

# GIS INTEGRATION WITH THE REMOTE SENSING DATA AND THE EXPERT SYSTEMS\*

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## **ABSTRACT**

GIS modelling techniques have evolved over the years especially consequent to the provision of multibant large scale data via remote sensing and with the use of computer facilities with high storage capability in recent years. Meanwhile, raster and vector based GIS information have begun to be widely used all over the world with the implication of versatile integration between image processing, database (raster, vector or numerical) and the expert systems. The work presented in this paper, focuses on an interactive expert system (StarExpert) which is aimed to be developed in Marmara Research Center and which assists to select optimal data and algorithms, ultimately, to gain more accurate results. In respect of high geometric and thematic correlation of the image features on the ground, when massive data stored in GIS, it may be difficult to interpret and process. In such cases, the interactive role of specially designed expert system will help to minimize errors and with eventual feasibility of decision making in respect of optimal image processing routine to help even inexperienced user on the basis of previous experiences.

## **1.0 INTRODUCTION**

Several research topics are being investigated at Turkish Research Council, Marmara Research Center, concerned with remote sensing and image analysis. Remote sensing information has recently been separated from the electronic department and established, relying on its own systems and since then has been gaining experience in crop identification and assessment, environmental pollution, GIS, image analysis etc. With the recent upgrades, the systems are being employed where each one is used independently. And so far no any of data or experience has been recorded and transfer between them systematically. The algorithms and processed data which have been developed since 1985 in related to crop identification on VAX 11/780, I2S System 575 commands need to be categorized and recorded systematically with related experiences in an expert system database for further contribution to integration with other systems, where the other systems are ; a pc-based satellite receiver and image processor which is capable of receiving METEOSAT and NOAA images frequently, processing internal and external images, density slice, filtering, geometric

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