ISO19152 Land Administration Domain Model-oriented Niger River 3D Satellite Mapping

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Key words: Cadastre; Cartography; Digital cadastre; Geoinformation/GI; GNSS/GPS; Land distribution; Land management; Land readjustment; Mine surveying; Photogrammetry; Real estate development; Reference frames; Standards; ISO19152 Land Administration Domain Model; UTM map projection; Differential GPS 3D mapping; Satellite photogrammetry 3D mapping; 4D Image Map Archive Designed Aerial Studies (IMADAS)

SUMMARY

This presentation will introduce the system configuration, survey map production regulations, and map creator training process for creating 3D cadastral maps in the Republic of Ghana and the Republic of Mali in accordance with ISO19152-LADM (Land Administration Domain Model), based on the current state of cutting-edge fields in Japan and around the world.

According to the Land Survey Act and the Cadastral Survey Work Regulations, to create cadastral maps, the reference control point can be determined as the Japan basic triangulation point (electronic control point) of GNSS satellite surveying and the instrument point and backsight point of a total station surveying system that performs ground (one parcel)surveying from that alone, which is called the Japan single-point observation method, officially.

Osaka, a pioneer in cadastral surveying in Japan, completed 1/ 20,000 topographical map in 1910 (Meiji 43), and since 1952 has been able to display, measure, and store nationwide data for each paddy field plot using a unified coordinate system on a GIS system(UTM map projection). The creation of cadastral maps began with the Johri land administration system of the Taika Reforms in 645 A.D., and continued through Toyotomi Hideyoshi's "Taiko Land Survey" and “Shogun” Tokugawa Ieyasu's "National Map Creation," which crushed the Pope and the King of Spain's plans to occupy Japan and enslave the Japanese in the 1590s by expelling them and the Christians with the world's largest gun army, before leading to the land tax reform and cadastral map creation of the 1870s before Russo-Japanese War in1904-05.

We propose, with the world-leading satellite surveying and photogrammetry, the followings.

(1) WGS84-UTM Zone -1/10,000 National Land Base Map Boundary Setting

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Method

(2) DGPS Satellite Surveying - Large-Scale 3D Cadastral Mapping

(3) Existing Aerial Photographs - Bundle Aerial Triangulation - 3D Topographic Mapping

(4) High-Resolution Satellite Image Photogrammetry 3D Mapping