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Evaluate the Possibility of Using ArcGIS Basemaps as GCP for Large Scale Maps

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Abstract : Awareness of the importance large-scale maps for development of a country is growing in all walks of life, especially for governments in Indonesia. Various parties, especially local governments throughout Indonesia demanded for immediate availability the large-scale maps of 1:5000 for regional development. But in fact, the large-scale maps of 1:5000 is only available less than 5% of the entire territory of Indonesia. Unavailability precise GCP at the entire territory of Indonesia is one of causes of slow availability the large scale maps of 1:5000. This research was conducted to find an alternative solution to this problem. This study was conducted to assess the accuracy of ArcGIS base maps coordinate when it shall be used as GCP for creating a map scale of 1:5000. The study was conducted by comparing the GCP coordinate from Field survey using GPS Geodetic than the coordinate from ArcGIS basemaps in various locations in Indonesia. Some areas are used as a study area are Lombok Island, Kupang City, Surabaya City and Kediri District. The differences value of the coordinates serve as the basis for assessing the accuracy of ArcGIS basemaps coordinates. The results of the study at various study area show the variation of the amount of the coordinates value given. Differences coordinate value in the range of millimeters (mm) to meters (m) in the entire study area. This is shown the inconsistency quality of ArcGIS base maps coordinates. This inconsistency shows that the coordinate value from ArcGIS Basemaps is careless. The Careless coordinate from ArcGIS Basemaps indicates that its cannot be used as GCP for large-scale mapping on the entire territory of Indonesia.

Keywords : accuracy, ArcGIS base maps, GCP, large scale maps
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