



# RPD CHALLENGE

-A Multi-GNSS Asia Programme-

AUGUST-DECEMBER 2020

*SOLUTION FOR DISASTER MANAGEMENT:  
TSUNAMI/FLOODING*

- **LEARN.** Key technologies behind IoT devices
- **CREATE.** Bring your ideas to life
- **WIN.** Develop your prototype and get awarded

Co-organised by



Cabinet Office

Supported by



AIS

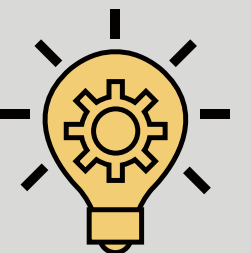


UNITED NATIONS  
**ESCAP**  
Economic and Social Commission for Asia and the Pacific



慶應義塾  
Keio University

**SONY**



# BRING YOUR IDEAS TO LIFE

## - THE PROCESS

1

What disaster can you imagine arising from floods and tsunamis in your city?

2

What could help mitigate that situation?

3

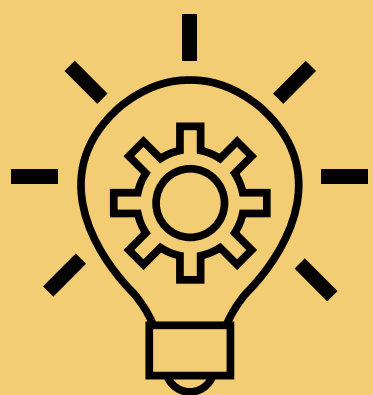
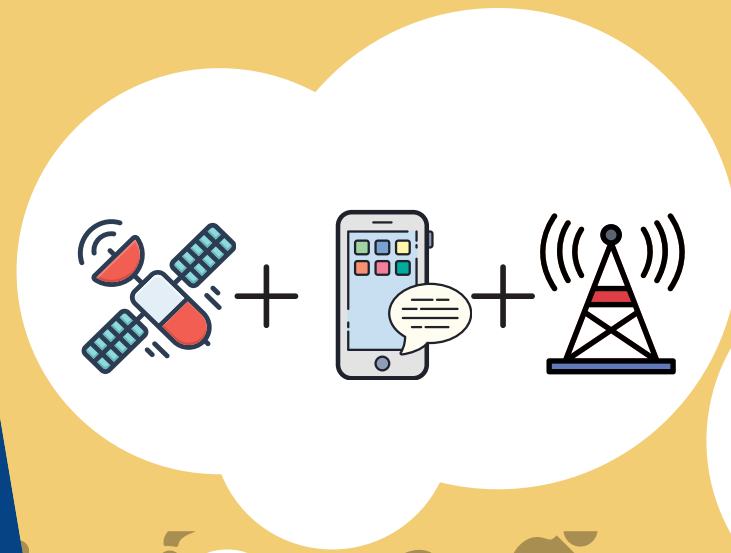
What infrastructure is already in place, and how could that be enhanced to become 'smarter' by combining GNSS & IoT capabilities?

5

Bring your solutions to life by assembling the devices and making improvements through tests & demos!

4

Work with your team mates and mentors to target the correct devices and skills to design your concept.



**HOW CAN I MAKE EMERGENCY SIRENS 'SMARTER' BY COMBINING LOCATION DATA OR GNSS CAPABILITIES?**

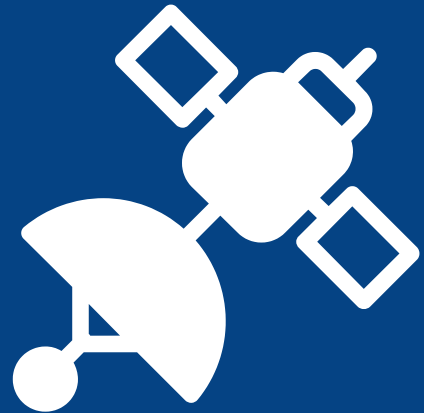
Maybe I can make my city safer for us citizens!

I want to design a system to support my family & friends in times of emergency.

**HOW CAN I UTILISE CURRENT INFRASTRUCTURE AND ENHANCE IT USING GNSS?**



# GENERAL INFORMATION



## What is the RPD Challenge?

The Rapid Prototype Development (RPD) Challenge is a hands-on Hackathon where teams will create a prototype with limited resources. Mentors will give valuable guidance and encourage participants to squeeze their brains to tackle real-life issues through creative solutions.

20 teams (max) will be able to participate. Join either as a Team or as an individual!

If joining individually, you will be put in to teams by the organisers.

## QUALIFICATION

Undergraduate, Graduate Students, Researchers, Industry, Policy and Decision Makers from Asia and Oceania Regions.

\*Course participants are required to participate in all courses from Step 0 to Step4

## REGISTRATION

Register from the link below:

<https://qrgo.page.link/sFUsq>

For any inquiries, contact [secretariat@multignss.asia](mailto:secretariat@multignss.asia)



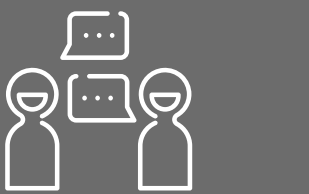
**REGISTRATION OPEN**

**Until**

**-7th Oct. 2020**



# PROGRAMME SCHEDULE

	STEP	DATE & TIME (THAI LOCAL TIME)		COURSE OVERVIEW
 <b>WEB BASED</b> 	<b>LET'S GET STARTED</b> Introduction	Aug-Oct		GNSS101 *GNSS101 lectures to be released on Youtube ** Speaker Info on the following page
	<b>STEP 1</b> Define scenario	10/10	14:00-15:00	Define your scenario with your team mates
10/11		14:00-15:00	Research currently available alert systems	
<b>STEP 2</b> System design & project Planning	10/18	14:00-15:00	Learn about GNSS and how to process its data	
	10/19	14:00-15:00	Design your concept based on your scenario	
<b>&lt;NOVEMBER TECH DAY&gt;</b> Special Technical Lecture by SONY, The University of Tokyo & other Experts				
 <b>PHYSICAL MEETING</b>	<b>STEP 3&amp;4</b> Develop Prototype, Demonstration & Awards in Thailand	12/16	10:00-12:00	Orientation
			13:00-17:00	Prototype Testing
		12/17	10:00-14:00	Prototype Demonstration
			15:00-16:00	Presentation & final evaluation
		16:00-16:30	Award ceremony & Certificate	

## Travel Restriction

Due to the Covid-19 and its subsequent travel restriction, please understand that **participants outside of Thailand may not be able to participate in Step 3 & 4**

# PROGRAMME SCHEDULE

## STEP 1: Define scenario

DATE: 10TH OCT. 14:00-15:35

DATE: 11TH OCT. 14:00-15:35

TIME (THAI LOCAL TIME)	SCHEDULED CONTENT
14:00-14:10	Opening & Introduction by MGA, GISTDA, CAO
14:10-14:25	Speeches by UNESCAP and ASEAN Experts
14:25-14:45	Ideathon Part1 –brainstorming issues of floods and tsunamis
14:45-15:00	Ideathon Part2 –brainstorming ideas to solve issues
15:00-15:15	Analysis of the Ideas –categorize ideas and define target
15:15-15:30	Presentation by some teams
15:30-15:35	Wrap-up and briefing for preparation/assignment from Mentors

TIME (THAI LOCAL TIME)	SCHEDULED CONTENT
14:00-14:05	Briefings by Keio University
14:05-14:15	Presentation of assignment by some teams
14:15-14:30	Analysis of the Stakeholders – discuss its potential users
14:30-15:00	Scenario Making –discuss its user experience
15:00-15:30	Presentation by each team representative – share the output of the work and get feedback
15:30-15:35	Wrap-up and briefing for preparation/assignment from Men

\*The steps highlighted in blue are group work sessions with mentors providing support to each team

\*\*13:00-14:00 Connection Test with Participants

# PROGRAMME SCHEDULE

## STEP 2 : System Design & Project Planning

DATE: 18TH OCT. 14:00-15:20

DATE: 19TH OCT. 14:00-15:30

TIME (THAI LOCAL TIME)	SCHEDULED CONTENT
14:00-14:05	Opening & briefing
14:05-14:25	Input talk by AIS, SONY, The University of Tokyo
14:25-14:55	Interactive Discussion: Questions collected from each team in web form in advance
14:55-15:00	Break
15:00-15:15	Scenario Revising -brush up the scenario based on the advice
15:15-15:20	Wrap-up and briefing for preparation/assignment from Mentors

TIME (THAI LOCAL TIME)	SCHEDULED CONTENT
14:00-14:05	Opening & briefing
14:05-14:35	Concept Design -design the system architecture based on the scenario- (data flowchart)
14:35-14:55	Prototyping Planning -define the goal and the strategy
14:55-15:00	Break
15:00-15:30	Presentation by each team representative – share the outputs of the work and get feedback
15:30-15:35	Wrap-up and briefing for preparation/assignment from Mentors

\*The steps highlighted in blue are group work sessions with mentors providing support to each team  
 \*\*Technical test in mid November before demonstration in December. Technical Day in November!  
 \*\*\*13:00-14:00 Connection Test with Participants

# MEET THE EXPERT LECTURERS

## Lecture Category

-  GNSS/GIS Technology
-  Solutions & Applications
-  Device Technology



**'Introduction of the Space Activities in Thailand'**  
**Dr. Damrongrit Niammuad**  
Director, Space Krenovation Park, GISTDA (Thailand)



**'Introduction to QZSS'**  
**Mr. Satoshi Kogure**  
Chair of MGA,  
Director, National Space Policy Secretariat (Japan)



**'Data Utilization & Applications'**  
**Prof. Ryosuke Shibasaki**  
Secretary General of MGA,  
Professor, The University of Tokyo (Japan)



**'GNSS Technology in Thailand'**  
**Prof. Chalermchon Satirapod**  
Professor, Chulalongkorn University (Thailand)



**'Introduction to HW/SW Tools for GNSS users'**  
**Dr. Dinesh Manandhar**  
Associate Professor (Project)  
CSIS, The University of Tokyo (Japan)



**'Space Data as the Solution to Societal Issues'**  
**Prof. Naohiko Kohtake**  
Professor, Keio University (Japan)



**'Current Situation of Disaster Solutions in Thailand'**  
**ACM. Somnuek Swatteuk**  
Special Expert,  
National Disaster Warning Center (Thailand)



**'GNSS Buoy Disaster Mitigation Systems'**  
**Prof. Teruyuki Kato**  
Hot Springs Research Institute of Kanagawa Prefecture (Japan)

and more..





# LET'S GET STARTED

- COURSE INTRO & LECTURES

1

## COURSE INTRODUCTION



Get your briefing on the course overview and the planned schedule for the journey ahead!

2

## GNSS 101



Learn the basics of positioning satellites and key technologies behind IoT devices through a series of webinars to spark your imagination with food for innovation from leading experts!

# STEP 1 - DEFINE SCENARIO



- 1 IDENTIFY SCENARIO
- 2 RESEARCH
- 3 SELECT



What's your scenario and where will you introduce your solution? Identify a scenario+location with your team!



What alert systems are available in that location? Do your research and define your target community.



What devices will be sending/receiving alerts? Select your components and map out your plan.

# STEP 2 - SYSTEM DESIGN & PROJECT PLANNING

- 1 LEARN
- 2 DESIGN
- 3 PREPARE



Learn about GNSS and necessary information through webinars with specialists to prepare for the challenge.



Design your concept based on your scenario, defining the necessary device, software and data-sets.



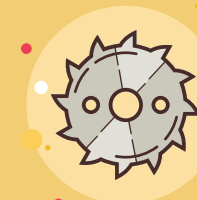
Work remotely with your team to further develop your concept and prepare for the physical meeting@SKP in Dec. 2020.

## - PHYSICAL MEETINGS -

# STEP 3 - DEVELOP PROTOTYPE



- 1 ASSEMBLE
- 2 INSTALL SOFTWARE
- 3 TEST



Bring together the necessary components and assemble your device.



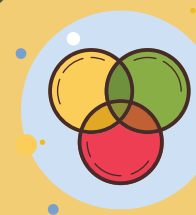
Install the pre-prepared software and install to the assembled device.



Check the interface and organise a series of tests to make sure the smooth running of the prototype.

# STEP 4 - DEMONSTRATION

- 1 DEMO
- 2 PRESENT
- 3 CERTIFICATE & AWARDS



Demonstrate your team's concept to the audience!



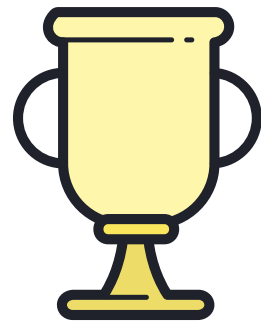
How will your solution benefit society? Convince your audience & evaluators with your concept.



Receive your RPD Certificate and the team with the best concept & prototype will be awarded by the organisers! May the best team win!

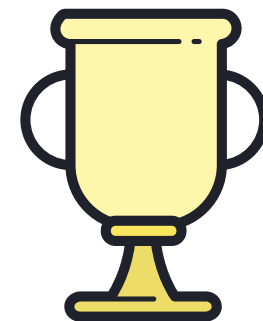


# CERTIFICATES & AWARDS



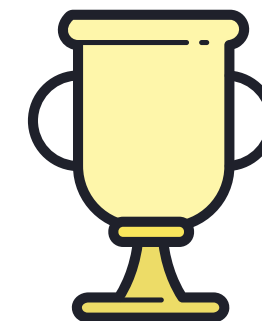
## MGA AWARD

**30,000THB** including site visit to Japan (roundtrip ticket), and support for local accommodation



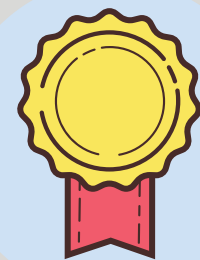
## GISTDA AWARD

**20,000THB** including site visit to Japan (roundtrip ticket), and support for local accommodation



## MICHIBIKI AWARD

Site visit to Japan (roundtrip ticket), and support for local accommodation



## SPONSOR AWARD

COMING SOON



## SPONSOR AWARD

COMING SOON



## MGA CERTIFICATE

All participants will receive a MGA Certificate to highlight their efforts through the programme. Work hard and prove your excellence!