THE APPLICATION OF DEFENCE GEOSPATIAL INFORMATION MANAGEMENT SYSTEM (DGIM) IN DISASTER MANAGEMENT

National Disaster Management Agency (NADMA), Prime Minister's Department (JPM) as a focal point for disaster management in Malaysia, continuously implements various improvement initiatives to reduce the risk of disasters and to enhance our disasters preparedness. Thus, NADMA has established a strategic collaboration with the Department of Survey and Mapping Malaysia (JUPEM) to utilize the Defence Geospatial Information Management (DGIM) system in disaster management. DGIM was developed by JUPEM as a system that share spatial datas from multiple agencies through Geographic Information System (GIS) applications, as shown in **Figure 1** and **Figure 2**. This initiative aligns with the Sustainable Development Goals (SDG), SDG 11 Sustainable Cities and Communities, to create a quality living environment for the cities and the local communities. Most high density urban areas also prone to disaster.

The second *Jawatankuasa Pengurusan Bencana Pusat (JPBP)* meeting of 2022 on 12 September 2022 has approved NADMA proposition to apply DGIM system capabilities in national disaster management. Abundant geospatial datas from various agencies can be used for disaster management purposes. However, this datas is available on separate platforms in the respective agencies and not systematically being integrated. DGIM has the capabilities to incorporate all spatial datas from multiple platforms in a single platform and can be accessed easily. With the availabilty of DGIM, NADMA as a user, don't have to appoint external IT consultants to develop this system. It will not incured any extra cost to the goverment spending.

OUTCOME/IMPACT

NADMA has designed a Disaster Management Dashboard (DMB) through DGIM system as shown in **Figure 3**, which operates 24 hours every day at National Disaster Command Center (NDCC) operations room to enable NADMA to monitor and gain latest disaster situation information from each locations or districts that have been hit by disaster. Various data can be obtained through DPB, and which among them are include district/mukim profiles, land use, population, utility and infrastructure facilities, hot spot locations for flooding, critical slope areas, roads and locations of the temporary evacuation centre. This available datas can be used to estimate damage loses and organise relief efforts for disaster victims in the respective areas. The DMB database will be expanded contionously from time to time. *Pusat Kawalan Operasi Bencana* (PKOB) at the state level and Non-Governmental Organizations (NGOs) can also report their respective activities through DPB to be monitored by NADMA. Disaster situation reports can also be prepared occasionally for stakeholders' information based on the datas available in DPB.

Disaster Management Geo-data Working Group chaired by the Director General of NADMA has been established to ensure spatial data sharing from various agencies can be implemented more effectively through DGIM system. It is also to ensure that each data shared by the respective agencies are accurate and up-to-date. This working group also enable each agencies to give their feedbacks and views to enhance DGIM system capability in disaster management. It also creates smart colloboration among various agencies in managing disasters in Malaysia.

This working group consist Malaysian Administrative Modernisation and Management Planning Unit (MAMPU), Department of Statistics Malaysia (DOSM), Department of Public Works (JKR), Department of Social Welfare (JKM), Department of Meteorology Malaysia (MET Malaysia), PLANMalaysia, Department of Irrigation and Drainage (JPS), Department of Mineral and Geoscience Malaysia (JMG), Malaysian Space Agency (MYSA) and the National Geospatial Centre (PGN). The application of DGIM system will ultimately improve the competency level of officials and agencies involved particularly in the field of GIS dan IT.

The DGIM system can constitute information superiority, an ability that needed by NADMA as the focal point of national disaster management. Thus, the application of DGIM system based on spatial data sharing inter-agency through GIS application allows any matters related to disaster management to be decided based on the latest, easily accessible and accurate available datas.

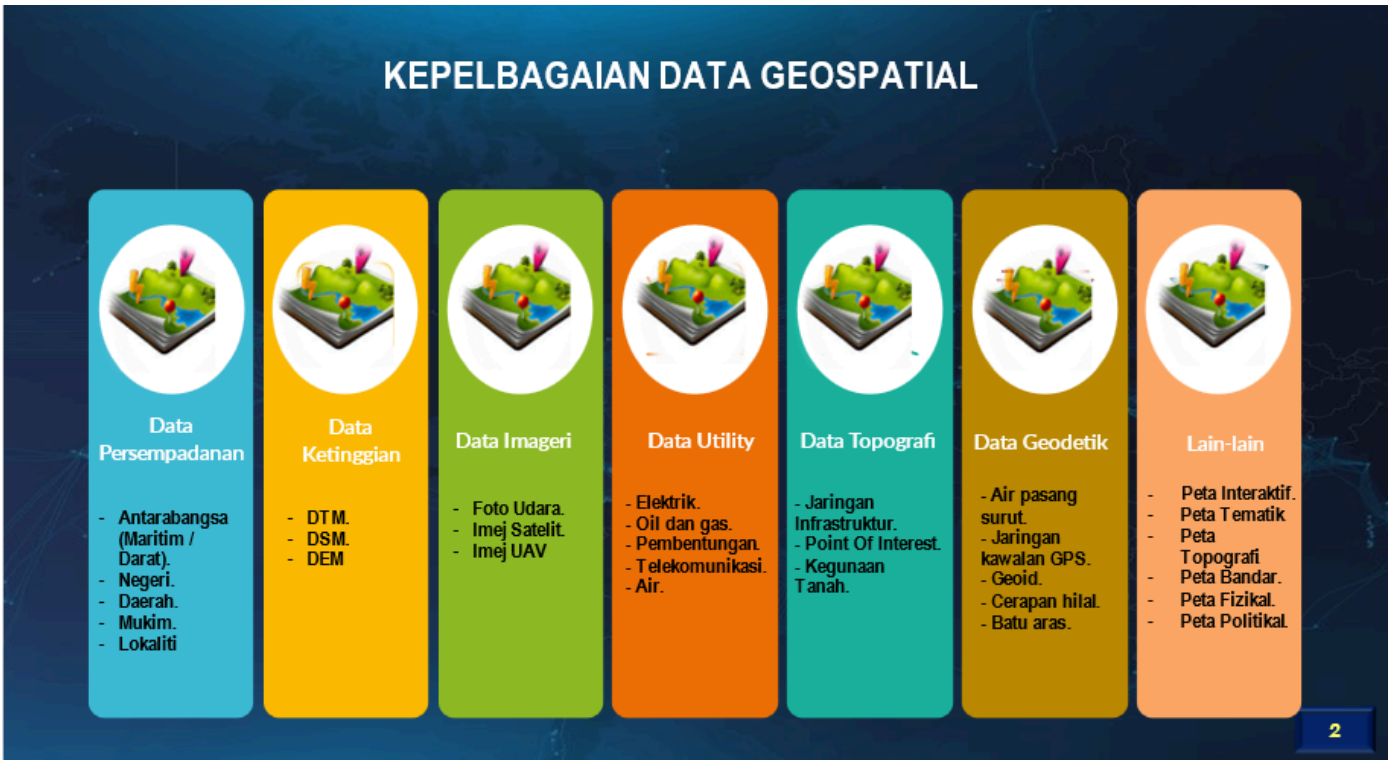


Figure 1: Defence Geospatial Information Management (DGIM) Data Integration

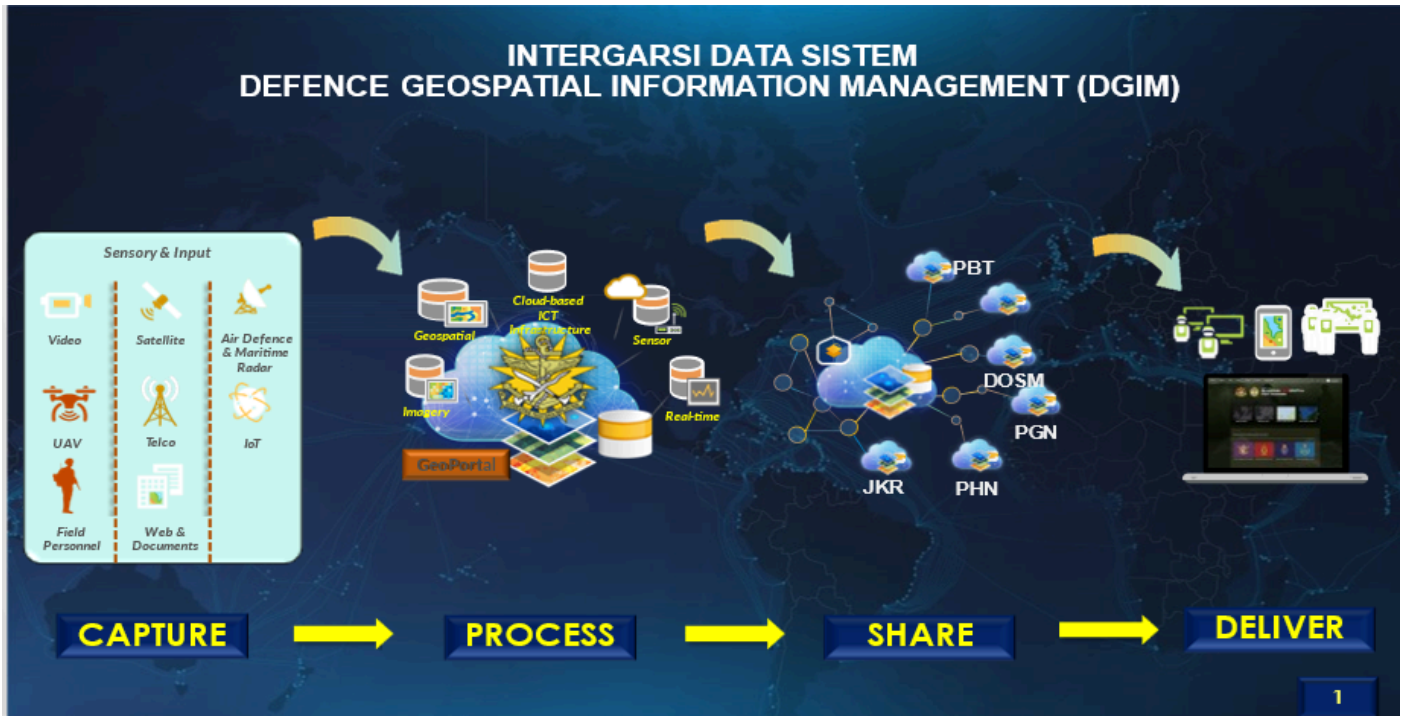
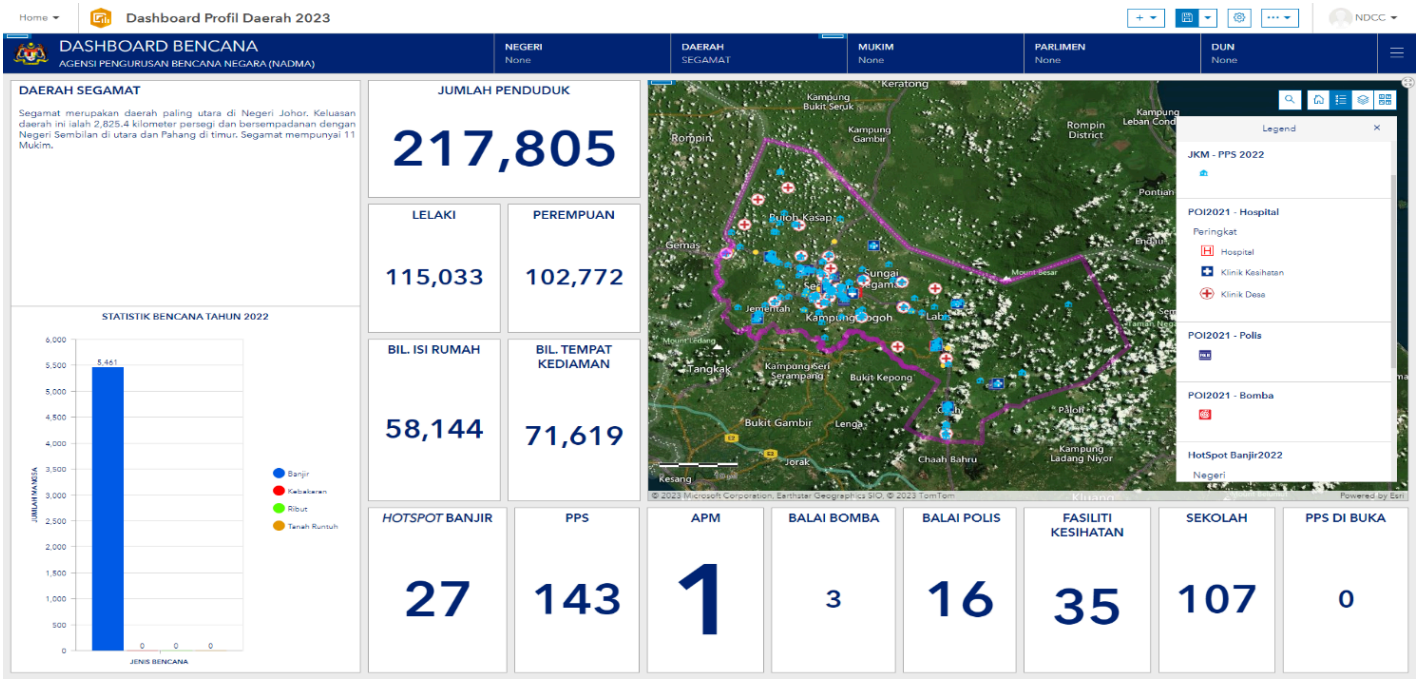


Figure 2: The Various of Geospatial Data Becomes the Basis of the Defence Geospatial Information Management (DGIM) System



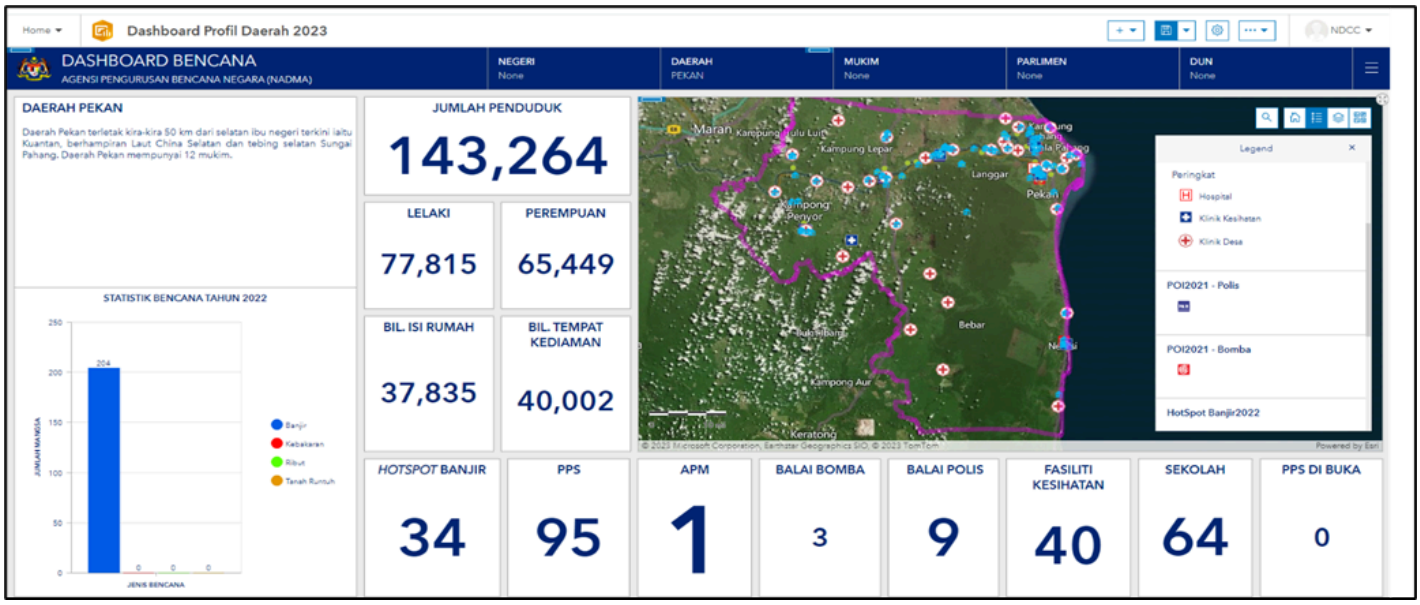


Figure 3: *Disaster Management Dashboard (DPB)*