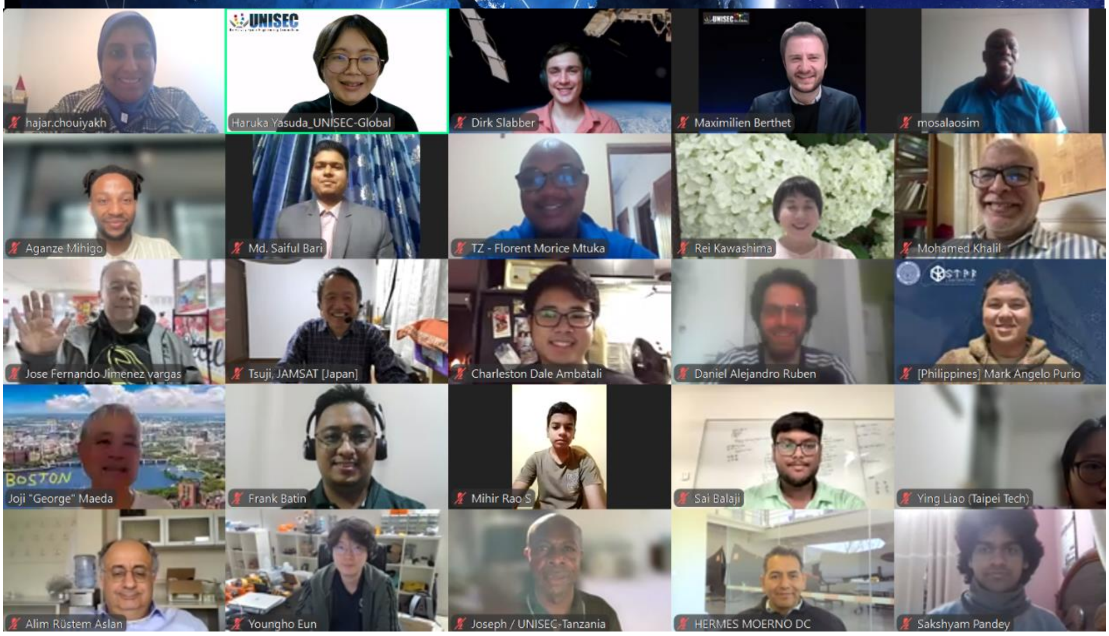
UNISEC-Global The 54th Virtual Meeting

March 15th, 2025, 22:00-24:00
(Standard Japan time GMT +9)



The following report was prepared by UNISEC-Global Secretariat
March 15, 2025
Japan

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1 Opening Remarks

1.1Prof. Shinichi Nakasuka, The University of Tokyo

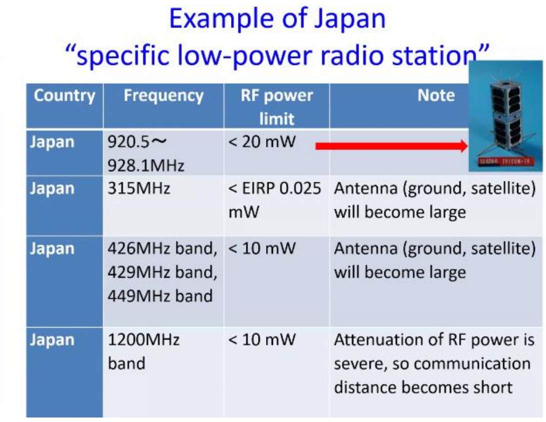
Prof. Shinichi Nakasuka was born in Osaka in 1961. After graduating from the Department of Aeronautics and Astronautics at the University of Tokyo in 1983, and receiving a Ph.D. in Aeronautics in 1988, he joined a computer manufacturer and became involved in research around Artificial Intelligence and automated manufacturing. In 1990, he became a lecturer at the University of Tokyo, then subsequently an assistant professor of the Research Center for Advanced Science and Technology, University of Tokyo, and a visiting research fellow in the United States. He has been a professor at the Department of Aeronautics and Astronautics since 2004. His research fields are space engineering and intelligence for space systems.

Pictured: Prof. Nakasuka while giving the opening remarks

<u>Highlights:</u>

- Theme is IoT Constellation Mission
    - Reduces data collection redundancy
    - Simple transmitter can uplink to satellite and make data collection easy
    - Also called store and forward mission
    - Ground transmission power can be allowed to be minimum
        - Was tested using LoRa in TRICOM-1R
        - Success using 8mW transmission power
    - However, data collection window is very small
        - about 40 minutes per day
    - If you have a constellation, you receive larger window to transmit and data
    - Use cases of IoT includes
        - Monitoring Animal Movements
        - Wild Fire Detection and Monitoring
        - Flood Detection and Monitoring
        - Agriculture Field Monitoring
- Key points to conduct useful IoT mission
    - Find real users of your IoT missions
        - Have strong desire to solve social or environmental problems
        - Have some funds to develop ground sensors and to do IoT experiments
        - Will willingly collaborate with you to conduct the experiments
- Selection of Frequency of IoT Uplink
    - “Specific low-power radio station” allows radio transmission usage without license
        - Condition is operation below a certain transmission power
    - A “technical compliance certification” must still be obtained
        - **Once done, an individual license is not needed for each ground transmitter**

        - Greatly simplifies the licensing process
    - Frequency and corresponding transmission power limit vary by country
    - Current Plan
        - Receiver on satellites will be designed as SDR(Software Defined Radio)
        - Can cover several frequency bands
        - **“Waiting frequency” can be switched when the satellites fly over different countries**
        - Antenna design is key technical issue
        - Such flexible antenna design is useful



Example of Japan
“specific low-power radio station”

Country	Frequency	RF power limit	Note
Japan	920.5～928.1MHz	< 20 mW	
Japan	315MHz	< EIRP 0.025 mW	Antenna (ground, satellite) will become large
Japan	426MHz band, 429MHz band, 449MHz band	< 10 mW	Antenna (ground, satellite) will become large
Japan	1200MHz band	< 10 mW	Attenuation of RF power is severe, so communication distance becomes short

Pictured: Prof Nakasuka explains the “specific low-power radio station” in case of Japan

- ONGLAISAT
    - 6U Satellite
    - developed in collaboration with Taiwan Space Agency (TASA)
    - 16th Satellite of ArkEdge Space
    - Released from ISS on Dec 9, 2024
    - Uses Time Delay Integration (TDI) method to obtain ultra high-resolution pictures
    - Orbital life is 2.5 months
- High accurate remote sensing missions is possible even in small satellites
- Solar activity is maximum this year
    - Makes the atmosphere around the earth expand
    - Large drops even in high altitude satellites due to this phenomenon
    - Cycle is 11 years
    - 5 years from now will have a minimum solar activity
        - Best time to launch satellites

<u>Q/Ans:</u>

Q: **Participant: Is the IoT payload going to be uniform for all the participants?**

A: ***Prof. Nakasuka:*** *It is not decided yet. If there is some organization that has the capability to develop such IoT payload then we can make the standardization of input and output of IoT receiver. If such group can develop their own IoT receiver, maybe that could be an option. We can discuss in future, what the optimal way is.*

2 IoT Constellation Mission Idea for Antarctic Sea Ice Monitoring

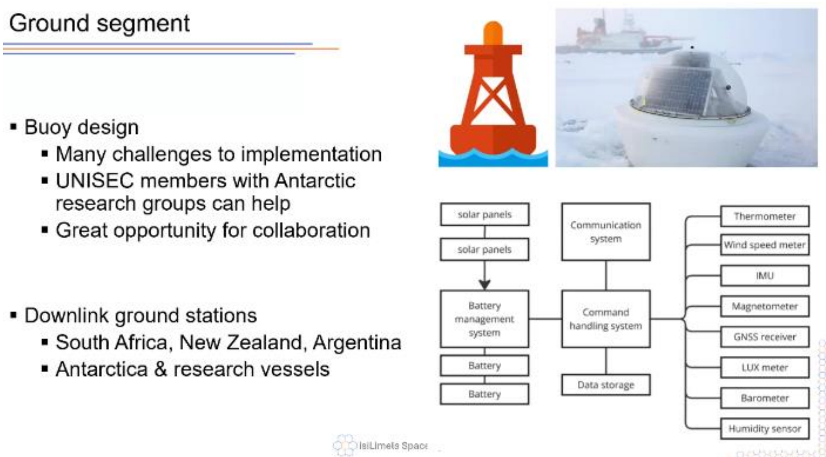
2.1Dirk Slabber, isiLimela Space Systems

Dirk Slabber is the founder of isiLimela Space Systems, South Africa. He received his Bachelor’s degree in BE, Mechatronics, Robotics and Automation Engineering from Stellenbosch University in 2022, and Master’s in Electrical and Electronics Engineering from Stellenbosch University in 2024. Dirk Slabber is also the finalist of 8th Mission Idea Contest with his idea of satellite constellation to relay GPS signals to Earth with the goal of increasing location accuracy and promote the development of autonomous vehicles.

Pictured: Mr. Dirk Slabber during his presentation

<u>Highlights:</u>

- Mission is "Use of IoT constellation for Antarctic Sea ice monitoring"
- Sea ice zones are important
  - Sea ice covers 10% of sea surface
  - Acts as heat sink, reflects solar rays
  - Protects Antarctic ice shelves from waves
- However, drastic drop from previous growth pattern
- Could prelude massive climate change impacts
- Massive effects on global weather
- EO satellites rely on in-situ data which is sporadic and uncertain
- Various factors such as ice consistency, thickness and dynamic air thermal interactions
- Solution / Proposal
  - Network of IoT buoys floating in Antarctic Sea ice zone
  - 1 for every 1000 km^2
  - Obtain in-situ data to supplement EO observations year-round
  - Will withstand Antarctic weather using LoRa or mesh network technologies
- Buoy design
  - Design challenges: low temperature, moisture, reduced sunlight
  - Possible ground stations: New Zealand, Argentina, South Africa



Pictured: Mr. Dirk presenting about Antarctic Ice Monitoring

- Neighboring countries are invited for collaboration
- Contact: dirkslabber@gmail.com

Q/Ans:

Q: **Maximilien Berthet: What potential synergies do you see between Antarctica and space search satellites, what synergies would you like to develop in this project?**

A: ***Mr. Dirk:*** *Well, I think the Antarctic environment would not be too different or the mentality for design in the Antarctic environment is not that different from space. Just with regards to very isolated systems in low energy environments, really. Especially during the Antarctic winter where it's very limited sunlight and very, very cold. As for synergies between the Antarctic research and space, I think space Antarctic is still a very unique position where most countries, if there is any value to extract data, they have already tried to implement some type of infrastructure to gain data from those areas, even in the most remote of places. And the one outlier in this region that is also extremely important for global weather is Antarctica, where especially in the ice zones we have no idea what's really going on there for most of the year. And I think this has a drastic impact or will have a drastic impact on coastal regions throughout the world in the next coming decades.*

Q: **Prof. Nakasuka: What strategies have you used for optimal configuration of the buoy on the Arctic Ocean? For example, even if the buoy moves you will add additional buoy in some vacant area or how should you keep the bully position with some method?**

A: ***Mr. Dirk:*** *I actually expect that there might be value in having both types of buoys. Of course, ice plates will start forming and freeze over the buoys. And part of Antarctic research and data monitoring is how these ice plates also move with respect to the larger scale ocean. So, in that sense, I don't see a particular problem with the buoys moving. The problem, however, of vacant areas dose indeed raise some questions, and I'm not sure how to deal with that.*

3 IoT Constellation Mission Idea for Mitigating Human-Wildlife Conflict

3.1Modisa Mosalaosi, Botswana International University of Science & Technology

Modisa Mosalaosi Botswana is the lead engineer of BOTSAT. Modisa Mosalaosi (Member, IEEE) received the B.Sc. degree in electrical engineering, and the M.Sc. Eng. and Ph.D. degrees in electronic engineering from the University of KwaZulu-Natal, Durban, South Africa, in 2009, 2015, and 2017, respectively. He is currently a Lecturer with the Botswana International University of Science and Technology (BIUST). His research interests include power line communication, RF and Microwave propagation, free-space optics, and green power technologies.

Pictured: Modisa Mosalaosi Li during his presentation

Highlights:

- Mission is 'Mitigating Human-Wildlife Conflict (HWC) in Botswana
- Introduction to HWC
    - Occurs when wildlife and humans compete for space and resources
    - Affects human life, and animal habitat
- HWC and human injuries due to animal attacks have increased in recent years
- Survey Statistics shows over 19,198 HWC incidents in Botswana between 2010 and 2014
- Government paid over 124 million Pula (10 million USD) in HWC compensation
- Up to 60% of DWNP district staff time is spent on HWC issues
- Since 2018
    - 45000 incidents recorded
    - 60 human deaths
    - 50 major injuries
- Causes of HWC in Botswana
    - Competition for Resources
    - Human Encroachment
    - Wildlife Population Growth
    - Crop Damage
    - Wildlife Predation
    - Livestock Disease
- Consequences of HWC in Botswana
    - Loss of Livelihoods
    - Human Safety Risk
    - Retaliation
    - Poor Attitude Towards Conservation
    - Loss of Wildlife
- Example of HWC in Botswana
    - Okavango Delta is severely affected by Elephants damaging crops
    - Eastern Okavango Panhandle faces Elephants raids in settlement
- Response To HWC in Botswana
    - Compensation provision from government
    - Development of community-based natural resource management
    - Implementation of wildlife proof fencing
    - Implementation of Public Awareness programs
- Satellite as a medium for animal movement data collection is the proposed IoT solution
- Mission Idea
    - Near Real-Time monitoring of animals at risk of conflict
    - Geo-fencing of critical areas of conflict
    - Warning is sent when the critical areas are crossed by animals

Q/Ans:

Q: **Prof. Nakasuka: Is it possible to put sensors on all the animals?**

A: ***Mr. Dirk:*** *If we talk about elephants, there are about 200,000 elephants. But they tend to move in groups . So, the groups can be identified. That can help reduce the number of sensors required.*

4 IoT Constellation Mission Idea for Sea Level Monitoring, Salt Water Intrusion and Weather Monitoring System

4.1Aganze Mihigo, Hisia

Mr. Aganze Mihigo presented on behalf of Ms. Fama Jallow. Mihigo completed his Bachelor degree from University of Illinois Urbana-Champaign in 2021 and his Master degree from University of Illinois Urbana-Champaign in 2024. He now works for Hisia.

Pictured: Mr. Mihigo during his presentation

<u>Highlights:</u>

- Hisia : Early-Stage startup based in the US and the Gambia
- Goal is to provide climate data insights on agricultural and environmental challenges in Africa
- Works on Customizable CubeSats designed specifically for the African market
- Gambia has a population of 2.4 million
- Economy is heavily relied on agriculture and tourism
- Because of its location, is vulnerable to climate change and impacts
- Gambia is prone to flood, faces frequent destruction of property
  - Early warning systems could have prepared Gambia to evacuate timely
- Other issues faced by Gambia includes
  - Rising sea levels
  - Salt water erosion impacting rice farming and freshwater sources
  - Unpredictable rainfall patterns causing floods and droughts
  - Lack of real-time climate change and environmental data
  - Insufficient early warning systems
- IoT solution aims to
  - Provide sea level data and salt water intrusion data
  - Install weather monitoring systems
  - Install early warning systems
- Sensors will be LoRa based
- Data collection will be in periodic basis of 3-4 hours and hourly in case of critical situations
- Sea level monitoring

        - Sensor type will be ultrasonic and radar tide gauges
        - Will collect food and water levels, tide changes, and wave heights data
- Salt water intrusion
    - Sensor type will be low cost, easy-to-install salinity sensors
    - Will collect salinity levels in groundwater and irrigation channels
    - Will protect salt fresh water resources and supports agriculture
- Weather monitoring system
    - Low-cost solar powered weather stations
    - Will collect temperature, humidity, rainfall, windspeed and direction
    - Will optimize irrigation, supports policy making and weather forecasts
- IoT is essential for the safety and security of Gambians

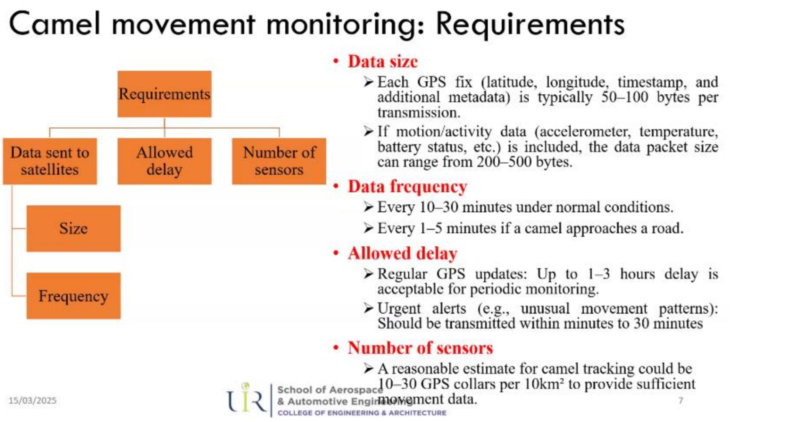
5 IoT Constellation Mission Idea for Safer Desert Roads

5.1Dr. Hajar Chouiyakh, International University of Rabat

Pictured: Dr. Chouiyakh during their presentation

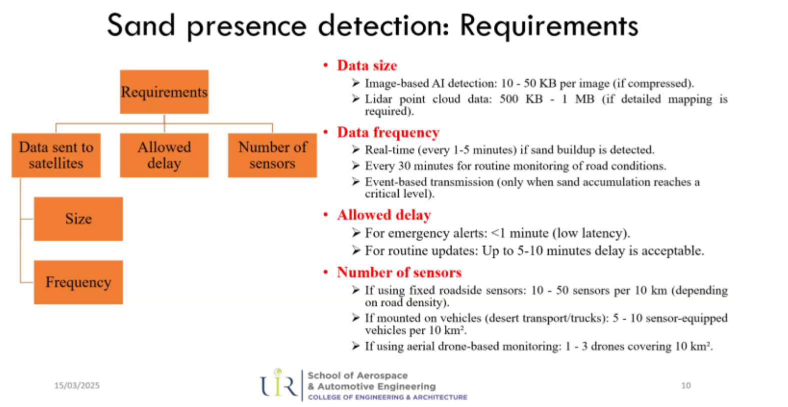
Highlights:

- Since 2016, Main roads to link cities have been constructed in Morocco
- Many serious accidents reported since then due to
    - car-camel collision
    - sand accumulation on roads
- IoT constellation mission aims to make desert roads safer
- Objective of this IoT mission is to support current research of camel movement
- Protecting camel lives is also an incentive
- Camel movement tracking methodology and requirements
    - GPS collars are mounted on camels and data is transmitted to satellites
    - Researchers receive the data to monitor and analyze patterns and draw conclusions



Pictured: Dr. Chouiyakh explaining the requirements of camel movement monitoring

  - GPS data requires typically 50-100 bytes of information per transmission
  - 200-500 bytes if motion/activity data is also included
  - Data frequency is one transmission per 10-30 minutes under normal conditions
  - Frequency increases to one transmission per 1-5 minutes if a camel approaches the road
  - Allowed delay is up to 3 hours for normal transmission and 30 minutes for critical transmission
  - Sensor density should be around 10-30 GPS collars per 10km^2
- Sand accumulation on roads further destroys infrastructure
- Data can further be implemented in self-driving vehicles
- Sand presence detection methodology
  - Optical data from lidar sensor measures
    - surface reflectivity
    - sand height
- uses image-based AI to make detections
- Sand presence detection requirements



Pictured: Dr. Chouiyakh explaining the requirements of sand presence detection

  - Data size
    - 10-50 kb per image if compressed
    - Lidar point cloud data is 500kB to 1MB for detailed mapping
  - Data frequency
    - 1 reading every 5 minutes for real time monitoring with <1 minute latency
    - 1 reading every 30 minutes for routine monitoring with 5-10 minutes latency
    - Event-based transmission when sand accumulation reaches a certain level
  - Sensor Density
    - Fixable roadside sensors : 10-50 sensors per 10 km
    - Vehicle mountable sensors : 5-10 sensors per 10 km
    - Aerial drones : 1-3 drones per 10 km

6 IoT Constellation Mission Idea for Typhoon monitoring

6.1 Yu-Sheng Liu, National Taipei University of Technology

Pictured: Mr. Yu-Sheng Liu during his presentation

<u>Highlights:</u>

- Typhoons causes damages in east Asia countries like Taiwan, Philippines and Japan
- More Typhoon data can help in mitigating losses
- Typhoon data can be obtained from Ocean Water Buoy
- Ocean Water Buoy collects
    - Sea Level Pressure (SLP) data
    - Sea Surface Temperature (SST) data
    - Position
- It uses Barometer, Thermistor and GPS sensors
- Moves using ocean current
- Data size is 14 bytes per transmission
- Data collection frequency is
    - One reading per hour in normal condition
    - One reading per half-an-hour in critical condition
- IoT systems can
    - help simplify the buoy design
    - help reduce cost of buoy development
    - support mass deployment of buoys
- Buoy can be built by students for educational purposes

<u>Q/Ans:</u>

Q: **Maximilien Berthet: What impact could the typhoon have on the buoys? Could that cause some damage? What is the wind speed at the ocean surface of typhoon?**

A: ***Yu-Sheng Liu:*** *We will gather pressure and sea surface temperature data. These two data will help us check the strength of typhoon and will help us focus the typhoon. So, in the past we could get only remote sensing data but using buoy we can get on site data.*

7 IoT Constellation Mission Idea for Water Monitoring, Smart Farming and Landslide monitoring

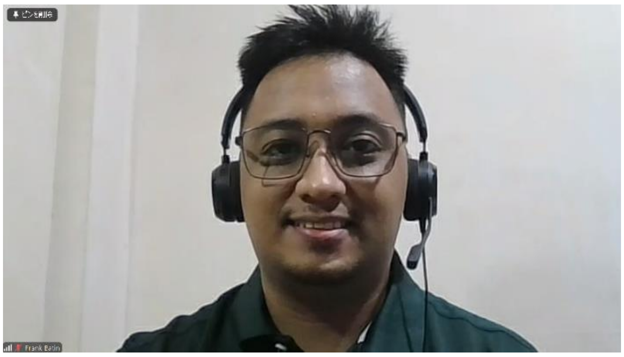
7.1 Vicktoria Zlateva, Space Vision Ltd.

Highlights:

- Emphasizes on the importance of ground water
- Water shortages are being faced in many places in Bulgaria during summer
- In such events, villages rely solely on the underground water reserves
- Water level monitoring helps in making informed decision making
- Current state
    - Municipalities need to travel long distance to receive information of affected region
- Identified causes of water pollution include agricultural chemicals
- Monitoring such changes will allow implementation of necessary actions
- Proposes low-cost sensors to be placed in key areas around the water sources
- Monitoring frequency
    - Regular usage – once per day
    - Drought – three times per day
- 16 bytes of information per sensor at base level depending on how many factors will be monitored
- Number of sensors depends of selected region and purposes
    - As a base proposal, suggests 10 sensors
- SOS Signal Tracking
    - GSM coverage is scarce in mountainous regions
    - Contact or call for help in case of emergency is difficult
    - SOS Signal Tracking is the proposed optimal solution
    - Several products in the market such as phones that connect directly to satellite
    - Another option is to apply the antenna on clothes or backpack
        - Could further be developed my implementing phone connection
    - In case of loss of human consciousness, device must be automated to send signals
    - 288 bytes per sensor required to detected position, latitude, light tracking etc. in cases of emergency
- Smart Farming, soil moisture and quality monitoring
    - Smart farming allows for higher yield
    - More important in the current scenario due to
        - global warming
        - rise in population
        - food security
    - proposes 10,000 sensors for 10km*10km field
- Monitoring terrains with landslide risks
    - Landslides are difficult to predict without dedicated sensors
    - Landslides are prominent in rainy seasons in Bulgaria
    - Proposes IoT monitoring of landslides
    - Suggests 10 bytes of data each to send information daily in case of general monitoring
    - Number of sensors is hard to determine as it is terrain-specific

8 IoT Constellation Mission Idea Presentation for Disaster Response

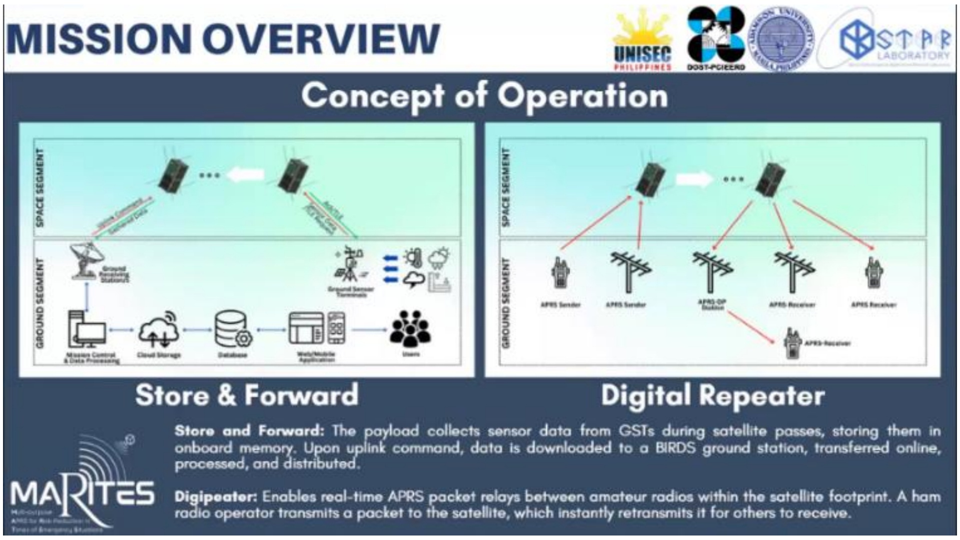
8.1 Frank Fitzgerald Batin, Adamson University



Pictured: Mr. Batin during his presentation

Highlights:

- MARITES
    - Multipurpose APRS in Nanosatellite for Risk Reduction in Times of Emergency Situations
- Idea developed with help of STAR lab
- STAR Laboratory Capabilities
    - Give mentorship and assistance in research, theses
    - Create structured research programs
    - Initiate industry or government-funded research
    - Make services available to
        - Students
        - Faculty
        - Researchers
        - Incubates
        - Partners of Adamson University
    - Provide capacity building to internal and external stakeholders.
    - Ground receiving station
    - Satellite Tracking and Control Software
    - Licensed and Open-Source GIS Software
    - Reflector Telescope
    - Hepta-SAT Training Kits
    - 3D- Printing Services
    - Hosted-Programming Services
    - Google Collab Subscription
    - Computer Terminals for Research
- Mission Introduction
- Philippines is highly susceptible to natural calamities
- So, need communication system that is not ground-dependent and can cover wide area
- Mission Overview
- Two types of communication used
    - Store and Forward
        - Data is downloaded to a BIRDS ground station
        - Then, transferred online
    - Digital Repeater
        - Real time APRS packet relays between amateur radios
        - Use of ham radio transmits a packet to satellite
        - Satellite instantly retransmits for other to receive



Pictured: Mr. Batin explaining communication used

- Mission is expected to monitor
    - Water level

    - Rain Intensity
    - GPS
    - Soil Moisture
    - Barometric Pressure
- Data is expected to be used by
    - Local Government Units
    - Disaster Response Teams
    - National Disaster Risk Reduction and Management
    - Council/Government Agencies for Disaster/Weather
    - Community Residents
- Mission is expected to
    - Improve early flood warnings
    - Enhance flood risk assessment
    - Support evacuation planning
    - Optimize disaster response and recovery
    - Reduce loss of lives and property
    - Empower communities
    - Supports national flood resilience policies
- System Requirements
    - Data Transmission Frequency
        - Every 30 min to 2 hrs.
        - Immediate if water rises suddenly
    - Data Size per Transmission
        - 50 – 255 bytes
        - Transmit full packet in 1.7 sec
    - Allowed Delay
        - 10 min to 2 hrs.
        - Immediate for critical alerts
    - Sensor Deployment (10kmx10km)
        - 10-20 sensors
        - 50+ in critical areas
- STAR lab has already developed Breadboard Model

9 IoT Mission Idea Presentation for Water Level Monitoring, Soil Monitoring and Elephant Monitoring

9.1Joseph Matiko, Dar es Salaam Institute of Technology

Dr. Matiko is currently working as a lecturer at DIT, Tanzania. He is also the central leader of a Regional Flagship ICT Centre, which is being established under the support of the World Bank. He obtained a BEng degree in Electronics and Telecommunication Engineering from the Dar es Salaam Institute of Technology (DIT), his MSc in Wireless Communications at Lund University, Sweden, and his PhD in Electronics and Computer Science at University of Southampton, UK. His current research interests include blockchain technology, mobile computing, embedded electronics for IoT, energy harvesting for low power electronic devices, machine learning, and biomedical signal processing and Space Technology.

Pictured: Dr. Matiko during his presentation

Highlights:

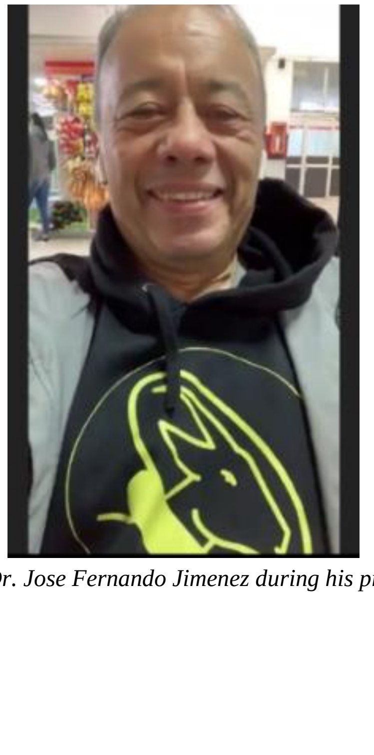
- Mission 1 (Water Level Monitoring)
- Tanzania has nine basins
- These basins are important source of water
- However, due to climate change, these basin cause flooding
- Therefore, monitoring water level is very important
- Data is expected to be used by
  - Ministries
  - Tanzania Water Boards
  - Prime Minister’s Rapid Disaster Response Unit
  - Researchers
- Mission is excepted to
  - Predict water levels for modelling
  - Help in decision making
  - Provide early warning
- Mission 2 (Soil Monitoring for Agriculture)
- Agriculture contributes 20% of Tanzania’s GDP
- However, agricultural sector faces climate change challenges
- Therefore, having soil vital information is crucial
- Mission will monitor
  - Soil moisture
  - Soil temperature
  - Soil pH level
  - Soil organic composition
- Data is expected to be used by
  - Ministry of Agriculture
  - Extension Officers
  - Farmers
- Mission is excepted to
  - Monitor vital information about soil
  - Make informed decision
  - Help in large scale farming
  - Improve the agricultural sector
- Mission 3 (Elephant Monitoring)
- Tanzania has large population of elephants.
- However, less work has been done to monitor them
- Tanzania has initiatives with government such as elephant management and action plan 2023
- So, this mission will monitor elephants
- Data is expected to be used by

- Ministry of Natural Resources and Tourism (TAWIRI)
    - Tanzania National Parks (TANAPA)
    - Tanzania Tourism Board (TTB)
- Mission is excepted to
    - Monitor elephant population, behavior and habitat
    - Provide data for decision making
    - Build proper elephant facilities and adaptive management
- Mission 4 (Communication Tower Monitoring)
- Tanzania aims to provide communication services to the entire population
- Government through UCSAF is subsidizing cost of communication towers
- However, monitoring these towers pose challenges in remote areas
- Therefore, the mission will monitor communication towers
- Data is expected to be used by
    - Ministry of ICT
    - Universal Communication Access Fund (UCSAF)
- Mission is expected to
    - Continuously monitor status of each tower
    - Help improving Telecommunications
        - Reliability
        - Emergency response
        - Infrastructure resilience
    - Improve e-Commerce and mobile services
- Conclusion
- Dr. Matiko invites all UNISEC members for collaboration

10 IoT Mission Idea Presentation for Effective Air Quality Data

10.1 Dr. Jose Fernando Jimenez, Los Andes University

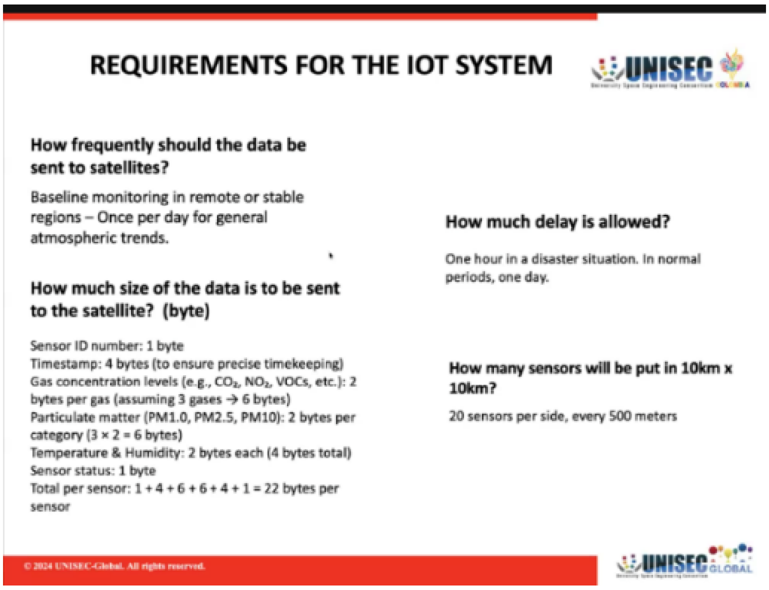
Dr. Jose Fernando Jimenez was born in Bogota, Colombia in 1958. Dr. Jimenez is an Electric Engineer graduated from University of the Andes (Uniandes), Colombia. He received the Diplôme d'études approfondies in Automatic Control from The Institut Supérieur de l'Aéronautique et de l'Espace (ISAE-SUPAERO), translated as "National Higher French Institute of Aeronautics and Space", in 1983, and the PhD in Industrial Systems from INSA, Toulouse and Uniandes in 2000. Since 1994, he is an associated professor of the Department of Electric and Electronic Engineering at Uniandes. Lastly, he is an IEEE professional member of the Aerospace and Electronics Systems Society.



Pictured: Dr. Jose Fernando Jimenez during his presentation

Highlights:

- Air quality in Colombian remains a challenge.
- No Colombian city meets WHO standards.
- Bogota has an Air Quality Monitoring Network with 20 stations.
- But is not effective and so build the IoT network for effective data.
- Sensor to be used
    - Plantower PMS5003 Particulate Matter Sensor
    - High precision laser sensor
    - Detects airborne particles, including PM1.0, PM2.5 and PM10
    - Cost of each sensor is approximately $30
    - Plan of 20 sensors per 500 meters
    - IoT frequency is between 902 and 928 Megahertz
- Real-time data will be provided to all



Pictured: Dr. Jose Fernando Jimenez presenting Requirement for IoT system

- Requirements for IoT system
    - System should be operated on daily basis
    - With 22 bytes per sensor

11 Announcement and Acknowledgment

11.1 Haruka Yasuda, UNISEC-Global

Pictured: Yasuda-San announcing the latest updates from UNISEC-Global

Highlights:

- **Nano-satellite IoT Constellation Program**
    - A new program launched by UNISEC-Global
    - Jointly design satellite bus (3-6U) with online guidance
    - Each satellite will be developed by each country with its own funding
    - If difficult, we will jointly search for international funds
    - All the satellites have the **same mission payload** to contribute to solving global problems
        - or local problems as a constellation
    - Each country can have **one specific mission payload** for its own interest
    - Web: https://unisec-global.org/iot.html
    - Interested ones can submit the form here: https://forms.gle/WcdvQ9GiQV9rxssj6
    - Deadline: **March 31, 2025**
    - Contact: iot@unisec-global.org

- **The Mission Idea Contest**
    - The 9th Mission Idea Contest : to the Moon
        - Theme: Lunar Mission
        - https://www.spacemic.net/
    - **Important Dates:**
        - Abstract submission due : April 15, 2025
        - Notification : May 20, 2025
        - Full Paper submission due : August 5, 2025 (Finalists)
        - Final Presentation : November 1, 2025 at the 11th UNISEC-Global Meeting in Tokyo
        - Contact: info@spacemic.net

- **CLTP14 (CanSat/ CubeSat Leader Training Program)**
    - Date: August 19 - 29, 2025
    - Venue: Nihon University, Chiba, Japan
    - Application Submission Due: April 22, 2025
    - Venue: Nihon University, Chiba, Japan
    - CLTP14 website: https://cltp.info/cltp14.html Contact : secretariat@cltp.info

- **The 11th UNISEC-Global Meeting**
    - Date: November 1 - 4, 2025
    - Venue: Tokyo, Japan
    - https://www.unisec-global.org/meeting11.html
    - **Tentative Program (T.B.C)**
        - November 1: Opening Ceremony, The 9th Mission Idea Contest: to the Moon, Reception
        - November 2: Deep Space Workshop, Student Session and Party
        - November 3: Supporting Ceremony Presentation, IoT Workshop, POC Meeting
        - November 4: Local Chapter Regional Report, Company Tour, Gala Dinner

- **Call for proposal for 15th Nano-Satellite Symposium and the 12th UNISEC-Global Meeting 2026**
    - Next 11th UNISEC-Global Meeting will be held in Japan 2025
    - Will call for proposal for venue of Nano-Satellite Symposium and UNISEC-Global Meeting in 2026
    - **Important Dates**
        - Proposal submission due : May 8, 2025
        - Proposal presentation : September 20,2025 (at Virtual UNIGLO meeting)
        - Local Chapter voting : October 2025
    - Download the format here: https://unisec-global.org/support.html

- **Launch Opportunity: J-Cube**
    - Special Discounted opportunities
    - 1U, 2U, 3U, deployment from International Space Station
    - Collaborate with UNISEC-Japan's University
    - Technical support will be provided
    - Contact: info-jcube@unisec.jp , http://unisec.jp/serviceen/j-cube

- **Next Virtual Meeting**
    - Date: April 19, 2025
    - Theme: T.B.D
    - Host: UNISEC-Global

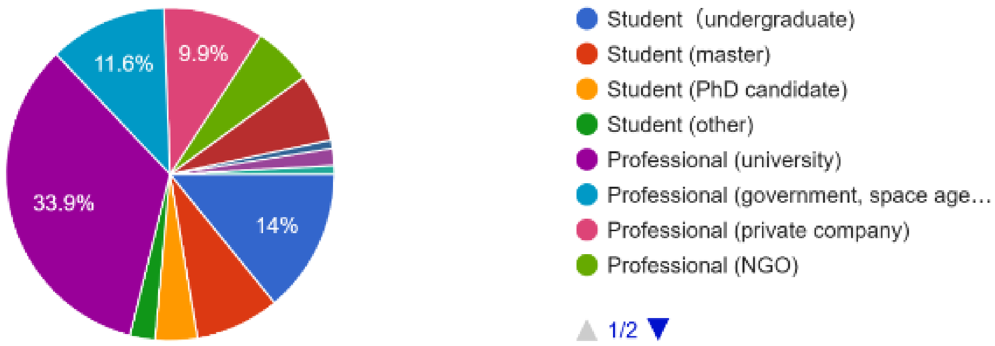
12 Participant Statistics

121 registered participants from **44** countries and regions for the 54th Virtual UNISEC-Global Meeting.

Country	Registrants	Country	Registrants
Algeria	1	Kenya	4
Argentina	1	Malaysia	1
Bangladesh	1	Mauritania	1
Belarus	2	México	1
Bhutan	1	Morocco	2
Botswana	2	Nepal	6
Bulgaria	5	Nigeria	3
Burkina Faso	3	Norway	1
Canada	1	Peru	1
Chile	2	Philippines	7
Colombia	6	Portugal	1
Cote d'Ivoire	1	Russia	1
Dominican Republic	1	Somalia	1
Egypt	8	South Africa	4
Ethiopia	1	South Korea	2
Finland	1	Taiwan	8
France	1	Tanzania	6
Gambia	2	Tunisia	1
Germany	1	Turkey	3
India	7	UK	2
Indonesia	2	USA	1
Japan	13	Zimbabwe	1

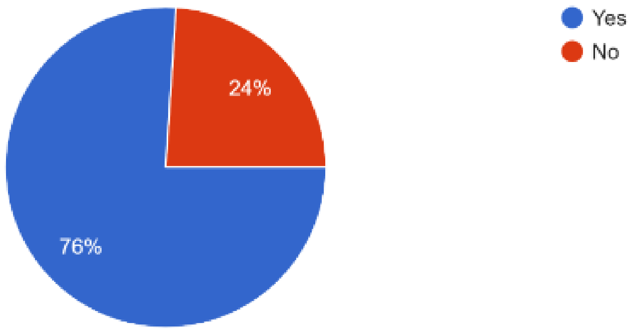
Student or professional?

121 responses



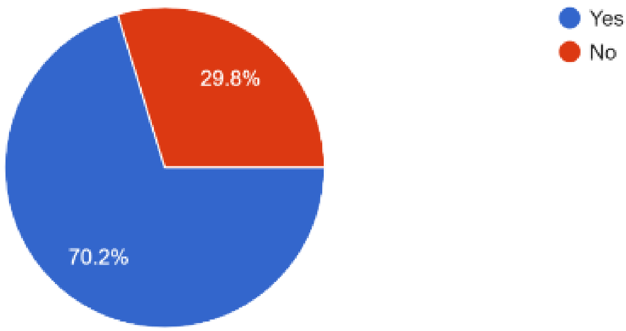
Have you participated in the UNISEC-Global Meeting previously?

121 responses



Will you join the Nano-satellite IoT Constellation Program?

121 responses

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Thank you