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NEW YEAR, NEW ADVANCES

The February issue of the WGIC Policy Watch highlights a number of advances, which in just the second month of 2021, are already taking hold. Contained herein are initiatives being undertaken in Australia, the European Union, India, the Netherlands, Pakistan, the United Arab Emirates, the United Kingdom and the United States.

In Australia, a collaborative effort for protecting personal privacy information, has resulted in a data privacy tool that identifies risks associated with sensitive and personal information embedded in selected datasets, being reidentified and matched to individuals.

Advances in the Global Navigation Satellite System (GNSS) cover a range of topics and geographies. In the European Union, GNSS software has been designed to strengthen linkages with the rapidly growing small satellite market. In the United States, a policy directive highlighting the importance of the Global Positioning System (GPS) was recently issued, and also in the U.S., NASA is developing a navigation architecture that will include GNSS signals for selected space missions. In the Indian State of West Bengal, GPS systems are being installed on refrigerated vans carrying COVID-19 vaccines to optimize vaccination regimes.

In the Netherlands, a partnership with Ukraine has been forged to aid the development and operation of a National Spatial Data Infrastructure (NSDI) in Ukraine. In Pakistan, the National Highway Authority (NHA) has instituted a program that allows e-bidding on contracts, e-billing with contractors, and GIS mapping – all in hopes of reducing corruption in the sector.

Interestingly, in the UAE, a Space Court is being developed to settle commercial disputes. As Space tourism and mining grow, entities in both the UAE and abroad may seek arbitration in this venue. Lastly, the U.K., in partnership with the UN Office of Outer Space Affairs (UNOOSA), has committed resources to identify examples of the sustainable use of outer Space, and to promote the Long-term Sustainability (LTS) guidelines and their implantation.

Please join us in reading the February 2021 issue of Policy Watch.

Barbara J. Ryan
Editor, Policy Watch
The National Geospatial Intelligence Agency (NGA) wants faster access to commercial geospatial data. “The private sector is coming out with new geospatial intelligence products and services faster than the government can figure out how to buy them. That means analysts need ways to procure commercial geoint at a moment’s notice,” David Gauthier, Director of the NGA’s Commercial and Business Operations Group, was quoted as saying.

NGA provides the U.S. government agencies with geospatial intelligence through satellite images. The National Reconnaissance Office (NRO), its sister agency, procures imagery from NGA. There is a demand for photographic imagery captured by electro-optical sensors in Space. But now analysts see value in other sources of intelligence, such as Space-based Synthetic Aperture Radar (SAR), which can penetrate clouds, and Radio Frequency (RF) satellites that identify and geo-locate the source of RF signals.

NGA is preparing to work with hundreds of suppliers and that will require an ability to do ‘real-time solution matching’ as needs arise. The intelligence community slowly is pivoting to a ‘commercial first’ mindset. We are promoting a strategy across leadership that basically says the cost of ignoring commercial capabilities is much worse than the cost of using them.

DAVID GAUTHIER
Director, NGA’s Commercial & Business Operations Group
The U.S. Space Force (USSF) has joined the U.S. Intelligence Community (IC). The Space Force has become the 18th member of the Community, which includes the Central Intelligence Agency (CIA), the Federal Bureau of Investigation (FBI) and National Security Agency (NSA), in addition to numerous other agencies in the Defense, Treasury, Homeland Security and Energy Departments. It is the first new organization to join the Intelligence Community since 2006, when the Drug Enforcement Administration (DEA), part of the Department of Justice, became part of the Community. With the USSF addition, nine DoD components are now members of the Intelligence Community.

Underscoring how the addition of Space Force to the Intelligence Community marks a “historic opportunity” to further strategic change across the national security space enterprise, John Ratcliffe, Director of National Intelligence, said that sharing of Space-related information led to increased integration and coordination between the various agencies regarding intelligence activities. “This move not only underscores the importance of Space as a priority intelligence and military operational domain for national security, but ensures interoperability, future capability development and operations, and true global awareness for strategic warning.”

Today, we took action to elevate Space intelligence missions, tradecraft, and collaboration to ensure the success of the Space Force, the Intelligence Community, and ultimately our national security.

**GEN. JOHN W. RAYMOND**
Chief of Space Operations
The Federal Aviation Administration (FAA) has for the first time approved fully-automated commercial drone flights by American Robotics. The company’s Scout System™ features advanced acoustic Detect-and-Avoid (DAA) technology that enables its drones to maintain a safe distance from other aircraft at all times. By developing a layered, redundant system of safety that includes proprietary technical and operational risk mitigations, American Robotics was able to prove that fully-automated commercial drone flights can be conducted safely in the National Airspace System (NAS), even when it conducts flights Beyond-Visual-Line-of-Sight (BVLOS) of the operator.

The FAA approval represents a pivotal inflection point in the industry. Prior waivers and certifications awarded by the agency required visual observers (VOs) stationed along the flight path to keep eyes on the airspace at all times, or required other burdensome restrictions, such as infrastructure masking. As a result, the value and scalability of commercial drone use in the U.S. has, until now, been drastically inhibited, or in many cases, eliminated.
NEW USDOC RULE MAKES UAS EXPORTS EASIER

On January 12, 2021, the Bureau of Industry and Security (BIS) of the U.S. Department of Commerce (USDOC) issued a new rule changing the license review policy to add flexibility for exports of unmanned aerial systems (UAS) that are controlled for missile technology (MT) reasons. The rule amends the United States’ Export Administration Regulations (EAR) to reflect the President’s July 24, 2020 policy updates. These updates softened the implementation of the Missile Technology Control Regime’s (MTCR) strong presumption of denial for transfers of Category I systems, and instead treated a carefully selected subset of MTCR Category I UAS (maximum airspeed less than 800 km/h) as Category II. This allows for a more liberal case-by-case review, and opens up trade opportunities for some U.S. drone producers.

The rule specifically adds a note to paragraph (b)(1) of EAR Sec. 742.5, largely disavowing the strong presumption of denial for Category I drones and replacing it with the same case-by-case review standard used for Cat II. The rationale is that Category I drones can also be used for non-security related commercial purposes.
The General Services Administration (GSA) has announced that it would only procure five drone models approved by the special Department of Defense (DoD) program of the U.S. Government.

In an update, GSA said, “Due to the significant risk associated with offering small unmanned aerial vehicles under its Multiple Award Schedules (MAS) program, it would remove all drone models from MAS procurement contracts, except those approved by DoD’s Defense Innovation Unit (DIU) through its Blue sUAS Program. Additionally, a solicitation refresh in the coming months will clarify that no drones, other than Blue sUAS approved UAVs, will be awarded to MAS contracts. A 30-day advance notification will be posted to GSA Interact prior to the solicitation refresh.

MAS are long-term government-wide contracts with commercial firms providing buyers from federal, State and local governments access to more than 11 million commercial products and services at volume-discount pricing.

GSA values its partnership with its contractors and is committed to exploring how drones can be securely offered under MAS. Should GSA identify and implement an appropriate risk mitigation strategy, affected contractors may have the opportunity to add drones back to MAS contracts.

GSA STATEMENT
The southern Indian State of Andhra Pradesh has joined 12 other States of the country (Goa, Gujarat, Haryana, Himachal, Jharkhand, Karnataka, Maharashtra, Odisha, Punjab, Telangana, Uttarakhand, and Uttar Pradesh) in the creation of a GIS-enabled database of industrial areas.

The State’s decision is expected to help bring about a committed approach towards resource optimization, industrial upgrades, and sustainability. The Industrial Information System (IIS), as the project is called, includes a range of potential clusters, parks, nodes and zones for which entrepreneurs can invest. It offers plot-level data along with updated land-related information in real time. In addition, a national-level land bank is also being developed by integrating the IIS with industrial GIS systems of States.

The portal will serve as a one-stop solution for all industrial information, including availability of raw materials, agriculture, horticulture, minerals, natural resources, distance from key logistic nodes, layers of terrain and urban infrastructure. At the moment, the database consists of over 3,350 parks/clusters covering about 475,000 hectares of land across 31 States and Union Territories.

**IIS Offerings**

- Information on available land for prospective investors looking at setting up units in the country;
- GIS mapping of industrial clusters;
- Information about existing external and internal infrastructure, such as rail, road, air and port connectivity, and other common facilities in and around the manufacturing clusters; and
- Links to State GIS portals and land banks.
GIS MAPPING SYSTEM TO COMBAT CORRUPTION

Pakistan has launched a novel GIS mapping system under the country’s National Highway Authority (NHA) e-governance system, which now allows e-bidding, e-billing and GIS mapping — to ensure transparency in awarding contracts and helping the country combat corruption.

Speaking at the launch of the system, Pakistan Prime Minister Imran Khan said, “e-bidding will reduce human interaction in awarding contracts for various projects and will eliminate corruption and bribery from the country. We will ask other ministries to also shift towards e-governance.”

The Prime Minister also expressed the resolve to digitize the Federal Board of Revenue (FBR) by July of this year. “We can ensure more tax collection by introducing automation and digitization in the FBR,” he said.

Earlier, Communications and Postal Services Minister Murad Saeed had said that the NHA has started an e-bidding system that will make the bidding process transparent, efficient and easy. “NHA is endeavoring to undertake road building projects on a public-private partnership (PPP) basis,” he said.

e-bidding will reduce human interaction in awarding contracts of various projects and will eliminate corruption and bribery from the country

IMRAN KHAN
Prime Minister of Pakistan
DATA
NEW PRIVACY TOOL TO PROTECT COVID-19 DATA

A new data privacy tool has been developed in Australia to ensure that key datasets, such as those concerning people’s movements during the pandemic, can be publicly shared with an extra layer of security. Created by the Commonwealth Scientific and Industrial Research Organisation’s (CSIRO) Data61, the digital specialist arm of Australia’s national science agency, the NSW Government, the Australian Computer Society (ACS) and several other groups, the data privacy tool assesses the risks to an individual’s data within any dataset, allowing targeted and effective protection mechanisms to be put in place.

Known as a Personal Information Factor (PIF) tool, it uses a sophisticated data analytics algorithm to identify risks of sensitive, de-identified and personal information within a dataset being re-identified and matched to its owner. The early version of the tool is already being used by the NSW Government to analyze datasets tracking the spread of COVID-19 in the State since March 2020 by applying appropriate levels of protection, before it is released as open data.

There is no other piece of software like the PIF tool. It was developed through a long and very collaborative process involving many state, Commonwealth, and industry colleagues. CSIRO’s Data61 really brought it to life and made it useable. Every day, it helps us analyze the security and privacy risks of releasing de-identified datasets of people infected with COVID-19 in NSW and the testing cases for COVID-19, allowing us to minimize the re-identification risk before releasing to the public.

DR IAN OPPERMANN
Chief Data Scientist, NSW Government
The Netherlands’ Cadastre, Land Registry and Mapping Agency, or Kadaster, has signed a Memorandum of Understanding (MoU) with StateGeoCadastre Ukraine to build institutional cooperation in the field of National Spatial Data Infrastructures. The memorandum will enable stronger cooperation between the two institutions to facilitate the exchange of experts and delegations, expert support on NSDI capacity, cooperation on cartography, topography, cadastre, and land registry spheres.

StateGeoCadastre aims to improve the development and operation of the NSDI in Ukraine, and the MoU will allow Kadaster to share its knowledge and experience, recognizing the mutual benefit of cooperating on NSDI and seizing the opportunity to promote friendship and understanding between the two countries. Chairman of the Kadaster Board of Management, Frank Tierolff, and Chairman of StateGeoCadastre, Roman Leschenko, signed the agreement virtually on January 20, 2021.

Ukraine has been a front-runner in self-assessing its NSDI state-of-play and plotting a future NSDI strategy. This MoU allows StateGeoCadastre and Kadaster to effectively collaborate on geo-information integration.

FRANK TIEROLFF
Chairman, Kadaster Board of Management
CITYDATA, a geospatial intelligence provider for smarter cities, has announced that users of their technology platform can now freely access demographic data of eight countries based on census open data sources. The demographic data is available in the form of RESTful APIs with over 500 searchable filters, and in the form of powerful map-based visualization in the browser through the online dashboard.

CITYDATA curates, categorizes, structures and transforms census datasets into easy to use APIs, so that researchers, students, academics and data scientists can be free from gnarly data wrangling and focus fully on analysis and correlation. The data APIs enable users to query a single attribute, an entire group of attributes, or even specific criteria like housing units with at least three rooms and households with at least four persons.

CITYDATA is all about data-driven insights to construct narratives about real-world observations. Our mobility data provides deep insights about people-density and movement patterns at the census block or neighborhood scale. Joining our mobility data with census demographic open data can unlock even deeper insights to explain the observed patterns.

APURVA KUMAR
CEO, CITYDATA.ai
GNSS SOFTWARE SOLUTION TO SUPPORT GALILEO

On January 8th, under the European Union’s Enhanced Navigation in Space (ENSPACE) project, it was announced that there has been significant progress in developing a GNSS software solution to support Galileo, the EU’s navigation satellite system. Coordinated by Qascom, the project is aimed at strengthening the rapidly growing small satellite market sector. The Galileo-enabled ENSPACE receiver has been made a part of the CubeSat mission BOBCAT-I, launched recently from the International Space Station (ISS).

Once its performance in Space has been evaluated, researchers will work on further developing the solution and turning it into a complete GNSS receiver product. In addition, they will also look into whether the receiver can be integrated into launchers or satellites that are orbiting around the Moon.

The mission contexts of the ENSPACE project include:

- LEO satellites for communication, broadband Internet services, and Earth Observation missions;
- MEO satellites for navigation;
- GEO satellites for broadband TV and Communications;
- Interplanetary missions such as satellites orbiting around the Moon or Mars; and
- Launchers.

In ENSPACE we evolved this concept and invested in a new software GNSS solution that has been installed in commercial off-the-shelf hardware and is also compatible with other system-on-chip components.

SAMUELE FANTINATO
Head of Advanced Navigation Unit, Qascom
Indian Finance Minister Nirmala Sitharaman presented the Union Budget 2021-2022 on February 1st, with a number of key announcements for the Space sector in the country. Four Indian astronauts are undergoing training for India’s ambitious Gaganyaan mission as part of a joint partnership between the Indian Space Research Organisation (ISRO) and Russia’s Roscosmos Corporation. The first unmanned launch is slated for December 2021.

Polar Satellite Launch Vehicles (PSLV-C51) carrying satellites from Brazil and India will be launched under NewSpace India Limited, a public sector undertaking under the Department of Space. The Chandrayaan-3 mission, the successor to the Chandrayaan-2 mission to the far side of the moon in 2019, is also set to be carried out in 2021. In addition, the government has made a financial allocation of INR 4,000 crore ($548 million) for conducting deep ocean survey projects from Space over five years, for the exploration and conservation of oceanic biodiversity.

ISRO is currently looking to complete three major Space projects by the end of 2025 – the Gaganyaan mission, the Mangalyaan-2, and the Shukrayaan mission. It is also planning to work on developing a heavy-lift launch vehicle, semi-cryogenic stage, reusable launch vehicle, advanced propulsion, next-generation avionics, advanced materials, dynamic Space applications, and efficient integration of Space-based services, as well as advanced Space science missions.
Dubai has announced the creation of a “Space Court” to settle commercial disputes, as the UAE — which is sending a probe to Mars — builds its presence in the Space sector. The tribunal will be based at the Dubai International Financial Centre (DIFC) Courts, an independent British-inspired arbitration center based on common law.

Companies and institutions based both in the UAE and abroad will now have the option of agreeing to take grievances to the tribunal, with new contracts potentially specifying the new “space court” as the forum for resolving disputes.

The oil-rich nation, whose colossal skyscrapers and mega-projects put it on the world map, is also looking at other new frontiers — Space tourism and mining — and has made plans to help regulate those fledgling industries.

We want to set the scene in terms of what courts can do. We believe that there will be a huge appetite for it.

AMNA AL OWAIS
Chief Registrar at DIFC Courts
The United Nations and the U.K. have signed an agreement to help nations ensure that outer Space remains safe and sustainable for future generations. Following the announcement, U.K. funding of £85,000 ($117 million) will support international efforts to promote Space sustainability by identifying examples of the sustainable use of outer Space through a series of events and outreach efforts. This project will also inform future UN Office of Outer Space Affairs (UNOOSA) capacity-building efforts to promote the future sustainability of outer Space, and will encourage all actors to implement the Long-term Sustainability (LTS) guidelines to the fullest.

This partnership with the U.K. Space Agency is the first time that the UK has funded a project with UNOOSA. It will enable the UN to raise global awareness on this important issue and foster the global governance of outer space-based on international law. It is also the first project to be funded from the international element of the U.K. Space Agency’s National Space Innovation Programme.

As the Earth’s orbit becomes congested with potentially hazardous debris, it’s critical that we work with our international partners to secure the continued safety and sustainability of space. I am therefore delighted the U.K. is partnering with the UN to implement and promote these vital standards to all emerging and established Space-faring nations, helping to ensure that outer space remains open for our next generation of astronauts.
MOU TO PUSH COMMERCIAL SPACE TRANSPORTATION

NASA and the FAA have signed a Memorandum of Understanding extending their collaboration on improving the commercial Space transportation capabilities of the United States, including commercial crew and cargo activities. The partnership can be seen in line with the objectives of the multiple U.S. Space policies that took effect in the past few years, including the Space Policy Directives 1 (harnessing the power of the private industry in Space), 2 (streamlining regulations around commercial use of Space), and 3 (Space situational awareness and Space traffic management), and the 2020 National Space Policy that was unveiled in December 2020.

Under the new agreement, the agencies will build a safe and cost-effective framework for commercial launch and Space travel, including transportation of passengers, cargo and other payloads, for orbital and suborbital missions. The intent is also to streamline spaceflight standards and requirements. Since FAA is responsible for regulations that govern commercial Space launch and re-entry licensing, the collaboration also entails licensing of orbital and suborbital flights, facilitating new innovations, and advancing point-to-point commercial suborbital pilot programs.

The partnership between the FAA and NASA is vital to continue the growth, innovation and safety of commercial Space operations, and maintain the pre-eminence of U.S. leadership in the aerospace sector.
POLICY DIRECTIVE ON GPS AND ALTERNATIVE PNT

On January 15th, the U.S. issued a policy directive highlighting the importance of the Global Positioning System (GPS), and underlining the need to develop an alternative Positioning, Navigation and Timing (PNT) service. The Memorandum on Space Policy Directive 7 (SPD-7) establishes the implementation actions and guidance for Space-based PNT programs and activities for America’s national and homeland security, civil, commercial, and scientific purposes.

The directive reiterates that the United States will continue to operate and maintain the GPS to satisfy civil, homeland security and national security needs, consistent with published performance standards and interface specifications. Further, it will continue to provide worldwide access to its Space-based GPS services and government-provided augmentations free of direct user fees, along with open and free access to information necessary to develop and build equipment to use these services.

SPD-7 provides guidance for:

1. A sustainment and modernization of the GPS and federally developed, owned and operated systems used to augment or otherwise improve GPS;

2. Implementation and operation of capabilities to protect United States and its allies’ access to, and use of, GPS for national, homeland and economic security, and to deny adversaries hostile applications use of United States Space-based PNT services; and

3. United States participation in international cooperative initiatives regarding foreign Space-based PNT services and foreign use of GPS and its augmentations.
NASA ADVANCING GNSS CAPABILITIES FOR ARTEMIS

Under its Space Communications and Navigation (SCaN) program, NASA is developing a navigation architecture, which will provide precise and reliable Position, Navigation, and Timing (PNT) data for the Artemis missions. GNSS signals will be a part of this architecture. Under this, missions at high altitudes will also be able to take advantage of GNSS signals. GNSS use in the high-Earth orbit and lunar Space will not only improve timing, enable accurate and responsive maneuvers and reduce costs, but will also allow autonomous, on-board orbit and trajectory determination.

Currently, six GNSS constellations are providing PNT services. These constellations are operated by China (BeiDou), the European Union (Galileo), India (IRNSS), Japan (QZSS), Russia (GLONASS), and the US (GPS). The interoperability of constellations will play a crucial role in the SCaN program. On the other hand, using multiple constellations offers more signal availability, thus providing improved navigation accuracy and timing for satellites. This will be helpful for spacecraft at higher altitudes, where GNSS signals are less numerous. However, using multiple constellations has its challenges, as each constellation has a unique design.
SPECIAL INITIATIVES
GPS USE IN TRANSPORTATION OF COVID-19 VACCINES

The Indian State of West Bengal has announced the installation of GPS in all the refrigerated vans which will be used to transport vaccines to different districts of the State.

The Kolkata State Health Department, through this initiative, aims to ensure better surveillance in the entire functioning of vaccine transportation through close coordination between various government departments. More than 30 refrigerated vans will have GPS systems. Each of the State’s 23 districts will have a van dedicated for vaccine distribution.

The health department has instructed us to keep adequate arrangements for admitting the people who will develop side effects after receiving the vaccines. Enough critical care beds would be made available.

HEALTH DEPARTMENT OFFICIAL
The U.S. Department of Transportation (DOT) has released the Automated Vehicles Comprehensive Plan (AVCP). The AVCP lays out the DOT’s robust multi-modal strategy to promote collaboration and transparency, modernize the regulatory environment, and prepare the transportation system for the safe integration of Automated Driving Systems (ADS). The AVCP prioritizes safety while preparing for the future of transportation.

The AVCP illustrates how DOT’s work, including a myriad of efforts with its stakeholders beyond government, is focused on meeting the challenges of a transportation system that must adapt to technological advancements. The AVCP provides real-world examples of how the Department’s operating administrations collaborate to address the needs of emerging technology applications.

The development of the AVCP was informed by extensive stakeholder engagement conducted over the last several years through events (in-person and virtual) and public notices. The AVCP will be published in the Federal Register for public review and comment.

This comprehensive plan lays out a vision for the safe integration of automated vehicles into America’s transportation system while ensuring that legitimate concerns about safety, security, and privacy are addressed.

ELAINE L. CHAO
Outgoing Transportation Secretary