

FIG

FIG WORKING WEEK 2017

Helsinki Finland

29 May - 2 June 2017

Presented at the FIG Working Week 2017,
May 29 - June 2, 2017 in Helsinki, Finland

Scheme for Enriching Authoritative Geospatial Information using Participatory Mapping Data in Indonesia

Harry Ferdiansyah
Otto-Friedrich-Universität Bamberg

Surveying the world of tomorrow -
From digitalisation to augmented reality

Organised by



Platinum Sponsors:





FIG WORKING WEEK 2017

Surveying the world of tomorrow -

Helsinki Finland 29 May - 2 June 2017

From digitalisation to augmented reality

Introduction

- Started from 70-ies, participatory map has been produced by Non-Governmental Organization (NGO)
- Majority NGO concern:
 - Natural resources exploitation (e.g. deforestation),
 - Legacy of cultural diversity (indigenous people)
 - Recent: transportation & POI (Point of Interest)
- (sometimes) generate Conflict with Indonesian Government policy
- Later: NGO evolves into **PMO (Participatory Mapping Organization)**



Platinum Sponsors:



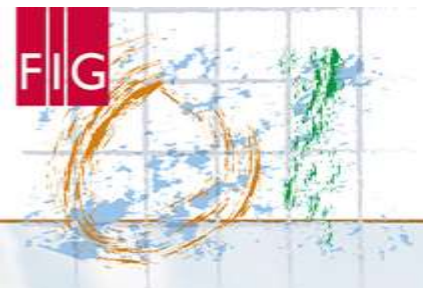
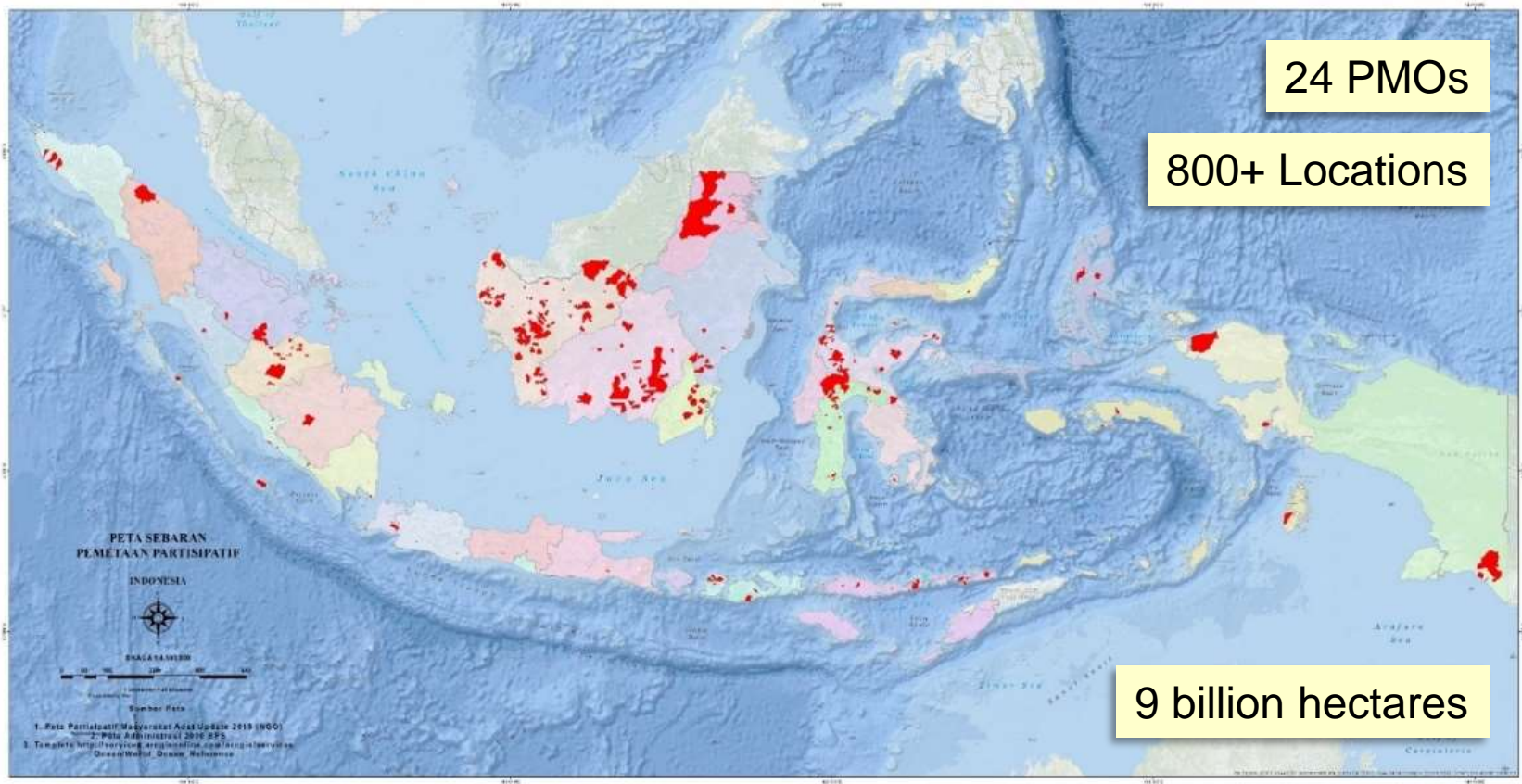


FIG WORKING WEEK 2017

Surveying the world of tomorrow -

Helsinki Finland 29 May - 2 June 2017

From digitalisation to augmented reality



PMO Map Coverage



Platinum Sponsors:





FIG WORKING WEEK 2017

Surveying the world of tomorrow -

Helsinki Finland 29 May - 2 June 2017

From digitalisation to augmented reality

Development of Geospatial Information (GI) in Indonesia

- Enactment of “*UUIG* (the Act/Law of Geospatial Information of Indonesia)” in 2011
 - The Act regulates all the aspect of GI (production, dissemination, etc.)
 - e.g. : Base (topographic) map production only by the Government (i.e. National Mapping Agency, **NMA**)
 - It also regulates on GI and *person* other than NMA’s.
 - Definition of “*person*” in the Act: individual and/or Organization
 - Legal consequences: GI that causes a property or personal loss
 - Up to €8000 fine or five years imprisonment



Platinum Sponsors:





FIG WORKING WEEK 2017

Surveying the world of tomorrow -

Helsinki Finland 29 May - 2 June 2017

From digitalisation to augmented reality

Problem:

PMO

- Accommodate PMO (and it's data) under the Act
- Maintain PMO involvement
 - as a *check & balance* mechanism for Authoritative Spatial Data

NMA

- Help NMA to fill the gaps (NMA obliged to provide all Indonesia GI)
 - Mapped Indonesian area as of 2017 : 42%

➔ Authoritative Spatial Data Enrichment? ➔



Platinum Sponsors:





FIG WORKING WEEK 2017

Surveying the world of tomorrow -

Helsinki Finland 29 May - 2 June 2017

From digitalisation to augmented reality

Research Methods

Documents Review

- The Act / UUIG
 - 21 out of 76 articles related to the topic
- The Act derivatives
 - PP (Govt' Regulation)
 - Perpres (Presidential Decree)
 - ...
- Additional documents
 - Technical & historical docs

Interview (2014 & 2015)

- Direct interview, online & hadcopy questionnaire
 - PMO : 13 out of 22 responded (!)
 - Academics
 - Government:
 - National Mapping Agency
 - Local (success story of PMO + GO)

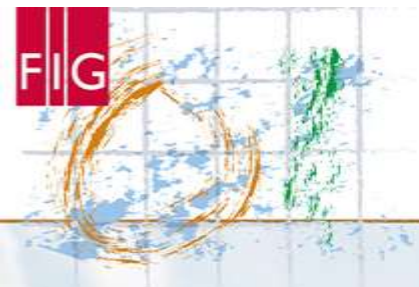


FIG WORKING WEEK 2017

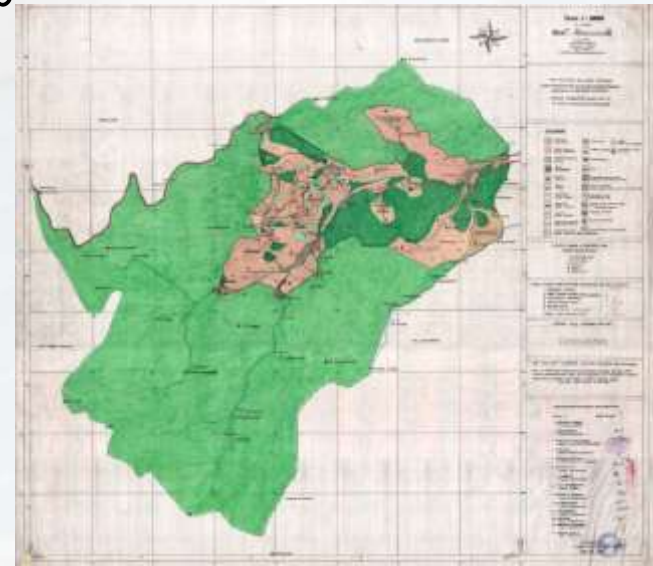
Surveying the world of tomorrow -

Helsinki Finland 29 May - 2 June 2017

From digitalisation to augmented reality

Result & Discussion (PMO)

- PMO data : hardcopy (inc. hand drawn map) & digital
- Data dissemination file-based (via CD & USB) & webmap (view only)
- PMO has a concern on data quality → 54% of PMO do not perform Quality check
- PMO data claimed to represent more original & factual attribute. Despite of geometry correctness.
- PMO view: ASD enrichment introduce locals' knowledge to the mapped object (e.g. historical data)
- PMO requested “*equal trade*” if their data used for ASD enrichment. Equal trade : Govt’ grants PMO full access to ASD



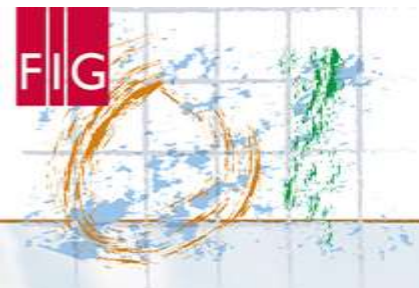


FIG WORKING WEEK 2017

Surveying the world of tomorrow -

Helsinki Finland 29 May - 2 June 2017

From digitalisation to augmented reality

Result & Discussion (NMA)

- NMA: ASD enrichment only possible if PMO follows certain standards
- The mapping standard : same as NMA's or create different standard for PMO
- NMA: not all PMO data will be included in the enrichment (to save NMA resources), only data that in-line with NMA products
- Joint committee to control ASD enrichment:
 - NMA : temporal committee
 - PMO : long-term



Platinum Sponsors:



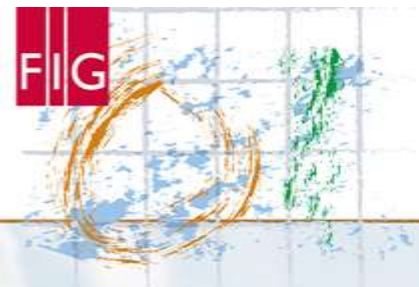


FIG WORKING WEEK 2017

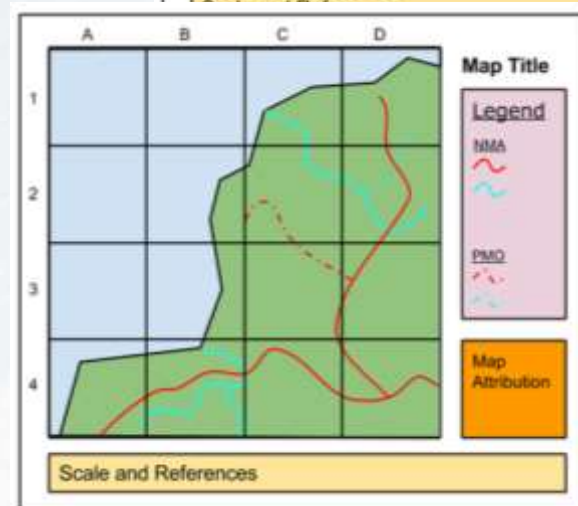
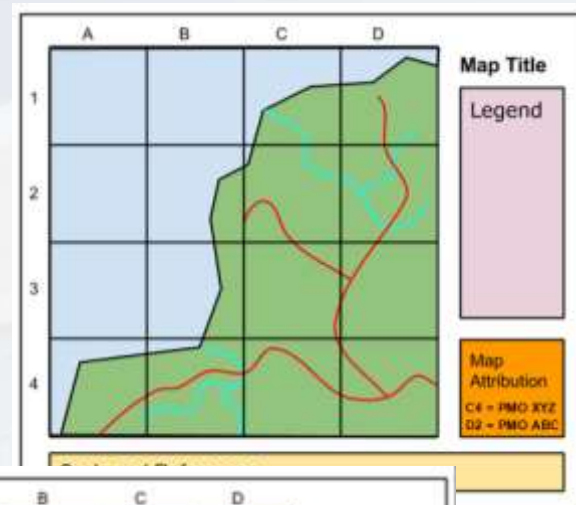
Surveying the world of tomorrow -

Helsinki Finland 29 May - 2 June 2017

From digitalisation to augmented reality

Result & Discussion (technical)

- Cartographic representation of enriched ASD
 - Symbology
 - Attribution for PMO data
- Feature codification
 - Differentiation between PMO vs NMA feature(s)
- Facilitation for PMO
 - Base map
 - Tools : data capture & dissemination



Platinum Sponsors:



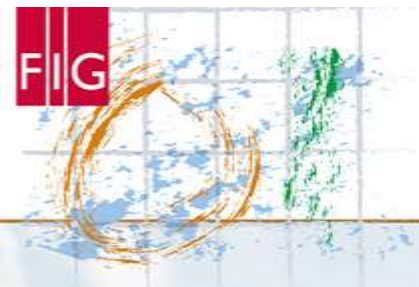


FIG WORKING WEEK 2017

Surveying the world of tomorrow -

Helsinki Finland 29 May - 2 June 2017

From digitalisation to augmented reality

Result & Discussion (non-technical)

- Association (pairing) between PMO & respective GO (e.g. PMO – National Land Agency, PMO – Ministry of Forestry, etc.
- GO provides training on spatial data for PMO
- Legal aspect of enrichment
- The “east” PMO rejection

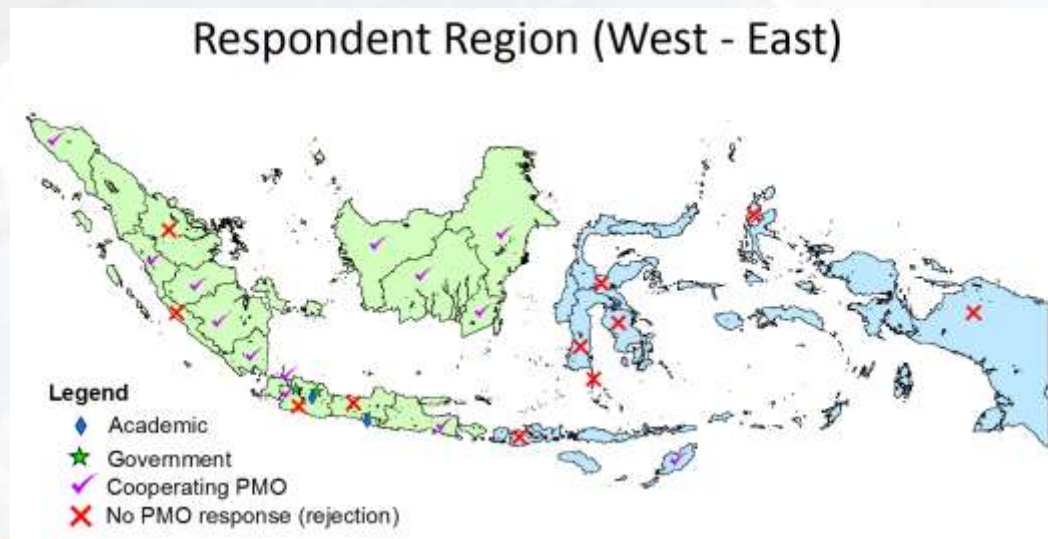




FIG WORKING WEEK 2017

Surveying the world of tomorrow -

Helsinki Finland 29 May - 2 June 2017

From digitalisation to augmented reality

Conclusion

- PMO and NMA : The enrichment of ASD is viable option as a win-win solution
- Several works needed to meet both parties request
 - NMA : standard of PMO mapping
 - PMO : facilitation
- PMO data could provide rich information of the non-spatial data that might be useful for certain purposes



Platinum Sponsors:

