

PHOTOGRAMMETRIC MANAGEMENT GIS SYSTEM

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ABSTRACT:

In the past, most of the photogrammetric processes, at the survey of Israel (SOI), were implemented manually. Only very few tasks were computer-assisted, in partial and a very limited format. The computerization at SOI included an alphabetical database of the photogrammetric data, such as mission, camera, triangulation, parameters. These parameters, in the past, were saved in separated and "private" files. These files served different users, in several departments, in terms of following-up only. All these data were kept without any geographical relations of the aero-photographs. This was due to the enormous amount of the aero-photographs data and the complexity of these data. This very complexity of past years lead to a decision that developing a spatial database and a photogrammetric management GIS system, is needed.

The photogrammetric management GIS system, discussed in this paper, was developed in order to integrate all the separate files, maintained by the different departments, and the Israeli National GIS coverages into one management system.

The paper describes, also, the major milestones of the newly developed system. The first stage included the

collection and analyses of the different photogrammetric processes, which were implemented in different departments. These processes include mission planning, aero-photographs shop, etc. The second stage was to collect the digital and non-digital photogrammetric data at the SOI and the development of a GIS database, which integrate and combine different data types from different users. The third stage was the development of modular and user-friendly algorithms which enable: (a) automatic mission planning; (b) finding archive aerophotographs by geographic, date and other parameters; (c) automatic production of orthophoto mosaics (from single, stereo or multi photographs); (d) automatic production of standardized "orthophotomap"; and (e) updating the database in real time, including quality control to disable entering error data to the photogrammetric database.

The newly developed system proved to be an efficient and most productive tool. Planned for the use of two sections only, the system is serving now all the sections of the division of photogrammetry. Further development is planned for year 2002 in terms of replacing old archiving techniques, pricing, customer service, and much more.