International Geoscience and Remote Sensing Symposium

IGARSS 2022

Kuala Lumpur, Malaysia

PROGRAMME GUIDE

17 to 22 July 2022

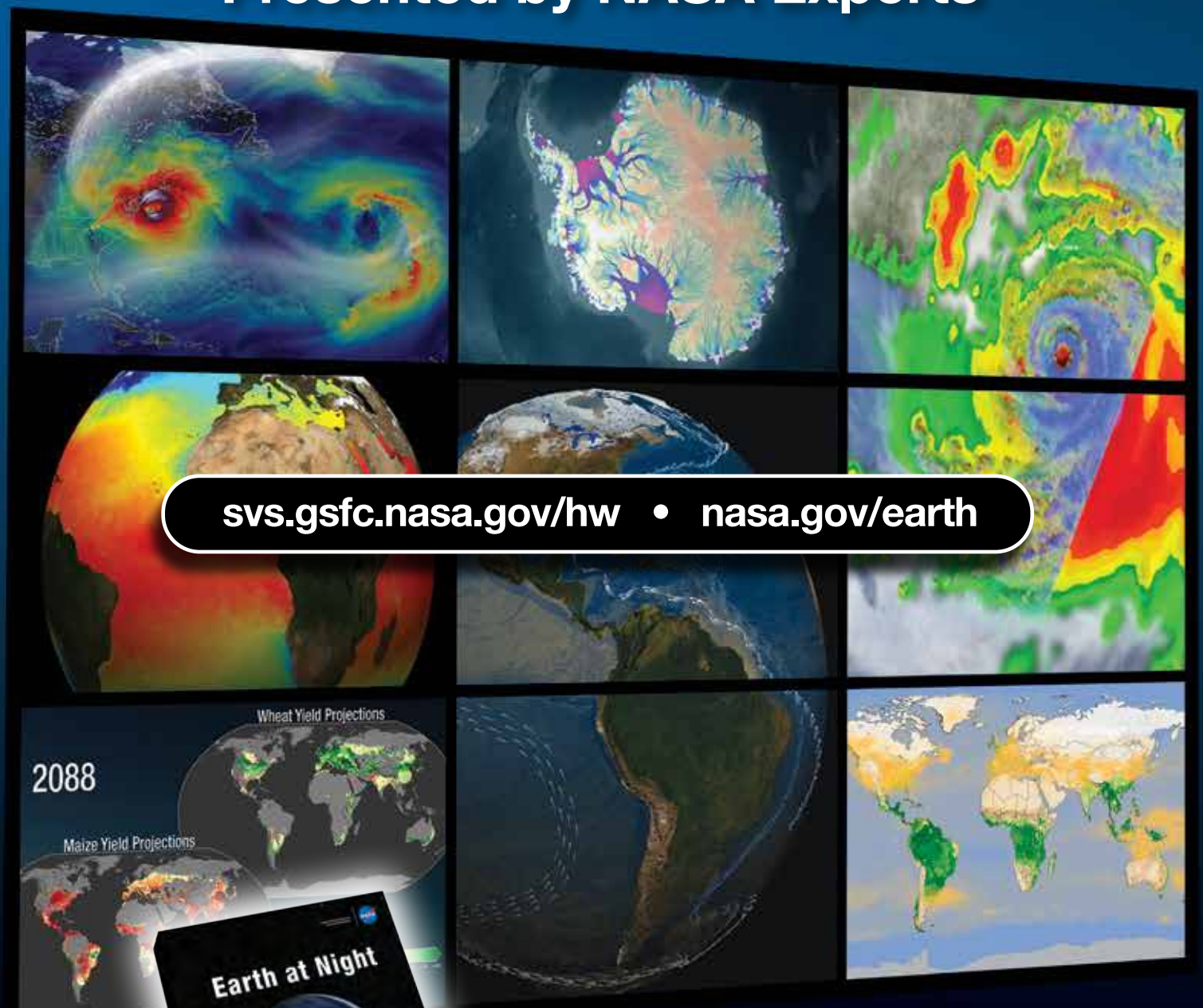
Kuala Lumpur Convention Centre (KLCC)

Kuala Lumpur, Malaysia

National Aeronautics and Space Administration

Join NASA for Hyperwall Science Stories in the Exhibit Hall, Booth #P2

Presented by NASA Experts



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www.nasa.gov

IGARSS2022
PROGRAMME GUIDE

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International Geoscience and Remote Sensing Symposium
IGARSS 2022
Kuala Lumpur, Malaysia

WELCOME

Greetings to all participants of IGARSS 2022!

Welcome to Kuala Lumpur, Malaysia, the place where all the colours, flavours, sounds and sights of Asia come together. Since Malaysia has reopened its borders to international travellers, it's time for us to reconnect and reunite! On behalf of the International Geoscience and Remote Sensing Symposium (IGARSS) 2022 Organising Committee, I am pleased to welcome you to the 42nd Annual IGARSS Symposium 2022, which is in both virtual and physical modes for the first time.

IGARSS 2022 aims to continue the excellent tradition of gathering world-class scientists, engineers and educators engaged in the fields of geoscience and remote sensing to meet and present their latest knowledge and experience on recent developments and advancements, and exchange ideas while attempting to identify future trends and make contact with the international remote sensing community, particularly in the context of earth observation, disaster monitoring and risk assessment.

Themed 'Preserving Our Heritage, Enabling Our Future through Remote Sensing' the symposium this year would offer a variety of programmes such as keynote talks, technical sessions, tutorials, exhibitions, fun run, awards banquet, pre-and post-conference tours and a map design competition as well as the summer school. We hope that you will have a fun-filled time at this very special and meaningful symposium.

To put a symposium of this magnitude together is not a small task. Thus, I would like to express my deepest gratitude to everyone who has contributed to the success of this international symposium. I hope this symposium will provide a meaningful experience for everyone and I wish you a very productive symposium with exciting and encouraging discussions and exchange of knowledge so that together we can anticipate a future of groundbreaking knowledge, research, and technology for the betterment of society.

Do enjoy the exciting week at IGARSS 2022.

Thank you.

Best Wishes,

Ir Academician Emeritus Prof Tan Sri Dato' Dr Chuah Hean Teik

IGARSS 2022 General Chair

PLATINUM

NASA's Earth Science Division fields the world's leading-edge Earth observations and scientific research to understand and adapt to our changing planet. The division produces actionable science and Earth science applications that directly benefit people across the world.

https://earth.nasa.gov

GOLD

Taylor & Francis is a specialist in scholarly research and in helping academic and research communities make new breakthroughs. We curate, produce and publish scholarly research and reference-led content, enabling the latest academic thinking and discovery to be shared and built on. We offer a rich variety of publications, including open access options, in remote sensing and GIS for you to read and publish your own research.

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SILVER

Norsk Elektro Optikk (NEO) was established in 1985 as a privately owned research-oriented company within the field of electro-optics. NEO has grown to be the largest independent research and development organization in electro-optics in Norway, and has in addition established itself as a manufacturer of advanced electro-optical products for an international market. HySpex, NEO's line of hyperspectral cameras, are compact, high performance and versatile instruments for a multitude of applications.

hyspex.com

HySpex
by neo

iRadar Sdn Bhd products and services in sensing and its related technologies. The core competency of the company lies on the capabilities to develop high precision remote sensing and embedded systems, which enables real-time acquisition and processing of multi-dimensional data in the most challenging environments.

iradar.com.my

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SILVER

Planet is the leading provider of global, daily satellite imagery and geospatial solutions. Planet is driven by a mission to image all of Earth's landmass every day, and make global change visible, accessible and actionable. Planet provides mission-critical data, advanced insights, and software solutions to over 800 customers, comprising the world's leading agriculture, forestry, intelligence, education and finance companies and government agencies, enabling users to simply and effectively derive unique value from satellite imagery.

To learn more visit **www.planet.com** and follow us on Twitter at **@planet.**

Malaysian Space Agency (MYSA) is established in 20 February 2019 through the merging of Malaysian Remote Sensing Agency and National Space Agency. The merging is one of the first steps taken by the government in implementing the National Space Policy 2030 whereby the first thrust is to strengthen government governance in the space sector. MYSA is entrusted to drive the development of the national space sector and contribute towards a new and strategic economic growth.

mysa.gov.my

MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION

PIESAT Information Technology Co., Ltd. is a leading satellite operation and application service provider in China since 2008. It was the only remote sensing application enterprise among the first batch of listed enterprises on the STAR Market in China.With ISO9001, ISO14001, ISO27001, CMMI L5, System Integration L2, Class-A Surveying and Mapping Qualification, PIESAT owns over 300 software copyrights and invention patents including remote sensing image processing software, GIS software, 3D visualization platform of spatial information, etc.

www.piesat.cn

Founded in late 2016, by a team of aerospace and data engineers, **Aonic** (Formerly Poladrone) is one of the firsts in Malaysia to specialize in developing custom algorithms for specific industries. Here at Aonic, we provide industry-leading aerial solutions to businesses that are seeking to simplify operations and improve efficiency by utilizing the latest drone technology. Aonic is proud of its expertise in aerial mapping and survey, infrastructure and construction inspection and precision spraying. We are also official distributors of a number of world class brands namely DJI Enterprise, Emlid, Sentera, FLIR and others to provide a complete solution to our customers.
We believe in assisting businesses in overcoming complex jobs through innovative and cost-effective drone technology tactics.

www.aonic.com

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SI Imaging Services (SIIS) is the exclusive sales representative of KOMPSAT (Korean Multi-Purpose Satellite) series 2, 3, 3A, and 5. We contribute to the remote sensing and earth observation industries by supplying VHR optical and SAR satellite imagery through 160 partners worldwide. Customers from industries and governments use KOMPSAT imagery for their missions and research, such as defense, disaster monitoring, mapping, urban planning, agriculture, etc. We plan to launch our own 30cm VVHR EO satellite, SpaceEye-T, in 2024.

www.si-imaging.com

Synspective provides one-stop solutions using satellite observation data to steadily move the world forward. Applying the results of the ImPACT programme (led by the Government of Japan, Cabinet Office), Synspective is building a constellation of 30 high-frequency, high-resolution SAR satellites to provide data solutions to government and commercial organizations.

synspective.com

BRONZE

The **JAXA Earth Observation Research Center (EORC)** carries out the calibration and validation of satellite data, as well as earth science and applied research using the data.

https://earth.jaxa.jp/
https://data.earth.jaxa.jp/
https://www.satnavi.jaxa.jp/

Journal of Remote Sensing is an online-only, Open Access Science Partner Journal published in affiliation with Aerospace Information Research Institute, Chinese Academy of Sciences and distributed by the American Association for the Advancement of Science. The journal publishes high-quality research on the theory, science, and technology of remote sensing, as well as interdisciplinary research with earth science and information science to benefit the earth observation community.

https://spj.sciencemag.org/journals/remotesensing

Since its inception in 2000, **ViTrox** designs and manufactures innovative, leading-edge and cost-effective automated vision inspection equipment and system-on-chip embedded electronics devices for the semiconductor and electronics packaging industries. ViTrox's core products are its Machine Vision System (MVS), Automated Board Inspection (ABI) and Electronics Communication System (ECS).

www.vitrox.com

Dr. Maurice Borgeaud

Head of Science, Applications, and Climate Activities in the Earth Observation (EO) Directorate of the European Space Agency (ESA)

Dr. Maurice Borgeaud is Head of Science, Applications, and Climate Activities in the Earth Observation (EO) Directorate of the European Space Agency (ESA). He interacts with the scientific community, ESA Member States and industry in order to propose ground-breaking EO science satellite missions as well as new domains for the development of innovative applications using EO data. He also plays a key role in defining the long-term EO data exploitation strategy addressing the full spectrum of EO user communities. He manages the ESA office for climate change including the development of essential climate variables, promotes the use of EO data to monitor the UN SDG's, and represents ESA on the Board of the International Charter: Space and Major Disasters.

Mr. Borgeaud graduated with a Degree in Engineering from EPFL, Lausanne and holds a Ph.D. from the Massachusetts Institute of Technology (MIT). He is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE) and Associate Editor for the "IEEE Transactions on Geoscience and Remote Sensing".

Dr. Karen M. St. Germain

Earth Science Division Director, National Aeronautics and Space Administration (NASA) Headquarters

Dr. St. Germain is the Division Director of the Earth Science Division, in the Science Mission Directorate at the National Aeronautics and Space Administration (NASA) Headquarters. She provides executive leadership, strategic direction, and overall management for the entire agency's Earth Science portfolio, from technology development, applied science, research, mission implementation and operation.

Prior to coming to NASA, Dr. St. Germain was the Deputy Assistant Administrator, Systems (DAAS), for NOAA's Satellite and Information Service. She guided the ongoing development and deployment of NOAA's two major satellite programmes (the Joint Polar Satellite System and Geostationary Operational Environment Satellite – R series), the COSMIC-2 mission, and the Space Weather Follow-On. She also led the development of the next-generation capabilities that will replenish and augment these systems in the future.

Dr. Jian Zhao

Director, Earth Observation System and Data Center, China National Space Administration (CNSA)

Dr. Jian ZHAO is the Director of Earth Observation System and Data Center of China National Space Administration, the Chief Designer and Deputy General Director of the China High-resolution Earth Observation System Project, and the Working Group Leader of the BRICS Remote Sensing Satellite Constellation in 2022.

He has long been engaged in space development strategy and technology research, engineering construction, organization and management of major space special projects, international space exchange and promotion, etc. He has forward-looking strategic research and global vision, rich management ability, and implementation experience of major national special projects, and has contributed significantly to the rapid development of space. He is an outstanding leader across industries, fields, and systems.

As a leading technology leader in China, he will continue to be committed to promoting the construction of earth observation systems and efficient application of data, serving economic and social development, and leading China's space to help achieve the 2030 Sustainable Development Goals of the United Nations.

Rebecca Moore

Director, Google Earth, Earth Engine and Outreach

Rebecca Moore directs Google's geospatial initiatives driving environmental and social impact, including Google Earth, Earth Engine, and Environmental Insights Explorer. She initiated the development of Google Earth Engine in 2009 as the first cloud-native, planetary-scale geospatial analytics platform bringing an unprecedented amount of satellite data online, together with petapixel-scale computation, enabling data scientists to easily derive actionable insights about our changing planet. In 2017, Earth Engine won the ASPRS Outstanding Technical Achievement award. In 2018, her team launched Environmental Insights Explorer to provide climate-action relevant data to thousands of cities worldwide. Moore's personal work using Google Earth was instrumental in stopping the logging of more than a thousand acres of redwoods in her Santa Cruz Mountain community. Moore has been honored with the 2013 White House Champion of Change Award for Open Science and the 2016 Rachel Carson Award from the National Audubon Society. She received a bachelor's degree in artificial intelligence with honors from Brown University and a master's degree from Stanford University.

ORGANIZING COMMITTEE
IGARSS2022

General Chair	Hean Teik Chuah, GRSS Malaysia Chapter and Universiti Tunku Abdul Rahman (UTAR)
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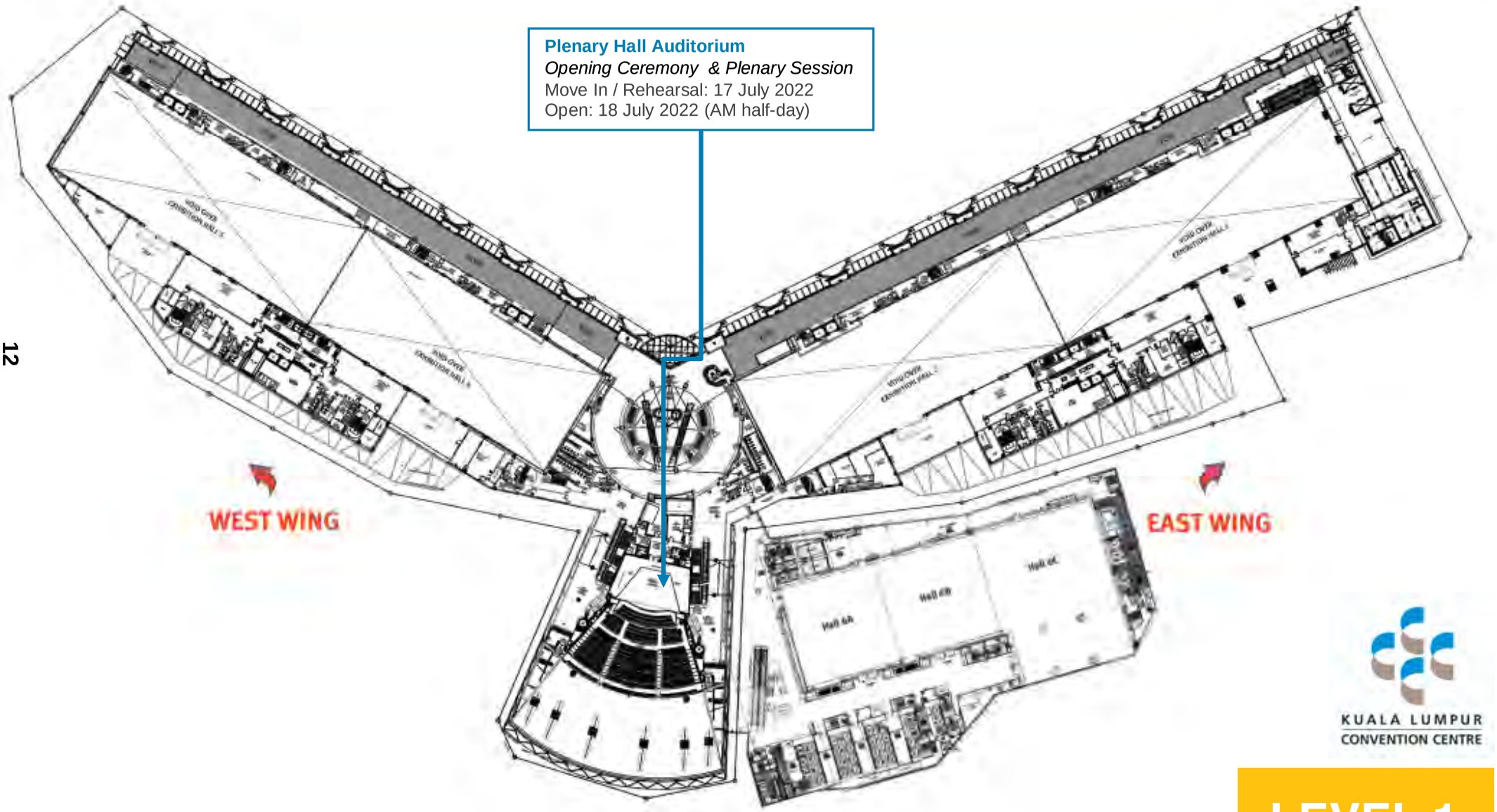
TIE Forum Co-Chairs	Boon Huang Lim, Muon Space Yu Jen Lee, Universiti Tunku Abdul Rahman (UTAR) Chia Ming Toh, Universiti Tunku Abdul Rahman (UTAR)



KUALA LUMPUR CONVENTION CENTRE

The floor plans are indicative and subject to change

LEVEL 1

Plenary Theatre
Technical Session 1 / Closing Ceremony
Open: 18 – 22 July 2022

Conference Hall 1
Technical Session 2
Open: 18 – 22 July 2022

Conference Hall 2
Welcome Reception
Open: 17 July 2022

Technical Session 3
Open: 18 – 22 July 2022

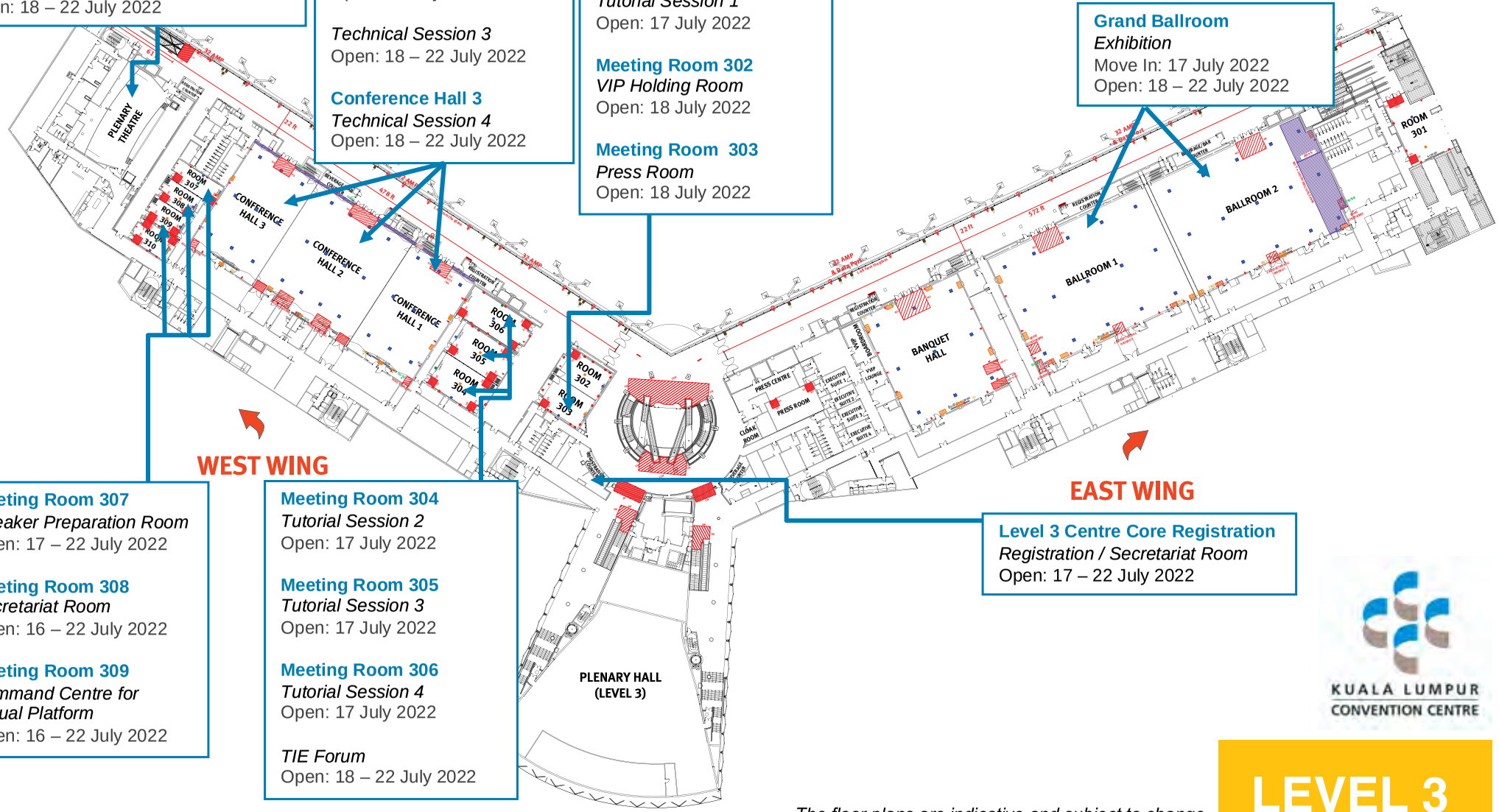
Conference Hall 3
Technical Session 4
Open: 18 – 22 July 2022

Meeting Room 302 & 303
Tutorial Session 1
Open: 17 July 2022

Meeting Room 302
VIP Holding Room
Open: 18 July 2022

Meeting Room 303
Press Room
Open: 18 July 2022

Grand Ballroom
Exhibition
Move In: 17 July 2022
Open: 18 – 22 July 2022



WEST WING

EAST WING

Meeting Room 307
Speaker Preparation Room
Open: 17 – 22 July 2022

Meeting Room 308
Secretariat Room
Open: 16 – 22 July 2022

Meeting Room 309
Command Centre for Virtual Platform
Open: 16 – 22 July 2022

Meeting Room 304
Tutorial Session 2
Open: 17 July 2022

Meeting Room 305
Tutorial Session 3
Open: 17 July 2022

Meeting Room 306
Tutorial Session 4
Open: 17 July 2022

TIE Forum
Open: 18 – 22 July 2022

Level 3 Centre Core Registration
Registration / Secretariat Room
Open: 17 – 22 July 2022

KUALA LUMPUR CONVENTION CENTRE

The floor plans are indicative and subject to change

LEVEL 3

Meeting Room 406 & 407
Tutorial Session 7
Open: 17 July 2022

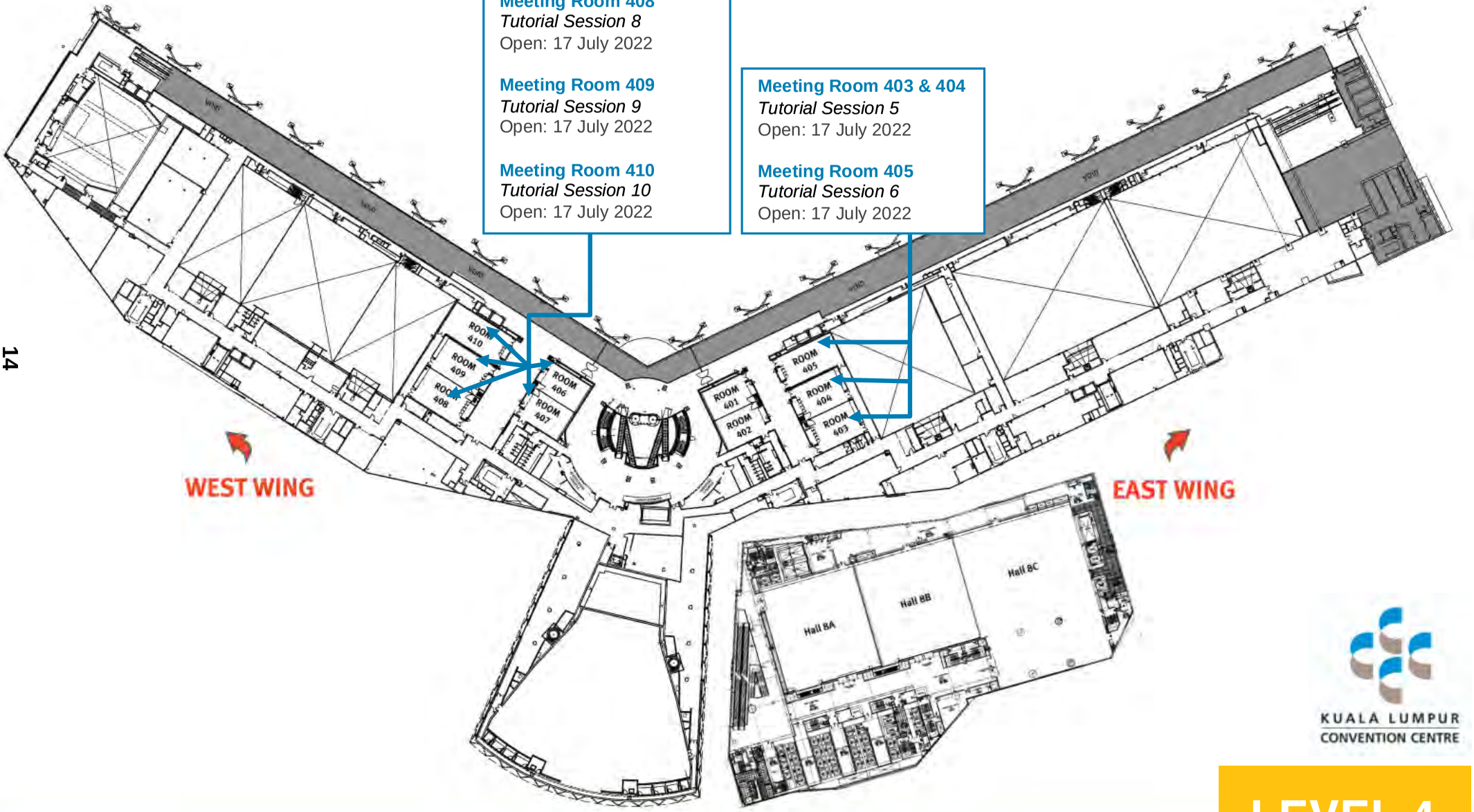
Meeting Room 408
Tutorial Session 8
Open: 17 July 2022

Meeting Room 409
Tutorial Session 9
Open: 17 July 2022

Meeting Room 410
Tutorial Session 10
Open: 17 July 2022

Meeting Room 403 & 404
Tutorial Session 5
Open: 17 July 2022

Meeting Room 405
Tutorial Session 6
Open: 17 July 2022



KUALA LUMPUR CONVENTION CENTRE

The floor plans are indicative and subject to change

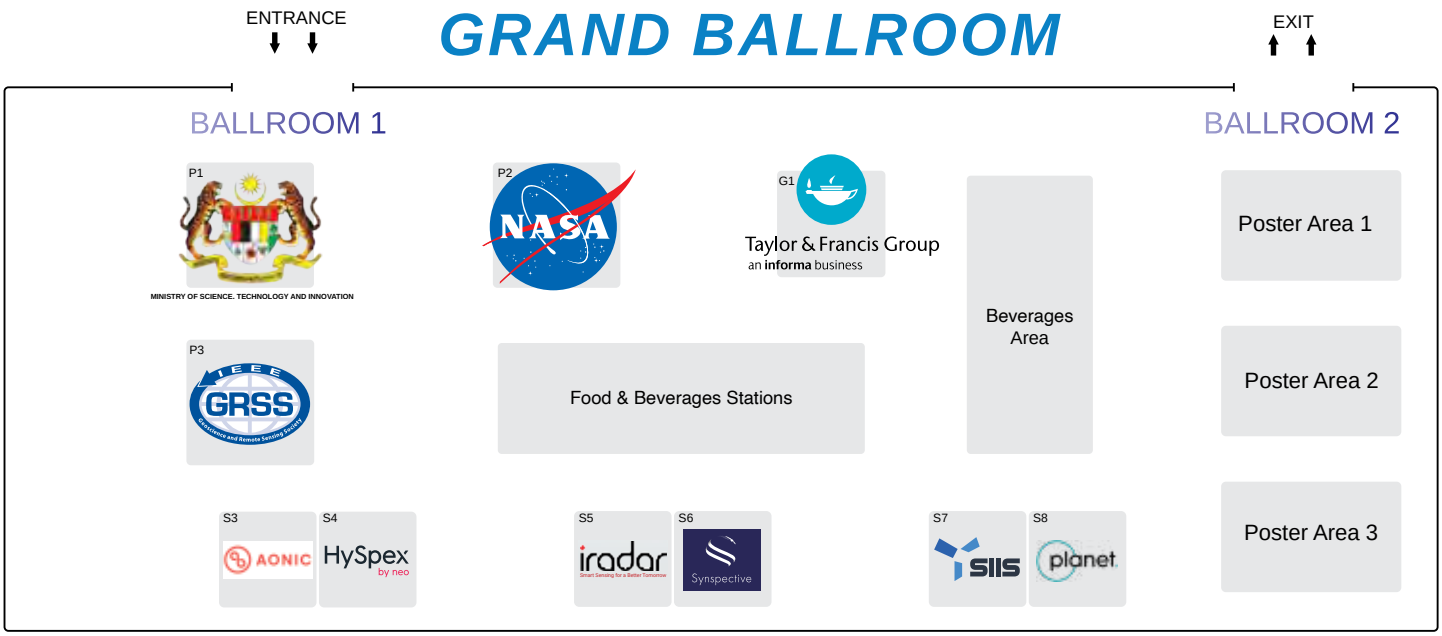
LEVEL 4

International Geoscience and Remote Sensing Symposium

IGARSS 2022

Kuala Lumpur, Malaysia

KUALA LUMPUR CONVENTION CENTRE



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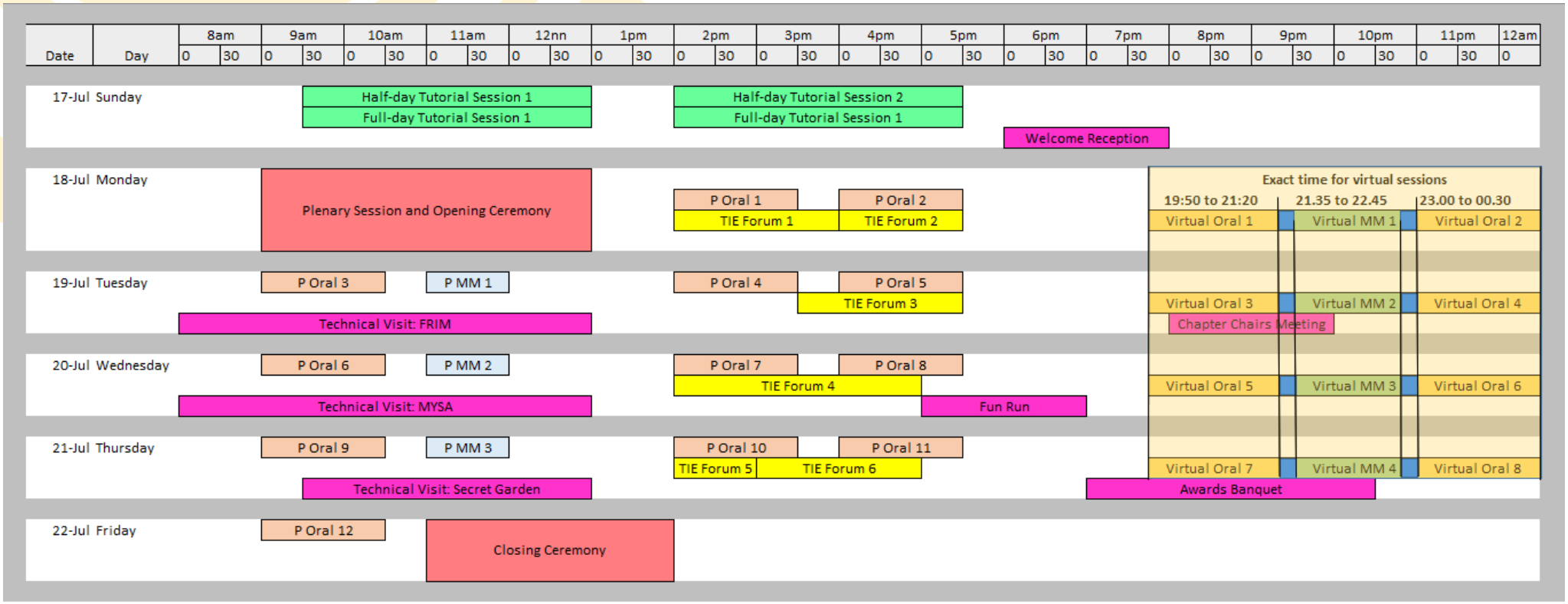
IGARSS 2022 *AT A GLANCE*



PLENARY SESSION

18 July 2022 (Monday)

8.00am to 12.00pm at Plenary Hall Auditorium (Level 1)

Time	Programme
8:00am	VIP / Plenary Breakfast
8:30am	Arrival of IGARSS VIPs and Participants
8:45am	Welcome Address by: - IGARSS 2022 General Chair - IEEE President - IEEE GRSS President
9:00am	**PLENARY SPEAKERS** **Dr. Maurice Borgeaud** *Head of Science, Applications, and Climate Activities in the Earth Observation (EO) Directorate of the European Space Agency (ESA)*
9:30am	**Dr. Karen M. St. Germain** *Director, Earth Science Division, Science Mission Directorate, National Aeronautics and Space Administration (NASA)*
10:00am	**Dr. Jian ZHAO** *Director, Earth Observation System and Data Center, China National Space Administration (CNSA)*
10:30am	**Ms. Rebecca Moore** *Director, Google Earth, Earth Engine & Outreach*
11:00am	**Awards Session** **Master of Ceremony: Prof Alberto Moreira** 2022 IEEE Fellow 2022 IEEE GRSS Outstanding Service Award 2022 IEEE GRSS Education Award 2022 IEEE GRSS Fawwaz Ulaby Distinguished Achievement Award 2022 IEEE GRSS Industry Leader Award
11:45am	**Symposium Introduction** Ir. Prof. Dr. Ewe Hong Tat - Technical Programme Committee Report
12:00pm	**Coffee Break**

OPENING CEREMONY

18 July 2022 (Monday)

12.00pm to 2.00pm at Plenary Hall Auditorium (Level 1)

Time	Programme
12:00pm	Arrival of YB Dato' Sri Dr Adham bin Baba Minister, Ministry of Science, Technology and Innovation (MOSTI)
12:30pm	National Anthem Doa Recital Welcome address by IGARSS 2022 General Chair Opening speech by YB Dato' Sri Dr Adham bin Baba Minister, Ministry of Science, Technology and Innovation (MOSTI)
1:00pm	Launch Gimmick Launching Video Presentation Souvenir Presentation & Photography Session Tour to Exhibition Hall (Grand Ballroom) Press Conference (Room 303) VIP Lunch (Room 302)
2:00pm	End of Session

CLOSING CEREMONY

22 July 2022 (Friday)

11:00am to 12:00pm at Plenary Theatre Auditorium (Level 3)

Time	**Programme**
11:00am	Arrival of IGARSS VIPs and Participants
11:10am	UTAR Chinese Orchestra
11:25am	Vote of Thanks by IGARSS 2022 General Chair
11:35am	Video Presentation –IGARSS 2023
11:40am	Performance
12:00pm	UTAR Chinese Orchestra

End of IGARSS 2022

TUTORIAL SESSION
(HYBRID)

Sun, 17 Jul, 09:30 - 17:30 Malaysia Time (UTC +8)

FD-1: Mathematical Morphology in Processing and Analysis of the Digital Elevation Models (DEMs)

FD-2: Hands-on Copernicus Sentinel-1 Persistent Scattering Interferometry for Ground motion

FD-3: Machine Learning in Remote Sensing - Theory and Applications for Earth Observation

FD-4: GRSS ESI HDCRS End-to-End Machine Learning with High Performance and Cloud Computing

FD-5: Using open data, platform, and API from NASA-ESA-JAXA Earth Observation Dashboard

FD-6: Physics Guided and Quantum Artificial Intelligence for Earth Observation: Towards the Digital Twin Earth

Sun, 17 Jul, 09:30 - 12:45 Malaysia Time (UTC +8)

HD-1: Earth Datacubes: From Simplified Access to ML Analytics (IEEE GRSS ESI Tutorial)

HD-2: SAR Polarimetry: A tour from Physics to Applications

HD-3: The ARTMO toolbox for analyzing and processing of remote sensing data into biophysical variables

HD-4: Natural disasters and hazards monitoring using Earth Observation data

Sun, 17 Jul, 14:15 - 17:30 Malaysia Time (UTC +8)

HD-5: Sparse Sampling and Reconstruction in SAR

HD-6: Remote sensing of cloud microphysical properties and surface radiation parameters

HD-7: Aiding active landscape fire detection from space with ASI PRISMA: unlocking the complementary value of hyperspectral PRISMA data

HD-8: Remote Sensing with Reflected Global Navigation Satellite System (GNSS-R) and other Signals of Opportunity (SoOp)

Monday, July 18

Monday, July 18, 14:00 - 15:30
MO2.O1: Differential SAR Interferometry: Methods and Applications
Conference Hall 1

Monday, July 18, 14:00 - 15:30
MO2.O2: Estimation, Regression, and Target Detection
Conference Hall 2

Monday, July 18, 14:00 - 15:30
MO2.O3: Ocean Temperature, Salinity and Ecology
Conference Hall 3

Monday, July 18, 14:00 - 15:30
MO2.O4: Disease Control and Sustainable Development Goals
Plenary Theatre Auditorium (PTA)

Monday, July 18, 16:00 - 17:30
MO4.O1: New Space SAR Systems
Conference Hall 1

Monday, July 18, 16:00 - 17:30
MO4.O2: Quantum computing and ML in GRSS
Conference Hall 2

Monday, July 18, 16:00 - 17:30
MO4.O3: Ocean Surface Current and Wind
Conference Hall 3

Monday, July 18, 16:00 - 17:30
MO4.O4: Observing and Interpreting Ice-Sheet and Ice-Shelf Temperatures and Other Properties Using Radar and Radiometer Data
Plenary Theatre Auditorium (PTA)

Monday, July 18, 19:50 - 21:20
MO5.V1: Electromagnetic modeling
Virtual Room 1

Monday, July 18, 19:50 - 21:20
MO5.V2: SAR Imaging Techniques: Methods and Imaging Modes II
Virtual Room 2

Monday, July 18, 19:50 - 21:20
MO5.V3: SAR Tomography
Virtual Room 3

Monday, July 18, 19:50 - 21:20
MO5.V4: Object Detection and Analysis
Virtual Room 4

Monday, July 18, 19:50 - 21:20
MO5.V5: Object Detection and Recognition II
Virtual Room 5

Monday, July 18, 19:50 - 21:20
MO5.V6: Optical Image Classification
Virtual Room 6

Monday, July 18, 19:50 - 21:20
MO5.V7: Multitemporal SAR Image Analysis
Virtual Room 7

Monday, July 18, 19:50 - 21:20
MO5.V8: Multisource Classification and Detection
Virtual Room 8

Monday, July 18, 19:50 - 21:20
MO5.V9: Sea Ice
Virtual Room 9

Monday, July 18, 19:50 - 21:20
MO5.V10: Forest and Vegetation: Application and Modeling I
Virtual Room 10

Monday, July 18, 19:50 - 21:20
MO5.V11: Soil Moisture Retrieval
Virtual Room 11

Monday, July 18, 19:50 - 21:20
MO5.V12: Ocean Ecology
Virtual Room 12

Monday, July 18, 19:50 - 21:20
MO5.V13: Calibration and Estimation Methods for Precipitation Radar
Virtual Room 13

Monday, July 18, 19:50 - 21:20
MO5.V14: Crop and Soil Properties Monitoring using UAV
Virtual Room 14

Monday, July 18, 19:50 - 21:20
MO5.V15: Advances in remote sensing towards sustainable development goals - PART I
Virtual Room 15

Monday, July 18, 19:50 - 21:20
MO5.V16: Earth observation in support of food security in developing regions
Virtual Room 16

Monday, July 18, 19:50 - 21:20
MO5.V17: Advancement of UAV/DRONE applications with Multi-Sensor Data for Land Cover Monitoring I
Virtual Room 17

Monday, July 18, 19:50 - 21:20
MO5.V18: GNSS-R Modeling Part 2: Inland Water
Virtual Room 18

Monday, July 18, 19:50 - 21:20
MO5.V19: Advanced Methods for Polarimetric SAR Information Extraction: Session 2
Virtual Room 19

Monday, July 18, 19:50 - 21:20
MO5.V20: ALOS Series Mission, Cal/Val, and Applications (Part 2)
Virtual Room 20

Monday, July 18, 19:50 - 21:20
MO5.V21: Honoring Dr. Gail Skofronick-Jackson Part II: Impacts and Interests from Sensors to Science
Virtual Room 21

Monday, July 18, 21:35 - 22:45
MO6.V1: Electromagnetic modeling
Virtual Room 1

Monday, July 18, 21:35 - 22:45
MO6.V2: SAR Imaging Techniques: Imaging Techniques
Virtual Room 2

Monday, July 18, 21:35 - 22:45
MO6.V3: SAR Imaging Techniques: Methods and Techniques II
Virtual Room 3

Monday, July 18, 21:35 - 22:45
MO6.V4: Subsurface Sensing and applications
Virtual Room 4

Monday, July 18, 21:35 - 22:45
MO6.V5: Ship Detection
Virtual Room 5
Monday, July 18, 21:35 - 22:45
MO6.V6: Object Detection and Recognition V
Virtual Room 6
Monday, July 18, 21:35 - 22:45
MO6.V7: Classification and Clustering MMV I
Virtual Room 7
Monday, July 18, 21:35 - 22:45
MO6.V8: Classification and Clustering MMV IV
Virtual Room 8
Monday, July 18, 21:35 - 22:45
MO6.V9: Estimation wtih Microwaves
Virtual Room 9
Monday, July 18, 21:35 - 22:45
MO6.V10: Environmental Monitoring
Virtual Room 10
Monday, July 18, 21:35 - 22:45
MO6.V11: Hyperspectral Super-Resolution
Virtual Room 11
Monday, July 18, 21:35 - 22:45
MO6.V12: Geographic Information Science I
Virtual Room 12
Monday, July 18, 21:35 - 22:45
MO6.V13: Sea Ice and Glacier
Virtual Room 13
Monday, July 18, 21:35 - 22:45
MO6.V14: Land Use and Land Cover Dynamics
Virtual Room 14
Monday, July 18, 21:35 - 22:45
MO6.V15: Agriculture V
Virtual Room 15
Monday, July 18, 21:35 - 22:45
MO6.V16: Soils and Soil Moisture Remote Sensing
Virtual Room 16
Monday, July 18, 21:35 - 22:45
MO6.V17: Atmospheric monitoring and prediction
Virtual Room 17
Monday, July 18, 21:35 - 22:45
MO6.V18: Ocean Altimetry and Coastal Zones
Virtual Room 18
Monday, July 18, 21:35 - 22:45
MO6.V19: Advances in LIDAR Mapping
Virtual Room 19
Monday, July 18, 21:35 - 22:45
MO6.V20: Remote Sensing Techniques and Applications
Virtual Room 20
Monday, July 18, 23:00 - 00:30
MO7.V1: Differential SAR Interferometry: Methods and Applications
Virtual Room 1
Monday, July 18, 23:00 - 00:30
MO7.V2: SAR Imaging Techniques: Methods and Techniques III
Virtual Room 2
Monday, July 18, 23:00 - 00:30
MO7.V3: Feature Selection for Hyperspectral Data
Virtual Room 3
Monday, July 18, 23:00 - 00:30
MO7.V4: Object Detection
Virtual Room 4
Monday, July 18, 23:00 - 00:30
MO7.V5: Classification and Clustering III
Virtual Room 5
Monday, July 18, 23:00 - 00:30
MO7.V6: Surface Sensing
Virtual Room 6
Monday, July 18, 23:00 - 00:30
MO7.V7: Target detection I
Virtual Room 7
Monday, July 18, 23:00 - 00:30
MO7.V8: Spatio-temporal Analysis
Virtual Room 8
Monday, July 18, 23:00 - 00:30
MO7.V9: Land Use Applications II
Virtual Room 9
Monday, July 18, 23:00 - 00:30
MO7.V10: Agriculture IV
Virtual Room 10
Monday, July 18, 23:00 - 00:30
MO7.V11: Observations of Clouds and Precipitation from Ground-Based Technology
Virtual Room 11
Monday, July 18, 23:00 - 00:30
MO7.V12: Ocean Temperature and Salinity
Virtual Room 12
Monday, July 18, 23:00 - 00:30
MO7.V13: Vegetation and Atmospheric Monitoring Using Lidar
Virtual Room 13
Monday, July 18, 23:00 - 00:30
MO7.V14: Remote Sensing for the Sustainable Development Goals
Virtual Room 14
Monday, July 18, 23:00 - 00:30
MO7.V15: AI4EO for Climate and Health
Virtual Room 15
Monday, July 18, 23:00 - 00:30
MO7.V16: Multi-frequency SAR algorithms for scientific downstream applications (Part 1)
Virtual Room 16
Monday, July 18, 23:00 - 00:30
MO7.V17: UAV Future Technology and Applications
Virtual Room 17
Monday, July 18, 23:00 - 00:30
MO7.V18: Microwave Modeling and Observation of Snow
Virtual Room 18
Monday, July 18, 23:00 - 00:30
MO7.V19: Physical Modeling in Microwave and Optical Remote Sensing
Virtual Room 19
Monday, July 18, 23:00 - 00:30
MO7.V20: International Spaceborne Imaging Spectroscopy Missions: International Cooperation and CalVal activities
Virtual Room 20
Monday, July 18, 23:00 - 00:30
MO7.V21: IEEE GRSS Data Fusion Contest
Virtual Room 21

Tuesday, July 19

Tuesday, July 19, 09:00 - 10:30
TU1.O1: SAR Imaging Techniques
Conference Hall 1

Tuesday, July 19, 09:00 - 10:30
TU1.O2: Cryospheric Componients
Conference Hall 2

Tuesday, July 19, 09:00 - 10:30
TU1.O3: Small Satellite Technologies and GNSS-R altimetry
Conference Hall 3

Tuesday, July 19, 09:00 - 10:30
TU1.O4: Remote Sensing Activities in ASEAN
Plenary Theatre Auditorium (PTA)

Tuesday, July 19, 11:00 - 12:00
TU2.MMA: Image Feature Estimation Techniques
Grand Ballroom 1/2

Tuesday, July 19, 11:00 - 12:00
TU2.MMB: Soil Moisture and other Land Surface Parameters
Grand Ballroom 1/2

Tuesday, July 19, 11:00 - 12:00
TU2.MMC: Radar Techniques
Grand Ballroom 1/2

Tuesday, July 19, 14:00 - 15:30
TU3.O1: Data Analysis in Microwaves: Methods and Applications
Conference Hall 1

Tuesday, July 19, 14:00 - 15:30
TU3.O2: Observations and Prediction of Clouds and Precipitation
Conference Hall 2

Tuesday, July 19, 14:00 - 15:30
TU3.O3: Agriculture I
Conference Hall 3

Tuesday, July 19, 14:00 - 15:30
TU3.O4: Maturing Remote Sensing Technology Through CubeSat Missions
Plenary Theatre Auditorium (PTA)

Tuesday, July 19, 16:00 - 17:30
TU4.O1: DPR and Subsurface Sensing
Conference Hall 1

Tuesday, July 19, 16:00 - 17:30
TU4.O2: Image and Data Fusion
Conference Hall 2

Tuesday, July 19, 16:00 - 17:30
TU4.O3: Ocean Altimetry and Coastal Zone
Conference Hall 3

Tuesday, July 19, 16:00 - 17:30
TU4.O4: GNSS+R for the Sustainable Development Goals
Plenary Theatre Auditorium (PTA)

Tuesday, July 19, 19:00 - 22:40
TUS.V21: Student Paper Contest
Virtual Room 21

Tuesday, July 19, 19:50 - 21:20
TU5.V1: InSAR Processing I
Virtual Room 1

Tuesday, July 19, 19:50 - 21:20
TU5.V2: SAR Imaging Techniques: Methods and Machine Learning
Virtual Room 2

Tuesday, July 19, 19:50 - 21:20
TU5.V3: 3D Imaging, Filtering and Information Extraction
Virtual Room 3

Tuesday, July 19, 19:50 - 21:20
TU5.V4: Image Segmentation and Analysis
Virtual Room 4

Tuesday, July 19, 19:50 - 21:20
TU5.V5: Target Detection and Recognition in SAR Images
Virtual Room 5

Tuesday, July 19, 19:50 - 21:20
TU5.V6: SAR Image Classification
Virtual Room 6

Tuesday, July 19, 19:50 - 21:20
TU5.V7: Change Detection I
Virtual Room 7

Tuesday, July 19, 19:50 - 21:20
TU5.V8: Spatial Resolution Enhancement
Virtual Room 8

Tuesday, July 19, 19:50 - 21:20
TU5.V9: Freeze-Thaw Status
Virtual Room 9

Tuesday, July 19, 19:50 - 21:20
TU5.V10: Forest and Vegetation: Biomass and Carbon Cycle
Virtual Room 10

Tuesday, July 19, 19:50 - 21:20
TU5.V11: Remote Sensing of Soils
Virtual Room 11

Tuesday, July 19, 19:50 - 21:20
TU5.V12: Ocean Surface Currents and Winds I
Virtual Room 12

Tuesday, July 19, 19:50 - 21:20
TU5.V13: Advanced Concepts in Aperture Synthesis, Hyperspectral and Polarimetric Microwave Radiometers
Virtual Room 13

Tuesday, July 19, 19:50 - 21:20
TU5.V14: Environmental Monitoring and Smart UAV Surveillance
Virtual Room 14

Tuesday, July 19, 19:50 - 21:20
TU5.V15: Advances in remote sensing towards sustainable development goals - PART II
Virtual Room 15

Tuesday, July 19, 19:50 - 21:20
TU5.V16: Embedding Ethics and Trustworthiness for Sustainable AI in Earth Sciences: Where do we begin?
Virtual Room 16

Tuesday, July 19, 19:50 - 21:20
TU5.V17: Artificial intelligence for radar and satellite remote sensing of precipitation
Virtual Room 17

Tuesday, July 19, 19:50 - 21:20
TU5.V18: Standardization in Geoscience Remote Sensing
Virtual Room 18

Tuesday, July 19, 19:50 - 21:20
TU5.V19: GNSS-R Modeling Part 1: Land
Virtual Room 19

Tuesday, July 19, 19:50 - 21:20
TU5.V20: European Space Agency SAR Missions: Status, Evolution and Contribution to Environmental Monitoring and Sustainable Development
Virtual Room 20

Tuesday, July 19, 21:35 - 22:45
TU6.V1: InSAR Phase Unwrapping & 3D Reconstruction
Virtual Room 1

Tuesday, July 19, 21:35 - 22:45
TU6.V2: SAR Imaging Techniques: Imaging Techniques II
Virtual Room 2

Tuesday, July 19, 21:35 - 22:45
TU6.V3: PolSAR and InSAR: Methods and Applications
Virtual Room 3

Tuesday, July 19, 21:35 - 22:45
TU6.V4: Feature Extraction and Reduction
Virtual Room 4

Tuesday, July 19, 21:35 - 22:45
TU6.V5: Target Detection and Recognition in SAR Images
Virtual Room 5

Tuesday, July 19, 21:35 - 22:45
TU6.V6: Object Detection and Recognition VI
Virtual Room 6

Tuesday, July 19, 21:35 - 22:45
TU6.V7: SAR Classification and Object Recognition
Virtual Room 7

Tuesday, July 19, 21:35 - 22:45
TU6.V8: Classification and Clustering MMV V
Virtual Room 8

Tuesday, July 19, 21:35 - 22:45
TU6.V9: Estimation Methods and Applications
Virtual Room 9

Tuesday, July 19, 21:35 - 22:45
TU6.V10: Advancements in radar target detection and characterization
Virtual Room 10

Tuesday, July 19, 21:35 - 22:45
TU6.V11: Multimodal Fusion
Virtual Room 11

Tuesday, July 19, 21:35 - 22:45
TU6.V12: Geographic Information Science II
Virtual Room 12

Tuesday, July 19, 21:35 - 22:45
TU6.V13: Data Management and Systems
Virtual Room 13

Tuesday, July 19, 21:35 - 22:45
TU6.V14: Forest and Vegetation: Application and Modeling I
Virtual Room 14

Tuesday, July 19, 21:35 - 22:45
TU6.V15: Land Remote Sensing Applications
Virtual Room 15

Tuesday, July 19, 21:35 - 22:45
TU6.V16: Wetlands Remote Sensing
Virtual Room 16

Tuesday, July 19, 21:35 - 22:45
TU6.V17: New Technology for Air Quality Monitoring and Atmospheric Applications III, Virtual Multimedia Session
Virtual Room 17

Tuesday, July 19, 21:35 - 22:45
TU6.V18: Trends in Satellite Missions III
Virtual Room 18

Tuesday, July 19, 21:35 - 22:45
TU6.V19: Optical Imagery Processing Techniques
Virtual Room 19

Tuesday, July 19, 21:35 - 22:45
TU6.V20: Data Analysis and Algorithms
Virtual Room 20

Tuesday, July 19, 23:00 - 00:30
TU7.V1: Differential SAR Interferometry: Methods and Machine Learning
Virtual Room 1

Tuesday, July 19, 23:00 - 00:30
TU7.V2: Polarimetric SAR Interferometry: Methods and Applications
Virtual Room 2

Tuesday, July 19, 23:00 - 00:30
TU7.V3: Graph and Tensor Methods for Hyperspectral Data Analysis
Virtual Room 3

Tuesday, July 19, 23:00 - 00:30
TU7.V4: Object Detection and Recognition V
Virtual Room 4

Tuesday, July 19, 23:00 - 00:30
TU7.V5: Classification and Clustering IV
Virtual Room 5

Tuesday, July 19, 23:00 - 00:30
TU7.V6: Optical Methods
Virtual Room 6

Tuesday, July 19, 23:00 - 00:30
TU7.V7: Target detection II
Virtual Room 7

Tuesday, July 19, 23:00 - 00:30
TU7.V8: Data Mining and Management Methods
Virtual Room 8

Tuesday, July 19, 23:00 - 00:30
TU7.V9: Land Use Applications III
Virtual Room 9

Tuesday, July 19, 23:00 - 00:30
TU7.V10: Urban characterization and modeling
Virtual Room 10

Tuesday, July 19, 23:00 - 00:30
TU7.V11: Prediction of Severe Weather and Natural Hazards
Virtual Room 11

Tuesday, July 19, 23:00 - 00:30
TU7.V12: Coastal Zones Remote Sensing
Virtual Room 12

Tuesday, July 19, 23:00 - 00:30
TU7.V13: Optical Imagery Calibration and Harmonization
Virtual Room 13

Tuesday, July 19, 23:00 - 00:30
TU7.V14: Achieving the UN Sustainable Development Goals Through Urban Digital Twins
Virtual Room 14

Tuesday, July 19, 23:00 - 00:30
TU7.V15: Remote Sensing for the Sustainable Development Goals: the contribution of the COSMO-SkyMed Italian Mission in the framework of the ASI's Open Call initiative (Part 1)
Virtual Room 15

Tuesday, July 19, 23:00 - 00:30
TU7.V16: Satellite Capabilities Critical to the Response to Southeast Asia Environmental Challenges
Virtual Room 16

Tuesday, July 19, 23:00 - 00:30
TU7.V17: UAV/mobile-mapping SAR systems and applications
Virtual Room 17

Tuesday, July 19, 23:00 - 00:30
TU7.V19: Multi-resolution and Multimodal Remote Sensing Image Processing and Interpretation
Virtual Room 19

Tuesday, July 19, 23:00 - 00:30
TU7.V20: ALOS Series Mission, Cal/Val, and Applications (Part 1)
Virtual Room 20

Tuesday, July 19, 23:00 - 00:30
TU7.V21: Human-centric AI4EO
Virtual Room 21

Wednesday, July 20

Wednesday, July 20, 09:00 - 10:30
WE1.O1: Feature Extraction and Reduction
Conference Hall 1

Wednesday, July 20, 09:00 - 10:30
WE1.O2: Data Management and Systems
Conference Hall 2

Wednesday, July 20, 09:00 - 10:30
WE1.O3: Novel Optical and Radar Techniques for Environmental Monitoring
Conference Hall 3

Wednesday, July 20, 09:00 - 10:30
WE1.O4: NASA Soil Moisture Active Passive Mission Observations and Results
Plenary Theatre Auditorium (PTA)

Wednesday, July 20, 11:00 - 12:00
WE2.MMA: Object Recognition and Classification
Grand Ballroom 1/2

Wednesday, July 20, 11:00 - 12:00
WE2.MMB: Remote Sensing Products and Applications
Grand Ballroom 1/2

Wednesday, July 20, 11:00 - 12:00
WE2.MMC: Land Remote Sensing
Grand Ballroom 1/2

Wednesday, July 20, 14:00 - 15:30
WE3.O1: Image Segmentation and Mapping
Conference Hall 1

Wednesday, July 20, 14:00 - 15:30
WE3.O2: Atmospheric Sounding from Satellites
Conference Hall 2

Wednesday, July 20, 14:00 - 15:30
WE3.O3: Land Subsidence, Land Slides and Mineral Mapping
Conference Hall 3

Wednesday, July 20, 14:00 - 15:30
WE3.O4: Active Microwave Remote Sensing of Snow
Plenary Theatre Auditorium (PTA)

Wednesday, July 20, 16:00 - 17:30
WE4.O1: Advances in Soil Remote Sensing
Conference Hall 1

Wednesday, July 20, 16:00 - 17:30
WE4.O2: Classification and Clustering I
Conference Hall 2

Wednesday, July 20, 16:00 - 17:30
WE4.O3: Trends in Satellite Missions I
Conference Hall 3

Wednesday, July 20, 19:50 - 21:20
WE5.V1: InSAR Processing II
Virtual Room 1

Wednesday, July 20, 19:50 - 21:20
WE5.V2: SAR Imaging Techniques: Methods and Techniques I
Virtual Room 2

Wednesday, July 20, 19:50 - 21:20
WE5.V3: Subsurface Sensing techniques I
Virtual Room 3

Wednesday, July 20, 19:50 - 21:20
WE5.V4: Deep Learning For Object Extraction
Virtual Room 4

Wednesday, July 20, 19:50 - 21:20
WE5.V5: Hyperspectral Image Classification I
Virtual Room 5

Wednesday, July 20, 19:50 - 21:20
WE5.V6: Surface Biophysical Parameters
Virtual Room 6

Wednesday, July 20, 19:50 - 21:20
WE5.V7: Change Detection II
Virtual Room 7

Wednesday, July 20, 19:50 - 21:20
WE5.V8: Multisensor Fusion
Virtual Room 8

Wednesday, July 20, 19:50 - 21:20
WE5.V9: Data Management and Systems
Virtual Room 9

Wednesday, July 20, 19:50 - 21:20
WE5.V10: Agriculture II
Virtual Room 10

Wednesday, July 20, 19:50 - 21:20
WE5.V11: Inland Waters and Wetlands II
Virtual Room 11

Wednesday, July 20, 19:50 - 21:20
WE5.V12: Next Generation of LEO/GEO Microwave and Infrared Sounders (Part 1 of 2)
Virtual Room 12

Wednesday, July 20, 19:50 - 21:20
WE5.V13: Microwave Radiometer Calibration Assessment and Parameter Retrievals
Virtual Room 13

Wednesday, July 20, 19:50 - 21:20
WE5.V14: Remote Sensing and Disease Control
Virtual Room 14

Wednesday, July 20, 19:50 - 21:20
WE5.V15: Advancement of UAV/DRONE applications with Multi-Sensor Data for Land Cover Monitoring II
Virtual Room 15

Wednesday, July 20, 19:50 - 21:20
WE5.V16: Harnessing the Power of Quantum Computing for Machine Learning
Virtual Room 16

Wednesday, July 20, 19:50 - 21:20
WE5.V17: Remote Sensing for the Sustainable Development Goals: the contribution of the COSMO-SkyMed Italian Mission in the framework of the ASI's Open Call initiative (Part 2)
Virtual Room 17

Wednesday, July 20, 19:50 - 21:20
WE5.V18: MULTIFREQUENCY MICROWAVE OBSERVATION OF VEGETATION: CROP CLASSIFICATION AND BIOMASS ESTIMATION
Virtual Room 18

Wednesday, July 20, 19:50 - 21:20
WE5.V19: GNSS-R Modeling Part 3: Coherent Scattering Properties
Virtual Room 19

Wednesday, July 20, 19:50 - 21:20
WE5.V20: Physics Aware Machine Learning for Synthetic Aperture Radar Applications
Virtual Room 20

Wednesday, July 20, 19:50 - 21:20
WE5.V21: International Spaceborne Imaging Spectroscopy Missions: Updates and News of planned mission
Virtual Room 21

Wednesday, July 20, 21:35 - 22:45
WE6.V1: Differential SAR Interferometry: Methods and Applications
Virtual Room 1

Wednesday, July 20, 21:35 - 22:45
WE6.V2: SAR Imaging Techniques: Methods and Machine Learning
Virtual Room 2

Wednesday, July 20, 21:35 - 22:45
WE6.V3: Bistatic Radar Imaging and Processing
Virtual Room 3

Wednesday, July 20, 21:35 - 22:45
WE6.V4: Road Detection and Analysis
Virtual Room 4

Wednesday, July 20, 21:35 - 22:45
WE6.V5: Target Detection and Recognition in Optical Image
Virtual Room 5

Wednesday, July 20, 21:35 - 22:45
WE6.V6: Image segmentation and application
Virtual Room 6

Wednesday, July 20, 21:35 - 22:45
WE6.V7: Classification and Clustering MMV II
Virtual Room 7

Wednesday, July 20, 21:35 - 22:45
WE6.V8: Classification and Clustering MMV VI
Virtual Room 8

Wednesday, July 20, 21:35 - 22:45
WE6.V9: Change Detection
Virtual Room 9

Wednesday, July 20, 21:35 - 22:45
WE6.V10: Advancements in optical target detection and unmixing
Virtual Room 10

Wednesday, July 20, 21:35 - 22:45
WE6.V11: Image matching, restoration and retrieval
Virtual Room 11

Wednesday, July 20, 21:35 - 22:45
WE6.V12: Snow Properties
Virtual Room 12

Wednesday, July 20, 21:35 - 22:45
WE6.V13: Remore Sensing Education and Data Policy
Virtual Room 13

Wednesday, July 20, 21:35 - 22:45
WE6.V14: Forest and Vegetation: Application and Modeling II
Virtual Room 14

Wednesday, July 20, 21:35 - 22:45
WE6.V15: Urban analysis
Virtual Room 15

Wednesday, July 20, 21:35 - 22:45
WE6.V16: Remote Sensing of Inland Waters
Virtual Room 16

Wednesday, July 20, 21:35 - 22:45
WE6.V17: Ocean Surface Currents and Winds
Virtual Room 17

Wednesday, July 20, 21:35 - 22:45
WE6.V18: Advanced Concepts in Microwave Radiometers
Virtual Room 18

Wednesday, July 20, 21:35 - 22:45
WE6.V19: Detection and Data Analysis
Virtual Room 19

Wednesday, July 20, 21:35 - 22:45
WE6.V20: Remote Sensing for the Sustainable Development Goals: Methods and Applications
Virtual Room 20

Wednesday, July 20, 23:00 - 00:30
WE7.V1: SAR Imaging Techniques: Applications
Virtual Room 1

Wednesday, July 20, 23:00 - 00:30
WE7.V2: SAR Polarimetry: Methods and Applications
Virtual Room 2

Wednesday, July 20, 23:00 - 00:30
WE7.V3: Neural Networks for Feature Extraction and Reduction
Virtual Room 3

Wednesday, July 20, 23:00 - 00:30
WE7.V4: Object Detection and Recognition VI
Virtual Room 4

Wednesday, July 20, 23:00 - 00:30
WE7.V5: Classification and Clustering V
Virtual Room 5

Wednesday, July 20, 23:00 - 00:30
WE7.V6: Classification and detection
Virtual Room 6

Wednesday, July 20, 23:00 - 00:30
WE7.V7: Unmixing II
Virtual Room 7

Wednesday, July 20, 23:00 - 00:30
WE7.V8: Snow Remote Sensing and Applications
Virtual Room 8

Wednesday, July 20, 23:00 - 00:30
WE7.V9: Forest and Vegetation: Application and Modeling II
Virtual Room 9

Wednesday, July 20, 23:00 - 00:30
WE7.V10: Urban environment and sustainability
Virtual Room 10

Wednesday, July 20, 23:00 - 00:30
WE7.V11: Atmospheric Measurements from Microwave Technology
Virtual Room 11

Wednesday, July 20, 23:00 - 00:30
WE7.V12: Trends in Satellite Missions II
Virtual Room 12

Wednesday, July 20, 23:00 - 00:30
WE7.V13: Airborne Remote Sensing Data Processing and Imaging Techniques
Virtual Room 13

Wednesday, July 20, 23:00 - 00:30
WE7.V14: Addressing New Security Scenarios with Big EO Data
Virtual Room 14

Wednesday, July 20, 23:00 - 00:30
WE7.V15: Computational Intelligence Applications in Remote Sensing Data Analysis
Virtual Room 15

Wednesday, July 20, 23:00 - 00:30
WE7.V16: Novelty Detection and Lifelong Learning for Robust Performance Under Ever-Changing Conditions (Part 2)
Virtual Room 16

Wednesday, July 20, 23:00 - 00:30
WE7.V17: Data Fusion: The AI Era
Virtual Room 17

Wednesday, July 20, 23:00 - 00:30
WE7.V18: European Ground Motion Service (EGMS)
Virtual Room 18

Wednesday, July 20, 23:00 - 00:30
WE7.V19: Research Advances of Remote Sensing through Latin America
Virtual Room 19

Wednesday, July 20, 23:00 - 00:30
WE7.V20: Radio Frequency Interference (RFI) in active microwave sensors
Virtual Room 20

Wednesday, July 20, 23:00 - 00:30
WE7.V21: Ocean Surface Currents and Winds II
Virtual Room 21

Thursday, July 21

Thursday, July 21, 09:00 - 10:30
TH1.O1: Land Use Applications I
Conference Hall 1

Thursday, July 21, 09:00 - 10:30
TH1.O2: Change Detection and Multi-Temporal Analysis
Conference Hall 2

Thursday, July 21, 09:00 - 10:30
TH1.O3: UAV and Ground Based Remote Sensing Techniques
Conference Hall 3

Thursday, July 21, 09:00 - 10:30
TH1.O4: Space Lidar: Missions, Technologies and Observations
Plenary Theatre Auditorium (PTA)

Thursday, July 21, 11:00 - 12:00
TH2.MMA: Data Analysis Methods and Applications
Grand Ballroom 1/2

Thursday, July 21, 11:00 - 12:00
TH2.MMB: Development of Key Enabling Techniques and Technologies for Advanced Payloads
Grand Ballroom 1/2

Thursday, July 21, 11:00 - 12:00
TH2.MMC: UAV and Drone Based Remote Sensing: Methods and Applications
Grand Ballroom 1/2

Thursday, July 21, 14:00 - 15:30
TH3.O1: Image Segmentation and Object Detection
Conference Hall 1

Thursday, July 21, 14:00 - 15:30
TH3.O2: New Technology for Air Quality Monitoring and Atmospheric Applications I (In Person)
Conference Hall 2

Thursday, July 21, 14:00 - 15:30
TH3.O4: New Concepts focused on Microwave and millimeter-wave Radiometer Technologies
Plenary Theatre Auditorium (PTA)

Thursday, July 21, 16:00 - 17:30
TH4.O1: Inland Waters and Wetlands I
Conference Hall 1

Thursday, July 21, 16:00 - 17:30
TH4.O2: Classification and Clustering II
Conference Hall 2

Thursday, July 21, 16:00 - 17:30
TH4.O3: Advances in operational EO Land data validation
Conference Hall 3

Thursday, July 21, 16:00 - 17:30
TH4.O4: Changing Marine Environments monitored by SAR
Plenary Theatre Auditorium (PTA)

Thursday, July 21, 19:50 - 21:20
TH5.V1: Differential SAR Interferometry: Applications
Virtual Room 1

Thursday, July 21, 19:50 - 21:20
TH5.V2: SAR Imaging Techniques: Methods and Techniques II
Virtual Room 2

Thursday, July 21, 19:50 - 21:20
TH5.V3: Subsurface Sensing techniques II
Virtual Room 3

Thursday, July 21, 19:50 - 21:20
TH5.V4: Vehicles detection
Virtual Room 4

Thursday, July 21, 19:50 - 21:20
TH5.V5: Hyperspectral Image Classification II
Virtual Room 5

Thursday, July 21, 19:50 - 21:20
TH5.V6: Hyperspectral Techniques
Virtual Room 6

Thursday, July 21, 19:50 - 21:20
TH5.V7: Unmixing I
Virtual Room 7

Thursday, July 21, 19:50 - 21:20
TH5.V8: Image Synthesis, Restoration and Retrieval
Virtual Room 8

Thursday, July 21, 19:50 - 21:20
TH5.V9: Remote Sensing Data and Policy Decisions
Virtual Room 9

Thursday, July 21, 19:50 - 21:20
TH5.V10: Agriculture III
Virtual Room 10

Thursday, July 21, 19:50 - 21:20
TH5.V11: Observations of Clouds and Precipitation from Space
Virtual Room 11

Thursday, July 21, 19:50 - 21:20
TH5.V12: Ocean Temperature and Salinity
Virtual Room 12

Thursday, July 21, 19:50 - 21:20
TH5.V13: Recent Advances in GNSS-R and SoOp-R Applications and Modeling I
Virtual Room 13

Thursday, July 21, 19:50 - 21:20
TH5.V14: Environmental Monitoring and Assessment Methods
Virtual Room 14

Thursday, July 21, 19:50 - 21:20
TH5.V15: Changing Marine Environments monitored by SAR II
Virtual Room 15

Thursday, July 21, 19:50 - 21:20
TH5.V16: Multi-frequency SAR algorithms for scientific downstream applications (Part 2)
Virtual Room 16

Thursday, July 21, 19:50 - 21:20
TH5.V17: UAV and Drone Based GNSS+R Remote Sensing
Virtual Room 17

Thursday, July 21, 19:50 - 21:20
TH5.V18: Advanced Flood Monitoring and Prediction for Disaster Risk Reduction and Resilient Infrastructure
Virtual Room 18

Thursday, July 21, 19:50 - 21:20
TH5.V19: Physics Aware Machine Learning for Synthetic Aperture Radar Applications II
Virtual Room 19

Thursday, July 21, 19:50 - 21:20
TH5.V20: Honoring Dr. Gail Skofronick-Jackson Part I: Spaceborne Remote Sensing from Global Precipitation Measurement and Beyond
Virtual Room 20

Thursday, July 21, 19:50 - 21:20
TH5.V21: Radio Frequency Interference (RFI) in passive microwave sensors
Virtual Room 21

Thursday, July 21, 21:35 - 22:45
TH6.V1: SAR Imaging Techniques: Applications
Virtual Room 1

Thursday, July 21, 21:35 - 22:45
TH6.V2: SAR Imaging Techniques: Methods and Techniques
Virtual Room 2

Thursday, July 21, 21:35 - 22:45
TH6.V3: Tomography and 3D Mapping
Virtual Room 3

Thursday, July 21, 21:35 - 22:45
TH6.V4: Image Semantic Segmentation
Virtual Room 4

Thursday, July 21, 21:35 - 22:45
TH6.V5: Object Detection and Recognition IV
Virtual Room 5

Thursday, July 21, 21:35 - 22:45
TH6.V6: Hyperspectral Image Classification III
Virtual Room 6

Thursday, July 21, 21:35 - 22:45
TH6.V7: Classification and Clustering MMV III
Virtual Room 7

Thursday, July 21, 21:35 - 22:45
TH6.V8: Surface Parameter Estimation
Virtual Room 8

Thursday, July 21, 21:35 - 22:45
TH6.V9: Information Extraction
Virtual Room 9

Thursday, July 21, 21:35 - 22:45
TH6.V10: Advancement in radar and hyperspectral target detection
Virtual Room 10

TECHNICAL PROGRAMME SESSIONS

Thursday, July 21, 21:35 - 22:45
TH6.V11: Super-Resolution
Virtual Room 11

Thursday, July 21, 21:35 - 22:45
TH6.V12: Glacier
Virtual Room 12

Thursday, July 21, 21:35 - 22:45
TH6.V13: Land Use Applications
Virtual Room 13

Thursday, July 21, 21:35 - 22:45
TH6.V14: Forest and Vegetation: Biomass and Carbon Cycle
Virtual Room 14

Thursday, July 21, 21:35 - 22:45
TH6.V15: Topography, Geology and Geomorphology
Virtual Room 15

Thursday, July 21, 21:35 - 22:45
TH6.V16: Observations and Prediction of Clouds and Precipitation
Virtual Room 16

Thursday, July 21, 21:35 - 22:45
TH6.V17: Ocean Surface Dynamics
Virtual Room 17

Thursday, July 21, 21:35 - 22:45
TH6.V18: Recent Advances in GNSS-R and SoOp-R Applications and Modeling II
Virtual Room 18

Thursday, July 21, 21:35 - 22:45
TH6.V19: Ground-based Remote Sensing Systems II
Virtual Room 19

Thursday, July 21, 23:00 - 00:30
TH7.V1: SAR Imaging Techniques: Methods and Imaging Modes I
Virtual Room 1

Thursday, July 21, 23:00 - 00:30
TH7.V2: Bistatic Radar Imaging and Processing
Virtual Room 2

Thursday, July 21, 23:00 - 00:30
TH7.V3: Spatial Feature Extraction
Virtual Room 3

Thursday, July 21, 23:00 - 00:30
TH7.V4: Object Detection and Recognition VII
Virtual Room 4

Thursday, July 21, 23:00 - 00:30
TH7.V5: Classification and Clustering VI
Virtual Room 5

Thursday, July 21, 23:00 - 00:30
TH7.V6: Multitemporal Image Analysis
Virtual Room 6

Thursday, July 21, 23:00 - 00:30
TH7.V7: Target detection III
Virtual Room 7

Thursday, July 21, 23:00 - 00:30
TH7.V8: Sea Ice and Glacier
Virtual Room 8

Thursday, July 21, 23:00 - 00:30
TH7.V9: Forest and Vegetation: Application and Modeling III
Virtual Room 9

Thursday, July 21, 23:00 - 00:30
TH7.V10: Geological Mapping and Surface Deformation
Virtual Room 10

Thursday, July 21, 23:00 - 00:30
TH7.V11: New Technology for Air Quality Monitoring and Atmospheric Applications II, Virtual
Virtual Room 11

Thursday, July 21, 23:00 - 00:30
TH7.V12: SAR Processing and Calibration Techniques
Virtual Room 12

Thursday, July 21, 23:00 - 00:30
TH7.V13: Ground-based Remote Sensing Systems I
Virtual Room 13

Thursday, July 21, 23:00 - 00:30
TH7.V14: Advanced remote sensing data analysis for sustainable development
Virtual Room 14

Thursday, July 21, 23:00 - 00:30
TH7.V15: Distributed Observing Systems: Demonstrations and Preliminary Results
Virtual Room 15

Thursday, July 21, 23:00 - 00:30
TH7.V16: Novelty Detection and Lifelong Learning for Robust Performance Under Ever-Changing Conditions (Part 1)
Virtual Room 16

Thursday, July 21, 23:00 - 00:30
TH7.V17: Advanced Methods for Polarimetric SAR Information Extraction
Virtual Room 17

Thursday, July 21, 23:00 - 00:30
TH7.V18: Datasets and Benchmarking in Remote Sensing
Virtual Room 18

Thursday, July 21, 23:00 - 00:30
TH7.V19: International Spaceborne Imaging Spectroscopy Missions: Updates and News of running missions
Virtual Room 19

Thursday, July 21, 23:00 - 00:30
TH7.V20: Next Generation of LEO/GEO Microwave and Infrared Sounders (Part 2 of 2)
Virtual Room 20

Thursday, July 21, 23:00 - 00:30
TH7.V21: TanDEM-X: Mission Status and New Developments
Virtual Room 21

Friday, July 22

Friday, July 22, 09:00 - 10:30
FR1.O1: Forest and Vegetation: Application, Modeling, Biomass and Carbon Cycle
Conference Hall 1

Friday, July 22, 09:00 - 10:30
FR1.O2: Change Detection, Multi-Temporal Analysis, and Geographic Information Science
Conference Hall 2

Friday, July 22, 09:00 - 10:30
FR1.O3: Remote Sensing Data Analysis and Assessment
Conference Hall 3

Friday, July 22, 09:00 - 10:30
FR1.O4: Recent Advances in Microwave Radiometer Missions and Calibration
Plenary Theatre Auditorium (PTA)

TECHNOLOGY, INDUSTRY, AND EDUCATION (TIE) FORUM

The forum will be done in hybrid mode, whereby there will be an online audience together with a physical audience. Speakers will be present physically unless stated otherwise.

VENUE: *MEETING ROOM 306*

Date	Title	Speaker/Session Organizer
MONDAY 18 July *14:00-16:00*	Funding opportunities offered by the European Research Council (ERC grants)	Dr. Nicolas Sifakis from ERC
MONDAY 18 July *16:00-17:30*	Geospatial Business Startup Workshop: Asia Pacific Region	Mr. Kevin Corbley
Tuesday 19 July *15:45-17:15*	Game-Changing Science with SmallSats and Hosted Payloads	Ms. Florence Tan from NASA
WEDNESDAY 20 July *14:00-17:00*	GRSS Chapter Panel Discussion and Women in Engineering Forum	Prof. Mousmi Ajay Chaurasia from Muffakham Jah College Engineering and Technology, Hyderabad, India
THURSDAY 21 July *14:00-15:00*	Technology Sharing Session (30 mins per speaker) A Memory Block Stream Chain Based High-Speed Remote Sensing Image Processing Technology And Its Application In China's 3rd National Land Resource Survey Remote sensing in farming: The present and the future	Various Speakers Dr. Lei Xia From PIESAT (Online Presentation) Mr. Cheang T.K. from Agritix
THURSDAY 21 July *15:00-17:00*	Biomass burning: Air quality, climate change and sustainability.	Dr. Liew SC

IGARSS 2022 WELCOME RECEPTION

Location KLCC Grand Ballroom Foyer
Date 17 July 2022 (Sunday)
Time 6pm to 8pm

Time	Programme
6:00pm	Arrival of IGARSS Organizing Committee and participants Gamelan UTAR Chinese Orchestra
6:15pm	Welcome Address by IGARSS 2022 General Chair
6:25pm	Performance 1
6:30pm	Dine/cocktail tables – Finger Food
6:45pm	UTAR Chinese Orchestra
7:00pm	Performance Networking session
8:00pm	End of event

IGARSS 2022 FUN RUN @ KLCC PARK

Welcome all participants of IGARSS 2022 to Malaysia's iconic KLCC twin towers. Besides the conference, our committee members are also committed to organizing a fun run with the objective to de-stress and for participants of this symposium to socialize with other participants while maintaining a healthy lifestyle.

Location	KLCC Park
Date/Time	**Wednesday, 20 July, 17:00 - 19:00**
Cost	USD $20
Distance	1.3km

Summary of fun run itinerary as below:

Time	Activities
17:00	Arrival of Participants
17:10	Briefing and warm up
17:20	Flag off by stages
17:30	Signing and message leaving at midpoint
17:40	Arriving at finish line for medal and water collection
17:50	Photo taking session and socializing with participants
18:00	End of event and clean up

IGARSS 2022 AWARDS BANQUET

The IGARSS 2022 Awards Banquet will be held at Grand Hyatt, Kuala Lumpur. Overlooking the iconic Petronas Twin Towers and adjacent to Kuala Lumpur Convention Centre, Grand Hyatt Kuala Lumpur is one of the best hotels in Kuala Lumpur strategically located in the heart of city. Please enjoy Malaysia hearty meal with cultural traditional music & dances from various region of Malaysia.

Location	Grand Ballroom, Grand Hyatt, Kuala Lumpur. An oval-shaped, pillar-less Grand Ballroom covered overhead by crystal chandeliers offers 1,045 square metres of space.
Date/Time	**Thursday, 21 July, 19:00 - 22:15**
Cost	USD $70

Time	Programme
7:00pm	Registration / Arrival of IGARSS Participants
7:15pm	Arrival of IGARSS VIP
7:45pm	Arrival of Guest of Honor
8:00pm	Speech by IGARSS 2022 General Chair
8:10pm	Speech by Guest of Honor
8:20pm	Dinner with Performance
9:40pm	Awards Ceremony
10:15pm	End of Award Banquet

TECHNICAL VISIT: SECRET GARDEN, 1 UTAMA MALL

A popular tourist attraction is the Secret Garden, an elaborate showcase of 500 species of exotic flora. Each plant is specially created on a bed of bio-carbon soil and meticulously nurtured by a team of renowned botanists. Take a stroll through this 30,000 sq ft high-tech rooftop sanctuary 35 metres above the ground – the largest in Southeast Asia. A renowned botanist, Dr Francis Ng. will guide you through the rooftop garden and share his amazing knowledge on the gems here!

Date/Time
Monday, 18 July, 08:00
Thursday, 21 July, 08:00

Meeting Point
Kuala Lumpur Convention Centre

Cost
USD $30

Itinerary

- 9:30 Departure from KLCC (Conference Venue) by bus
- 10:00 Arrival at Secret Garden
- 10:15 Guided tour on Secret Garden by renowned botanist
- 12:00 Departure from Secret Garden by bus
- 13:00 Lunch at local restaurant

TECHNICAL VISIT: FOREST RESEARCH INSTITUTE MALAYSIA (FRIM)

The Forest Skywalk is FRIM's second canopy walkway which is located at Kepong Botanic Gardens (KBG). The highest point of the structure is 141 m above sea level. The structure was built using aluminium, enforced with steel tubes and supported by guy wires. From the Forest Skywalk office, you need to walk 100 m along an easy trail. Once on the skywalk, visitors can spend 30 to 40 minutes to complete the loop. The panoramic view on the Forest Skywalk will captivate attention, especially from the top of the 50 m tower.

Date/Time
Tuesday, 19 July, 08:00 - 13:00

Meeting Point
Kuala Lumpur Convention Centre

Cost
USD $50

Itinerary

- 8:00 Departure from KLCC (Conference Venue) by bus
- 9.00 Arrival at FRIM
- 9.30 Skywalk/ Nature Trekking activities
- 12.00 Departure from FRIM by bus
- 13.00 Lunch at local restaurant

CHAPTER CHAIRS DINNER

Please be our guest at the technical committees and chapter chairs dinner on Tuesday, 19 July, 7 pm. This will be our moment to meet and sit together after more than a year we're restricted due to pandemic. Get your ticket on the IGARSS 2022 registration website to book your seat.

Location
Banquet room, Kuala Lumpur Convention Centre

Date/Time
Tuesday, 19 July, 19:00 – 21:00

Cost
By invitation

TECHNICAL VISIT: MALAYSIA SPACE AGENCY (MYSA)

Malaysia Agency Space (MYSA) is the agency mandated by the government to develop the space sector for the nation. Through the National Space Policy, the country is envisioning to have the capability and capacity to capitalize space as a strategic sector for national well-being towards achieving the country's vision. With that, the agency is geared to develop the country's potential in the space sector to support the economic growth and social development, and strengthening the national security. The tour will bring you through research facilities at MYSA. Guided tours include the overview of the institute, Satellite Assembly & Integration Facility and Mission Control Facility.

Date/Time	**Wednesday, 20 July, 08:00 - 13:00**
Meeting Point	Kuala Lumpur Convention Centre
Cost	USD $30
Itinerary	• 8:00 Departure from KLCC (Conference Venue) by bus • 9:30 Arrival at MYSA • 9:45 Briefing from MYSA officer • 10:30 Guided tour on Satellite Assembly & Integration Facility • 11:30 Guided tour on Mission Control Facility • 11:45 Photography session • 12:00 Departure from MYSA by bus • 13:00 Lunch at local restaurant

YOUNG PROFESSIONALS' MIXER

The young professionals (YP) mixer is a chance for GRSS YPs to have an informal meet and greet and to network with accomplished professionals from industry and academia. You'll have a chance to meet senior GRSS members that are willing to share stories about their careers and offer advice to the YPs. Get your ticket on the IGARSS 2022 registration website to join us on Monday, 18 July, 7 pm.

Location	Woobar, W Kuala Lumpur
Date/Time	**Monday, 18 July, 19:00 - 21:00**
Cost	USD $20

WOMEN IN GRSS MIXER

This Women in GRSS luncheon is a great opportunity for attendees to interact and network with senior members. We will have a short, informal programme and share a delicious meal together! All are welcome. Get your ticket on the IGARSS 2022 registration website to join us on Wednesday, 20 July, 7 pm.

Location	Komune Co-working KLCC, Suite 6-1, Level 6, Lobby A, Wisma UOA II
Date/Time	**Wednesday, 20 July, 19:00 – 21:00**
Cost	Free

2022 SUMMER SCHOOL
INTERNATIONAL GEOSCIENCE AND REMOTE SENSING

Date **14-16 July 2022 (Thursday to Saturday)**

Venue Universiti Tunku Abdul Rahman (UTAR)
Kampar Campus
Jalan Universiti,
Bandar Barat,
31900, Kampar, Perak, Malaysia

The summer school will be dedicated to introducing drone-based remote sensing to the participants and will include practical training where data collection campaign, technical lessons, demo by drone service providers and hands-on exercises. This summer school is held in conjunction with the IGARSS 2022 event.

Certain sessions of the summer school programme for this year will be held in-person and virtual concurrently. Please refer to the tentative schedule for sessions that will be held concurrently.

The organizing committee will grant 20 applications to join the IGARSS 2022 summer school on-site. Other applicants will join the event online (virtual mode).

For on-site participants, participation in the summer school will be free of charge, including accommodation, and transportation between Kuala Lumpur and Kampar (the Summer School's venue) and each of the training days.

Date	Time	Description	Session	Location
Day 0 **13 July 2022**	14:00 – 17:30	Travel from KL to UTAR, Kampar		KLCC
	17:30 – 18:00	Check in to Hotel		Grand Kampar Hotel
Day 1 **14 July 2022**	09:00 – 09:30	Registration and welcome		UTAR Kampar
	09:30 – 12:30	Introduction to Drones - Overview of drones, flying safety, Flying modes	In-person and virtual	Lecture Hall, UTAR Kampar
	12:30 – 13:30	Lunch break	Onsite only	UTAR Kampar
	13:30 – 17:00	Drones Hands-on - Take-off and landing, basic movements, flying modes, return to home		Zone M, UTAR Kampar

SUMMER SCHOOL (continued)

Date	Time	Description	Session	Location
Day 2 **15 July 2022**	09:30 – 12:30	Drone-based Imaging System - Introduction to digital camera, multispectral and hyperspectral, flight mission planning	In-person and virtual	Computer Lab, UTAR Kampar
	12:30 – 13:30	Lunch break		UTAR Kampar
	13:30 – 17:00	Drones Hands-on - Capturing HDR image, capturing bracketed image, capturing raw data, ground-truth measurement		Zone M, UTAR Kampar
Day 3 **16 July 2022**	09:30 – 12:30	Hyperspectral Imaging - Understanding hyperspectral imaging, raw data pre-processing, data processing and analysis	In-person and virtual	Computer Lab, UTAR Kampar
	12:30 – 13:30	Lunch break	In-person and virtual	UTAR Kampar
	13:30 – 17:00	Processing Hands-on - Reading and processing hyperspectral raw data, visualization summary and wrap up		Computer Lab, UTAR Kampar
	17:00 – 20:00	Travel to KL		UTAR Kampar

MAP DESIGN COMPETITION

Aim and Objectives of The Competition

The map design competition will be organized to promote interest in map design and recognize significant advancement of geoscience and related technology in cartography elements.

Categories:

- Secondary School
- Polytechnic Colleges/University

Judging Criteria: The GRSS outreach committee will determine the top three in each category. Each of the following elements will be weighted the same with a maximum score of 5 points awarded per element:

- Accuracy - grammar, punctuation, spelling
- Design/Layout - logical organization and visual flow of text and graphics
- Legibility - text font, text size, figures, tables, and graphics
- Visual Appeal - color coordination, geometry, accents, highlights, use of symbology
- Effective communication - understandable and concise
- Effective use of Geographic Information - appropriate use and portrayal of spatial data
- Originality - unique presentation

Software: Use of any software is allowed to create your map with the exception of any online map portals such as Google Maps or Bing Maps, due to copyright and permission restrictions.

Map contest rules and regulations:

- Only one entry is allowed per person.
- Maps and winner's names will be published on the IGARSS 2022 website.
- Winners will be required to provide a release to use their map image.

THREE MINUTES THESIS COMPETITION

3MT™, founded by the University of Queensland, is an academic competition that cultivates students' presentation and research communication skills and challenges them to describe their research within only three minutes to a general audience with one static slide.

Since IGARSS is held in a hybrid format this year, the competition is open to all students in a research-based master's or doctoral programme worldwide, whether attending the symposium in-person or remotely.

If you want to take the challenge and participate in the competition, submit a 3-minute video describing your thesis and research topic to a video platform (YouTube, TikTok, etc.) or to a site accessible only by the evaluation committee with a private URL. The judging criteria for this phase are presentation skills (40%), scientific quality (40%) and originality (20%) of the topic presented.

The top 10 submissions will be selected and invited to the final round, which will take place virtually on Tuesday, July 19, 2022.

PRE AND POST CONFERENCE TOURS

Travel around to experience the remarkable treasures and the hidden gems in Malaysia with our official tour agent, Asia Experience (https://www.asia-experience.com/igarss2022).

1. CITY EXCURSIONS

Location	Tour highlights
Spotlight on Kuala Lumpur (Tour Code: KUL100)	The gate of the King's Palace • National Mosque • National Monument • National Museum • Independence Square • Petronas Twin Towers • Handicraft Centre and Chocolate Boutique
Kuala Lumpur Discovery Duration: 8 Hours Tour Code: KUL110	FRIM • Royal Selangor Pewter factory • Batu Caves • National Mosque • National Museum • Independence Square • Petronas Twin Towers • Handicraft Centre and Chocolate Boutique
Picturesque Putrajaya (Tour Code: KUL105)	Putrajaya, Malaysia's smart City in the Garden • many striking and impressive buildings, monuments and bridges • Perahu ride (*optional)
Kuala Selangor Firefly (Tour Code: KUL109)	Evening tour to Kuala Selangor Wetland Reserve • Mangrove forests • Cruise on a boat • Firefly Phenomenon • Included 1 dinner at Local Restaurant
Heritage of Melaka (Tour Code: KUL108)	Cheng Hoon Teng Temple • Porta de Santiago• Stadthuys • St Paul's Church • Christ Church • Jonker Street

2. OVERNIGHT STAY

Package Name	Tour Code
2-Days 1-Night Melaka, Malacca	MKZ01
2-Days 1-Night Genting Highlands, Pahang	GH5
3-Days 2-Nights Langkawi Round Island, Kedah	LGK01
3-Days 2-Nights Penang City Explorer, Penang	PEN01
3-Days 2-Nights Fun in Legoland, Johore	JHB01
3-Days 2-Nights Mossy Forest Cameron Highlands, Pahang	CMH01
3-Days 2-Nights Taman Negara Explorer, Pahang	MTN01
3-Days 2-Nights Deluxe Package Laguna Redang, Terengganu	LGN01
3-Days 2-Nights Tioman Fullboard Snorkelling Experience, Pahang	TOM01
3-Days 2-Nights Rawa Island Full board Experience, Johore	RWI01
4-Days 3-Nights The Paradise of Kota Kinabalu, Sabah	BKI01
3-Days 2-Nights Kinabalu Park & Hot Spring, Sabah	BKI02

PRESENTATION INSTRUCTIONS

ORAL PRESENTATION		
Information	**Physical (hybrid)**	**Virtual**
General Plan	For this oral session, you are given 10 minutes to present your paper, and a further 5 minutes for question and answer session. Presenters shall prepare a 10-minutes presentation slides either in Power Point or PDF format, for each paper. Presenters shall also prepare a pre-recorded video of the presentation, in MP4 format.	
Presentation Language	English	
Organizer	• Session Chair - Main person in-charge of the overall conduct of the session. • Session Co-chair (if available) - Assist chair to manage the session. • Session Manager - To assist chair/co-chair in technical matters including handling of Zoom.	
Room / Presenter Facilities	1. Microphone and speaker 2. Lectern 3. Laptop 4. Projector 5. Screen 6. Laser pointer 7. Zoom	Presenter shall prepare a laptop or desktop installed with Zoom.
Presenter arrival / attendance	30 minutes before the session begins - to meet with the session chair and load the presentation materials to the laptop	Zoom meeting will begin 15 minutes before the scheduled time. Presenters should join the Zoom meeting at least 5 minutes before the session begins.
Presentation time	15 minutes (Any setup time you use is part of your overall 15 minutes presentation time) Suggested plan: • 10 minutes - Slides presentation • 5 minutes - introduction, summary, and questions from the audience If the author of a paper is not attending in-person (due to unavoidable reasons), he/she can prepare a pre-recorded video of the presentation (10 minutes long) and submit to the session manager to be played during the paper slot. However, one co-author of the paper MUST be present (in-person or online) to answer any questions.	15 minutes (Any time taken to share the screen, adjust the microphone and test the audio is part of your overall 15 minutes presentation time) During session: • 10 minutes - Slides presentation - the recorded video in MP4 format will be played • 5 minutes - question and answer session with the audience

Information	Physical (hybrid)	Virtual
Presentation Format	A PowerPoint slides or PDF file is to be prepared for presentation. Laptop with the following tools will be provided: • Windows 10, PowerPoint 2010~2019 • Windows Media Player 11 • Ensure your presentation materials are compatible with the tools provided. • We recommend you make your slides with aspect ratio of 16:9 (If you make them with aspect ratio of 4:3, the reduced-size slides are projected onto a screen.	The video should be (The video's quality is the author's responsibility): • in MP4 format • Dimensions: Minimum height 480 pixels • File size: Maximum 100 MB • Aspect Ratio: 16:9 (widescreen format) • Avoid areas that have echo: • Rooms should be fairly small; • Sound dampening with carpeting, curtains, furniture.
Presentation Uploading Time	Uploading of presentation materials can be done from 30 minutes before the presentation up until 10 minutes before the presentation, on a first-come first-serve basis. You are solely responsible to upload your presentation materials before the session.	To submit the recorded video presentation NO LATER THAN 5 July 2022.
Presentation Uploading method	To the computer in the session room via USB flash memory stick (USB Port is Type A) Presenters can check their presentations in the Speaker Preparation Room at MEETING ROOM 307. There will be 7 computers for the speakers to check and modify the presentations if needed.	

Information	Physical (hybrid)	Virtual
IMPORTANT NOTES	1. To check your visual aids before the session begins; 2. When uploading your presentation, please check if formulas/animations are shown correctly. **REMINDER: Please do not attempt to use your own computer to connect to the projector.**	1. Check that your final video and audio plays directly in common web browsers like Chrome/Chromium, Firefox, etc. by dragging the video file onto a browser window. You may need to re-encode the video file with different parameters if there is no audio or video portion played on the web browser. 2. Use as quiet an area as possible. 3. Hardline internet connections are highly recommended, but if unavailable, a strong Wi-Fi connection should do the job. 4. A good headset with a microphone set close to your mouth BUT away from direct line of mouth to reduce “pops”. Try to avoid using default, built-in microphones on your computer, if possible. 5. Do a test recording of a couple of minutes and review the sound and picture quality, in the MP4 format, and check the bit rate before recording your entire presentation. Make adjustments as needed. 6. Authors will be required to electronically sign a Consent and Release statement, which grants the symposium the permission to receive, display, and archive the media files submitted for use during the virtual symposium.

MULTIMEDIA PRESENTATION		
Information	**Physical**	**Virtual**
General Plan	Multimedia session will combine poster presentation with video clip or slide presentation. The session will be split into two 30-minutes periods. In the first 30 minutes of the session, each presenters will be given a 2-minute time to present their video clip or slides. This session is optional, but highly encouraged. The second 30 minutes will be question and answer session, whereby each presenter will need to stand near their posters.	Each multimedia session is made up of 10 papers with each having a 5-minute video clip. The video clips will be played by the session manager. In the final 20 minutes, a group discussion led by the session chair will take place summarizing the topic of the session and related question and answer.
Presentation Language	English	
Organizer	• Session Chair - Main person in-charge of the overall conduct of the session. • Session Co-chair (if available) - Assist chair to manage the session. • Session Manager - To assist chair/co-chair in technical matters.	• Session Chair - Main person in-charge of the overall conduct of the session. • Session Co-chair (if available) - Assist chair to manage the session. • Session Manager - To assist chair/co-chair in technical matters including handling of Zoom.
Room / Presenter Facilities	Laptop connected to big screen monitor.	Presenter shall prepare a laptop or desktop installed with Zoom.
Presenter arrival / attendance	• Multimedia sessions are scheduled at 11:00 on Tuesday, Wednesday and Thursday. • Authors should have their posters in place by 10:00. • Authors should be at the venue from 10:45 until 12:00 (noon). • Posters should be removed after 14:00.	Zoom meeting will begin 15 minutes before the scheduled time. Presenters should join the Zoom meeting at least 5 minutes before the session begins.
Presentation time	• From 11:00 to 11:30, each presenter is given 2 minutes to present a short slide/video of their work. This is optional. • After 11:30, all authors should be beside their posters for Q&A sessions, until 12:00 (noon).	• A recorded video (5 minutes) will be presented by the session manager from 21:35 to 22:25 (local time). • From 22:25 to 22:45 (local time), Q&A session (or group discussion) will be conducted, led by session chair/co-chair. • All authors are expected to contribute to the discussion. • Virtual attendees will also be able to view the multimedia materials at any time during the conference and to ask questions via the symposium website.

MULTIMEDIA PRESENTATION (continued)		
Information	**Physical**	**Virtual**
Presentation Format	Presentations: • Authors who wish to make the 2-minute presentation, should prepare a presentation file (PowerPoint, PDF or a 2-minute video). • We recommend producing your presentation with an 16:9 aspect ratio. However, you can also prepare your presentation in the classic 4:3 format. • Poster: • One poster board is reserved for your use. Each board has a width of 1m and a height of 2m. • The poster is not required to fill this entire space, but it cannot be any larger than the board size. It is recommended to use A1 Portrait for your poster size. • The title of your poster should appear at the top in CAPITAL letters about 25mm high. Below the title put the author(s)' name(s) and affiliation(s).	
Presentation Uploading Time	Presentations: Uploading of presentation materials can be done from 10:00 up to until 10:45, on a first-come first-serve basis. You are solely responsible to upload your presentation materials before the session. Poster: Authors should have their posters in place by 10:00. There MUST be a presenter standing at the poster during the entire scheduled poster time. A poster that is mounted to the board, but without any person presenting it will be considered a no-show!	The authors are required to submit the video by 5 July 2022. (link provided below) Only ONE file may be submitted. New uploads will REPLACE existing uploads of the same type.
Presentation Uploading method	To the computer in the session room via USB flash memory stick (USB Port is Type A)	
IMPORTANT NOTES	Authors are invited to be on stand-by near their posters during the session breaks and must be near their poster during the dedicated poster session time.	Authors will be required to electronically sign a Consent and Release statement, which grants the symposium the permission to receive, display, and archive the media files submitted for use during the virtual symposium.

TRAVEL INFORMATION

Weather

- In Kuala Lumpur, Malaysia, the average high temperature in July is 32.2°C (90°F) and the average low temperature is 23.2°C (73.8°F). The weather is usually humid with occasional showers.

Electricity

- The voltage used in Malaysia is 230/240 volts -50hz. If your electrical appliance uses 110/120 volts, you will need to use a **transformer/converter**. Failing to do so will damage your electrical appliances.
- Bring a universal plug and/or adaptor for your electrical equipment.

Money Currency

- MYR – Malaysia Ringgit

Local Time

- Local time in Malaysia is 8 hours ahead of GMT.

Traveller SIM

Telco	MYR	Where to Get
Celcom	**MYR10** Prepaid Pack FREE 1GB Monthly Basic Internet Call rate at 30sen/min SMS at 15sen/SMS	You can purchase the pack at selected Celcom branches, Blue Cube or dealer outlets at major airports, tourist hotspots and shopping malls. You will need to show your passport and fill in the registration form. Then you can make your first call to activate the number. MYR3 is preloaded in the pack but you are recommended to reload from as low as MYR50 to enjoy a longer validity period.
Digi	**MYR15** DIGI Next 15 6GB High-Speed Internet Valid for 30 days **MYR30** DIGI Next 30 20GB High-Speed Internet Valid for 30 days **MYR35** DIGI Next 35 Unlimited Calls + 30GB High-Speed Internet Valid for 30 days	You can purchase the pack at KLIA2 or any Digi outlets. You will need to show your passport and fill in the registration form.
Hotlink	**MYR25** **HIGH-SPEED INTERNET PACK** SIM Pack + 10GB High-Speed Internet Pass	You can purchase the pack at KLIA, KLIA2 or any Maxis outlets. You will need to show your passport and fill in the registration form.

(1) COVID-19 SOP RELAXATION FOR TRAVELLERS ENTERING MALAYSIA EFFECTIVE 1 MAY 2022 (info updated as of 20 June 2022 – details please go to https://esd.imi.gov.my/)

A. COVID-19 test requirements prior to departure and upon arrival are no longer needed for the following groups of travellers:

- Travellers aged 12 and under regardless vaccination status
- Travellers aged 13 years and above who have completed vaccination
- Travellers with a history of COVID-19 infection within 6 to 60 days from the recovery date prior to departure

B. Travellers with incomplete vaccination status or have not received vaccination must comply to the following:

- To perform pre-departure test two (2) days prior to departure to Malaysia (RT-PCR or RTK-Ag Professional)
- Undergo COVID-19 screening test within 24 hours upon arrival using antigenic RTK with the supervision of private medical practitioners either physically or virtually
- Compulsory to undergo a quarantine for five (5) days at any accommodation including own residence and required to undergo RT-PCR on the fourth day or RTK-Ag professional on the fifth day

C. Travellers who detected symptoms upon entry at the International Gateway will be instructed to undergo a COVID-19 screening test with a professional RTK antigen (Ag) with the assistance from the respective staff at the airport.

D. All travellers must download and register as MySejahtera users before coming to Malaysia. Travellers must still present a Traveller's Card displayed in the MySejahtera app upon arrival at the International Gateway.

→ Download and install **MySejahtera** from the Gallery of Malaysian Government Mobile Applications (GAMMA), Apple AppStore, Google Play Store or Huawei AppGallery Enter your mobile phone number and click “Register”.

Guideline to register in MySejahtera application

The followings are the steps to register MySejahtera:

1. Download and install MySejahtera from the Gallery of Malaysian Government Mobile Applications (GAMMA), Apple AppStore, Google Play Store or Huawei AppGallery
2. Click on “Register Here” to register a new account
3. Enter your mobile phone number and click “Register”. You may also click on the link “I would like to use Email to Register” *(if you want to register using email address)*
4. You will receive an OTP via SMS from 63839 *(if you register using phone number)* or confirmation link through your email. *(if you register using email address)*
5. Enter the OTP and click ‘Send’ *(if you register using phone number)* or click on the confirmation link sent to your email *(if you register using email address)*
6. Fill in your registration details and click ‘Confirm’
7. You will receive a “Successful Registration” message. Click “Close” at the bottom of the screen to return to the sign-in screen
8. Enter your User ID *(phone number or email address)* and your password then click “Sign in”.
9. Done! You may start using the app

E. COVID-19 insurance for foreign travellers is no longer a pre-requisite to enter Malaysia.

You may refer to the Ministry of Health (MOH) website (https://www.moh.gov.my/) for more information.

For any other queries, please contact at +603-7839 7171 or email at:

a) Employment Pass, Professional Visit Pass, and related passes: helpdesk@myxpats.com.my

b) Residence-Pass Talent (RP-T): rptcare@myxpats.com.my

c) For other Immigration related matters: http://eapp.imi.gov.my/tanya/create

(2) TRANSPORTATION

Upon arrival, you may opt for any of the transportation below to proceed to Kuala Lumpur City Centre.

1. KL AIRPORT BUS SHUTTLE (to KL Sentral)

KLIA has a variety of bus services that can take you to several destinations within Peninsular Malaysia. You can take the bus service by going to Level 1, Block C, Short-Term Car Park and Level 1, Main Terminal Building. Please note that the information is subject to change by the respective service providers. For booking and information, please visit http://theairportbus.com.my/

Service Provider	Routes	Fares	Operating Hours
Express Coach	KLIA to/from KL Sentral	One Way Adult: MYR15.00 Return Trip Adult: MYR30.00	FROM KLIA Start: 7.45am End: 8.45pm Travelling Time: 1 hour

2. KLIA EXPRESS TRAIN (to KL Sentral)

The fastest way to get from KLIA to the city centre is by taking the KLIA Ekspres. There is a non-stop service to the KL City Air Terminal (KL CAT) located in KL Sentral which will take about 28 minutes. There is also a transit train service with 3 stops along the journey at Bandar Tasik Selatan, Putrajaya/Cyberjaya, and Salak Tinggi. The transit train service will take about 35 minutes. The trains are equipped with comfortable seats, digital entertainment, wheelchair seat restraint, a wheelchair-friendly washroom, and luggage racks.

You can visit the KLIA Ekspres website at www.kliaekspres.com for the full fares and schedule.

3. KL AIRPORT LIMO & TAXI SERVICES

There are two types of taxi services provided at KLIA; airport taxi and metered city taxi.

(i) Airport Taxi

Airport taxi operates through a coupon system that can be purchased at the counters. The airport taxi service provider has a variety of vehicle types in their fleet ranging from family sedans to luxury vehicles. The charges start from a minimum of MYR32.20 and are fixed based on the desired destinations.

The coupons can be purchased from the counters at

- Domestic Arrival, Level 3, Main Terminal Building
- International Baggage Reclaim, Level 3, Main Terminal Building

For more information on rates and bookings, kindly contact Airport Limo (M) Sdn. Bhd. at 1-300-88-8989 or visit their website at www.airportlimo.my

(ii) Metered City Taxi

Metered taxi service is available at KLIA and charges are according to distance/time inclusive of a flag fall charge for the first 1km or 3 minutes between MYR3.00 to MYR6.00 depending on the type of taxi. Subsequent charges are based on the distance or time travelled.

Coupons can be purchased from the counter at Level 1, Main Terminal Building.

(3) PACKING AND HEALTH INSURANCE

A. PACKING

- Avoid bringing other valuable things.
- Personal belongings such as computer, wallet, money, phone, camera, and passport will be your responsibility. Please take/bring it along with you during the event.
- Clothes (as recommended in the schedule).
- Bring a light jacket, the event venue is air-conditioned.
- Bring a universal plug and/or adaptor for your electrical equipment.

B. HEALTH INSURANCE & MEDICAL REQUIREMENTS

- **Each participant MUST prepare his / her own medical and travel insurance** and it should cover the period of stay in Malaysia.
- If any medical treatment is required during the event in Malaysia, the medical expenses shall be borne by the participant.

(4) CONTACT DETAILS

Malaysian Emergency Response Services (MERS) **999**
→ is the Government's initiative to consolidate all emergency numbers in Malaysia into a single hot line for public convenience, covering all types of emergencies such as the police, Fire and Rescue Department, Ministry of Health, Civil Defence Department and Malaysian Maritime)

IGARSS LOC Contact Number: +60 11-1888 9397

PROGRAMME COORDINATOR
Name: Prof Ts Dr Lim Yang Mooi
Email: ymlim@utar.edu.my

EVENT SECRETARIAT
Name: Pn Azura Abdullah
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Name: Pn Marianne Masli
Email: marianne@utar.edu.my

OFFICIAL TRAVEL AGENCY
Asia Experience Travel Sdn Bhd
Ms Karlida +60 12-314 9488

ACCOMMODATION

Participants are responsible for making their own hotel arrangements.
The information below is provided for your convenience.

GRAND HYATT KUALA LUMPUR	• **Distance to KLCC**: Adjacent to KLCC • **Contact Person**: Ms Sandra Lee • **Email**: sandra.lee1@hyatt.com
INTERCONTINENTAL KUALA LUMPUR HOTEL	• **Distance to KLCC**: 11 Minutes walking • **Contact Person**: Ms Affiqah Akib • **Email**: reservation.kulha@ihg.com/ affiqah.mohdakib@ihg.com
ROYALE CHULAN KUALA LUMPUR	• **Distance to KLCC**: 17 minutes walking & 5 minute by Taxi • **Contact Person**: Nurul Wazwani Hassan • **Email**: wazwani.rckl@royalechulan.com
PERDANA KUALA LUMPUR	• **Distance to KLCC**: 9 minutes walking • **Contact Person:** Low Han Yee • **Email:** han.y@attanahotels.com / sales.pkl-cc@attanahotels.com
TRADERS HOTEL KUALA LUMPUR	• **Distance to KLCC:** Connected • **Contact Person:** Ms Aries Oh • **Email:** csteam.thkl@tradetshotels.com / aries.oh@tradeshotels.com
MANDRIN ORIENTAL KUALA LUMPUR	• **Distance to KLCC:** Adjacent to KLCC • **Contact Person:** Ms Sophia Fong • **Email:** Group-MOKUL-Booking@mogh.com
ELEMENT BY WESTIN KUALA LUMPUR	• **Distance to KLCC:** 10 minutes walking • **Contact Person:** Mr Armin Hazrie • **Email:** armin.hazrie@elementhotels.com / reservation.elementkl@elementhotel.com
8 KIA PENG SUITES	• **Distance to KLCC**: 7 minutes walking • **Contact Person**: Ms Nicole Whaung • **Email:** reservation@8kiapengsuites.com / nicol.whaung@8kiapengsuites.com

Other Hotels in the Vicinity

Hotel	**Distance to KLCC**
Pullman Kuala Lumpur	10-minute walk
Corus Hotel Kuala Lumpur	05-minute walk
IBIS KLCC	15-minute walk or 05 minute by taxi
Le Apple Boutique Hotel	10-minute walk
Holiday Inn Express Kuala Lumpur City Centre, an IHG Hotel	10-minute walk
Melia Kuala Lumpur	15-minute walk or 05 minute by taxi
De King Boutique Hotel KLCC	15-minute walk or 05 minute by taxi


IGARSS
Pasadena, California 2023
17-21 July 2023
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