

2015 - A Giant Leap for Thailand in Human Space Technology

UN/Costa Rica Workshop on Human Space Technology

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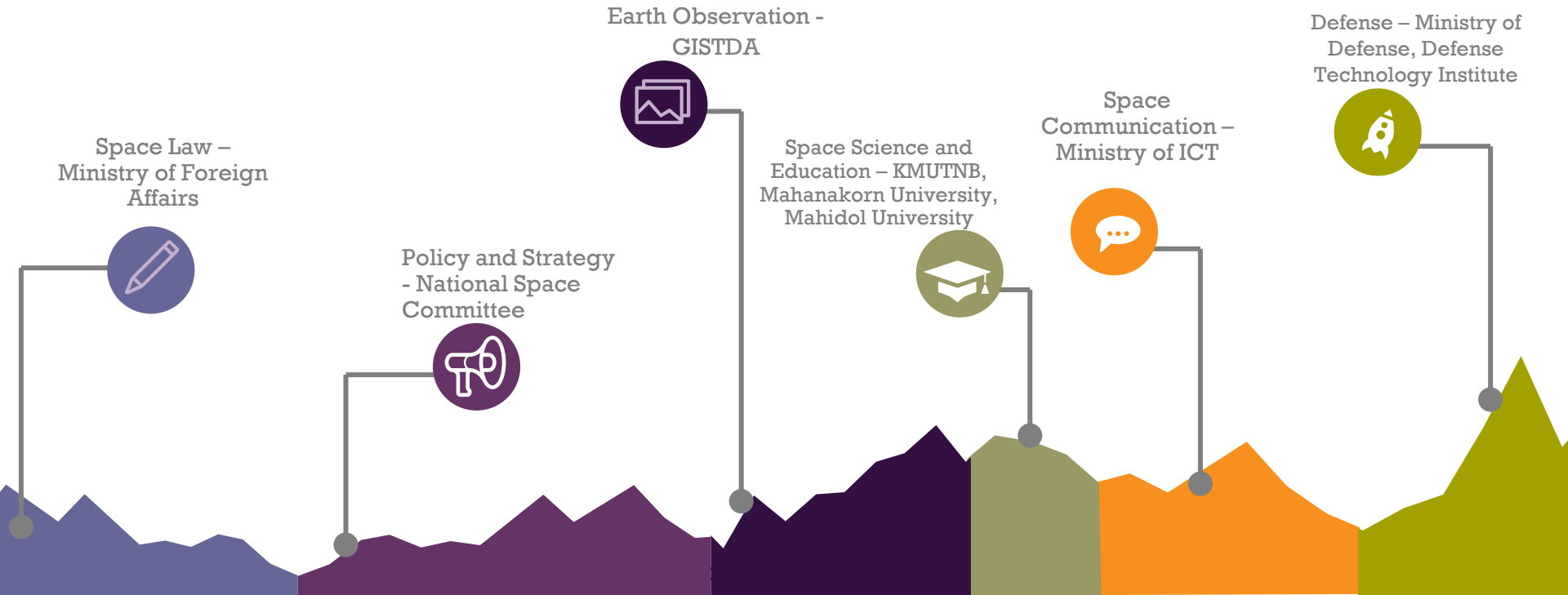




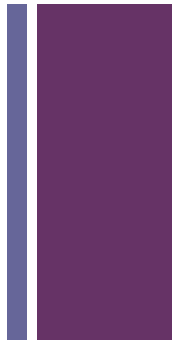
Pre 2015 - Thailand Space Segment at a Glance



Exploration ???
Human Space Technology ???
Space Industry ???



+ Thailand Space Development



Established the first Ground station in ASEAN in 1982

Thailand has received and stored earth observation data for more than 30 years



Indigenous capability

Thailand aims to be self sustainable in aerospace technology development on a small scale by 2020

National Space Committee met and National Space Agency proposed

2014

Thailand joined the NASA ERTS-1 Project back in 1971. It was the first space related Project in Thailand.



NSC

Establishment of National Space Committee

The National Space Committee was established in 2009

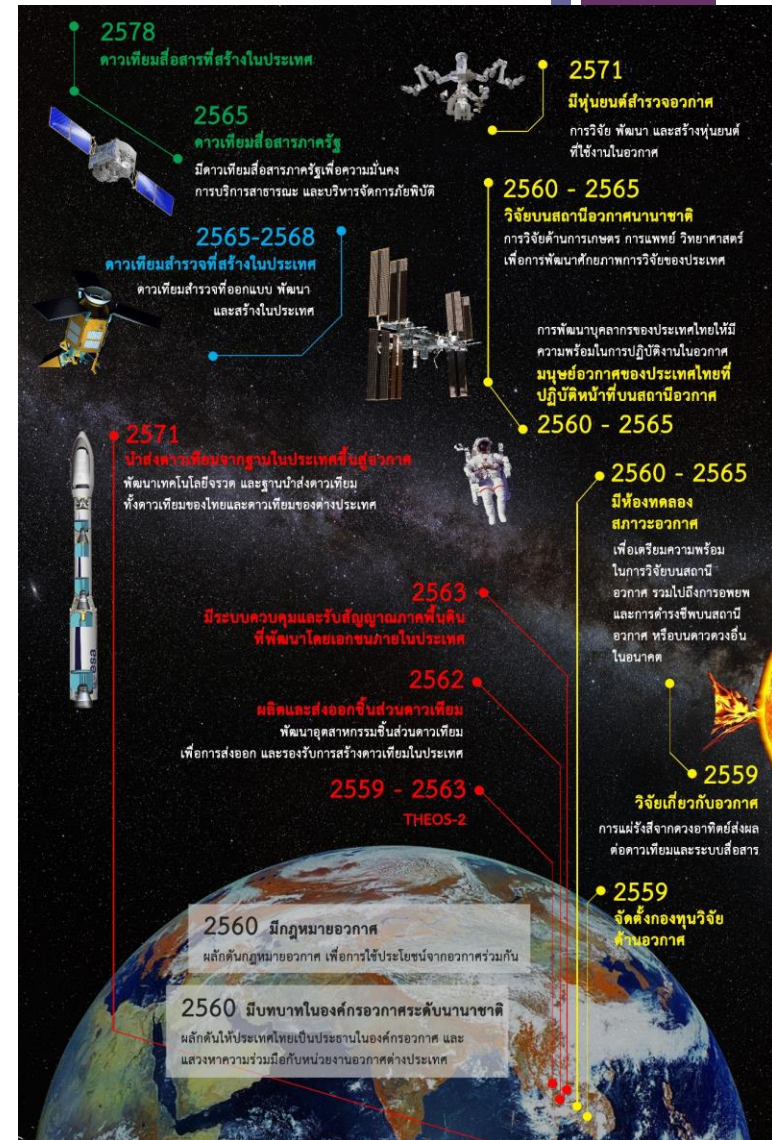
+ The National Space Committee



- Head by Prime Minister of Thailand.
- Committee members include Deputy Prime Ministers, 8 ministers and several experts in the field of Space
- Established in 2009 but inactive until 2014
- Several meetings in 2014 and 2015 in order to establish Thailand position in Space Technology
- Establish itself as a center for Space domain strategy planner and defragmented the space segment in Thailand

+ National Space Program - 2015

- The National Space Program was authorized by the National Space Committee.
- 20 year Plan established from 2015 to 2034
- Emphasis on:
 - Capability to develop space technology
 - International Space Science Collaboration
 - Unmanned Space exploration
 - Manned Space Program



+ Initial steps in Human Space Technology

Partner with other agency to create opportunities for Micro-Gravity Experiments



Indigeno US Efforts

2016
Generate Interest in Space Exploration Efforts

Build Innovative Driven Enterprise

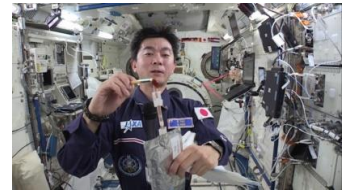


2018
Create Innovation from within

Create Micro-Gravity experiments in Thailand

Establishment of Thai Space Industry **2017**

Invite Experts to give insights of Space Environment



International collaboration

Micro-gravity Experiment ideas

Partner with national and regional bodies



Training



Training

Hmm... Brainpower?
Create Value From Space

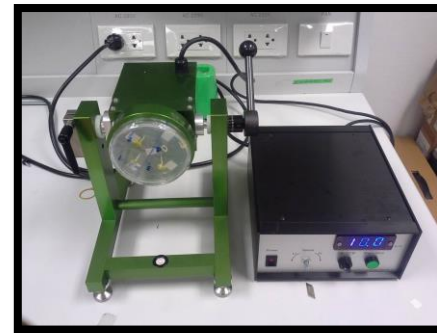
Create Investment in Space



Generate Value from Space to the people

+ UN-ZGIP – Clinostat

- Thailand received 1 clinostat from UNOOSA in 2013
- The instruments were both used for internal experiments as well as an education tool
- Students are encouraged to participate in the experiments
- International schools in Thailand has included micro-gravity experiments using clinostat as part of their biology curriculum
- Currently exploring opportunities for Drop Test Experiments as well as cubesat development





Thank you for your attention

+ THASA Space Contest 2015

- Contest for Thai youth to propose experiments to be conducted in space environment and partial micro-gravity
- Over 80 applications (project) submitted
- The top 10 teams were provided with weather balloon service to lift their experiments to 30km above surface of the earth
- The contest was also televised on national television over a period of 3 months through 10 episodes





Thai PBS HD

+ Asian Try Zero-G

- Collaboration with JAXA to conduct micro-gravity experiments
 - On-board Zero-G aircraft
 - On KIBO module of the ISS (KIBO-ABC)
- GISTDA and NSTDA invites students and participants from all over Thailand to propose their experiments
- Selected experiments are performed by Japanese Astronauts on board the ISS



+ The Space Inspirium

- The Space Inspirium is the first Space Museum in Thailand
 - Aims to inspire the next generation with space technology
- Over 50,000 visitors since its opening in January 2016
- Exhibit includes space exploration timeline, photo with astronauts, 3D movie, Augment reality section
- The Space Inspirium has generated vast interest in human space technology in Thailand





GISTDA
เปิดห้อง ของขวัญปีใหม่
ชวนคนไทยดูลุย



<http://www.nasa.gov/>



Industry development: Aerospace as a future industry



- Thailand propose 5 Future Industry to drive up its GDP
 - Aerospace is one of the 5 future industry
 - The industries shall receive support from the government
- Special Incentives for investment in Aerospace
 - No personal income tax of experts for 5 years
 - 8 years reduced company tax
 - 300% tax rebate on R&D Spending



+ Next big thing - National Space Capability Development – THEOS 2

- THEOS 2 program is the next Earth Observation Program
 - Approved in principle by the cabinet of Ministers
 - Larger Scale Earth Observation Satellite built by prime contractor
 - Small Earth Observation satellite to be built in Thailand
 - Development of local industry in Aerospace Sector





Conclusion



- Thailand is currently in the early development stage of space technology and micro-gravity research
- Activities/Projects must be kept continuous in order to have larger impact
 - Some outreach project fizzle out early
- Cooperation with developed nations are needed
 - Opportunities such as experiments on board ISS, etc.
 - Exhibits for creating inspirations
 - Visits from Experts and Astronauts to create generate interests
- Cooperation with other developing space nations
 - Working together on project to share resources
 - Concentration on developing technological capacity



Thank you

Questions? Suggestions? Recommendations?



Axe Apollo Program and the first Thai Space traveler

- Axe conducted a contest and awarded the winner with sub-orbital flight
- 23 winners from around the world were selected and the award was given by Buzz Aldrin
- Ms. Pirada Techavijit, a Thai National and employee of the Ministry of Science and Technology was one of the winner and is poised to be the first Thai in Space

