### 20-21 OCTOBER 2020

HELD ONLINE

# **IGRSM** 2 0 2 0

10<sup>th</sup> IGRSM International Conference and Exhibition on Geospatial & Remote Sensing Advancing Geospatial 4.0

> PROGRAMME BOOK



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### **IGRSM 2020** A

# Message from the Minister of Science, Technology and Innovation





Foremost, I would like to thank the organisers, the Institution of Geospatial and Remote Sensing Malaysia (IGRSM) and Universiti Putra Malaysia (UPM), for inviting me to grace this great occasion. It my great pleasure to be here with the international and local participants, and exhibitors of the conference

I congratulate the organising committee for successfully organising the 10<sup>th</sup> IGRSM International Conference and Exhibition on Geospatial & Remote Sensing (IGRSM 2020) on 20-21October 2020 in online mode. This conference's theme, *Advancing Geospatial 4.0* aptly highlights the importance geospatial technologies as a key component of Industry Revolution 4.0. Digital transformation is redefining the geospatial industry by data profusion, unveiling new business models, and increased investments in innovations, streamlined workflows, predictive analysis, and wider industry collaboration. The geospatial sector is further being accelerated by the rapid decrease in the size of sensors, increasing computerisation, as well as cloud capabilities and fast connectivity. The creation of enormous amounts of geospatial data and the ability to analyse it using new algorithms is redefining business models, while even traditional sector such as transportation and agriculture are undergoing a massive transformation.

It is encouraging to see IGRSM take a key step in developing the national geospatial industry through the creation of the title Geospatialist (Gs) for its members. I believe that this title will help provide important recognition for geospatial practitioners both in public and private sectors.

I would like to take this opportunity to invite participants from all sectors to engage in fruitful discussions and information sharing to help the geospatial industry rise to a higher level. I am sure that we will all benefit from this conference for the years to come.

YB Khairy Jamaluddin Minister of Science, Technology and Innovation

# Message from the Vice-Chancellor, Universiti Putra Malaysia (UPM)





Firstly, I will like to convey my warm thank-you to YBM, YB Khairy Jamaluddin, Minister of Science, Technology and Innovation for taking great interest in officiating the Online Mode 10th IGRSM International Conference and Exhibition on Geospatial & Remote Sensing (IGRSM 2020). I am happy to note that Universiti Putra Malaysia (UPM) has played an active and significant role in organizing this conference together with the Institution of Geospatial and Remote Sensing Malaysia (IGRSM), Universiti Utara Malaysia (UUM), Universiti Teknologi Malaysia (UTM), International Islamic University Malaysia (IIUM), Science & Technology Research Institute For Defence (STRIDE), Forest Research Institute Malaysia (FRIM), GIS Innovation Sdn Bhd, and GPSLANDS Sdn Bhd.

The cooperation shown by the universities, professional institution, government agencies and private companies is a good indicator of interorganizational cooperation and I hope such cooperation can be emulated for geospatial data sharing between organizations within a country. In UPM, we include the moulding of such traits within our students' curriculum and instil it during their stay on campus

As geospatial science and technology has vast potential and capabilities, UPM has given great encouragement to this field in the pursuit of knowledge discovery, application research, teaching and skills provisions. We continue to support this core field as we believe in its ability to expedite the new norms using Geospatial 4.0, with emphasis on Big Data, 5G, coupled with Geospatial Artificial Intelligence. We hope this conference will help you assimilate knowledge from these fields and much more.

With the support of the sponsors, supporting organizers and media partners, the organizers have managed a comprehensive and beneficial geospatial conference for the benefit of the professional practitioners, academics, industry and society. I wish all of you a very successful conference.

### YBhg. Prof Dr Mohd Roslan Sulaiman Vice-Chancellor Universiti Putra Malaysia (UPM)

### IGRSM 2020 Adva

### Message from the Dean, Faculty of Engineering, Universiti Putra Malaysia (UPM)





Firstly, I wish to extend my heartfelt appreciation to YB Khairy Jamaluddin, Minister of Science, Technology and Innovation for his willingness to officiate the 10th IGRSM International Conference and Exhibition on Geospatial & Remote Sensing (IGRSM 2020), which is jointly organised by the Institution of Geospatial and Remote Sensing Malaysia (IGRSM) and Universiti Putra Malaysia (UPM)

I am happy to note of UPM's significant milestone towards becoming a leading university in geospatial research, a field in which we have received several national and international awards. In sustaining support for research in this area, we have established well equipped multi-disciplinary laboratories in several faculties as well as relevant research centres (RCs) such as the Geospatial Information Science Research Centre (GISRC) and Smart Farming Technology Research Centre (SFTRC).

This conference, with the theme Advancing Geospatial 4.0, provides a platform for disseminating knowledge, and sharing expertise and experiences in geospatial sciences in all aspects of applications. Maps and geographic information derived from geospatial technologies are assets that are valuable for the planning and development of the nation, as well as tools for economic growth and modernisation through collaborative work and smart partnership.

Finally, I would like to thank and congratulate the organisers, presenters, participants and exhibitors for the success of this event. I am confident that this knowledge-sharing platform can gather professionals and industry experts from the geospatial field globally to disseminate their knowledge and share their expertise and vast experience with the participants. This is a perfect venue for the steady flow of the latest technologies in geospatial.

### YBhg. Prof. Ir. Ts. Dr. Nor Kamariah Noordin Dean, Faculty of Engineering Universiti Putra Malaysia (UPM)

# Message from the President of The Institution of Geospatial and Remote Sensing Malaysia (IGRSM)



IGRSM INSTITUTION OF GEOSFATTAL AND REMOTE SENSING MALAVSA I am pleased to warmly welcome the Honourable YB Khairy Jamaluddin, Minister Of Science, Technology And Innovation, all distinguished guests, keynote speakers, paper presenters, delegates, sponsors, exhibitors and supporters to the 10th IGRSM International Conference and Exhibition on Geospatial & Remote Sensing (IGRSM 2020), which is jointly organised by the Institution of Geospatial and Remote Sensing Malaysia (IGRSM) and Universiti Putra Malaysia (UPM).

The main objective of IGRSM 2020 is to bring together local and international experts in geospatial technologies, both from the government and private sectors to disseminate knowledge, and to share their expertise and experiences in present and future applications and development of remote sensing, geographical information systems (GIS) and global navigation satellite systems (GNSS). The theme for this conference is Advancing Geospatial 4.0, which is very imperative in the context of the current development of geospatial technologies worldwide. As the world is currently facing the COVID-19 pandemic, the significance of geospatial technologies becomes more pronounced. Daily updated maps of COVID-19 infection zone regions as well as contact tracing through apps such as MySejahtera are just some new applications that are now becoming the norm. The expanding geospatial landscape has given rise to a full range of applications. The ability of users to determine their position and transmit the coordinates to other devices has been of significant use in location-based services, advertising and social networking.

Social mapping capabilities are changing long-held constructs of map production and use. In many parts of the world, map data is now being captured in the field by volunteers riding bicycles or walking. This societal involvement in data acquisition adds value to conventional data collection by satellites and other space and airborne capabilities as well as efforts undertaken by the relevant national agencies. This conference creates an environment for discussing and building intelligence into geospatial technologies that can be shared and utilised to enhance the best solutions for the future of inhabitants of this planet. Finally, I wish all the presenters, participants, delegates and exhibitors a rewarding conference, which will hopefully culminate with new networks and collaborations. To the international presenters and participants, may you have a pleasant and memorable stay in Malaysia.

Last but not least, I wish IGRSM 2020 every success.

### YBhg. Prof. Gs. Dr. Abdul Rashid Mohamed Shariff President

Institution of Geospatial and Remote Sensing Malaysia (IGRSM)

10<sup>th</sup> IGRSM INTERNATIONAL CONFERENCE AND EXHIBITION ON GEOSPATIAL & REMOTE SENSING (IGRSM 2020) 20 - 21 OCTOBER 2020

### IGRSM 2020 Advancing Geospatial 4.0

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#### LIST OF CONTRIBUTORS

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### PROGRAMME Day 1: 20 October 2020 (Tuesday)

0815 - 0900	Opening Ceremony
	<ul> <li>Negaraku and Universiti Putra Malaysia (UPM) Anthems</li> <li>Doa Recitation</li> <li>Welcoming Speech by YBhg. Prof. Gs. Dr. Abdul Rashid bin Mohammed Shariff, President of IGRSM and Chairman of IGRSM 2020</li> <li>Guest Address by YBhg. Prof. Ir. Ts. Dr. Nor Kamariah Noordin, Dean, Faculty of Engineering, Universiti Putra Malaysia (UPM)</li> <li>Vice-Chancellor's Address by YBhg. Prof Dr. Mohd Roslan Sulaiman, Vice- Chancellor, Universiti Putra Malaysia (UPM)</li> <li>Opening Address by YB Khairy Jamaluddin bin Abu Bakar, Minister of Science, Technology &amp; Innovation</li> </ul>
0900 - 1130	Keynote Session I
	<ul> <li>YBrs. Tn. Hj. Gs. Azlikamil bin Hj. Napiah, Director General, Malaysian Space Agency (MYSA): Remote Sensing's Role in the New National Space Policy</li> <li>YBhg. Dato' Sr. Dr. Azhari Mohamed, Director General of Survey and Mapping Malaysia, Department of Survey and Mapping Malaysia (JUPEM): Geospatially Speaking, Just Where on Earth Are We Now?</li> <li>Mr. Jonathan Ong and Mdm. Siti Baizura Alidin, Planet: How Planet's Agile Aerospace Approach Pushes the Boundaries of Geospatial</li> <li>Mr. Paul Kennedy, Vice President, Product Strategy, Geointelligence, MDA Conserting Department of Lange Space Space Space With Observation</li> </ul>
	Geospatial Services Inc.: Growing a Space Economy with Earth Observation
1130 - 1200	Break
1130 - 1200 1200 - 1330	
	Break
	<ul> <li>Break</li> <li>Keynote Session II</li> <li>Prof. Dr. Wataru Takeuchi, Remote Sensing of Environment and Disaster Laboratory (RSED), Institute of Industrial Science, University of Tokyo: Geospatial Technologies Towards One World, One Health and One Earth</li> <li>Mr. Johnny Ngo, Head of Sales Engineering APAC, Maxar: Maxar Legion</li> </ul>
1200 - 1330	Break         Keynote Session II         • Prof. Dr. Wataru Takeuchi, Remote Sensing of Environment and Disaster Laboratory (RSED), Institute of Industrial Science, University of Tokyo: Geospatial Technologies Towards One World, One Health and One Earth         • Mr. Johnny Ngo, Head of Sales Engineering APAC, Maxar: Maxar Legion Constellation: Empowering the New Era of Earth Imaging & Insights
1200 - 1330	Break Keynote Session II Prof. Dr. Wataru Takeuchi, Remote Sensing of Environment and Disaster Laboratory (RSED), Institute of Industrial Science, University of Tokyo: Geospatial Technologies Towards One World, One Health and One Earth Mr. Johnny Ngo, Head of Sales Engineering APAC, Maxar: Maxar Legion Constellation: Empowering the New Era of Earth Imaging & Insights Lunch Break

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 Mr. Marcos Garcia, Business Development Manager, RIEGL in collaboration with GPS Lands: Better Scanner Utilization with RIEGL's New RiMAP GIS Software

- Sr. Ismail bin Hussin, Principal Assistant Director, Policy & Outreach Section, Policy Development, Standards & Outreach Branch, National Geospatial Centre (PGN): Geospatial Information Sharing in IR 4.0: Speed Up Production, Meet the Standard
- Mr. Mohamad Azhar Ahmad, Chief Operating Officer, RedPlanet Solutions (M) Sdn. Bhd.: RedPlanet Data Acquisition Services
- Mr. Simone Placidi, Managing Director, Metasensing AP Pte. Ltd.: MetaSensing SAR Solutions: From Ground to Space

#### 1600 - 1800 Parallel Session A

- A1: Geospatial Mapping & Monitoring I
- A2: Geospatial Modelling I
- A3: Geospatial Planning & Management I
- A4: Geospatial Decision-Making I

### Day 2: 21 October 2020 (Wednesday)

#### 0900 - 1100 Parallel Session B

- B1: Geospatial Mapping & Monitoring II
- B2: Geospatial Modelling II
- B3: Geospatial Planning & Management II
- B4: Geospatial Decision-Making II

1100 - 11.30	Break
1130 - 1330	Parallel Session C         •       C1: Geospatial Mapping & Monitoring III         •       C2: Geospatial Modelling III         •       C3: Geospatial Planning & Management III         •       C4: Geospatial Decision-Making III
1330 - 1430	Lunch Break
1430 - 1630	Parallel Session D         •       D1: Geospatial Mapping & Monitoring IV         •       D2: Geospatial Modelling IV         •       D3: Geospatial Planning & Management IV         •       D4: Geospatial Decision-Making IV
1630 - 1700	Closing Ceremony

Presentation of Best Paper and Best Student Paper Awards

# **IGRSM 2020**

vancing Geospatial 4.0

#### **KEYNOTE SPEAKERS**



# REMOTE SENSING'S ROLE IN THE NEW NATIONAL SPACE POLICY

YBrs. Tn. Hj. Gs. Azlikamil bin Hj. Napiah

Director General Malaysian Space Agency (MYSA)

#### Abstract

Space exploration has produced technologies and applications that cover various aspects of people's lives, such as communications, broadcasting, internet networks, mapping, vehicle navigation systems, weather forecasting, as well as national security and sovereignty. It also contributes towards the economy through its data, technology and applications. Due to the importance and widespread use of space technologies, it has been regarded in many countries as a strategic asset. Therefore, for Malaysia to attain the status of developed nation and to be capable of going further in the future, mastery of the space sector should be reinforced. The National Space Policy aims to clearly state the country's stand and objectives in the mastery of the space sector, and in preparing the country to face future challenges. In order to achieve these objectives, the National Space Policy outlines five main trusts, which are Trust 1: Reinforcing governance in optimising the country's access to space capabilities; Trust 2: Focusing on space technologies, infrastructure and applications that are significant to the country; Trust 3: Driving the development of space science and technology as well as building expertise; Trust 4: Contributing to the economy and wellbeing of the country; and Trust 5: Improving and strengthening international cooperation and networks.

In line with the aspiration for the country to become a scientific nation for socio-economic transformation and inclusive growth, activities in remote sensing especially in relation with research, development, commercialisation and innovation continues to be carried out as stated in Trust 3. Having this will enable space technologies to contribute to the economy and wellbeing of the country, as identified in Trust 4 of the National Space Policy.

#### Biography

YBrs. Tn. Hj. Gs. Azlikamil bin Hj. Napiah was born in Pasir Panjang, Sekinchan Selangor on 11 September 1969. He started his professional career in the private sector as a senior geologist in 1993. He joined the government sector as a research officer at the Malaysian Remote Sensing Agency (MRSA) (formerly known as the Malaysian Centre for Remote Sensing - MACRES) in August 1994. During his career as a Research Officer, he gained formal knowledge through certified training in remote sensing in Australia, United Kingdom and the Netherlands. He was also actively involved in the ASEAN Subcommittee on Space and Technology Application (SCOSA), and has been appointed as one of the Executive Committee members of the ASEAN Regional Training Centre for Space and Application (ARTSA), which is based in Thailand. He is also an active member in the Institution of Geospatial and Remote Sensing Malaysia (IGRSM). With his vast experience in R&D and technical management, he was appointed to lead the Corporate and Strategic Section in MRSA for four years, and then promoted as the Deputy Director General (Technical Services) in 2011. In May 2015, he was appointed as the Director General of MRSA with the task of spearheading the development and operationalisation of remote sensing and related technologies in Malaysia. With the merger of the Malaysian Remote Sensing Agency (MRSA) and National Space Agency (ANGKASA) in 2019, he was appointed as the Director General of the Malaysian Space Agency (MYSA).

# **IGRSM 2020**

Ivancing Geospatial 4.0

#### **KEYNOTE SPEAKERS**



### GEOSPATIALLY SPEAKING, JUST WHERE ON EARTH ARE WE NOW?

YBhg. Dato' Sr. Dr. Azhari bin Mohamed

Director General of Survey and Mapping Malaysia Department of Survey and Mapping Malaysia (JUPEM)

#### Abstract

The process of knowing one's position on the Earth has been around since the beginning of human existence. In ancient times, Man used stars as markers to help him know where he is and guide his travel. As journeys become more widespread, then far away from the Earth's surface, the necessity for three-dimensional positioning was born. Little did ancient Man know then that their descendants would be doing just about similar things, but with something extra. These extras are markers in the form of artificial satellites orbiting around the Earth, which are capable of giving position, velocity and time to anyone, anywhere and anytime. Nowadays, space-based systems such as the Global Positioning System (GPS) have become the pre-eminent methods of navigation.

The Department of Survey and Mapping Malaysia (JUPEM) is the competent authority in establishing the geospatial reference system. This is carried out through the setting up of geodetic infrastructures that includes horizontal and vertical survey controls throughout the country for the eventual purpose of national development, security and defence. Since 1997, JUPEM has been developing the capability for real-time data streaming from a network of 18 to the current of nearly 100 continuously operating reference Global Navigation Satellite System (GNSS) stations known as MyRTKnet.

The coordinates of MyRTKnet stations are in the Geocentric Datum of Malaysia or GDM2000, defined by its relationship to the ITRF2000 reference frame at a specified epoch of 1 January 2000. The datum definition was fixed at this epoch and did not include time dependencies although time series were produced as a byproduct for other geodynamic applications. However, due to the 2004, 2005 and 2007 earthquakes in Sumatra, large coordinate jumps had occurred. The earthquakes generated motions and caused significant displacements to the geodetic infrastructures in Malaysia with magnitude of the displacements ranging from 1.0 to 25.8 cm. Modelling of more uniform time dependencies need to be applied in new computations in order to remove systematic errors due to earth deformation. This modelling is based on a velocity model and would effectively be a time-dependent transformation. All the results would be converted back to the reference epoch and expressed in terms of that epoch.

This presentation takes us on a journey that traces the brief history of positioning that has advanced so dramatically from the days when stars were used by Man to mark his way to an era of satellite positioning. It also seeks to address the review taken on GDM2000 by looking at the new GNSS data available after the incidents of earthquake in Sumatra and to produce a revised datum that is able to represent the present coordinate reference system for Malaysia

#### Biography

YBhg. Dato' Sr. Dr. Azhari bin Mohamed is currently the Director General of Survey and Mapping at the Department of Survey and Mapping Malaysia (JUPEM) in Kuala Lumpur. He had worked as a District Surveyor in Kelantan, Kedah and Perlis, as well as serving at the Geodetic Survey Division and Boundary Affairs Division.

He graduated with an Honours B.Sc. in Surveying and Mapping Sciences from the University of East London in 1984 and an M.Phil in GPS Geodesy from the University of Newcastle upon Tyne in 1995. In 2003, he obtained a PhD in Geomatic Engineering from Universiti Teknologi Malaysia (UTM).

His current research interests include the study of the dynamics of the Earth as observed by space geodetic techniques, GPS time series for crustal deformation, sea level variation, Islamic astronomy and young moon observation. He is an author and co-author of over 50 technical papers and seven books on a variety of topics, notably in geodesy and Islamic astronomy. Currently he is the Vice President of the Royal Institution of Surveyors Malaysia (RISM), Chairman of the Geomatics and Land Surveying Division of RISM, Deputy President of the Malaysian Islamic Astronomical Society, and a committee member of the Falak Expert Panel of JAKIM. He has been chasing solar and lunar eclipses for more than 30 years and was a Secretary of the National Eclipse Trackers Team or ET. In 2017, he was elected as Vice-Chair of Working Group 1 of Geodetic Reference Framework for Sustainable Development, United Nations Global Geospatial Information Management Asia Pacific (UN-GGIM-AP).

He was an external examiner for two Master students and a co-supervisor of one successful PhD student. He is also a Fellow of RISM, an Honorary Fellow of the International Institute of Utility Specialists (IIUS) in Hong Kong, a registered land surveyor and an Adjunct Professor at UTM. He has appeared on several TV programmes, including RTM1 Inovasi, Buletin Utama TV3, RTM1 Panorama, Journal Islam and Forum Perdana Hal Ehwal Islam as well as TV3 Selamat Pagi Malaysia and TV9 Nasi Lemak Kopi 'O'. In 2018, he was presented with the national Tokoh Maulidur Rasul Award by the Deputy Yang DiPertuan Agong, Sultan Nazrin Muizzuddin Shah. Dato' Sr. Dr. Azhari is married to an English Language teacher and has four children.

#### **KEYNOTE SPEAKERS**



# GEOSPATIAL TECHNOLOGIES TOWARDS ONE WORLD, ONE HEALTH AND ONE EARTH

Prof. Dr. Wataru Takeuchi

Remote Sensing of Environment and Disaster Laboratory (RSED), Institute of Industrial Science The University of Tokyo, Japan

#### Biography

Prof. Dr. Wataru Takeuchi is currently a Professor at the Institute of Industrial Science (IIS), The University of Tokyo, Japan. He obtained the Bachelor degree in 1999, Master degree in 2001, and Ph.D. degree in 2004 at the Department of Civil Engineering, The University of Tokyo. He was a Visiting Assistant Professor at the Asian Institute of Technology (AIT), Thailand from 2007 to 2009, Director of the Japan Society for Promotion of Science (JSPS), Bangkok Office, Thailand from 2010 to 2012, and a Senior Policy Analyst, Council for Science, Technology and Innovation (CSTI), Cabinet Office (CAO), Government of Japan from 2017 to 2019. He has been a regular member of the Japan Society of Photogrammetry and Remote Sensing, Remote Sensing Society of Japan, and American Society of Photogrammetry. His current research interests covers remote sensing and GIS, global land cover and land use change, global carbon cycling, as well as management and policy for terrestrial ecosystems. He has around 100 peer-review journal papers and 520 conference papers.

#### **KEYNOTE SPEAKERS**



#### HOW PLANET'S AGILE AEROSPACE APPROACH PUSHES THE BOUNDARIES OF GEOSPATIAL

Mr. Jonathan Ong Southeast Asia Regional Sales Manager, Planet



Mdm. Siti Baizura Alidin Sales Engineer, Planet

#### Abstract

Planet pioneered an agile aerospace development approach that continually optimizes spacecraft architecture and software through an evolution of capabilities. We have completed 14 major iterations of the Dove spacecraft design with new generations being released at a steady rate.

Since 2019, Planet has launched our new generation of Dove, called SuperDoves, which not only upgraded the electronic components to increase the sensor's lifespan but also made a breakthrough in the increase of the spectral bands to eight and also improved the image quality. We also recently launched three additional SkySat satellites, which will enable us to capture a single location multiple times per day and drive more situational awareness in key locales.

In this session, you will learn how these hardware improvements, in combination with investments in cloud infrastructure and advanced software processing techniques, are driving a new era in geospatial analysis with the availability of global, high-frequency data over the entire Earth's landmass.

#### Biographies

Mr. Jonathan Ong is the Southeast Asia (SEA) Regional Sales Manager with Planet. After graduating with a materials engineering degree at Nanyang Technological University (NTU), Singapore, he started his career with Procter & Gamble learning about the business from the supply chain perspective, then moving to Navico as the sales manager for SEA. He is passionate about space and technology enablers, and has joined Planet to continue bringing forward Earth Observation solutions to the market.

Mdm. Siti Baizura Alidin is the Sales Engineer of Planet working closely with the sales team for the APAC region. With 10 years of geospatial experience, she supports customer needs by assessing their imagery requirements and providing the right solutions. Prior to Planet, she was working at Hydronav Services, a geospatial and marine survey company based in Jakarta as the Sales and Technical Engineer for mapping and geospatial products. She spent six years working in Indonesia before moving back to Malaysia. She graduated from Universiti Teknologi MARA (UiTM) with a bachelor degree in surveying science and geomatics.

### KEYNOTE SPEAKERS



# GROWING A SPACE ECONOMY WITH EARTH OBSERVATION

Mr. Paul Kennedy

Vice President, Product Strategy, Geointelligence, MDA Geospatial Services Inc.

#### Abstract

Earth Observation (EO) supports economic and knowledge growth along with environmental sustainability. Malaysia has strong infrastructure for EO data reception and user applications, leveraging all-weather Synthetic Aperture Radar (SAR) imagery to provide reliable, rapid-response information for a number of critical monitoring activities. With a long history working in both Canada and Malaysia, MDA understands the importance of EO infrastructure and capabilities to a country with limited space budgets. Using examples from both countries, we will discuss approaches to best applying EO infrastructure and data to key economic and environmental challenges. We will discuss current successes and cutting-edge research and development into new applications for knowledge creation and end user support. EO offers Malaysia an opportunity to grow on existing successes to satisfy the goals of the National Space Policy and to develop a vibrant space community.

#### Biography

Mr. Paul Kennedy has over 25 years of experience in earth observation, geographic information systems and marine science. Paul joined MDA in 1998. He is currently the Vice President of Product Strategy for the Geointelligence business within MDA. This group provides advanced Earth Observation and geospatial intelligence solutions, including near-real time maritime domain awareness systems, full SAR imaging missions, and a variety of decision-support systems to improve the operational performance of business, civil government, and defence organisations worldwide. The team provides industry-leading operational monitoring programmes with data from the RADARSAT-2 SAR satellite combined with additional data sources to meet customers' mission requirements.

Prior to his current position, Paul was responsible for the overall business development and program delivery of MDA's Earth Observation systems offerings. He has also held a number of engineering, business development and management roles at MDA related to satellite ground systems, as well as information products and services for the energy and mining industries.

#### **KEYNOTE SPEAKERS**



### MAXAR LEGION CONSTELLATION: EMPOWERING THE NEW ERA OF EARTH IMAGING & INSIGHTS

Mr. Johnny Ngo

Head of Sales Engineering APAC, Maxar

#### Abstract

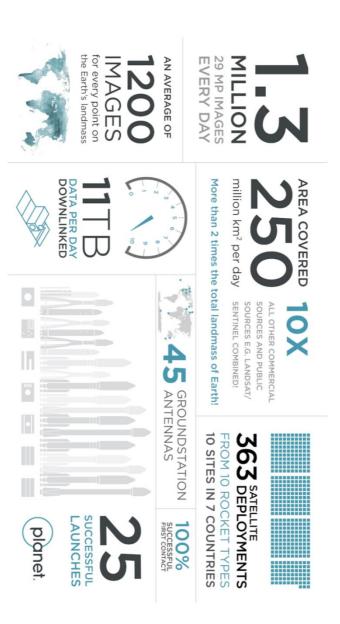
Maxar is a trusted partner and innovator in Earth Intelligence and Space Infrastructure. We enable commercial businesses and government organizations to understand our changing planet, deliver global broadband communications, and explore space. Our unique approach combines decades of deep mission understanding and a proven foundation of commercial technologies. Across a variety of markets and more than 50 governments, innovative customers choose Maxar solutions to inform critical decisions, evolve operations, and improve ROI.

Today, our ability to observe, analyze and monitor our planet is unprecedented. We are no longer in a data scarce situation and our computing power has increased heaps and bounds as compared to a decade ago. With all these technological advancements, tools and big data at our finger tips, I believe we are now in best possible era to garner the insights from Earth Intelligence to build our world a better place.

How will you leverage Maxar Earth Intelligence for a better world? Explore impactful solutions and outcomes at maxar.com

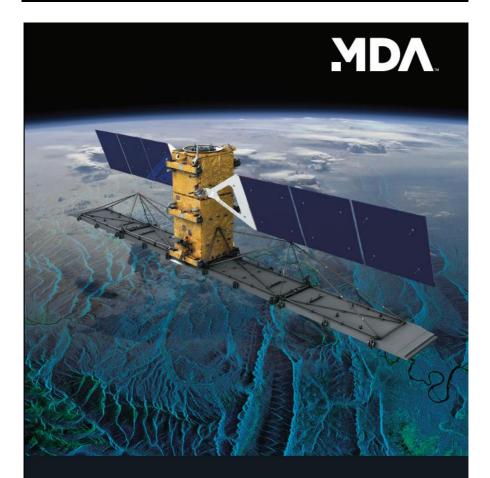
#### Biography

Mr. Johnny Ngo is the HEAD of Sales Engineering APAC working off Maxar's APAC HQ in Singapore. His team primarily focuses on working alongside with the Sales & Support team tackling the different requirements from the customers in the region. Leading to his 11th years of service with Maxar this year, previously DigitalGlobe, he has an excellent track record in supporting key accounts within APAC and the creation of a team to support a regionalised structure that is in-tune with in-region expectations. He graduated from Mississippi State University, whereby he holds a Master of Science degree in Business Information Systems and Bachelor of Science degree in Chemical Engineering.



10<sup>th</sup> IGRSM INTERNATIONAL CONFERENCE AND EXHIBITION ON GEOSPATIAL & REMOTE SENSING (IGRSM 2020) 20 - 21 OCTOBER 2020





MDA is an internationally recognized leader in space robotics, satellite antennas and subsystems, surveillance and intelligence systems, defence and maritime systems, and geospatial radar imagery.

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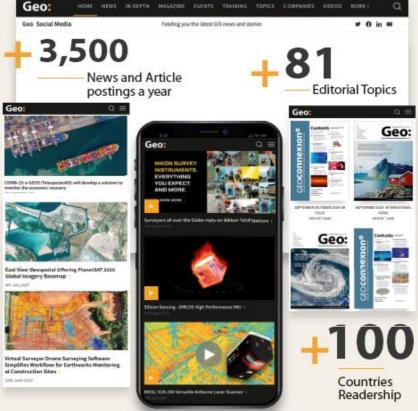
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