Seameo Biotrop 2



THE REAL TIME PARTICIPATORY MAPPING FOR DISASTER AND EMERGENCY PREPAREDNESS SYSTEM A CASE STUDY OF TEACHERS INVOLMENT IN CENTER SULAWESI

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BACKGROUND

REAL TIME PARTICIPATORY MAPPING FOR DISASTER AND EMERGENCY PREPAREDNESS SYSTEM

BACKGROUND



Save Human life



Economics Recovery

THE REAL TIME PARTICIPATORY MAPPING FOR DISASTER AND EMERGENCY PREPAREDNESS SYSTEM AN IDEA

Aftermath Disaster



WHAT IS TEHE REALTIME AS A BIG IDEA

The Real Time Participatory Mapping for Disaster and Emergency Preparedness is idea to adopt open web standards for the sharing of map services based on Participatory Geographic Information Systems (PGIS) and Spatial Notification for emergency condition such as disaster, accident, emergency condition, Etc. base on real geo location

BACKGROUND

REAL TIME PARTICIPATORY MAPPING FOR DISASTER AND EMERGENCY PREPAREDNESS SYSTEM

OBJECTIVE

1. To develop collaborative web GIS base on real-time geotagging emergency occurrence

2. To conduct the capacity building of communities for increasing attitude, knowledge and skill to improve participatory mapping for emergencies and disasters preparedness





WHY SCHOOLS & TEACHERS ?



METHODOLOGY

DESIGN

DATA & COMPONENTS

ARCHITECTURE

SITE OF PROJECT



A satellite image to show the location of Palu - Source Google Earth

METHODOLOGY

This Project was focus on developing Web GIS base using collaborative mapping by integrating official data and real time geotagging data by schools communities

Concept of Participatory Geographic Information Systems (PGIS) and Spatial Notification in web GIS will become ideal platform to deliver real time-emergency data and information spatially



Phase of project development

DATA & TOOLS

1	No.	Data	Scale/Resolution	Format	Source
	A	Imagery Data			
	1	Very High/High Resolution Imagery Data	0,5 -20 m	raster	Government, Private
	2	DEM	10 m	raster	Government, Private
	B	Base Map Data			
	1	Administration	1:25.000	vector	Government, Private
	2	Road Network	1:25.000	vector	Government, Private
	3	Facilities (S chool, Hospital, Police Office, Evacuation route and point, etc.	1:25.000	vector	Government, Private
	4	Contour	1:25.000	vector	Government, Private
	5	Land Cover	1:25.000	vector	Government, Private
	<u>c</u>	Thematic Data			
	1	Historical Disaster	1:50.000	vector	Government, Private
	2	Climate	1:50.000	vector	Government, Private
	4	Regional Spatial Plan	1:50.000	vector	G overnment
	5	Population	1:50.000	vector	Government



Main components

ARCHITECTURE/DESIGN MODEL



Spatial Analysis/Geo-processing Service

RESULT/ACTIVITIES

FOCUS GROUP DISCUSSION

AERIAL MAPPING AND SURVEILLANCE

MODEL DEVELOPMENT

PROTOTYPE MODEL

FOCUS GROUP DISCUSSION (FGD)



AERIAL MAPPING AND SURVEILLANCE



PROTOTYPE MODEL DEVELOPMENT

Teachers & Communities Participatory using Mobile Phone (APPS) on update data & information



The Real Time Update Data





PROTOTYPE (INTERFACE) AS A RESULT





TRAINING SYLLABUS

FUNDAMENTAL-INTERMEDIATE TRAINING SYLLABUS

ADVANCE TRAINING SYLLABUS

FUNDAMENTAL-INTERMEDIATE TRAINING SYLLABUS

No	Topics	Brief Description	Minutes	Teaching Method
1	Introduction of Emergency and Disaster Management	Introduction to emergency and disaster management cycle, Activities in each stage of emergency and disaster management, Introduction to Real Time Participatory Mapping For Disaster And Emergency Preparedness System	150	Lecture, Discussion
2	Introduction GIS & Remote Sensing Technology	GIS concept, GIS component, Spatial data concept and data sources, GIS stages, cartography concept, coordinate system and map projection concept, imagery resolution, technique and approach	100	Lecture, Discussion
3	Introducing GIS Software and Tools (license and open source)	Introducing ArcGIS desktop, ArcGIS main frames, ArcGIS Online, Introducing QGIS, QGIS configuration, what's the difference between two software, the advantages and disadvantages of each software, installation of GIS software and problem solving, Introduce GNSS (Global Navigation Satellite System), use of GPS devices, download GPS data with DNR or other GPS software, introduction to differential GPS, introduction to drone application and utility	150	Lecture, Discussion, Practical
4	Utilizing GIS Software and Tools (license and open source)	Get started with ArcMap, Opening and viewing the data, viewing attribute data, exploring the data, layer, map tips, scale, metadata, capturing data technique, geotagging, working with online data, geo-database	100	Lecture, Discussion, Practical, Case Study
5	Produce and Editing Spatial Data	Understanding map digitization, adding an image, create new shapefile, create field attribute, digitization the map, create link to access database, import any spatial data, Digitation point features with absolute coordinate, clip features with split and cut polygon tools, using trace tools, reshaping polygon or polyline, merge features, using buffer tools, dissolve data, data conversion, edit attribute data (rearrange the columns, setting the table view, the selection of record, loading external attribute data, combining the attribute table, search for specific objects, calculating object statistics, select the object interactively using SQL, adding columns or fields, perform mathematical equation).	500	Discussion, Practical, Case Study
6	Introduction of Spatial Analysis and Image Analysis for Participatory Mapping For Disaster And Emergency Preparedness	Organizing data based on national standard, geo-processing, overlay analysis, temporal analysis, raster image processing, introduction to remote sensing software, pre and post processing satellite images, rapid mapping technique	400	Lecture, Discussion, Practical, Case Study
7	Layout, Print , publishing Map	Understanding of symbology, display the text, layout for creating maps, projection, page, adding coordinate system, adding elements in the map layout, save the map, publishing map online, analysis map online	100	Discussion, Practical
8	Field Trip (Survey Practice)	Rapid Survey Techniques and Practice, Input field survey data, transform to GIS data	500	Fieldtrip
		Total Minutes	2000	

ADVANCE TRAINING SYLLABUS

No	Topics	Brief Description	Minutes	Teaching Method
1	Data Analysis for Emergency and Disaster Management	Advanced geodatabase, metadata, external database, join and relate table, topology, sharing data online, integrate data from online sources, emphasis the need for metadata and consistency of attributes, the organization of data in either folder structures or geodatabases, the management of versions of data using national standard	150	Lecture, Discussion, Practical
2	Introduction Web-GIS	GIS concept, GIS component, Spatial data concept and data sources, GIS stages, cartography concept, coordinate system and map projection concept, imagery resolution, technique and approach, Computer networking system (configuration, trouble shooting etc.), Introduction of Information Management System and Web-GIS	100	Lecture, Discussion, Practical
3	Spatial data query	Identifying features, search specified feature, interactive query, spatial query, select by attributes, select by location, select by graphics, advanced query, create calculated field, use of definition query, create table join, create data resume	100	Lecture, Discussion, Practical
4	Spatial Model Implementation for Participatory Mapping For Disaster And Emergency Preparedness	Assessing Emergency and Disaster potency, weight sum analysis, weight overlay analysis model builder, parameterization	500	Lecture, Discussion, Practical, Case Study
5	Using Participatory Mapping For Disaster And Emergency Preparedness System and geoprocessing service	Using ArcGIS online, introduction of model builder, create analysis tools using model builder	150	Discussion, Practical, Case Study
6	Spatial Analysis and Image Analysis for Participatory Mapping For Disaster And Emergency Preparedness	Rapid interpretation technique using OBIA, sharing data technique	400	Lecture, Discussion, Practical, Case Study
7	Layout, Print , publishing Map	publishing	100	Discussion, Practical
8	Field Trip (Survey Practice)	Accuracy assessment and validation	500	Fieldtrip
		Total Minutes	2000	

CONCLUSION

What Next

- As a case study basis, the RT-PADEPS is still needed improvement before it will be implemented for vocational senior high school.
- Any other case studies and input data to be data base within web-GIS as trial and error to become a good model on disaster mitigation and risk reduction management to recovery the humanitarian, ecosystem and economics point of view

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