Term of Reference

ISPRS STUDENT CONSORTIUM

Summer School

46th

Asian Conference on Remote Sensing

2025

Organized by

ISPRS Student Consortium
Internasional Society for Photogrammetry And Remote Sensing
Asian Association on Remote Sensing
Indonesia Society for Remote Sensing (ISRS)
Hasanuddin University

MAPIN
MASYARAKAT AHLI PENGINDERAAN JAUH INDONESIA
Indonesian Society for Remote Sensing (ISRS)

Table
Of Contents

Introduction

Remote sensing is the science or art of obtaining information about objects, areas, or phenomena by analyzing data obtained using instruments, without direct contact with the objects, areas, or phenomena being studied (Lillesand and Kiefer, 1990). Remote sensing techniques have developed significantly. With satellite remote sensing, data can be obtained almost at any time with wide coverage. Even medium-resolution remote sensing data can be obtained free of charge. Thus, the use of remote sensing techniques can obtain information quickly, with wide coverage, at any time, and cheaply. However, remote sensing techniques have shortcomings, especially satellite remote sensing, because the resolution of the images obtained is limited, so the information cannot be as detailed as the results of field surveys. In line with the development of geographic information systems, geographic information systems, or GIS for short, have developed rapidly in their use, not only in the field of geography but also in almost all fields of science.

Goals

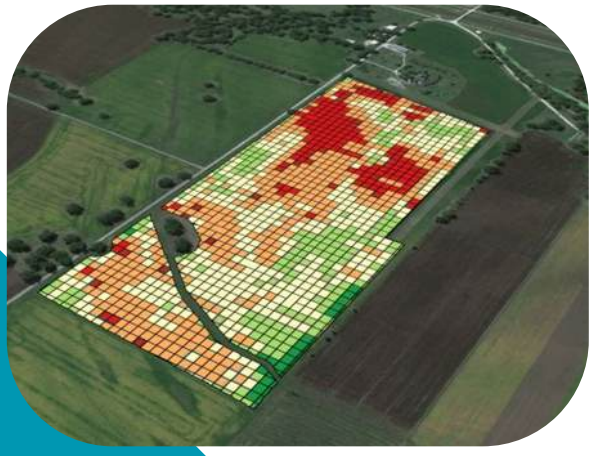
The objective of this Summer School is to equip participants with knowledge and skills in the use of remote sensing and GIS technologies, particularly in relation to processing and analyzing remote sensing data and geographic information systems.

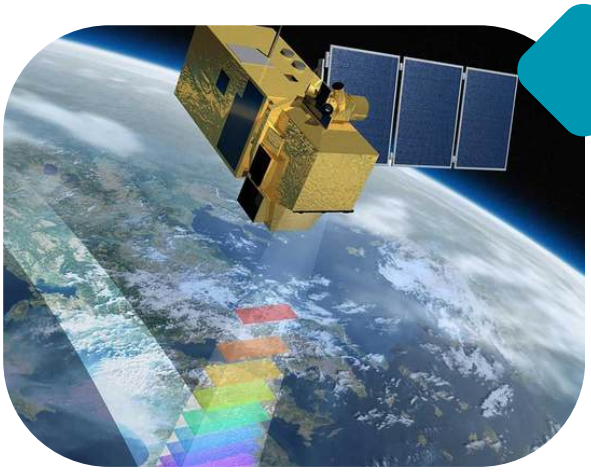
About

Summer School

Welcome to the Remote Sensing Applications for Agricultural Mapping Summer School!

This training is designed to introduce and deepen participants' understanding of the use of remote sensing technology in supporting precision agriculture management and mapping. With the rapid development of satellite technology and geospatial data analysis, remote sensing has become a very important tool for increasing agricultural productivity, monitoring crop health, and supporting data-driven decision making in the agricultural sector.





In this training, we present experts who will discuss key topics, including:

1. **The Application of Microwave Remote Sensing for Agricultural Mapping**, which will explore how microwave radar technology can be used to map agricultural land, even in bad weather or cloud cover conditions.
2. **Utilization of SAR Data in Agricultur**e, which will discuss the use of Synthetic Aperture Radar (SAR) data for soil texture analysis, moisture monitoring, and detection of changes in agricultural land.
3. **Remote Sensing Application for Student Research**, which will provide students with practical insights on how to design remote sensing-based research to support studies in agriculture and Environmental
4. **Agricultural Detail Mapping Techniques**, which will explore detailed mapping methods to identify crop types, planting patterns, and potential yields with high accuracy.

Meet

Our Presentetion Team

To ensure a rich and inspiring learning experience, we have invited four speakers who have exceptional expertise and extensive experience in the application of geospatial technology to support natural resource management and sustainable agriculture.

Prof. Josaphat Tetuko Sri Sumantyo
Presentation: The Application of Microwave Remote Sensing for Agricultural Mapping

Dr. Agustan, SMIEE
Presentation: Utilization of SAR Data in Agriculture

Ms. Laxmi Thapa
Presentation: Remote Sensing Application for Student Research

Andang Suryana Soma, Ph.D
Presentation: Agricultural Detail Mapping Techniques

Meet
Our Support Team

We are proud of introducing our dedicated and expert support team in the fields of remote sensing and Geographic Information Systems (GIS). Our team consists of experienced professionals with in-depth expertise in remote sensing, spatial analysis, and geospatial data management. With our mastery of the latest technologies, such as satellite image processing, digital mapping, and location-based data analysis, we are ready to provide innovative solutions for a wide range of needs, from environmental monitoring and regional planning to natural resource management.

Dr. Eng. Ilham Alimuddin
Remote Sensing Specialist

Mr. Hermansyah Prasyad
Remote Sensig and Drone Specialist

Mr. Syaeful Rahmat
GIS and regional planning Specialist

Mr. Muh. Yusuf Fadhel
Drone Specialist

Day 1

The Application of Microwave Remote Sensing for Agricultural Mapping

Time (WITA)	Agenda	Description	Resource Person/Facilitator
08:00 - 08:30	**Registration and Opening**	- Participant registration - Opening remarks by the committee - Explanation of training objectives and overview of the 4-day material	Training Committee
08:30 - 10:00	**Theory Session 1: Introduction to Microwave Remote Sensing**	- Fundamentals of microwave-based remote sensing - Advantages of microwave Remote Sensing	Prof. Josaphat Tetuko Sri Sumantyo
10:00 - 10:15	**Coffee Break**	Rest and networking Session	-
10:15 - 12:00	**Theory Session 2: Case Studies and Applications**	- Application examples: crop mapping, soil moisture analysis - Challenges and opportunities for microwave Remote Sensing in tropical agriculture - Discussion and Q&A	Prof. Josaphat Tetuko Sri Sumantyo
12:00 - 13:00	**Break (Rest, Prayer, Meal)**	Lunch and prayer	-
13:00 - 16:00	**Practical Session: Remote Sensing Microwave Data Processing**	- Hands-on: microwave data processing using software (QGIS/ArcGIS) - Practice creating simple microwave RS-based maps - Discussion of results and evaluation	Facilitator and Prof. Josaphat Tetuko Sri Sumantyo

Day 2

Utilization of SAR Data in Agriculture

Time (WITA)	Agenda	Description	Resource Person/Facilitator
08:00 - 08:30	**Check-in and Recap of the Previous Day**	- Brief recap of Day 1 - Introduction to Day 2 material	Moderator
08:30 - 10:00	**Theory Session 1: Introduction to SAR Data**	- Explanation of Synthetic Aperture Radar (SAR) technology - Characteristics of SAR data (polarization, resolution) - SAR applications in agriculture (soil texture, irrigation monitoring)	Dr. Agustan
10:00 - 10:15	**Coffee Break**	- break and networking Session	-
10:15 - 12:00	**Theory Session 2: Practical Applications of SAR**	- Case studies: crop damage detection, flood monitoring in agricultural areas - Integration of SAR data with optical data - Q&A	Dr. Agustan
12:00 - 13:00	**Break (Rest, Prayer, Meal)**	- Lunch and prayer	-
13:00 - 16:00	**Practical Session: SAR Data Analysis**	- Hands-on: SAR data processing (e.g., SNAP Toolbox or Google Earth Engine) - Soil moisture analysis or land classification exercises - Group discussions and evaluations	Facilitator dan Dr. Agustan

Day 3

Cultural Day

Time (WITA)	Agenda	Description	Resource Person/Facilitator
08:00 - 08:30	**Check-in and Recap of the Previous Day**	- Brief recap of Day 2 - Introduction to Day 3 material	Moderator
08:30 - 10:00	**Cultural Workshop**	- Interactive sessions: traditional dance, handicrafts, or folk games.	Committee
10:00 - 10:15	**Coffee Break**	- Break dan networking Session	-
10:15 - 12:00	**Cultural Exhibition**	- Cultural exhibition booths (food, art, and traditions) from various countries/regions	Committee
12:00 - 13:00	**Break (Rest, Prayer, Meal)**	- Lunch and prayer	-
13:00 - 16:00	**Cultural Exhibition, Interactive Cultural Quiz**	- Cultural exhibition booths (food, art, and traditions) from various countries/regions. Culture-based quiz with attractive prizes for participants	Facilitator dan Ms. Laxmi Thapa

Day 4

Remote Sensing Application for Student Research

Time (WITA)	Agenda	Description	Resource Person/Facilitator
08:00 - 08:30	**Check-in and Recap of the Previous Day**	- Brief recap of Day 2 - Introduction to Day 3 material	Moderator
08:30 - 10:00	**Theory Session 1: Remote Sensing Research Design**	- Steps in designing remote sensing-based research - Selection of satellite data and analysis methods - Examples of research topics in agriculture and the environment	Ms. Laxmi Thapa
10:00 - 10:15	**Coffee Break**	- Break dan networking Session	-
10:15 - 12:00	**Theory Session 2: Research Practice**	- Student research case studies (e.g., land cover mapping) - Tips for writing proposals and scientific publications - Q&A	Ms. Laxmi Thapa
12:00 - 13:00	**Break (Rest, Prayer, Meal)**	- Lunch and prayer	-
13:00 - 16:00	**Practical Session: Research Simulation**	- Hands-on: designing simple research ideas - Satellite data analysis exercises for research topics - Brief presentations of research ideas by participants	Facilitator dan Ms. Laxmi Thapa

Day 5

Agricultural Detail Mapping Techniques

Time (WITA)	Agenda	Description	Resource Person/Facilitator
08:00 - 08:30	**Check-in and Recap of the Previous Day**	- - Brief recap of Day 3 - Introduction to Day 4 material	Moderator
08:30 - 10:00	**Theory Session 1: Detailed Mapping Techniques**	- Detailed mapping method: Classification Detailed mapping using UAV - GIS integration for visualization	Andang Suryana Soma, Ph.D
10:00 - 10:15	**Coffee Break**	- break dan networking Session	-
10:15 - 12:00	**Theory Session 2: Advanced Applications**	- Detailed Drone Mapping Techniques for Agriculture - Case studies: land optimization mapping, land damage, and new land - Q&A	Andang Suryana Soma, Ph.D
12:00 - 13:00	**Break (Rest, Prayer, Meal)**	- Lunch and prayer	-
13:00 - 15:30	**Practical Session: Detailed Mapping**	Hands-on: flying drones, terrain orientation, detailed mapping using QGIS or ArcGIS - Land classification and cropping pattern analysis exercises - Discussion of results	Facilitator dan Andang Suryana Soma, Ph.D
15:30 - 16:00	**Closure**	- Summary of the 4-day training - Certificate presentation (if applicable) - Closing remarks and group photo	Organizing Committee and Speakers

About

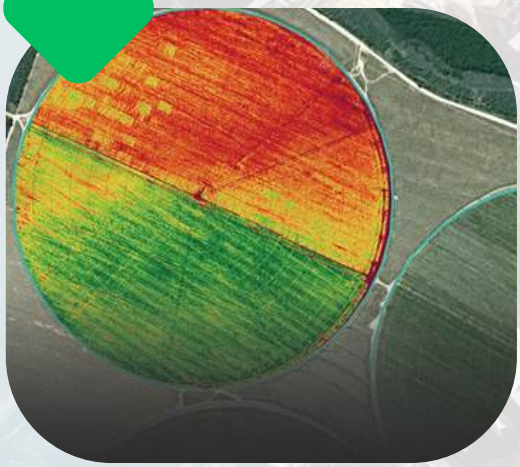
Venue

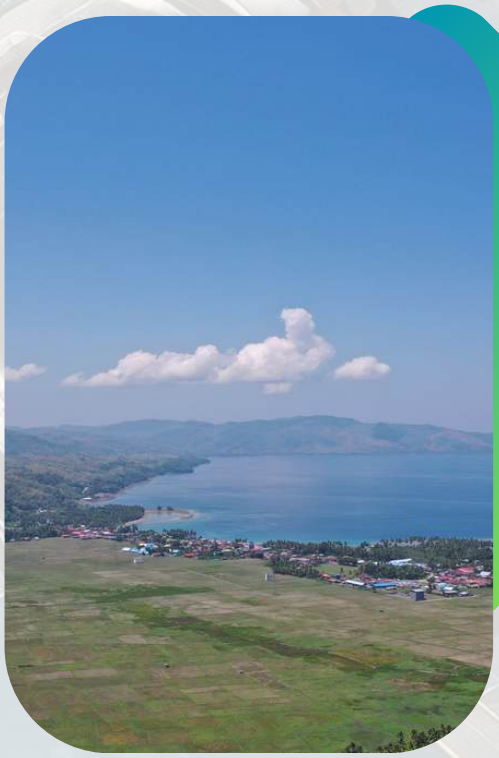
Welcome to the Hasanuddin University (UNHAS) Educational Forest, an oasis of knowledge amidst green expanses that serves as a natural laboratory for innovation and research in forestry and agriculture! We are very excited to hold a four-day training course on “Remote Sensing Applications in Agricultural Mapping” at this very special location. The UNHAS Educational Forest is not merely a green area, but also an inspiring space that unites natural beauty, biodiversity, and scientific spirit.

The learning environment in this training program is designed to inspire and excite. Imagine learning cutting-edge technologies such as microwave remote sensing and SAR data while surrounded by the scent of forest soil and birdsong, creating an experience that harmoniously combines theory and field context. Each day, you will delve into in-depth material with experts, from agricultural land mapping to research design, complemented by hands-on sessions that allow you to not only hear about satellite data, but also “touch” it with your own hands. Interactive discussions and collaboration with fellow participants will enrich your insights, while the atmosphere of the UNHAS Educational Forest will add energy and inspiration for innovation.

Thank You

and see you at summer school





Further Information

Phone
+62 812-4240-8204

Website
acrs2025.mapin.or.id

Email
ialimuddin@gmail.com

Address
Perintis Kemerdekaan Road No KM 10, Tamalanrea Indah, Tamalanrea District, Makassar, South Sulawesi