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The Digital Elevation Model market: current situation and perspectives

L.-F. Guerre, A. Hirschfeld, L. Demargne — Spot Image
Louis-Francois.Guerre@spotimage.fr

C. Foucher — Institut d'Economie Industrielle de Toulouse

Abstract

The description of the current market for Digital Elevation Models as well as its potential development has been studied by Spot Image at the request of ESA. Forecasting a boost in Digital Elevation Model offer induced by the ERS tandem mission, an assessment of the market for DEM is particularly relevant. Although, DEMs (from airborne, spaceborne, digitized maps) have been produced and used for many years now, no comprehensive studies of this market are available. Indeed, it is very surprising to find that few assessments of this market have been made.
This study aimed to describe the offer and the demand for DEMs. This involved: identifying the structure of the market, the different uses and applications, as well as the suitability of the current offer to the user needs. The market for DEMs was analysed both qualitatively and quantitatively. The information was gathered with questionnaires, direct interviews, and from existing surveys.
There is a real current market for DEMs of various sources such as digitised topographic maps, airborne or spaceborne stereoscopic imagery, with accuracies ranging from 1 m to 100m. There is already an existing archive of a few tens of millions of km2 and an annual production of several millions km2. There are a few number of large producers in the world and many small producers. However, the offer of DEM is not very visible and the market not yet well structured or organised. The price depends on the type of DEM and the service associated and can vary from 0.1 to 150 US $ per km2. End users requiring a product that is adequate to their needs are ready to pay several $ per km2 for spaceborne DEMs. There is an important latent commercial demand which can not be served by the current offer of DEMs. This demand is stronger for high-resolution DEMs (height accuracy better than 5m), but the market for DEMs with lower accuracy is still significant. This later market can be addressed by ERS SAR interferometry. Among the main commercial applications of DEMs are: telecommunications, defence, thematic mapping and GIS.
The perspectives of the potential market for DEMs are important thanks to the potential of market development of the most promising applications using DEMs. However, the market can develop only with a strong increase in the worldwide availability of the DEMs for the users, and a development of the distribution and marketing of DEMs products.
Keywords: