني من أعداف التنمية الستدامة. 2030، وسمايية الفقر الهدها الأول من أمد البالت مية السنت امية 2030، والما فقة على البيئة والوارد الطبيعية والكامن خلال تسيق الجهود في مجال استخدام تحكنولونها الالسالات والعلومات في الزراعة وسولا إلى طيل متحكامات وستدامة
- 4. نوكت على تطوير نظم وتحكنونومها الزراعة النحكية وتطبيقاتها وتضمرتها في خطبكا الومانية وفقا للدراتنا لتالية والبشرية وأن نعمل على التعكامل مع الدول الأغرى في التعلقتين لإسناث سبتممأت قادرة على استخدام انازات الأثيباء والتوبيات التحكنواوجية الجديدة لبلوغ تحكامل زراعي يرتحكز على الابتحكار والتجديد التحكنواوجي ويسامم في تحقيق الأمن الفذائي والنحو الاقتصادي
- تثمن دور وجود التطمذ المريبذ التنميذ الزرامية والتطمذ المريبذ التطفئولوجيات الالصال والعلومات ومعيهما لتعليق الأمزالدناني وإملاق بادرة الزامة أوالفلاحة النطيش أجز التحول مزائز امتالتقليدية إلى الزامة الحديثة باستغدام التقنيات المديثة بالها مز تأثير أيجابي على الإنتاجية الزراعية والبيئية والمعتدامها على النمو الاقتصادي
- ة. الإشابة راملان لتنظمة المريبة التنتمية الترامية توجهها نحو جمل النظمة مجمعاً للمعرفة وKicowledge Hoby في التجال الزراعي لغنمة الباماون والغبراء ومتفذي القرار والفاعلون في القمااع الزراعي والإشادة أيضأ بإعلان مديرهام التطمة المريية التنمية الزامية إنشاء مركز لريادة الأممال الزامية ضمن ميكل التطمة لخدمة صفار التجريز واوي
- 7. نشيد بميادرة التنظمة المريية لتمكنولوجيات الالمنال والعلومات بانشاء مغج البحوث لدراسة ولتغيذ مشاويع والدقافي الزراعة النطقية والزاعة الطيقة باستعمال الأفعار السناعية وذلك في إطار ميطفز التميز العربي السيق بيدو GNSS بأيطش وتأمن استعاد التكشب السيق الدلاحة بالاقدار السناعية CDNO للتعاون في عنا العبال ودعم عنادالبادرة توماعد على دور التماخ الخاص المربي والأفريقي في زيادة الأمدال والابتحاد وقادة معامل ومفاير متطورة لتوماون المكنولوجيات للعاودات والاتصالات باستخدام فلطييقات فرؤسية والنازنت الأقياد مع إناحة مساحة خاصة للشياب رمن
- 9. نوطه على أصيد أحداث الشراطهات الإقليمية والدولية برين الدول النتجة لتطبيقات تطعنواوجيا العلومات والاتصالات التونيدة الترزاعة والدول المريبة والطيشية وإيجاد أثياث لتمويل مشاريع التراعة التطعية لفائدة صفار لترارمين

الونسون ليبادة الأمماليق منا لنوال

- نوماد دمدنا لايجاد الأطرائوسية والسارائيجيات الواطعية التطايز التطانولومي اللازم للتوسع في استضام تطبيقات
- تثمن ونشجع على قيام الدول العربية والإفريقية بتطوير تشريعات وسياسات داعمة التواعة النكية والتعليقات والخدمات السائدة لهاء مع إيجاد كيثرست استات التراعة التحليث



# Thank you for your attention