Establishing Geodatabase and GIS Infrastructure for Saudi Telecom Company (STC)

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Together with King Abdulaziz City for Science and Technology (KACST), GeoTech Co. (GTC) undertook the STC Geodatabase and GIS project in December, 2002, and successfully completed it in March of 2005. The following tasks were successfully completed during the course of the Project, which covers all of Saudi Arabia. This project was one of the most comprehensive well-structured and balanced geodatabases in the Middle East: (1) High Resolution Images of IKONOS/QUICKBIRD (60,000 km2): establishment of GPS-points every 5 km; production of DEMs with RMSH = ś 5-8 m in height; orthorectification of IKONOS / QUICKBIRD images with RMSH = ś 1.0-1.5 m in planimetry, (2) Medium Resolution Images of LANDSAT-7 (1,500,000 km2): establishment of GPS-points every 50 km; collection of 30 m precision DEMs; orthorectification of LANDSAT-7 images with RMSH = ś 15-20 m in planimetry; determining land use and clutters from LANDSAT-7 images, (3) GIS Database (1,500,000 km2): Vectorisation of orthorectified IKONOS / QUICK-BIRD images and establishment of GIS database (60,000 km2); Vectorisation of street centerlines, buildings, street edges, parcels and blocks, integration of telephone network (60,000 km2); mapping and integration of subdivisions and establishment of GIS database (11,177 km2); integration of structural and local plans and establishment of PIS database (1,500,000 km2), (4) GSM Database: Production/compilation of raster maps, vector maps, local plans, 20-25 m DEMs and clutters (150,000 km2); Production/compilation of raster maps, vector maps, structural plans, 50 m DEMs and clutters, Production/compilation of raster maps, vector maps (1,500,000 km2), (5) GSM Building Heights (2500 km2): determination of building heights in Dammam, Riyadh, Jeddah, Makkah and Madinah using stereo aerial photography and IKONOS images,

and finally (6) GIS Center: Provision of GIS hardware/software, development of applications and establishment of STC GIS infrastructure. This presentation illustrates in depth this very huge state-of-the-art project.