THAILAND Country Report

DAMRONGRIT NIAMMUAD, PhD.
Acting Deputy Executive Director

28 Nov 2019

GISTDA
Space Ecosystem

- Science, Technology, Innovation
- Space Awareness & Promotion
- Workforce
- Cluster/Infrastructure
- Budget & Regulation

Space Economy
Contents

1. Science Technology Innovation
2. Space Awareness & Promotion
3. Space infrastructure
4. Space workforce
1. Science Technology Innovation
* Space Applications

Joint Research Project
Climate Change on Agriculture

A Cross-comparison of Drought Monitoring System between ADM-GISTDA and JASMIN-JAXA

Project Status

Completed Process
- Data Collection 2018-2019
- Cross-comparison indices: ADM-GISTDA and JASMIN-JAXA
  - GISTDA: DRI: Drought Risk Index
  - JASMIN: KBDI: Keetch-Byram Drought Index
- Result: Similar Trend and Relationship

Next Step
- Analysis long-term historical data 2013 – 2019 (NDVI and NDWI)
- Analyze Anomaly data to identify drought level index
GISTDA has actively working alongside Sentinel Asia to provide tools and support for disaster response management, gearing up the community towards Sendai Framework.

2019 – Implementation for Sentinel Asia Step 3

Implementation of OPTEMIS for Sentinel Asia Step 3
**Space Environment Utilization**

Protein Crystallization in Space
The first space research experiment of THAILAND by GISTDA/NSTDA

26 JULY 2019: Protein target to Anti-Malaria Drugs was launched to ISS by JAXA cooperation
9 Aug 2019: It was sent back to Earth and then sent to the Synchrotron Light Research Institute in Hyogo, Japan for the data diffraction of protein structure
The Observation and Analysis of Smectic Islands In Space (OASIS)
2. Space Awareness & Promotion
THAILAND SPACE WEEK 2019

1st National Space Week of Thailand
Thailand Space Week 2019
**Thailand Space Week**

27 - 29 August 2019 at Impact Muang Thong Thani, Bangkok

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//th Multi GNSS Asia Conference
Space Camp THAILAND
International Competition in Space technology
Two Team from THAILAND to Final-Round on 25 Nov 2562

"Blue Watch" Spatial Aquaculture Advisory System for Smart Aquafarms

"Traffic Light Management" for Intelligent City by QZSS and 5G Platform
| Semi-finalist | Technology Demonstrate of Bone-Loss-Reducing Bacteria Culture for Deep Space | A) ICE Cubes | Saran Seehanam | Space Youth Association of Thailand (SYAT) and FREAK laboratory | Thailand |

**The 6th Mission Idea Contest**
For Achieving Sustainable Development Goals with Human Spaceflight

![Image of two women and two men with an award and a group of four men holding an award]
Poster Contest in 2019

2019 Theme: See you in Space
Thailand’s Defence Technology Institute

Rocket And Science Camp

Email: arisara.p@dti.or.th
Line ID: DTI Rocket Camp
Detailed presentation can be downloaded from:
http://www.dti.or.th/page_bx.php?cid=58&cno=5955&cno2=0&show=

1. Customizable rocket – size, mass, height, payload bay
2. Extensive R&D in rocket sciences – solid propulsion, parachute, telemetry, CanSat
3. Flexible and well facilitated test range on land/sea – Doppler Radar, Optic Tracking
4. Wide-spread domestic cooperation with public/private/academic sectors – GISTDA (satellite AIT, ground station), NSM (CanSat Competition)
5. Possible cooperation with international partners – ASEAN and more
6. Free in-campus expenses for selected teams of students

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GEO-SPACE
INTELLIGENCE FOR
THAILAND-GLOBAL
SUSTAINABILITY

AUGUST 2020
BANGKOK

GEOINFOTECH
2020

12TH MULTI GNSS
ASIA CONFERENCE

THAILAND
AEROSPACE FORUM

SPACE YOUTH
FORUM

DISCOVER THE LATEST ADVANCEMENTS IN GNSS

Multi-GNSS Asia
Conference
2020
3. Space infrastructure
Space Operations

Satellite Ground Station
- Satellite Receive station
- Data archive
- Flight dynamics and Mission planning
- Multi Mission Ground Segment (MMGS)
- Operation and Application Training
Satellite Assembly Integration and Test (AIT) facility

Component manufacturing and material testing facility

Vibration Shaker
Mass Properties Testing
Thermal vacuum
Thermal cyclic

Ready in 2021!
GALAXI – Mechanical Testing Services for Aerospace
Supporting National Aerospace Quality Infrastructure (NQI) in order to uplift the competitiveness of composite supply chain

AS9100D
Aerospace Quality Standard Accreditation

“The 1st and only Thai government agency accredited the Aerospace quality standard (AS9100D)”
GALAXI – Mechanical Testing Services for Aerospace
Supporting National Aerospace Quality Infrastructure (NQI) in order to uplift the competitiveness of composite supply chain

ISO/IEC 17025:2005
Testing Laboratory Accreditation

“The only accredited Aerospace testing lab in Thailand”
GALAXI – Mechanical Testing Services for Aerospace
Supporting National Aerospace Quality Infrastructure (NQI) in order to uplift the competitiveness of composite supply chain.

GALAXI Laboratory, Space Krenovation Park, 88 Moo 9 Tungsukhla Sriracha Chonburi, 20230 Thailand

This certificate is granted and awarded by the authority of the Nadcap Management Council to:

Geo-Informatics and Space Technology Development Agency (GISTDA)

This certificate demonstrates conformance and recognition of accreditation for specific services, as listed in www.eAuditNet.com on the Qualified Manufacturers List (QML), to the revision in effect at the time of the audit for:

Non Metallic Materials Testing

Certificate Number: 1714796982
Expiration Date: 31 July 2022
Accreditation Length: 12 months

Michael J. Hayward
Vice President and Chief Operating Officer

Performance Review Institute (PRI) | 161 Thorn Hill Road | Warrendale, PA 15086-7527

NADCAP
AC7122 : Non-metallic material testing

“The first NMMT independent laboratory for Aerospace in South east Asia”
Space Experiment Facility
4. Space workforce
Capacity Building Activity in 2019

Science Based Information Sharing Derived from Earth Observation Satellites for Agriculture Management in the ASEAN Region

Objectives
• Understand backgrounds of the project and connection to GEOGLAM
• Learn the basic knowledge of satellite-based remote sensing for agromet
• Learn the usage of JAXA's web system for agromet information (JASMIN)
• Understand how to interpret satellite-based agromet information to rice growing outlook

Number of Participants: 30 participants
- ASEAN Organizations: 12 persons
- International Organizations: 6 persons
- Educational Institution: 1 persons
- Government Organizations 11 persons
Aerospace Professional Training

eQualearn - Anodizing process course in June 2019

Collaborate with Senior Aerospace (Thailand) to officially hold eQualearn course from PRI starting from 2019

- Special Process
- Quality
- Audit preparation & Criteria
See You All in Bangkok, August 2020