

“Future of Space Industry Business in Thailand and ASEAN: Great Opportunities...”

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Thailand

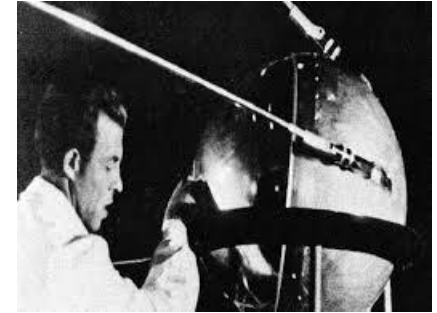
11 June 2014

at the 57th Session of COPUOS, Vienna, Austria

Changing space environment

Since the days of the US-USSR “space-race”, the environment for space development has changed.

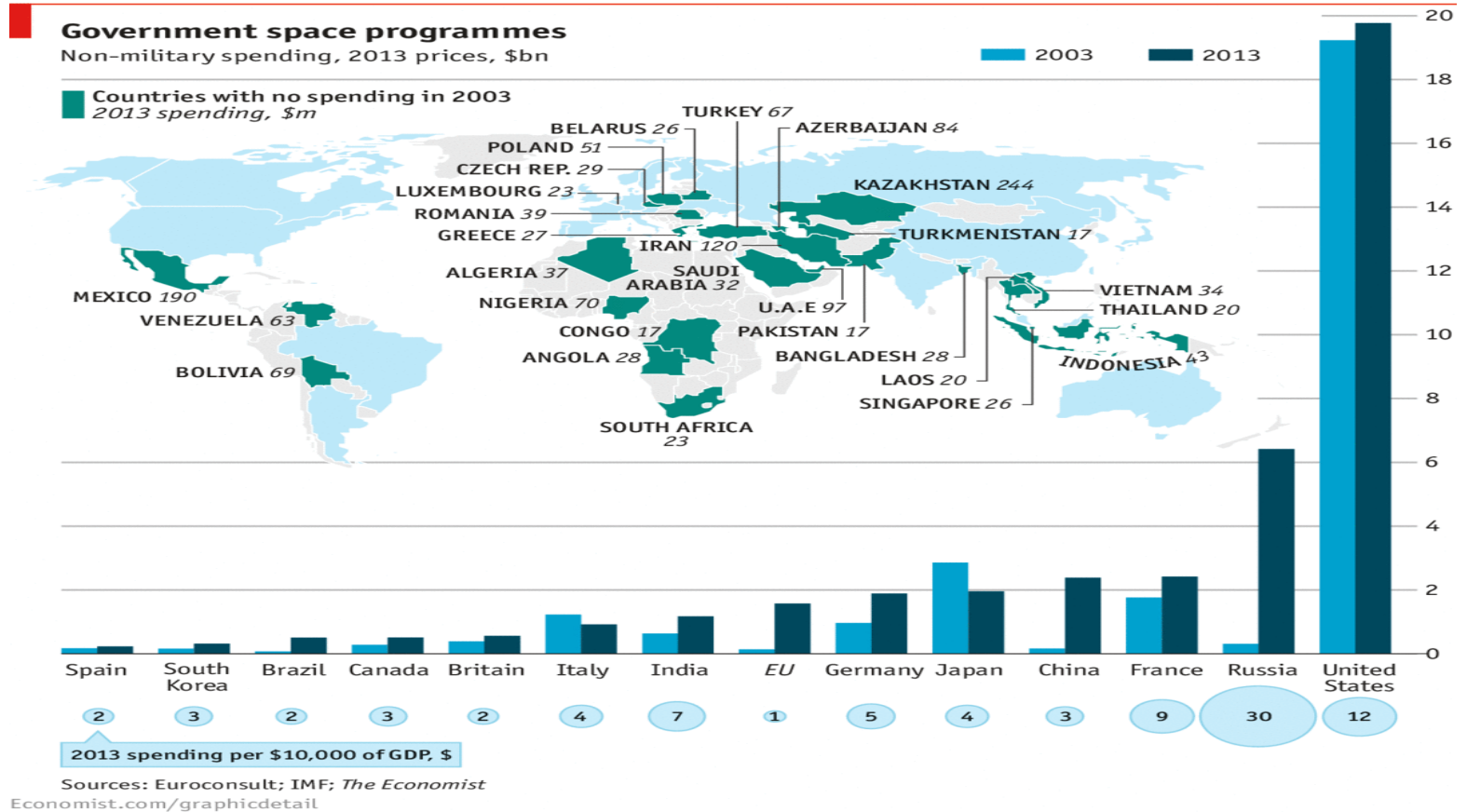
- **Europe, Japan, China, India and Canada have developed fully multi-disciplinary agencies**
- **New “tiger” economies have joined the space establishment.**
- **Commercialization - starting with Telecoms but now branching into many more areas including EO, launchers and manned missions – even proposed interplanetary**
- **Emerging and developing economies now are investing in space capabilities which can contribute to the global space community**



Space is now a global enterprise

Emerging economies in Space

Last 10 years, more countries have invested in their first “space capabilities”



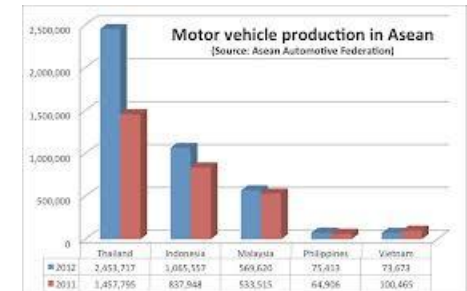
Thailand is now a “developing” space economy

Thailand: Manufacturing Base

Thailand is a Regional Manufacturing leader

Thailand Production Base

- **ASEAN** leader in manufacturing areas such as auto, and electronics
- Skilled and experienced workforce
- Clustering of companies for parts, bespoke fabrication, services and supplies
- Now moving into more manufacturing areas
 - Biomedical
 - Aerospace
 - Energy and environment
 - Robotics and automation
 - New materials



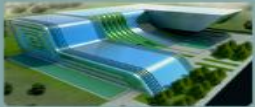
Space industry is the next adventure

SPACE KRENOVATION PARK

*“Where we cluster, collaborate & co-create values
...for a better world”*

SKP

Space Krenovation Park



พิพิธภัณฑ์เทคโนโลยีสำรวจโลก
(Visionarium)



ศูนย์ผลิตข้อมูลภาพถ่ายดาวเทียม
และภูมิสารสนเทศด้านภัยพิบัติ
(Geo Informatics Solution Delivery)



ศูนย์บ่มเพาะธุรกิจเทคโนโลยีอวกาศ
(Entrepreneurial Development Center)



สถานีควบคุมและรับสัญญาณดาวเทียม
(Satellite Operations Center)



ศูนย์พัฒนาเทคโนโลยีอวกาศ
(Space Technology
Development Center)



ที่พักอาศัยและนันทนาการ

ศูนย์วิจัยและฝึกอบรมด้านภูมิสารสนเทศ
(Geoinformatics Research & Training)



The **SKP** innovation platform

Unique Opportunities for partnerships – a new way of managing space development

- ❖ **Co-Creation**
- ❖ **Collaboration**
- ❖ **Clustering**
- ❖ **9 Elements**

LEVEL OF THAILAND COMPETITIVENESS



The **SKP** is not a procurement center

The **SKP** is a capability development center

Privileges of Partnerships at SKP

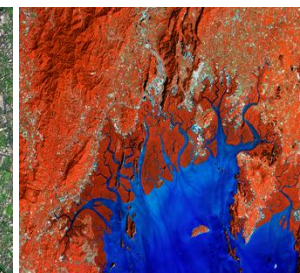
At **SKP**, the Partnerships will benefit from..

- ✓ **Duty exemption** and other **investment privileges**.
(Under Thailand Board of Investment Regulations)
- ✓ Access and Utilization of its **facilities**
 - Remote Sensing & Geo-Informatics Data Center
 - Conference rooms and Exhibition area
 - Dormitories
 - Training facilities
 - High speed internet
 - Financial, business and investment consultant service.

**Unbeatable Thailand,**
Unparalleled Opportunities

**THAILAND
BOARD OF
INVESTMENT**

TAXES



How does the **SKP** partnership program work?



PHASE 1: Inception and feasibility

- Partner company brings idea for product or service in the form of a “**9-element**” model
- The idea must have elements of co-development – capacity building
 - The idea is assessed for feasibility – technical, commercial and legal
 - Commercial feasibility and market assessment are important aspects

PHASE 2: Pilot or Demo

- The development program is a **joint collaboration**
- Partner company brings expertise and product technical competence
 - GISTDA brings facilities, data and downlinks, human resources and local companies
 - A pilot program, demonstration system or proof of concept is produced

PHASE 3: **marketing** and full implementation

- The pilot or demonstration is used to show the capabilities
- organises workshops and conferences and invites potential customers and stakeholders – local national and regional government departments, institutions, commercial enterprises
 - A joint venture to commercial is formed and a full implementation funded

SKP Partnerships

- ❖ **SKP** partnership program now in operation
- ❖ 12 international and local companies resident at **SKP**
- ❖ Over **40** collaboration programs ongoing or in discussion
- ❖ **Midstream** ground segment and **downstream** applications covering all applications areas (Agriculture, Security, Urban planning, Natural Resources and Disaster Monitoring and Management)
- ❖ New initiatives for **Navigation** and **Maritime**



บริษัท พรีเม่สตีล แอนด์ คอนสตรัคชั่น จำกัด
PRECISE STEEL AND CONSTRUCTION CO.,LTD.



AWR Lloyd

Wuhan OUTSOURCING
The Source for Wuhan Outsourcing

VOSSCA control system project

The VOSSCA control system project is the first partnership program run from the SKP and is a win-win for GISTDA and Terma

VOSSCA program

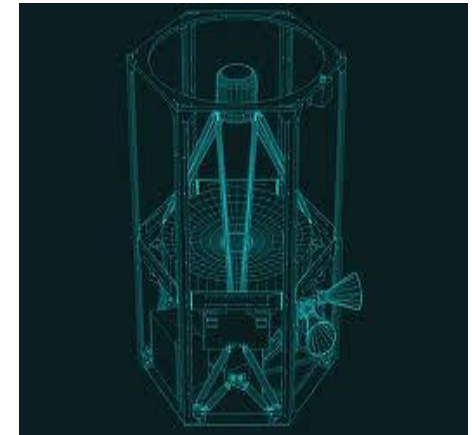
- To develop the leading edge spacecraft control system in the world – a “leapfrog” approach.
- Partnership with Terma of Europe who provide a latest generation system as “open” source code

Terma benefits

- Consultancy contract to further develop new system functionalities
- Testbed of existing and planned satellites
- Access to the ASEAN market and marketing support
- Resources and talent for software development, training and support

GISTDA benefits

- Capacity building program in Thailand
- Next generation control system at less cost than traditional procurement
- Outreach system to encourage students

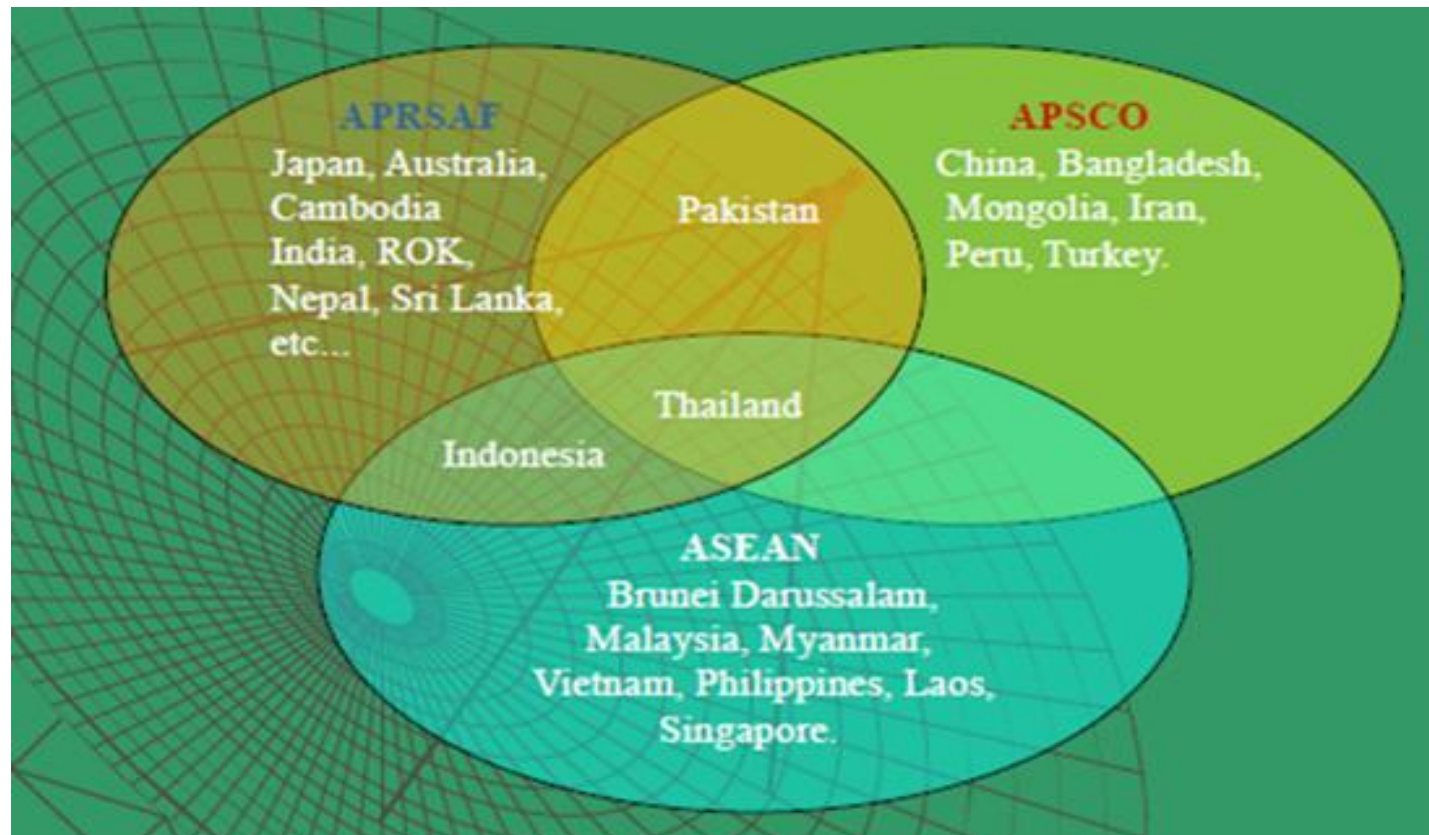


TERMA®



Thailand as a space partner

Thailand is a member of numerous **regional** and **international** bodies



Thailand is a bilateral and multilateral partner

Thailand: Geographical Hub for ASEAN

Thailand: A Gateway to the ASEAN

Thailand: Forefront of regional integration

For the ASEAN Economic Community in 2015



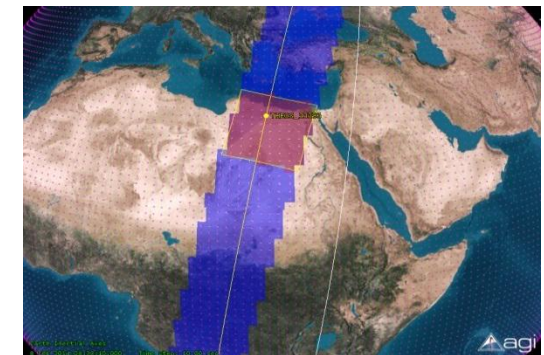
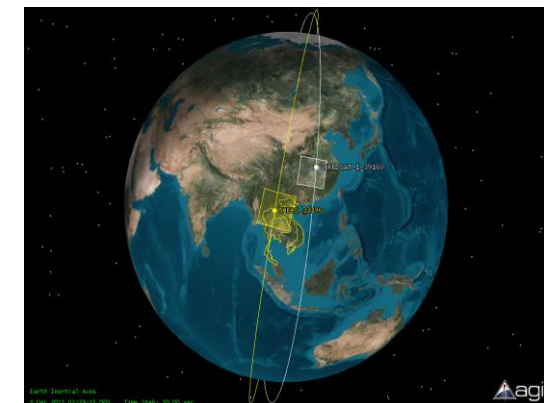
For the fast developing Mekong region

Thailand: Regional Initiator

Through the regional **ASEAN**-SCOSA program **Thailand** has initiated the

“**ASEAN Virtual Constellation**”

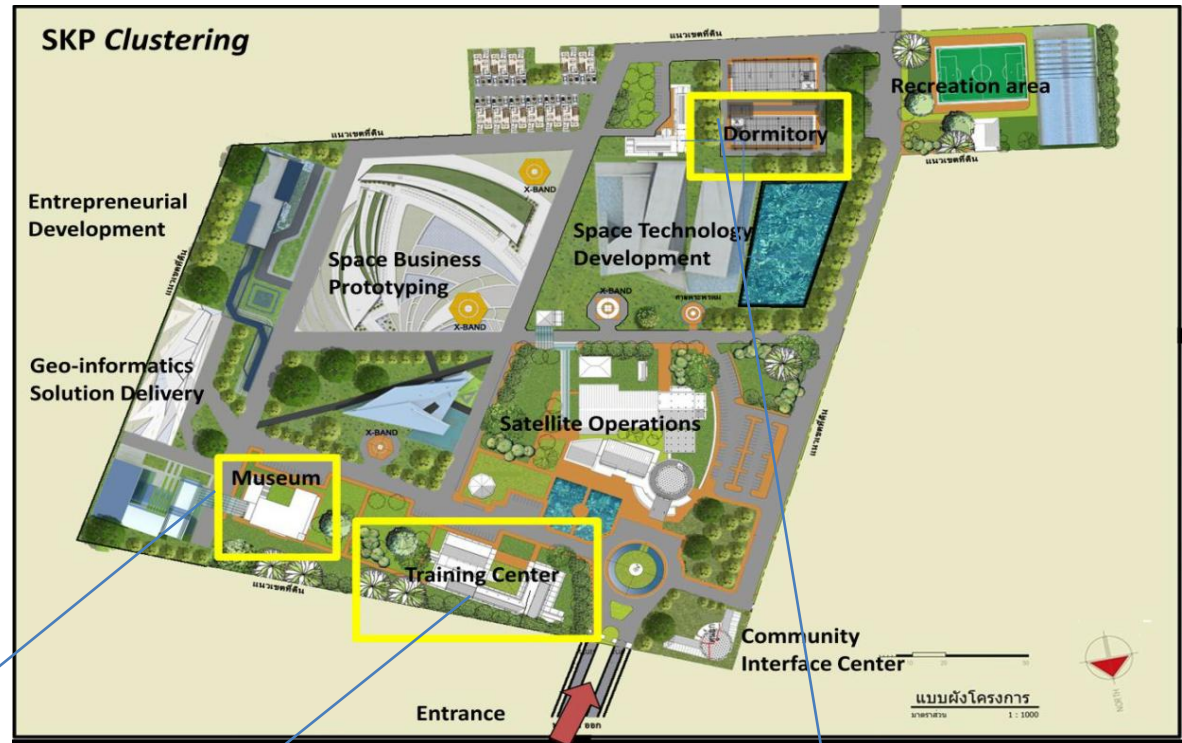
- Bringing together the **ASEAN** nations with EO space assets (Indonesia, Malaysia, Singapore, **Thailand** and Vietnam), with those countries who need data but have no independent access (Brunei, Cambodia, Laos, Myanmar, Philippines)
- Data sharing of multiple satellite data
- Kicked off at APRSAF 2013 with bilateral agreement Thailand-Vietnam
- **Thailand** providing imaging from Thaichote satellite



ASEAN Regional Training Center for Space Applications

Training facilities :

- Total Area about 3,800 sq.m.
- 1 large Conference Room (180 Persons)
- 1 Laboratory Room (80 Persons)
- 3 Small Conference/ Lecture Rooms
- 1 Research Room
- 1 Cafeteria (85 Persons)
- 1 Dormitory (24 Units)





Thank you