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Harnessing the Power of Space-Based Imagery: Driving Innovation and Economic Growth

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GISTDA
Thailand



I. SPACE-BASED IMAGERY





VISION

TO BE AN ORGANIZATION THAT BRINGS TOGETHER THE VALUES OF SPACE TECHNOLOGY AND GEO-INFORMATICS FOR THE GREATEST BENEFIT OF HUMANITY

Space & Gl Assets Development FarmSpace Yield Forecast **Carbon Atlas** Crop Insurance Checkfun Carbon Atlas • Carbon Credit Net carbon **Assessment** FarmSpace map • Credit Score **GI for All** Crop Calendar 2025 2024 Q3 Q1 Q4 Q2 **Q2 Q4** Q1 **Q3** CubeSat **Satellite Program** THEOS-3 Roadmap of Satellite • Design & develop in Constellation country • 10% Local Content **National Space** FS Report National FEASIBILITY **Ground Systems Data Center** Satellite AIT SpacePort **Business**

II. IMPORTANCE OF SPACE & GEOSPATIAL POLICY



The National Geo-Informatics Committee



The National Geospatial
Master Plan 2023-2027 (5 Years)

Submission to the National Geo-Informatics Committee and then the Cabinet for Consideration **Current Status**of



The National Space Policy Committee

Space & Geospatial Policy in THAILAND

Development of the National Space Law

The National Space
Master Plan 2023-2037 (15 Years)

Submission to the Cabinet for Consideration

The National Space Law

01

New Space Economy 02

Space Security 03

International
Standard
Operating
Procedure

04

One Stop
Service
Coordinator

05

Space Education

06

Support Space Ecosystem

National Space Master Plan 2023-2037 (15 Years)

Strategy 8: Driving Mechanism for the Master Plan

Enforce laws and regulations that assist Thai space actors (gov. & non-gov.) for conducting space activities



VISION

"To develop and for prosperity, security, and



Strategy 1: Space Affairs for National Security

Start the space industrial basis that supports Thailand national security



Seek new productive cooperation on commercialization of space activities

Develop and strengthen the skills and

fast-changing technology

abilities that Thailand needs to adapt in a

Strategy 6: Human Development



utilize space affairs sustainability"



Strategy 2: Space Affairs for Sustainability

Demonstrate applications of space science and technology for achieving the **Sustainable Development Goals**



Strategy 3: Space Economy Development

Increase the growth of the commercial space sector in Thailand

Strategy 5: Research and Innovation

Encourage research community and private sector to intensify their efforts in the space sector



Strategy 4: Infrastructure Management

Create an enabling environment to ensure that space technologies and space-based solutions are quickly and easily transformed into tangible products and solutions

National Geospatial Master Plan 2023-2027 (5 Years)

Vision: Every sectors gain competitive advantage and Thai people have a good quality of life using geospatial technology

Objectives

Thai economy gains competitive advantage with geospatial technology

02

All sectors trust in national central geographic information systems

Strategies

Drive Thailand Economy with Geospatial Technology

03

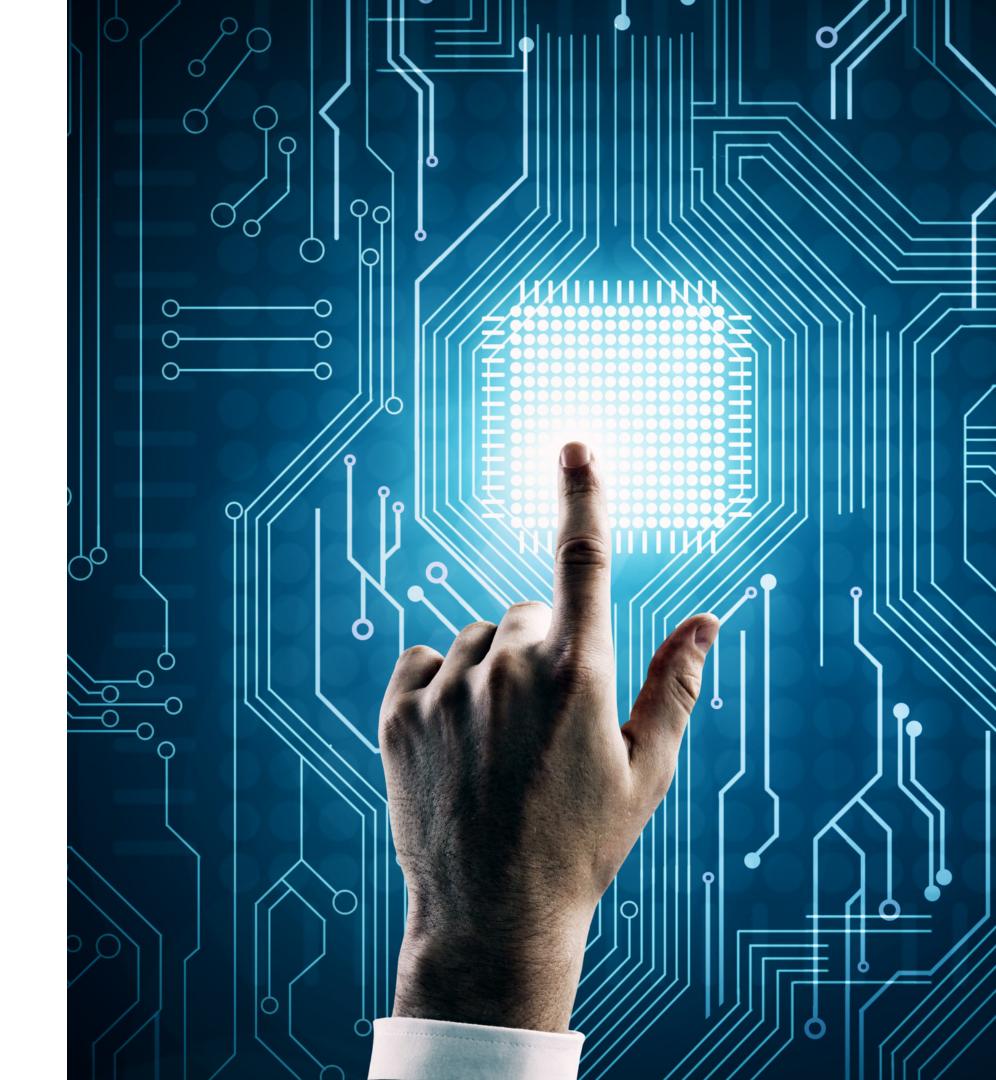
Develop geospatial open platforms and promote geospatial open data

Develop the national geospatial data sets which are essential for various uses and mission especially for economic growth

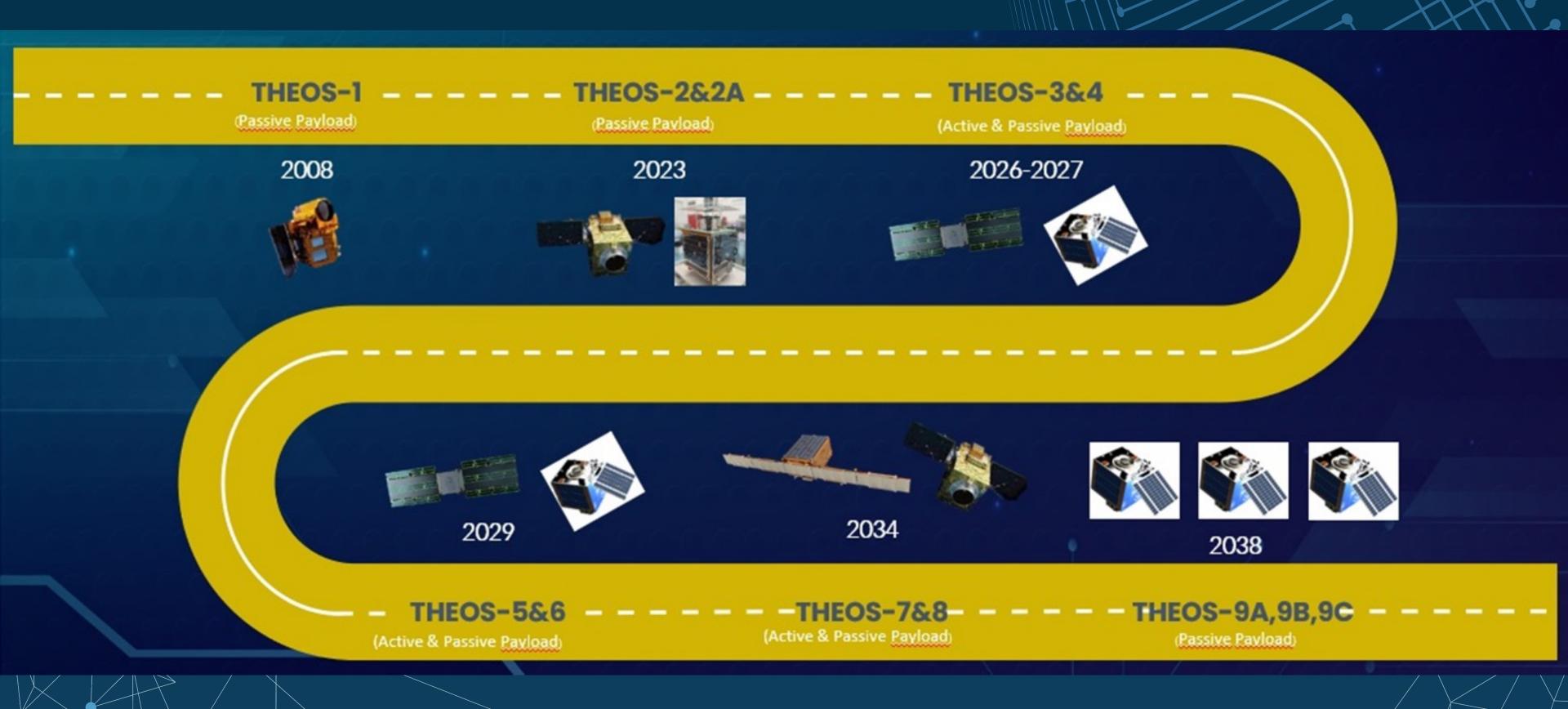
04

Building HR capacity and a mechanism to drive geospatial innovation

III. INTEGRATION INTO THE NATIONAL AND REGIONAL DIGITAL INFRASTRUCTURE



EO Satellite Roadmap: National Constellation



THAILAND BASE MAP Thailand Base Map from satellite images resolution 2 meters □ SATELLITE BASE MAP 2 m (THAICHOTE & OTHER) □ SATELLITE BASE MAP 10 m (SENTINEL-2)

Ground Equipment and Services

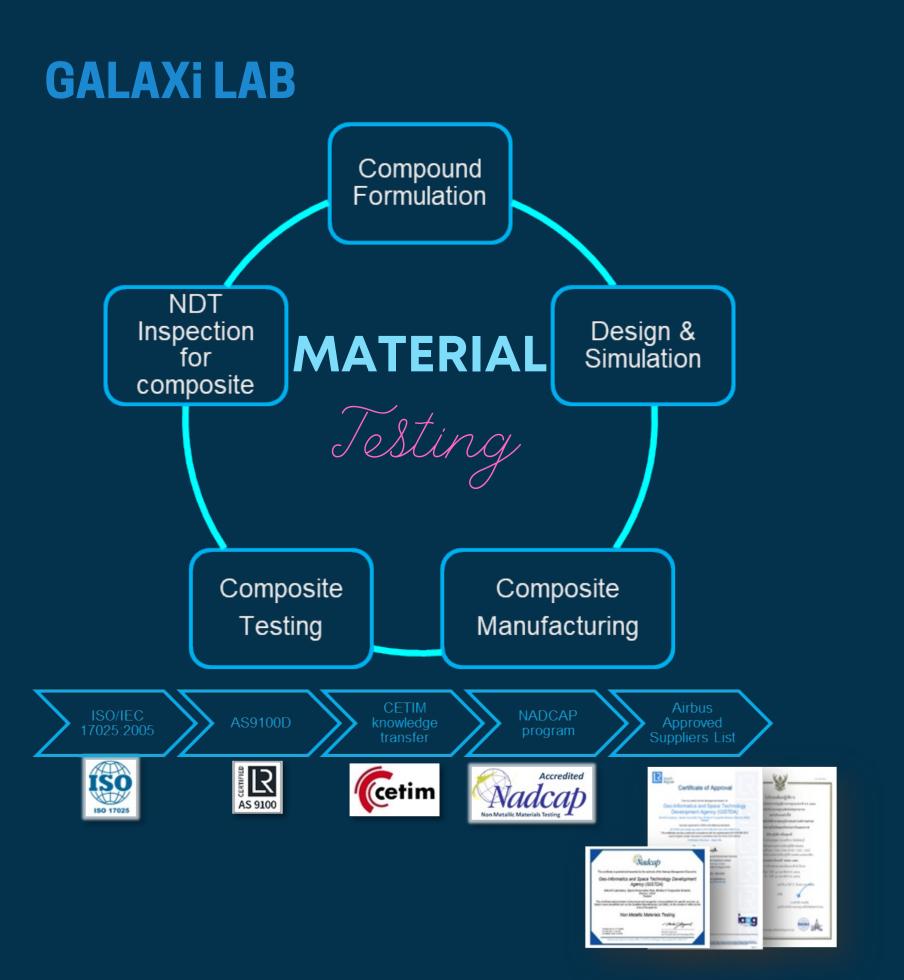


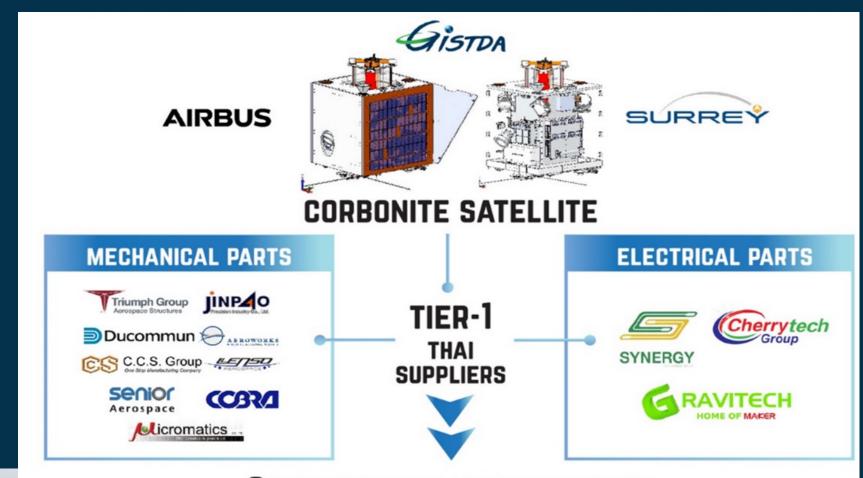
Complete Cycle for Ground Segment Development in Thailand





National Infrastructure for Satellite Development





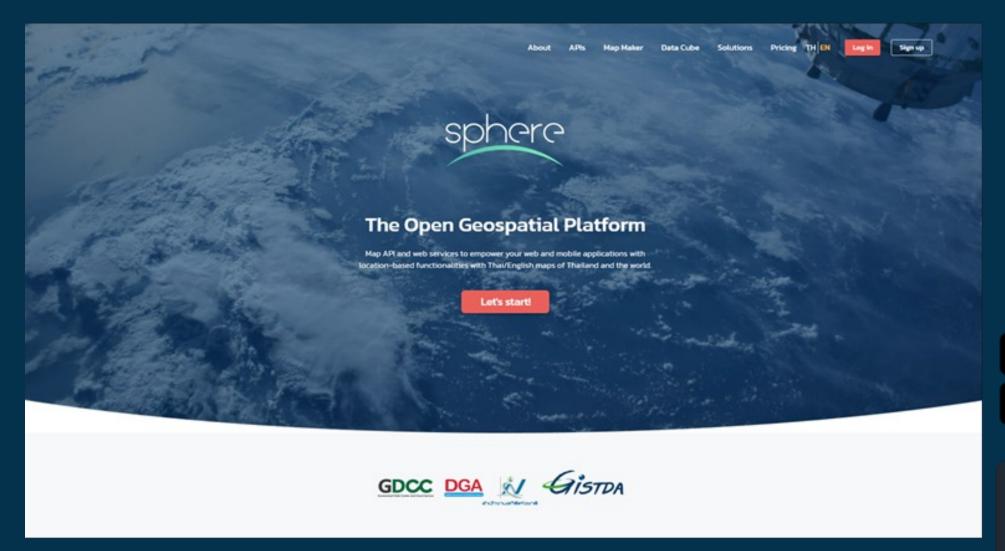






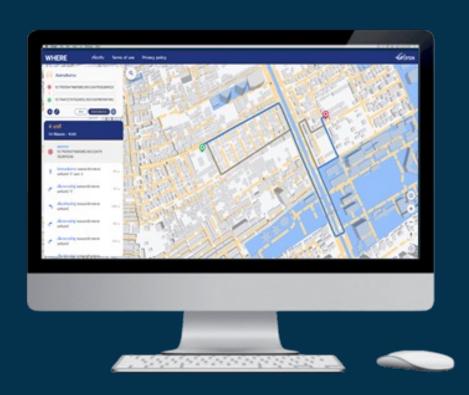
sphere

sphere.gistda.or.th











DATASET

✓ Basemap

Google Play

App Store

2-meter resolution with simple access

Satellite-as-a-Service (SaaS)

Satellites use remote sensors to obtain information about diverse features of the Earth's surface

More...

DEM | POI | AOI | Building Footprint | Admin. Boundary



TOOLS

Maps API

Open-source map library for web browser and mobile-friendly interactive maps.

mapMaker

"Make & Share"

✓ eXeCube

Easy web-based spatial and space-time computation



APPLICATIONS

✓ WHERE

Turn-by-turn navigation. Select your destination, plan your own route. WHERE will navigate you. On road, as you wish.

DIGITAL SERVICE PLATFORM

Objective Accessibility Availability Affordability

Digital Gateway to Geospatial

Data

Products

Satellite Imagery

- Thaichote (Archive)
- THEOS-2 (Tasking/Archive)
- Partners' Satellite Imagery
- Landsat / Sentinel / Worldview 1,2,3

Search for imagery

THEOS-2/ THAICHOTE

Search for More Products

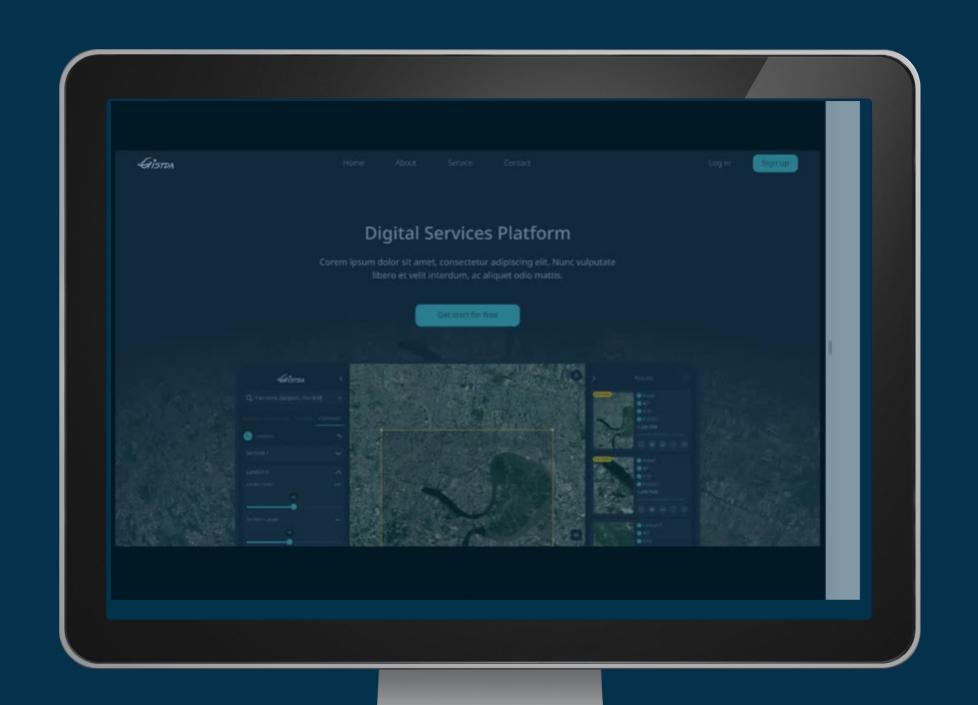
Data/ Map/ Data Sensor/ Souvenir SI Shop/ Book/ Multimedia

Add to Cart

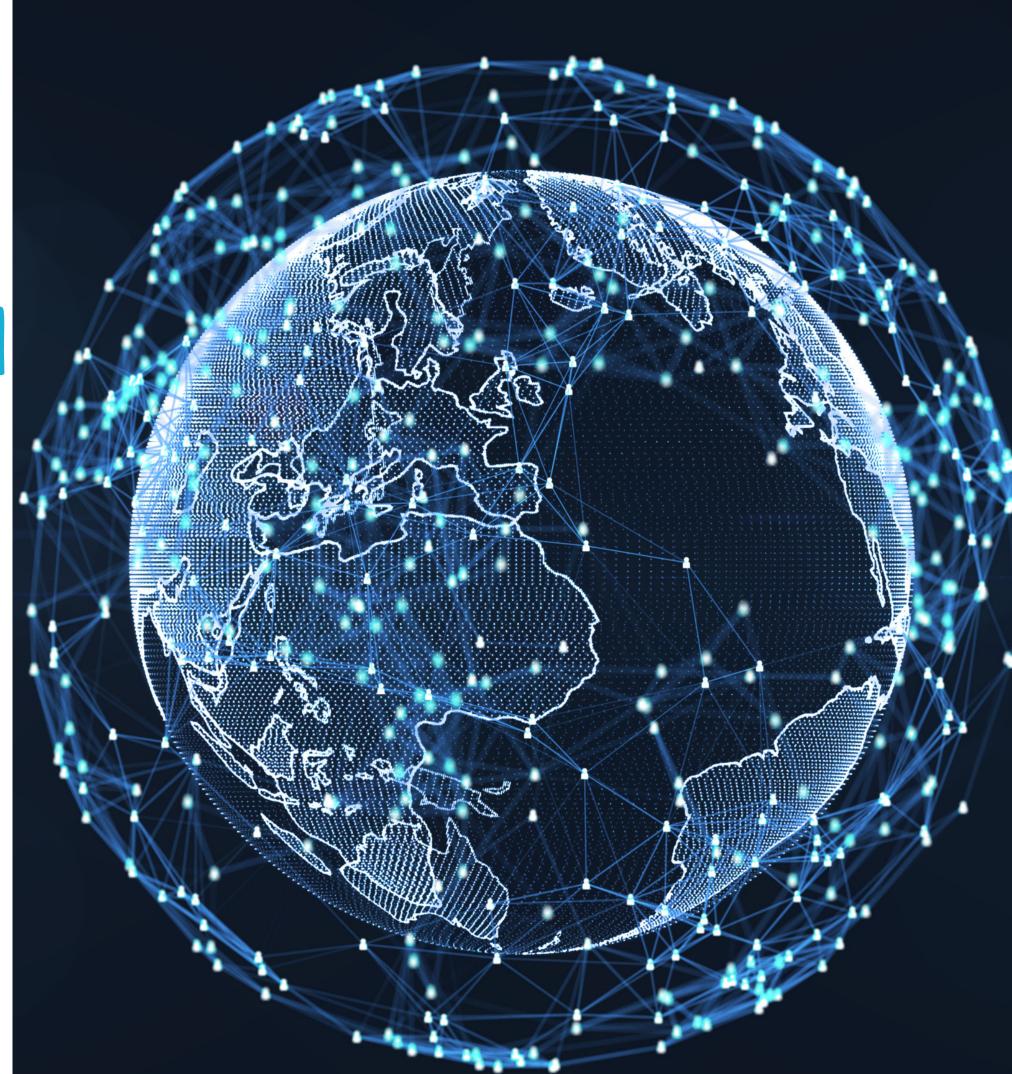
Place Order & Download

Payment

Tracking your orders



V. DRIVING DOWNSTREAM SPACE ECOSYSTEM **DEVELOPMENT AND ECONOMIC GROWTH**





GISTDA Channel Partnership





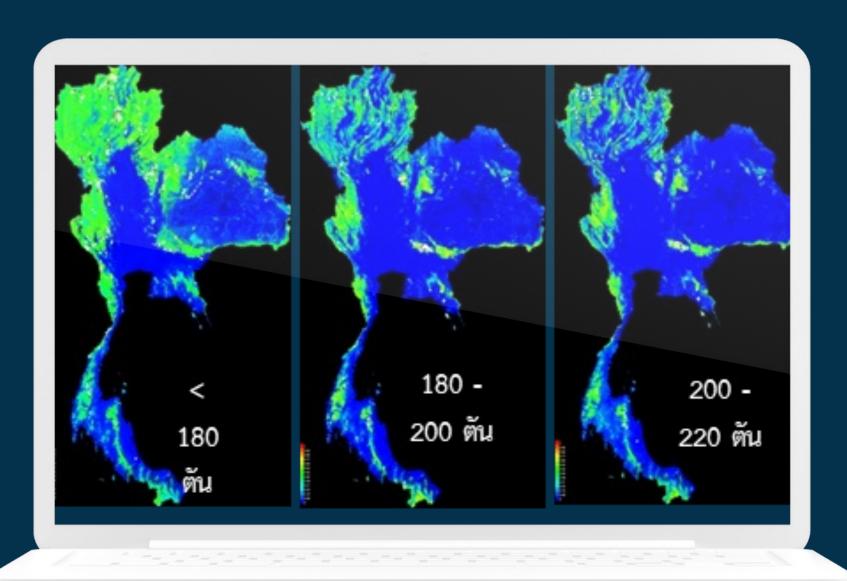


Case studies of successful collaborations Dragonfly

(Plot-by-plot spatial agriculture platform for farmers)



Assessment of Carbon Credit in Forest Areas



Targeting Suspected Forest Encroachment Areas



URBAN DATABASE

Utilities



Land Parcels



Satellite images



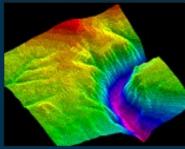
Pipeline

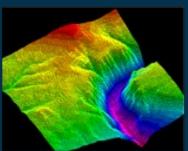


Land Cover



Terrain





Transportation



Building

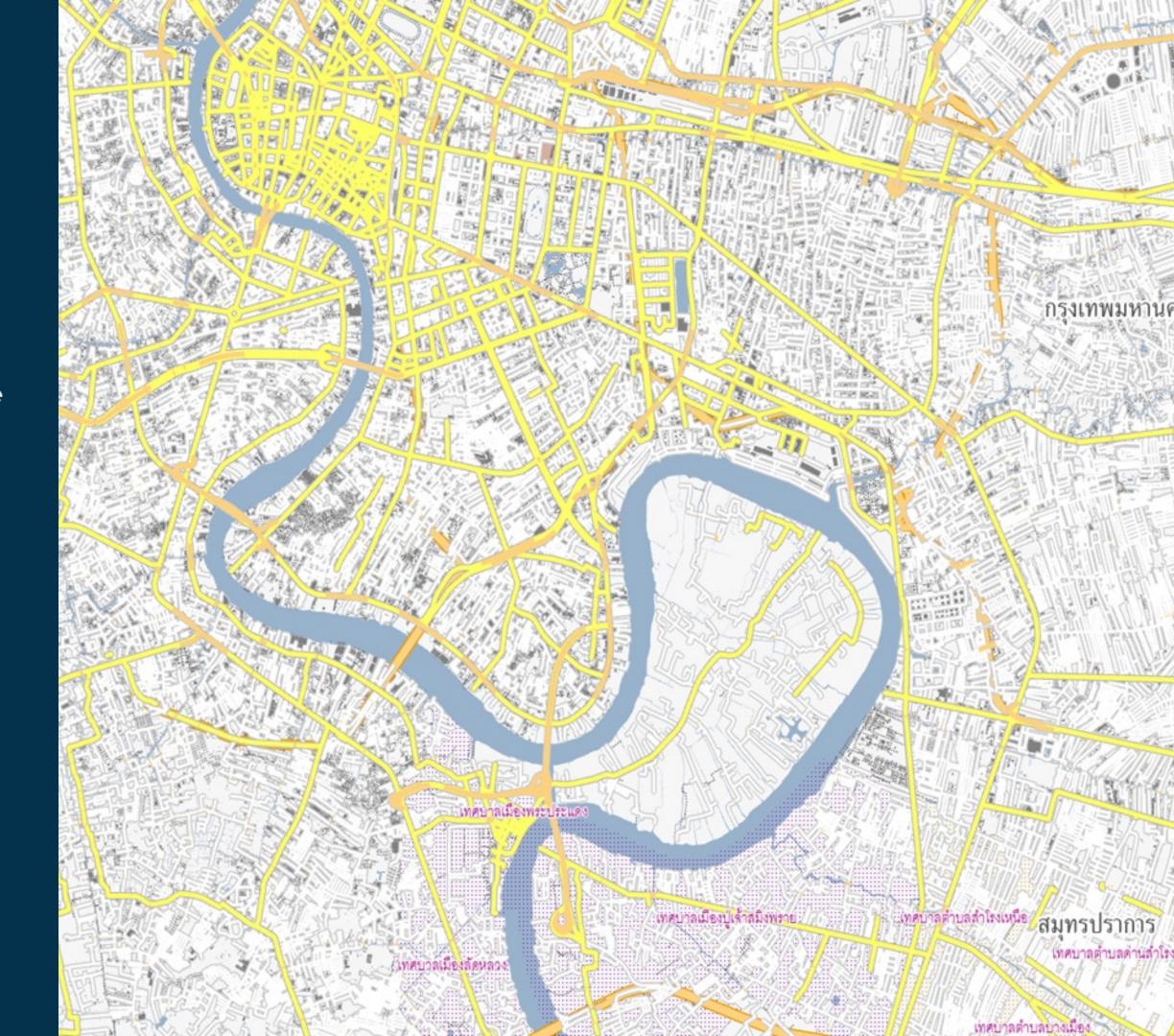


Planning Zone



River/water



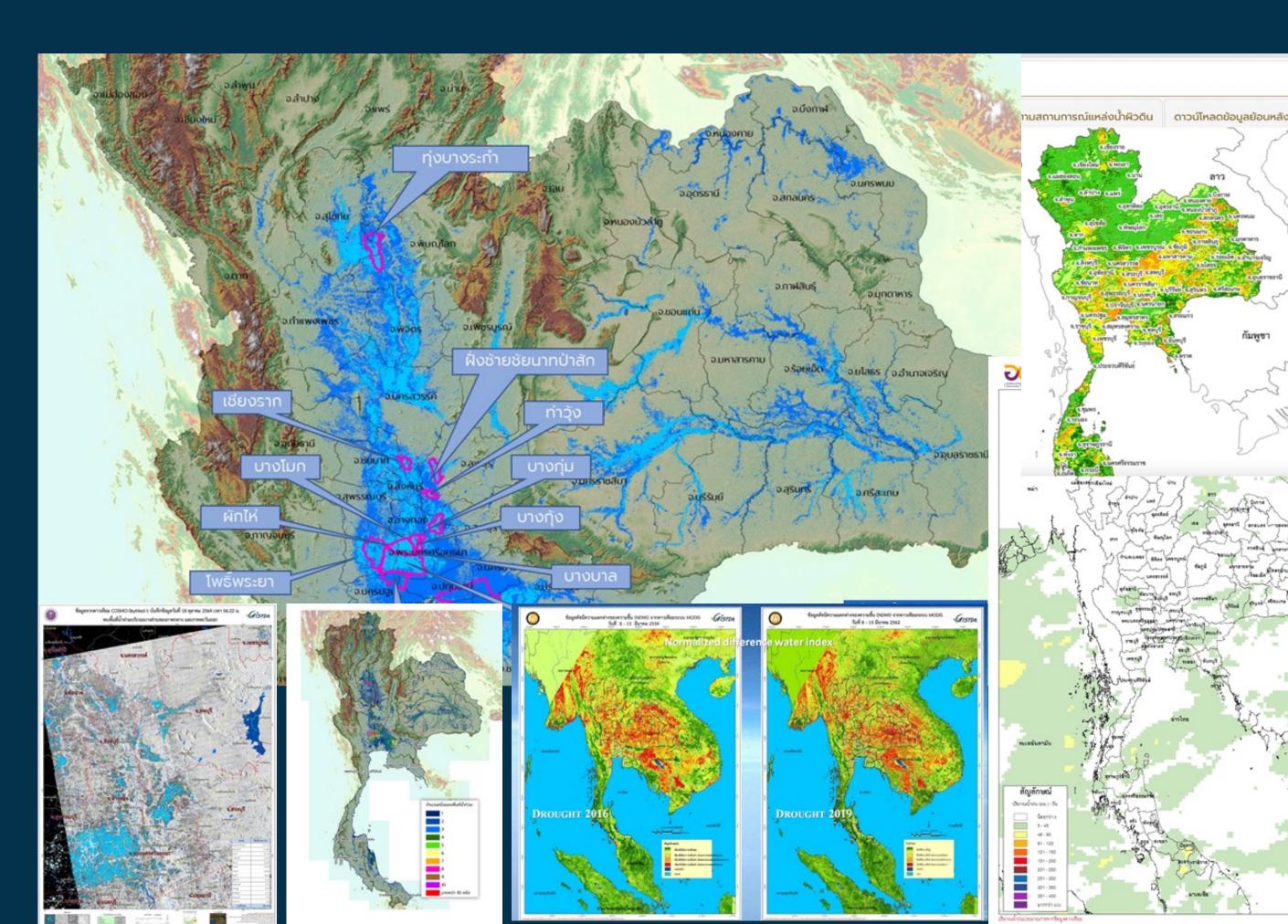


Disaster









KNOWLEDGE ECOSYSTEM



Disaster

Water

Agriculture

Mapping

Ecosystems

Natural Resources &

Under Sirindhorn Center for Geo-Informatics: SCGI



One Stop Service

Space-Ed Lifelong Learning platform

Raise Awareness for Excellence.

- o GISTDA Space Camp
- o Academic Olympics
- o Summer School
- o APRSAF
- o Kibo Robot Programming
- Challenge
- o STEAM Drone & Coding
- o Space Inspirium
- o Competitions / Challenges





Non-Degree **Basic Course** Training 10 Module Course Advance Course Training 2566-2570

- 1. Urban Planning Applications and Solutions Course
- 2. Natural Resources and Environmental Management Solutions Course
- 3. Agricultural Solutions Course
- 4. Hazards/Disaster Solutions Course
- 5. Social Sustainability and Resilience (Wellness) Solutions Course
- 6. Integrated Water Management and Solutions Course
- 7. Big Data & Intelligent Decision Making Course
- 8. Application Solutions for Public Health Course
- 9. Application of GIS for Defense Course
- 10. Architecture, Engineering and Construction Course





Professional standards and qualifications for the Digital Industry profession, specializing in Space Technology and Geoinformatics Geoinformatics Technologist / Remote Sensing Surveyor / Satellite Engineer

Manpower Development 2024 300,000 people

Support data/platforms/instructors/funding

SCGI students accumulate credits for regular

Accumulate credits with network universities

Partners& Networks































THEOS2

AIRBUS

SCGI







and non-degree programs























































Key Takeaways

- Utilize satellite imagery for innovation
- Propel the downstream space ecosystem





VENUE .
IN BANGKOK, THAILAND

THAILAND SPACE WEEK 2024

PLENARY

EXHIBITION

BUSINESS MATCHING YOUTH

SIDE EVENT

EXCLUSIVE MEETING



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