# *MAPS GEOSYSTEMS*

# Focus Africa and Middle East

Over its thirty years existence the privately owned MAPS Group has executed thousands of aerial survey projects in 65 countries. It currently operates in seventeen countries, with mapping projects such as Large Scale Topographic Mapping for a metropolis of four million inhabitants, and DTM and Orthophoto Production for an irrigation project involving 80,000 stereo models.

Originally set up in Lebanon in 1974 to serve the growing mapping demands of the Middle East, MAPS geosystems is now the foremost private mapping organisation presence in the Middle East and Africa. With a staff of 240 specialising in geographic/technical data acquisition and spatial data integration, MAPS activities cover a full range of services, including ground and aerial survey, utility survey, automated vector and image mapping, orthophoto production, satellite-image processing, GIS implementation and consultancy. The Group is financially independent, and owned and jointly managed by its three partners.

## Database-ready Data

Since its inception MAPS has operated internationally, spreading first through the Middle East and Africa where it has slowly but steadily replaced survey companies traditionally operating in this area. Operations in Europe began after MAPS acquired a German survey company. Crucial to operational spread was acquisition of a twin turboprop aircraft in 1982. This aircraft, using universally available jet fuel, meant a great advantage over competitors. The strength of MAPS is its ability to offer comprehensive mapping services, from primary data acquisition through to database-ready data. Apart from trad-itional ground and aerial survey and mapping, the MAPS group is heavily involved in the latest technologies in its field. It represents ESRI in the United Arab Emirates, as well as being the exclusive distributor of high-resolution satellite imagery from Digital Globe in the Middle East and most of Africa.

## Own Production Software

The MAPS System Engineering Department is tasked with implementing the company concept: automate what can be auto-mated, offsetting development costs against long-term benefits. Today we have reached the stage of being largely independent of third-party software, having developed our own software for vector and raster data acquisition, image processing, terrain modelling and so on, including photogrammetric workstations and QA-system. In particular, our production software outperforms commercially available systems generally designed for more universal usage whilst lacking efficiency in performing well-defined tasks. We benefit considerably from the high level of automation of our custom-built software. There are, of course, areas where we continue to rely on highly specialised third-party software, either as â€˜enginesâ€™ built into our procedures or as standalone software; for instance, for aerial triangulation and GPS processing. Since our software is primarily for in-house use, development cycles are much shorter than would be possible if marketing to third parties. Nevertheless, many MAPS innovations have found their way into the industry at large. As early as 1993 the Group was instrumental in developing the Zeiss T-Flight GPS-controlled Photo Management system, and more recently MAPS PromptServer technology has been acquired by ESRI and is now marketed revamped as the ESRI Image Server.

## Finding the Data

We are convinced that only a fraction of existent geospatial data is adequately exploited. Data may be available, but that is not to say it is accessible. Accessibility is hampered by many factors: lack of metadata (not knowing what exists and where), legal access restrictions, insufficient means of data transfer, incompatible data structures and formats, insufficient training and user-unfriendly applications. MAPS campaigns on many levels to improve this situation and ensure the supply of data and procedures that allow the end-user direct, unencumbered and timely access to information.

## Outsourcing GIS

A widening gap exists between source data and data usable within an information system. Apart from the complex data structure required by advanced GIS systems, increasing use and dependency on third-party data causes severe integration problems. So does accommodating myriad different geodetic reference systems with often dubious transformation parameters. In addition, there is an enormous backlog of data that has to be attended to but might as well be discarded unless it can be migrated into structures negotiable by advanced data-exploitation and mining systems.

The growing awareness that a very large proportion of all data, irrespective of its nature, has relevant spatial attributes is leading to an explosion in demand for geospatial data, most noticeably imagery and GIS technology as a whole. At the same time, organisations increasingly realise their need for considerable expertise if they are to enjoy full return on investment in source data. So they must either make information technology part of their core business or look to outsource GIS-related activities.

## Future Aims

Whilst the traditional task of mapping companies is the provision of mapping services to other organisations, they are now required to offer a more comprehensive service. This includes data migration and data integration to the extent that data can be plugged effortlessly into a client database, ready for instant use in diverse applications. Given this scenario, the foreseeable future will see MAPS concentrating its efforts on:

- economical spatial-data acquisition, be this new acquisition, updating or data migration
- provision of data in geodata-bases readily accessible for any user application
- setting up data acquisition and data management facilities at selected locations, including client premises, to be managed either by MAPS staff or MAPS-trained client personnel
- provision of professional-application services: customer advice on optimal spatial-data exploitation
- emphasising inclusion of image data in data acquisition as well as data-exploitation phases.

The entire capacity of MAPS will participate in realising these objectives, utilising not only present knowledge but also continuing input from large mapping projects undertaken by the company.